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

DATA PACKAGE

METALS

PROJECT NAME : FT MEADE TIPTON AIRFIELD PARCEL RI - PO 0111169

WESTON SOLUTIONS

1400 Weston Way

PO Box 2653

West Chester, PA - 19380

Phone No: 610-701-7400

ORDER ID : P5117

ATTENTION : Nathan Fretz

Laboratory Certification ID # 20012

Table Of Contents for P5117

1) TCLP METALS DATA 2
2) Signature Page 4
3) Case Narrative 5
4) Qualifier Page 7
5) Conformance/Non Conformance 8
6) QA Checklist 9
7) Chronicle 10
8) Hit Summary 11
9) Sample Data 12
9.1) TAPIAL2-IDW-SOIL-120424-00-T2 13
10) METALS CALIBRATION DATA 14
10.1) Initial and Continuing Calibration Verification 15
10.2) CRDL Standard For AA & ICP 21
10.3) Initial and Continuing Calibration Blank Summary 22
10.4) Preparation Blank Summary 26
10.5) Interference Check Sample 28
11) METALS QC DATA 29
11.1) Matrix Spike Summary 30
11.2) Post Digest Spike Summary 32
11.3) Duplicate Sample Summary 33
11.4) Laboratory Control Sample Summary 35
11.5) ICP Serial Dilutions 37
12) METALS PREPARATION & INSTRUMENT DATA 38
12.1) ICP Interelement Correction Factors 39
13) PREPARATION & ANALYTICAL SUMMARY 44
13.1) Sample Preparation Summary 45
13.2) Analysis Run Log 47
14) METALS RAW DATA 49
14.1) METALS RAW DATA - ANALYTICAL 50
14.2) LB133834 50
14.3) LB133829 208
14.4) METALS RAW DATA - PREP 210
14.4.1) PB165436 210
14.4.2) PB165486 214
15) Analytical Runlogs 217

16) Extraction Logs 225
16.1) PB165390.pdf 225
17) Standard Prep Logs 229
18) Shipping Document 389
18.1) Chain Of Custody 390
18.2) Lab Certificate 391

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

Cover Page

Order ID : P5117

Project ID : Ft Meade Tipton Airfield Parcel RI - PO 0111169

Client : Weston Solutions

Lab Sample Number	Client Sample Number
P5117-01	TAPIAL3-SB04I-10-120324-00-T1
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2

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

Signature : _____

Date: 12/20/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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

CASE NARRATIVE

Weston Solutions
Project Name: Ft Meade Tipton Airfield Parcel RI - PO 0111169
Project # N/A
Chemtech Project # P5117
Test Name: TCLP Mercury,TCLP ICP Metals

A. Number of Samples and Date of Receipt:
2 Solid samples were received on 12/05/2024.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Anions Group1, Cyanide, Ignitability, Mercury, Metals ICP-TAL, METALS-TAL, PCB, pH, Sulfide, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS, TCLP Pesticide, TCLP VOA, TCLP ZHE Extraction, TOC and TS. This data package contains results for TCLP Mercury,TCLP ICP Metals.

C. Analytical Techniques:
The analysis of TCLP ICP Metals was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of TCLP Mercury was based on method 7470A and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike (COMP-1MS) analysis met criteria for all samples except for Barium due to matrix interference.
The Matrix Spike Duplicate (COMP-1MSD) analysis met criteria for all samples except for Barium due to matrix interference.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Calculations:

Calculation for TCLP Metals:
Concentration or Result (µg/L) = $C \times \frac{Vf}{Vi} \times DF \times 1000$

Where,

C = Instrument value in ppm (The average of all replicate exposures)
Vf = Final digestion volume (mL)
Vi = Initial aliquot amount (mL) (Sample amount taken in prep)
DF = Dilution Factor

Calculation for TCLP Hg:

Concentration or Result (µg/L) = C x DF
Where,
C = Instrument response in µg/L from the calibration curve.
DF = Dilution Factor

F. Additional Comments:

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

Signature_____

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

QA Control # A3040961

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: P5117 MATRIX: TCLP

METHOD: 6010D,7470A,1311

		NA	NO	YES
1.	Calibration Summary met criteria.			✓
2.	ICP Interference Check Sample Results Summary Submitted.			✓
3.	Serial Dilution Summary (if applicable) Submitted.			✓
4.	Laboratory Control Sample Summary (if applicable) Submitted.			✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
	The Matrix Spike (COMP-1MS) analysis met criteria for all samples except for Barium due to matrix interference. The Matrix Spike Duplicate (COMP-1MSD) analysis met criteria for all samples except for Barium due to matrix interference.			
7.	Sample Duplicate Analysis Met QC Criteria			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
8.	Digestion Holding Time Met			✓
	If not met, list number of days exceeded for each sample:			
9.	Analysis Holding Time Met			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

_____ _____

QA REVIEW Date

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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P5117

	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:** 12/20/2024

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

LAB CHRONICLE

OrderID:	P5117	**OrderDate:**	12/5/2024 10:55:00 AM
Client:	Weston Solutions	**Project:**	Ft Meade Tipton Airfield Parcel RI - PO 0111169
Contact:	Nathan Fretz	**Location:**	L41

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5117-01	**TAPIAL3-SB04I-10-120324-00-T1**	**SOIL**			**12/03/24**			**12/05/24**
			Mercury	7471B		12/06/24	12/06/24	
			Metals ICP-TAL	6020B		12/18/24	12/19/24	
P5117-02	**TAPIAL2-IDW-SOIL-120424-00-T2**	**TCLP**			**12/04/24**			**12/05/24**
			TCLP ICP Metals	6010D		12/06/24	12/09/24	
			TCLP Mercury	7470A		12/09/24	12/09/24	

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

Hit Summary Sheet
SW-846

SDG No.: P5117 **Order ID:** P5117

Client: Weston Solutions **Project ID:** Ft Meade Tipton Airfield Parcel RI - PO 01

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : TAPIAL2-IDW-SOIL-120424-00-T2									
P5117-02	TAPIAL2-IDW-SOIL-120424-00	TCLP	Barium	841		62.8	125	500	ug/L
P5117-02	TAPIAL2-IDW-SOIL-120424-00	TCLP	Chromium	23.2	J	6.60	25.0	50.0	ug/L

SAMPLE DATA

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

Report of Analysis

Client:	Weston Solutions	Date Collected:	12/04/24
Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169	Date Received:	12/05/24
Client Sample ID:	TAPIAL2-IDW-SOIL-120424-00-T2	SDG No.:	P5117
Lab Sample ID:	P5117-02	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	80.0	U	1	34.8	80.0	100	ug/L	12/06/24 11:10	12/09/24 14:14	SW6010	SW3050
7440-39-3	Barium	841	N	1	62.8	125	500	ug/L	12/06/24 11:10	12/09/24 14:14	SW6010	SW3050
7440-43-9	Cadmium	7.50	U	1	0.94	7.50	30.0	ug/L	12/06/24 11:10	12/09/24 14:14	SW6010	SW3050
7440-47-3	Chromium	23.2	J	1	6.60	25.0	50.0	ug/L	12/06/24 11:10	12/09/24 14:14	SW6010	SW3050
7439-92-1	Lead	48.0	U	1	35.1	48.0	60.0	ug/L	12/06/24 11:10	12/09/24 14:14	SW6010	SW3050
7439-97-6	Mercury	1.60	U	1	0.81	1.60	2.00	ug/L	12/09/24 08:55	12/09/24 12:37	SW7470A	
7782-49-2	Selenium	80.0	U	1	58.8	80.0	100	ug/L	12/06/24 11:10	12/09/24 14:14	SW6010	SW3050
7440-22-4	Silver	25.0	U	1	5.80	25.0	50.0	ug/L	12/06/24 11:10	12/09/24 14:14	SW6010	SW3050

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

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

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

METAL CALIBRATION DATA

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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
ICV13	Mercury	3.87	4.0	97	90 - 110	CV	12/09/2024	11:46	LB133829

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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
CCV05	Mercury	4.58	5.0	92	90 - 110	CV	12/09/2024	11:50	LB133829
CCV06	Mercury	4.88	5.0	98	90 - 110	CV	12/09/2024	12:25	LB133829
CCV07	Mercury	4.97	5.0	99	90 - 110	CV	12/09/2024	12:53	LB133829
CCV08	Mercury	4.73	5.0	95	90 - 110	CV	12/09/2024	13:37	LB133829
CCV09	Mercury	5.03	5.0	100	90 - 110	CV	12/09/2024	15:27	LB133829
CCV10	Mercury	5.23	5.0	105	90 - 110	CV	12/09/2024	15:39	LB133829

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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	Arsenic	955	1000	96	95 - 105	P	12/09/2024	11:35	LB133834
	Barium	508	520	98	95 - 105	P	12/09/2024	11:35	LB133834
	Cadmium	494	510	97	95 - 105	P	12/09/2024	11:35	LB133834
	Chromium	517	520	99	95 - 105	P	12/09/2024	11:35	LB133834
	Lead	971	1000	97	95 - 105	P	12/09/2024	11:35	LB133834
	Selenium	975	1000	98	95 - 105	P	12/09/2024	11:35	LB133834
	Silver	248	250	99	95 - 105	P	12/09/2024	11:35	LB133834

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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	Arsenic	18.7	20.0	94	80 - 120	P	12/09/2024	11:49	LB133834
	Barium	99.3	100	99	80 - 120	P	12/09/2024	11:49	LB133834
	Cadmium	5.91	6.0	98	80 - 120	P	12/09/2024	11:49	LB133834
	Chromium	11.3	10.0	113	80 - 120	P	12/09/2024	11:49	LB133834
	Lead	12.3	12.0	102	80 - 120	P	12/09/2024	11:49	LB133834
	Selenium	21.1	20.0	106	80 - 120	P	12/09/2024	11:49	LB133834
	Silver	9.94	10.0	99	80 - 120	P	12/09/2024	11:49	LB133834

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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	Arsenic	4840	5000	97	90 - 110	P	12/09/2024	12:29	LB133834
	Barium	9640	10000	96	90 - 110	P	12/09/2024	12:29	LB133834
	Cadmium	2430	2500	97	90 - 110	P	12/09/2024	12:29	LB133834
	Chromium	993	1000	99	90 - 110	P	12/09/2024	12:29	LB133834
	Lead	4850	5000	97	90 - 110	P	12/09/2024	12:29	LB133834
	Selenium	4880	5000	98	90 - 110	P	12/09/2024	12:29	LB133834
	Silver	1230	1250	98	90 - 110	P	12/09/2024	12:29	LB133834
CCV02	Arsenic	5090	5000	102	90 - 110	P	12/09/2024	13:30	LB133834
	Barium	9940	10000	99	90 - 110	P	12/09/2024	13:30	LB133834
	Cadmium	2430	2500	97	90 - 110	P	12/09/2024	13:30	LB133834
	Chromium	984	1000	98	90 - 110	P	12/09/2024	13:30	LB133834
	Lead	4850	5000	97	90 - 110	P	12/09/2024	13:30	LB133834
	Selenium	5240	5000	105	90 - 110	P	12/09/2024	13:30	LB133834
	Silver	1240	1250	100	90 - 110	P	12/09/2024	13:30	LB133834
CCV03	Arsenic	4930	5000	99	90 - 110	P	12/09/2024	14:23	LB133834
	Barium	9920	10000	99	90 - 110	P	12/09/2024	14:23	LB133834
	Cadmium	2420	2500	97	90 - 110	P	12/09/2024	14:23	LB133834
	Chromium	967	1000	97	90 - 110	P	12/09/2024	14:23	LB133834
	Lead	4790	5000	96	90 - 110	P	12/09/2024	14:23	LB133834
	Selenium	5010	5000	100	90 - 110	P	12/09/2024	14:23	LB133834
	Silver	1220	1250	98	90 - 110	P	12/09/2024	14:23	LB133834
CCV04	Arsenic	4850	5000	97	90 - 110	P	12/09/2024	15:13	LB133834
	Barium	9630	10000	96	90 - 110	P	12/09/2024	15:13	LB133834
	Cadmium	2370	2500	95	90 - 110	P	12/09/2024	15:13	LB133834
	Chromium	952	1000	95	90 - 110	P	12/09/2024	15:13	LB133834
	Lead	4720	5000	94	90 - 110	P	12/09/2024	15:13	LB133834
	Selenium	4940	5000	99	90 - 110	P	12/09/2024	15:13	LB133834
	Silver	1200	1250	96	90 - 110	P	12/09/2024	15:13	LB133834
CCV05	Arsenic	4810	5000	96	90 - 110	P	12/09/2024	15:52	LB133834
	Barium	9700	10000	97	90 - 110	P	12/09/2024	15:52	LB133834
	Cadmium	2320	2500	93	90 - 110	P	12/09/2024	15:52	LB133834
	Chromium	925	1000	92	90 - 110	P	12/09/2024	15:52	LB133834
	Lead	4610	5000	92	90 - 110	P	12/09/2024	15:52	LB133834
	Selenium	4900	5000	98	90 - 110	P	12/09/2024	15:52	LB133834

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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	Silver	1180	1250	94	90 - 110	P	12/09/2024	15:52	LB133834

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

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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	0.16	0.2	81	40 - 160	CV	12/09/2024	11:58	LB133829
CRI01	Arsenic	20.0	20.0	100	40 - 160	P	12/09/2024	11:59	LB133834
	Barium	96.4	100	96	40 - 160	P	12/09/2024	11:59	LB133834
	Cadmium	5.65	6.0	94	40 - 160	P	12/09/2024	11:59	LB133834
	Chromium	9.89	10.0	99	40 - 160	P	12/09/2024	11:59	LB133834
	Lead	11.0	12.0	91	40 - 160	P	12/09/2024	11:59	LB133834
	Selenium	18.4	20.0	92	40 - 160	P	12/09/2024	11:59	LB133834
	Silver	9.73	10.0	97	40 - 160	P	12/09/2024	11:59	LB133834

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB13	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	12/09/2024	11:48	LB133829

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB05	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	12/09/2024	11:53	LB133829
CCB06	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	12/09/2024	12:28	LB133829
CCB07	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	12/09/2024	12:55	LB133829
CCB08	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	12/09/2024	13:48	LB133829
CCB09	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	12/09/2024	15:35	LB133829
CCB10	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	12/09/2024	15:47	LB133829

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	11:54	LB133834
	Barium	100	+/-100	U	25.0	100	P	12/09/2024	11:54	LB133834
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	12/09/2024	11:54	LB133834
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	11:54	LB133834
	Lead	12.0	+/-12.0	U	9.60	12.0	P	12/09/2024	11:54	LB133834
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	11:54	LB133834
	Silver	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	11:54	LB133834

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	12:34	LB133834
	Barium	100	+/-100	U	25.0	100	P	12/09/2024	12:34	LB133834
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	12/09/2024	12:34	LB133834
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	12:34	LB133834
	Lead	12.0	+/-12.0	U	9.60	12.0	P	12/09/2024	12:34	LB133834
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	12:34	LB133834
	Silver	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	12:34	LB133834
CCB02	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	13:35	LB133834
	Barium	100	+/-100	U	25.0	100	P	12/09/2024	13:35	LB133834
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	12/09/2024	13:35	LB133834
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	13:35	LB133834
	Lead	12.0	+/-12.0	U	9.60	12.0	P	12/09/2024	13:35	LB133834
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	13:35	LB133834
	Silver	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	13:35	LB133834
CCB03	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	14:27	LB133834
	Barium	100	+/-100	U	25.0	100	P	12/09/2024	14:27	LB133834
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	12/09/2024	14:27	LB133834
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	14:27	LB133834
	Lead	12.0	+/-12.0	U	9.60	12.0	P	12/09/2024	14:27	LB133834
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	14:27	LB133834
	Silver	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	14:27	LB133834
CCB04	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	15:17	LB133834
	Barium	100	+/-100	U	25.0	100	P	12/09/2024	15:17	LB133834
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	12/09/2024	15:17	LB133834
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	15:17	LB133834
	Lead	12.0	+/-12.0	U	9.60	12.0	P	12/09/2024	15:17	LB133834
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	15:17	LB133834
	Silver	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	15:17	LB133834
CCB05	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	15:56	LB133834
	Barium	100	+/-100	U	25.0	100	P	12/09/2024	15:56	LB133834
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	12/09/2024	15:56	LB133834
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	15:56	LB133834
	Lead	12.0	+/-12.0	U	9.60	12.0	P	12/09/2024	15:56	LB133834
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	12/09/2024	15:56	LB133834
	Silver	10.0	+/-10.0	U	5.00	10.0	P	12/09/2024	15:56	LB133834

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB165390TB		**WATER**		**Batch Number:**		**PB165486**		**Prep Date:**	**12/09/2024**	
	Mercury	0.84	<2.00	J	1.60	2.00	CV	12/09/2024	14:03	LB133829

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB165486BL		**WATER**		**Batch Number:**		**PB165486**		**Prep Date:**	**12/09/2024**	
	Mercury	0.20	<0.20	U	0.16	0.20	CV	12/09/2024	12:07	LB133829

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB165390TB		**WATER**		**Batch Number:**		**PB165436**		**Prep Date:**	**12/06/2024**	
	Arsenic	100	<100	U	80.0	100	P	12/09/2024	12:55	LB133834
	Barium	500	<500	U	125	500	P	12/09/2024	12:55	LB133834
	Cadmium	30.0	<30.0	U	7.50	30.0	P	12/09/2024	12:55	LB133834
	Chromium	50.0	<50.0	U	25.0	50.0	P	12/09/2024	12:55	LB133834
	Lead	60.0	<60.0	U	48.0	60.0	P	12/09/2024	12:55	LB133834
	Selenium	100	<100	U	80.0	100	P	12/09/2024	12:55	LB133834
	Silver	50.0	<50.0	U	25.0	50.0	P	12/09/2024	12:55	LB133834

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB165436BL		**WATER**		**Batch Number:**		**PB165436**		**Prep Date:**	**12/06/2024**	
	Arsenic	100	<100	U	80.0	100	P	12/09/2024	12:38	LB133834
	Barium	500	<500	U	125	500	P	12/09/2024	12:38	LB133834
	Cadmium	30.0	<30.0	U	7.50	30.0	P	12/09/2024	12:38	LB133834
	Chromium	50.0	<50.0	U	25.0	50.0	P	12/09/2024	12:38	LB133834
	Lead	60.0	<60.0	U	48.0	60.0	P	12/09/2024	12:38	LB133834
	Selenium	100	<100	U	80.0	100	P	12/09/2024	12:38	LB133834
	Silver	50.0	<50.0	U	25.0	50.0	P	12/09/2024	12:38	LB133834

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

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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	Arsenic	3.35			-20	20	12/09/2024	12:08	LB133834
	Barium	5.62	6.0	94	-94	106	12/09/2024	12:08	LB133834
	Cadmium	3.33	1.0	333	-5	7	12/09/2024	12:08	LB133834
	Chromium	56.5	52.0	109	42	62	12/09/2024	12:08	LB133834
	Lead	11.9			-12	12	12/09/2024	12:08	LB133834
	Selenium	-19.6			-20	20	12/09/2024	12:08	LB133834
	Silver	-4.87			-10	10	12/09/2024	12:08	LB133834
ICSAB01	Arsenic	105	104	101	88.4	120	12/09/2024	12:17	LB133834
	Barium	508	537	95	437	637	12/09/2024	12:17	LB133834
	Cadmium	1000	972	103	826	1120	12/09/2024	12:17	LB133834
	Chromium	563	542	104	460	624	12/09/2024	12:17	LB133834
	Lead	52.4	49.0	107	37	61	12/09/2024	12:17	LB133834
	Selenium	29.8	46.0	65	26	66	12/09/2024	12:17	LB133834
	Silver	195	201	97	170	232	12/09/2024	12:17	LB133834

METAL QC DATA

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

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Weston Solutions **level:** low **sdg no.:** P5117

contract: WEST04 **lab code:** CHEM **case no.:** P5117 **sas no.:** P5117

matrix: Water **sample id:** P5136-02 **client id:** COMP-1MS

Percent Solids for Sample: NA **Spiked ID:** P5136-02MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	87 - 113	4000		100	U	4000	100		P
Barium	ug/L	88 - 113	2120		1340		1000	78	N	P
Cadmium	ug/L	88 - 113	982		3.00	J	1000	98		P
Chromium	ug/L	90 - 113	1990		14.3	J	2000	99		P
Lead	ug/L	86 - 113	4590		60.0	U	5000	92		P
Mercury	ug/L	82 - 119	38.0		2.00	U	40.0	95		CV
Selenium	ug/L	83 - 114	9980		100	U	10000	100		P
Silver	ug/L	84 - 115	379		50.0	U	380	100		P

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

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Weston Solutions **level:** low **sdg no.:** P5117

contract: WEST04 **lab code:** CHEM **case no.:** P5117 **sas no.:** P5117

matrix: Water **sample id:** P5136-02 **client id:** COMP-1MSD

Percent Solids for Sample: NA **Spiked ID:** P5136-02MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	87 - 113	4030		100	U	4000	101		P
Barium	ug/L	88 - 113	2120		1340		1000	78	N	P
Cadmium	ug/L	88 - 113	981		3.00	J	1000	98		P
Chromium	ug/L	90 - 113	1950		14.3	J	2000	97		P
Lead	ug/L	86 - 113	4580		60.0	U	5000	92		P
Mercury	ug/L	82 - 119	38.7		2.00	U	40.0	97		CV
Selenium	ug/L	83 - 114	10000		100	U	10000	100		P
Silver	ug/L	84 - 115	372		50.0	U	380	98		P

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

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Matrix: Water **Level:** LOW **Client ID:** COMP-1A

Sample ID: P5136-02 **Spiked ID:** P5136-02A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Barium	ug/L	88 - 113	2160		1340		1000	82		P

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Weston Solutions **Level:** LOW **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Matrix: Water **Sample ID:** P5136-02 **Client ID:** COMP-1DUP

Percent Solids for Sample: NA **Duplicate ID** P5136-02DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	100	U	100	U			P
Barium	ug/L	20	1340		1310		2		P
Cadmium	ug/L	20	3.00	J	2.77	J	8		P
Chromium	ug/L	20	14.3	J	13.3	J	7		P
Lead	ug/L	20	60.0	U	60.0	U			P
Mercury	ug/L	20	2.00	U	2.00	U			CV
Selenium	ug/L	20	100	U	100	U			P
Silver	ug/L	20	50.0	U	50.0	U			P

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

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Weston Solutions **Level:** LOW **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Matrix: Water **Sample ID:** P5136-02MS **Client ID:** COMP-1MSD

Percent Solids for Sample: NA **Duplicate ID** P5136-02MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	4000		4030		1		P
Barium	ug/L	20	2120		2120		0		P
Cadmium	ug/L	20	982		981		0		P
Chromium	ug/L	20	1990		1950		2		P
Lead	ug/L	20	4590		4580		0		P
Mercury	ug/L	20	38.0		38.7		2		CV
Selenium	ug/L	20	9980		10000		0		P
Silver	ug/L	20	379		372		2		P

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

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB165436BS							
Arsenic	ug/L	4000	3680		92	87 - 113	P
Barium	ug/L	1000	959		96	88 - 113	P
Cadmium	ug/L	1000	935		94	88 - 113	P
Chromium	ug/L	2000	1940		97	90 - 113	P
Lead	ug/L	5000	4660		93	86 - 113	P
Selenium	ug/L	10000	9370		94	83 - 114	P
Silver	ug/L	380	354		93	84 - 115	P

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB165486BS							
Mercury	ug/L	4.0	3.40		85	82 - 119	CV

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

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

COMP-1L

Lab Name: Chemtech Consulting Group **Contract:** WEST04

Lab Code: CHEM **Lb No.:** lb133834 **Lab Sample ID :** P5136-02L **SDG No.:** P5117

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

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Arsenic	100	U	500	U			P
Barium	1340		1210	J	9		P
Cadmium	3.00	J	150	U	100.0		P
Chromium	14.3	J	250	U	100.0		P
Lead	60.0	U	300	U			P
Mercury	2.00	U	10.0	U			CV
Selenium	100	U	500	U			P
Silver	50.0	U	250	U			P

METAL PREPARATION & INSTRUMENT DATA

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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
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
Cadmium	226.502	0.0000000	0.0000000	0.0000930	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000920	0.0000000	0.0000380	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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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
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
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0002870
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0003170	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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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
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
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000070	0.0002200	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0001400	-0.0008600
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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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
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
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0006580	0.0000000	0.0000000	0.0001290
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

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Case No.:** P5117 **SAS No.:** P5117

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
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
Cadmium	226.502	0.0000000	0.0000630	0.0001280	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0001110	0.0000000
Lead	220.353	0.0000000	-0.0003610	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

METAL PREPARATION & ANALYICAL SUMMARY

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Method:**

Case No.: P5117 **SAS No.:** P5117

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB165436**						
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2	SAM	WATER	12/06/2024	5.0	25.0	
P5136-02DUP	COMP-1DUP	DUP	WATER	12/06/2024	5.0	25.0	
P5136-02MS	COMP-1MS	MS	WATER	12/06/2024	5.0	25.0	
P5136-02MSD	COMP-1MSD	MSD	WATER	12/06/2024	5.0	25.0	
PB165390TB	PB165390TB	MB	WATER	12/06/2024	5.0	25.0	
PB165436BL	PB165436BL	MB	WATER	12/06/2024	5.0	25.0	
PB165436BS	PB165436BS	LCS	WATER	12/06/2024	5.0	25.0	

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Weston Solutions **SDG No.:** P5117

Contract: WEST04 **Lab Code:** CHEM **Method:**

Case No.: P5117 **SAS No.:** P5117

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB165486**						
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2	SAM	WATER	12/09/2024	3.0	30.0	
P5136-02DUP	COMP-1DUP	DUP	WATER	12/09/2024	3.0	30.0	
P5136-02MS	COMP-1MS	MS	WATER	12/09/2024	3.0	30.0	
P5136-02MSD	COMP-1MSD	MSD	WATER	12/09/2024	3.0	30.0	
PB165390TB	PB165390TB	MB	WATER	12/09/2024	3.0	30.0	
PB165486BL	PB165486BL	MB	WATER	12/09/2024	30.0	30.0	
PB165486BS	PB165486BS	LCS	WATER	12/09/2024	30.0	30.0	

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Weston Solutions **Contract:** WEST04

Lab code: CHEM **Case no.:** P5117 **Sas no.:** P5117 **Sdg no.:** P5117

Instrument id number: **Method:** **Run number:** LB133829

Start date: 12/09/2024 **End date:** 12/09/2024

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1115	HG
S0.2	S0.2	1	1121	HG
S2.5	S2.5	1	1123	HG
S5	S5	1	1128	HG
S7.5	S7.5	1	1133	HG
S10	S10	1	1138	HG
ICV13	ICV13	1	1146	HG
ICB13	ICB13	1	1148	HG
CCV05	CCV05	1	1150	HG
CCB05	CCB05	1	1153	HG
CRA	CRA	1	1158	HG
PB165486BL	PB165486BL	1	1207	HG
PB165486BS	PB165486BS	1	1212	HG
CCV06	CCV06	1	1225	HG
CCB06	CCB06	1	1228	HG
P5117-02	TAPIAL2-IDW-SOIL-120424-0(	1	1237	HG
P5136-02MS	COMP-1MS	1	1246	HG
P5136-02MSD	COMP-1MSD	1	1248	HG
CCV07	CCV07	1	1253	HG
CCB07	CCB07	1	1255	HG
CCV08	CCV08	1	1337	HG
CCB08	CCB08	1	1348	HG
PB165390TB	PB165390TB	1	1403	HG
P5136-02L	COMP-1L	5	1415	HG
CCV09	CCV09	1	1527	HG
CCB09	CCB09	1	1535	HG
P5136-02DUP	COMP-1DUP	1	1537	HG
CCV10	CCV10	1	1539	HG
CCB10	CCB10	1	1547	HG

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Weston Solutions **Contract:** WEST04

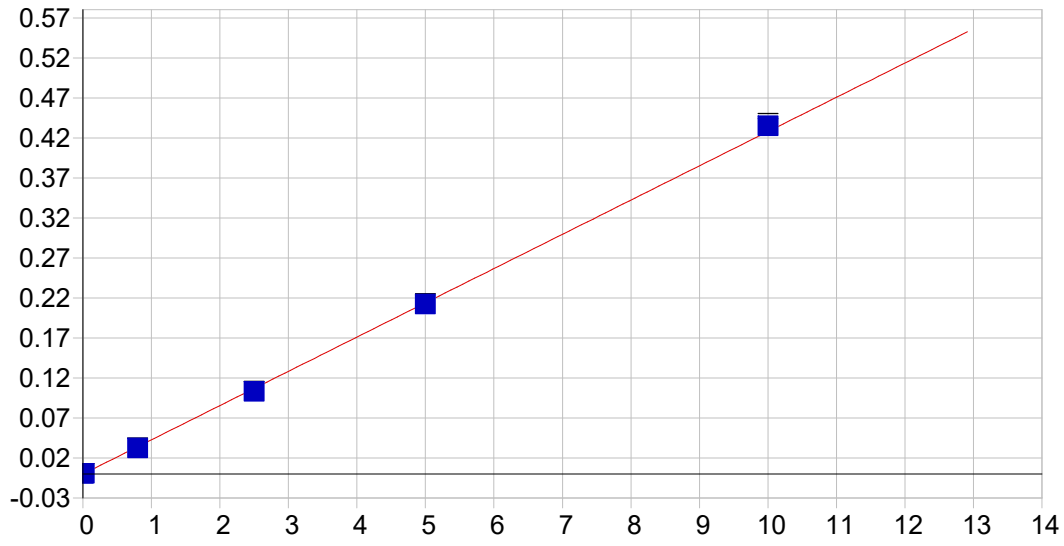
Lab code: CHEM **Case no.:** P5117 **Sas no.:** P5117 **Sdg no.:** P5117

Instrument id number: **Method:** **Run number:** LB133834

Start date: 12/09/2024 **End date:** 12/09/2024

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1106	Ag,As,Ba,Cd,Cr,Pb,Se
S1	S1	1	1110	Ag,As,Ba,Cd,Cr,Pb,Se
S2	S2	1	1114	Ag,As,Ba,Cd,Cr,Pb,Se
S3	S3	1	1118	Ag,As,Ba,Cd,Cr,Pb,Se
S4	S4	1	1123	Ag,As,Ba,Cd,Cr,Pb,Se
S5	S5	1	1127	Ag,As,Ba,Cd,Cr,Pb,Se
ICV01	ICV01	1	1135	Ag,As,Ba,Cd,Cr,Pb,Se
LLICV01	LLICV01	1	1149	Ag,As,Ba,Cd,Cr,Pb,Se
ICB01	ICB01	1	1154	Ag,As,Ba,Cd,Cr,Pb,Se
CRI01	CRI01	1	1159	Ag,As,Ba,Cd,Cr,Pb,Se
ICSA01	ICSA01	1	1208	Ag,As,Ba,Cd,Cr,Pb,Se
ICSAB01	ICSAB01	1	1217	Ag,As,Ba,Cd,Cr,Pb,Se
CCV01	CCV01	1	1229	Ag,As,Ba,Cd,Cr,Pb,Se
CCB01	CCB01	1	1234	Ag,As,Ba,Cd,Cr,Pb,Se
PB165436BL	PB165436BL	1	1238	Ag,As,Ba,Cd,Cr,Pb,Se
PB165436BS	PB165436BS	1	1242	Ag,As,Ba,Cd,Cr,Pb,Se
PB165390TB	PB165390TB	1	1255	Ag,As,Ba,Cd,Cr,Pb,Se
CCV02	CCV02	1	1330	Ag,As,Ba,Cd,Cr,Pb,Se
CCB02	CCB02	1	1335	Ag,As,Ba,Cd,Cr,Pb,Se
P5117-02	TAPIAL2-IDW-SOIL-120424-0(	1	1414	Ag,As,Ba,Cd,Cr,Pb,Se
CCV03	CCV03	1	1423	Ag,As,Ba,Cd,Cr,Pb,Se
CCB03	CCB03	1	1427	Ag,As,Ba,Cd,Cr,Pb,Se
P5136-02DUP	COMP-1DUP	1	1436	Ag,As,Ba,Cd,Cr,Pb,Se
P5136-02L	COMP-1L	5	1440	Ag,As,Ba,Cd,Cr,Pb,Se
P5136-02MS	COMP-1MS	1	1445	Ag,As,Ba,Cd,Cr,Pb,Se
P5136-02MSD	COMP-1MSD	1	1449	Ag,As,Ba,Cd,Cr,Pb,Se
P5136-02A	COMP-1A	1	1453	Ba
CCV04	CCV04	1	1513	Ag,As,Ba,Cd,Cr,Pb,Se
CCB04	CCB04	1	1517	Ag,As,Ba,Cd,Cr,Pb,Se
CCV05	CCV05	1	1552	Ag,As,Ba,Cd,Cr,Pb,Se
CCB05	CCB05	1	1556	Ag,As,Ba,Cd,Cr,Pb,Se

METAL
RAW DATA

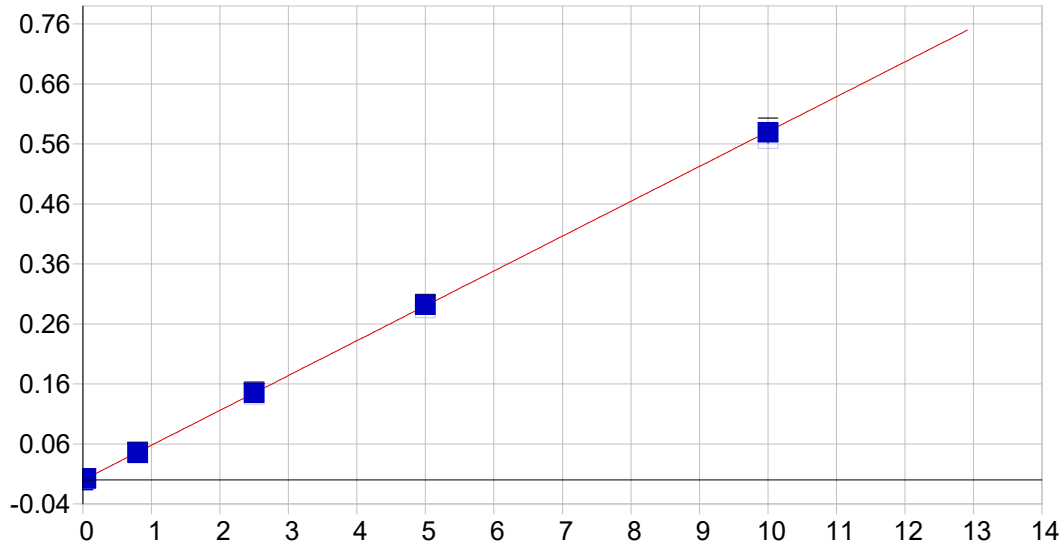


As 189.042 {479}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000130	Re-Slope:	1.000000
A1 (Gain):	0.042802	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999778	Status:	OK.
Std Error of Est:	0.000021		
Predicted MDL:	0.002854		
Predicted MQL:	0.009514		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00013	.000	1
S1	.02000	.01942	-.001	-2.91	.00070	.000	1
S3	2.5000	2.4144	-.086	-3.43	.10309	.000	1
S4	5.0000	4.9601	-.040	-.798	.21194	.001	1
S5	10.000	10.167	.167	1.67	.43457	.003	1
S2	.80000	.75940	-.041	-5.07	.03234	.000	1

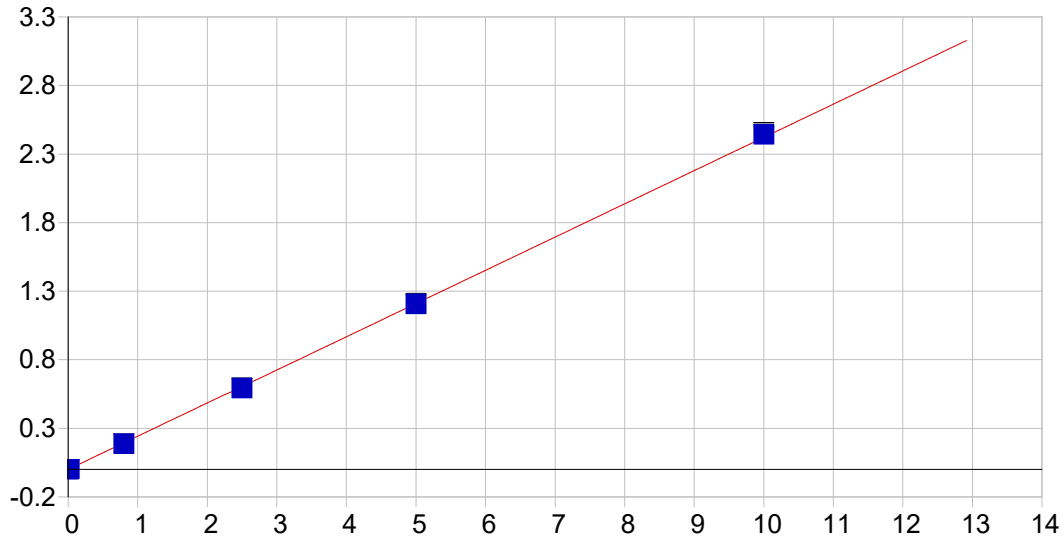


Tl 190.856 {477}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000286	Re-Slope:	1.000000
A1 (Gain):	0.058092	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999981	Status:	OK.
Std Error of Est:	0.000012		
Predicted MDL:	0.001880		
Predicted MQL:	0.006267		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00029	.000	1
S1	.04000	.03758	-.002	-6.05	.00175	.000	1
S3	2.5000	2.5067	.007	.267	.14266	.001	1
S4	5.0000	5.0320	.032	.641	.28668	.001	1
S5	10.000	9.9781	-.022	-.219	.56866	.008	1
S2	.80000	.78549	-.015	-1.81	.04449	.001	1

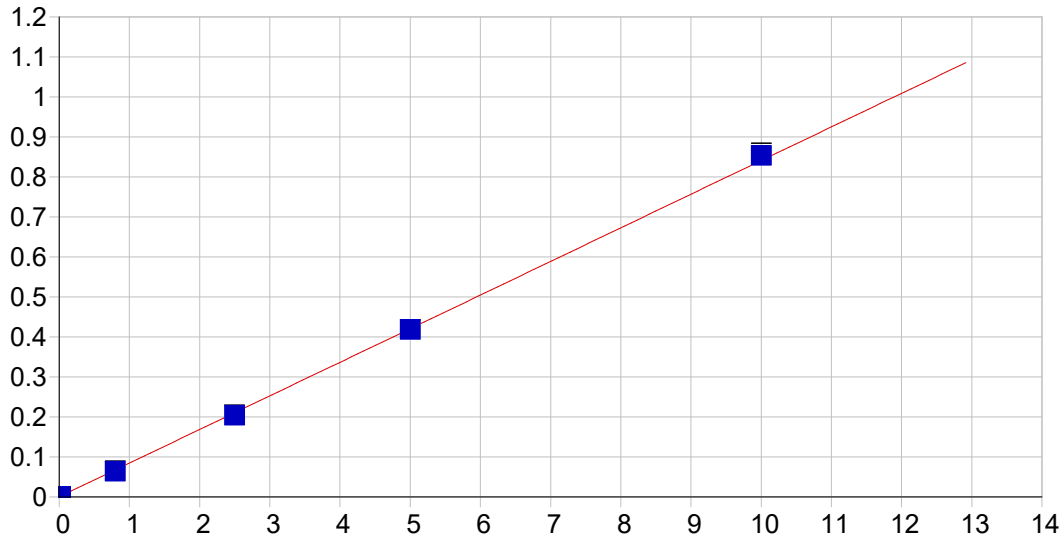


Pb 220.353 {453}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000094	Re-Slope:	1.000000
A1 (Gain):	0.242128	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999923	Status:	OK.
Std Error of Est:	0.000055		
Predicted MDL:	0.000979		
Predicted MQL:	0.003264		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00009	.000	1
S1	.01200	.01125	-.001	-6.25	.00257	.000	1
S3	2.5000	2.4465	-.053	-2.14	.59161	.001	1
S4	5.0000	4.9826	-.017	-.347	1.2050	.004	1
S5	10.000	10.095	.095	.949	2.4415	.013	1
S2	.80000	.77674	-.023	-2.91	.18776	.001	1

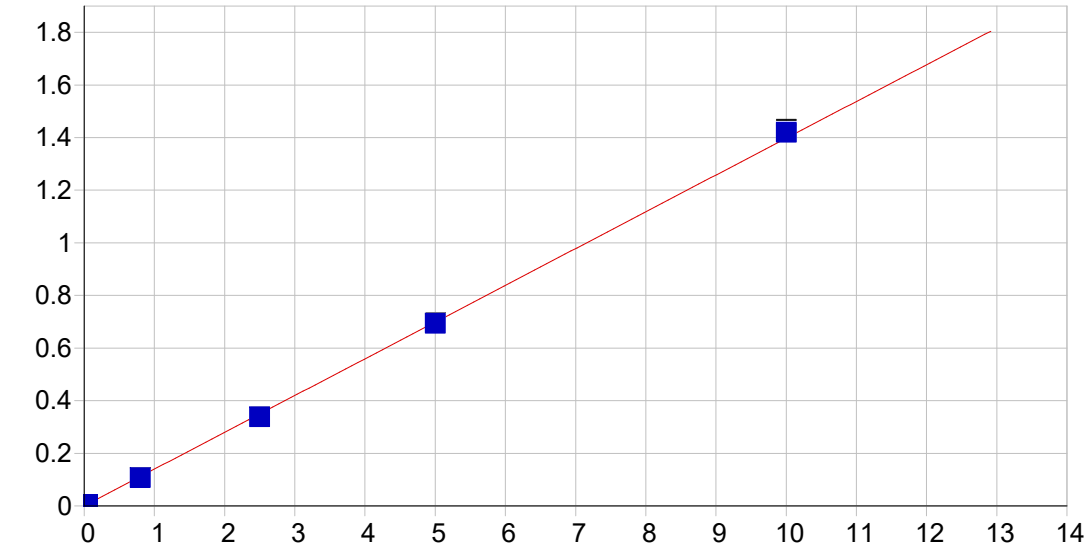


Se 196.090 {472}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000413	Re-Slope:	1.000000
A1 (Gain):	0.084035	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999804	Status:	OK.
Std Error of Est:	0.000039		
Predicted MDL:	0.002061		
Predicted MQL:	0.006868		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00041	.000	1
S1	.02000	.01816	-.002	-9.22	.00194	.000	1
S3	2.5000	2.4222	-.078	-3.11	.20391	.001	1
S4	5.0000	4.9704	-.030	-.591	.41799	.001	1
S5	10.000	10.151	.151	1.51	.85321	.006	1
S2	.80000	.75850	-.042	-5.19	.06414	.000	1

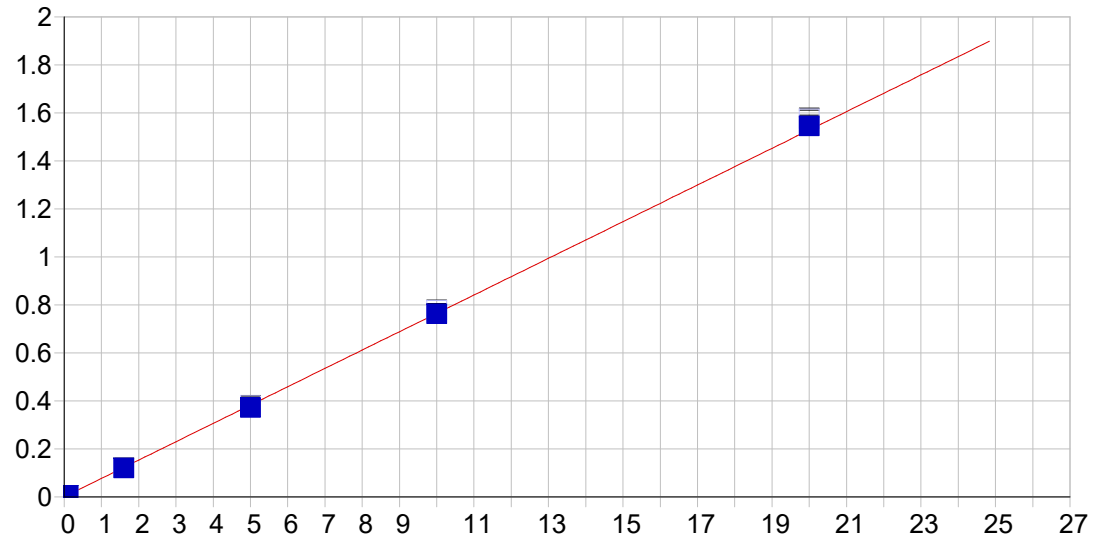


Sb 206.833 {463}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000136	Re-Slope:	1.000000
A1 (Gain):	0.139726	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999809	Status:	OK.
Std Error of Est:	0.000101		
Predicted MDL:	0.001397		
Predicted MQL:	0.004656		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00014	.000	1
S1	.05000	.04793	-.002	-4.14	.00685	.000	1
S3	2.5000	2.4185	-.081	-3.26	.33902	.001	1
S4	5.0000	4.9648	-.035	-.703	.69575	.001	1
S5	10.000	10.155	.155	1.55	1.4228	.009	1
S2	.80000	.76373	-.036	-4.53	.10715	.000	1

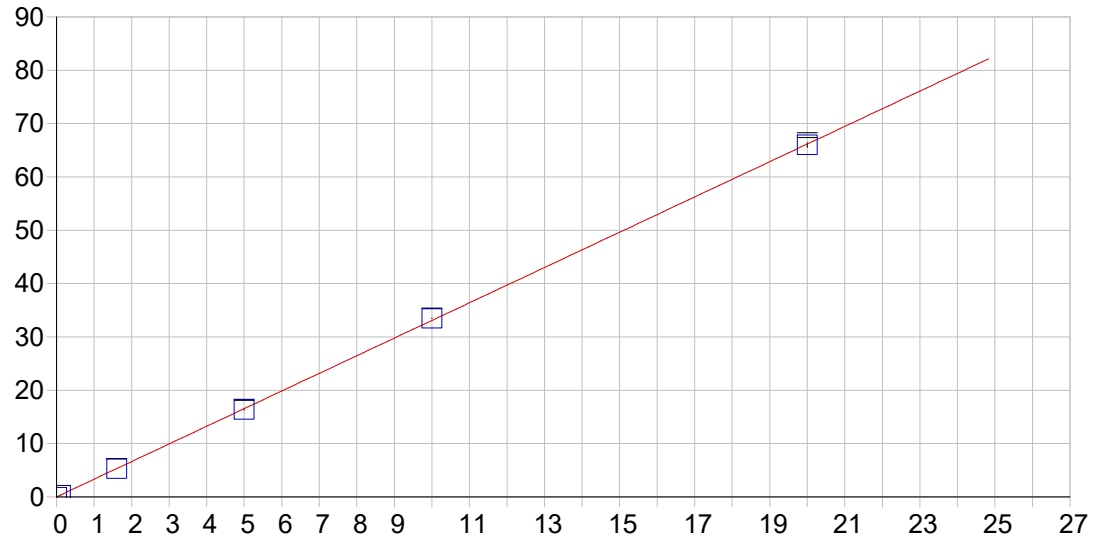


Al 396.152 { 85}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000694	Re-Slope:	1.000000
A1 (Gain):	0.076410	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999894	Status:	OK.
Std Error of Est:	0.000084		
Predicted MDL:	0.005554		
Predicted MQL:	0.018512		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00069	.000	1
S1	.10000	.09104	-.009	-8.96	.00824	.000	1
S3	5.0000	4.8646	-.135	-2.71	.37981	.001	1
S4	10.000	9.9732	-.027	-.268	.77756	.001	1
S5	20.000	20.215	.215	1.08	1.5750	.004	1
S2	1.6000	1.5563	-.044	-2.73	.12198	.001	1

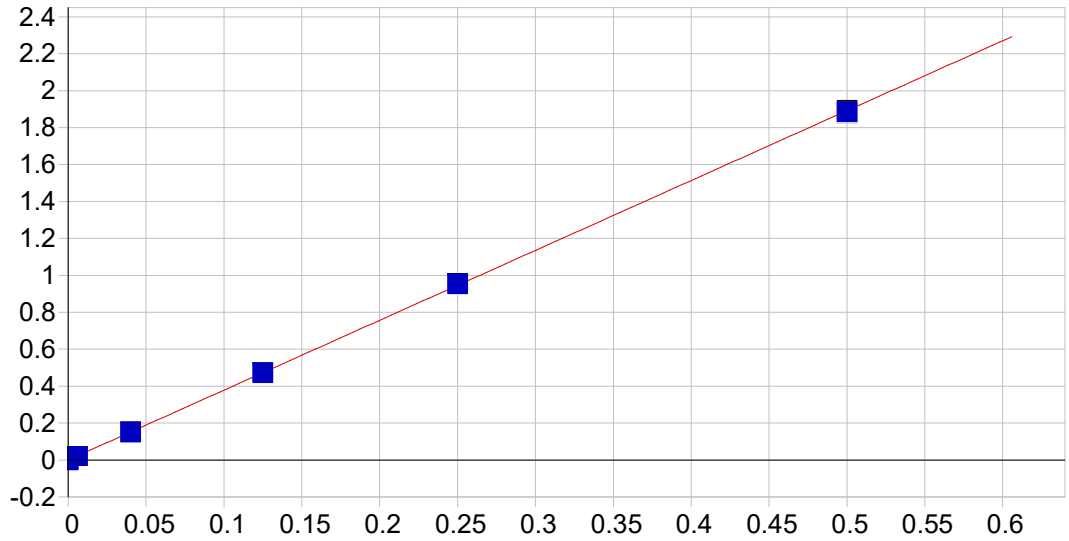


Ba 493.409 { 68}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.014203	Re-Slope:	1.000000
A1 (Gain):	3.307450	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999969	Status:	OK.
Std Error of Est:	0.001916		
Predicted MDL:	0.000460		
Predicted MQL:	0.001534		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.01422	.001	1
S1	.10000	.09665	-.003	-3.35	.33386	.004	1
S3	5.0000	4.9431	-.057	-1.14	16.363	.104	1
S4	10.000	10.116	.116	1.16	33.471	.056	1
S5	20.000	19.947	-.053	-.267	65.986	.454	1
S2	1.6000	1.5982	-.002	-.111	5.3003	.028	1

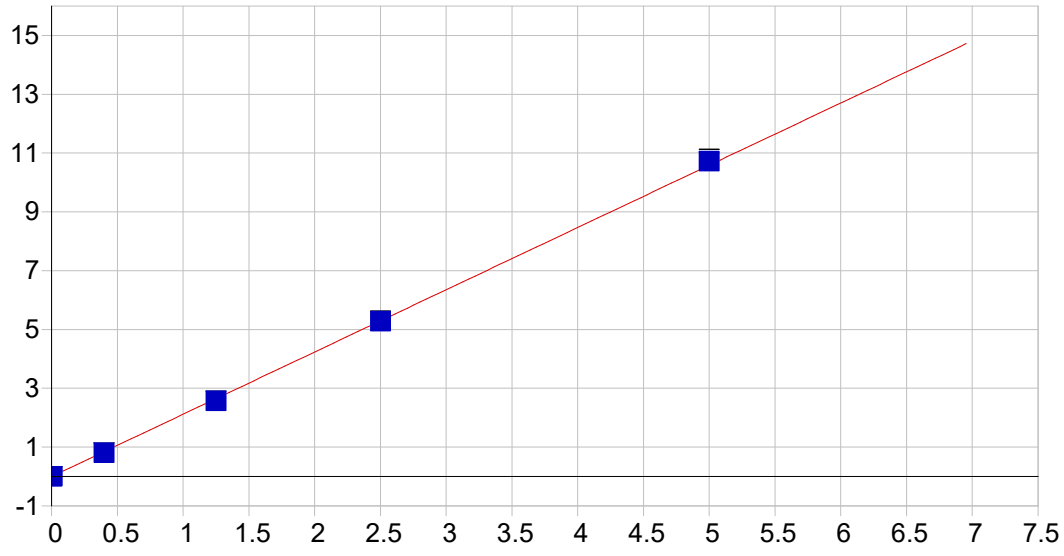


Be 234.861 {144}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000246	Re-Slope:	1.000000
A1 (Gain):	3.784316	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999982	Status:	OK.
Std Error of Est:	0.000065		
Predicted MDL:	0.000054		
Predicted MQL:	0.000180		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00025	.000	1
S1	.00600	.00581	-.000	-3.19	.02157	.000	1
S3	.12500	.12486	-.000	-.109	.47016	.000	1
S4	.25000	.25222	.002	.889	.95000	.001	1
S5	.50000	.49815	-.002	-.370	1.8764	.009	1
S2	.04000	.03995	-.000	-.114	.15028	.001	1

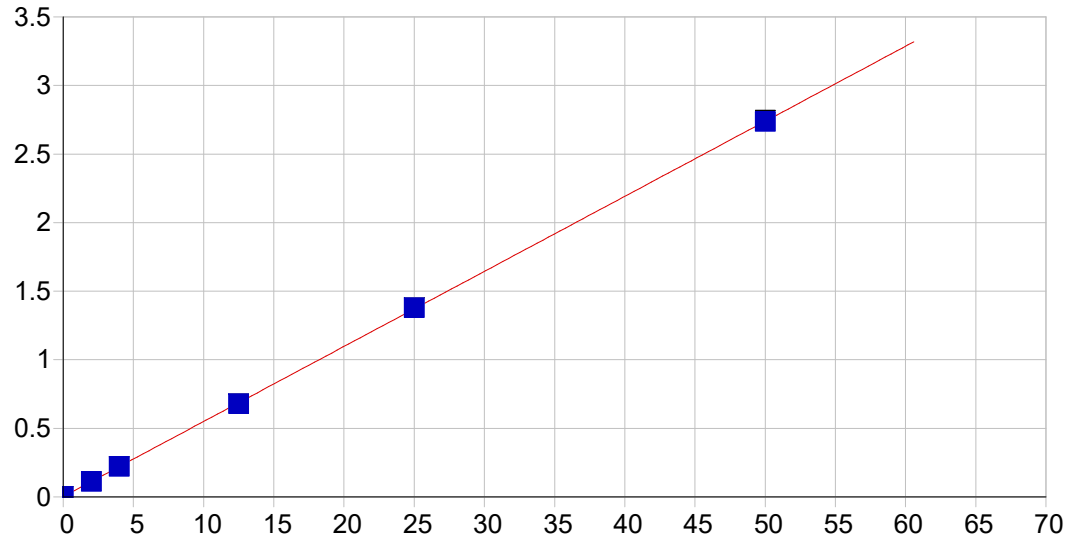


Cd 226.502 {449}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000093	Re-Slope:	1.000000
A1 (Gain):	2.117222	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999838	Status:	OK.
Std Error of Est:	0.000346		
Predicted MDL:	0.000086		
Predicted MQL:	0.000285		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00009	.000	1
S1	.00600	.00556	-.000	-7.26	.01193	.000	1
S3	1.2500	1.2111	-.039	-3.11	2.5665	.005	1
S4	2.5000	2.4923	-.008	-.310	5.2811	.013	1
S5	5.0000	5.0655	.065	1.31	10.734	.059	1
S2	.40000	.38155	-.018	-4.61	.80860	.001	1

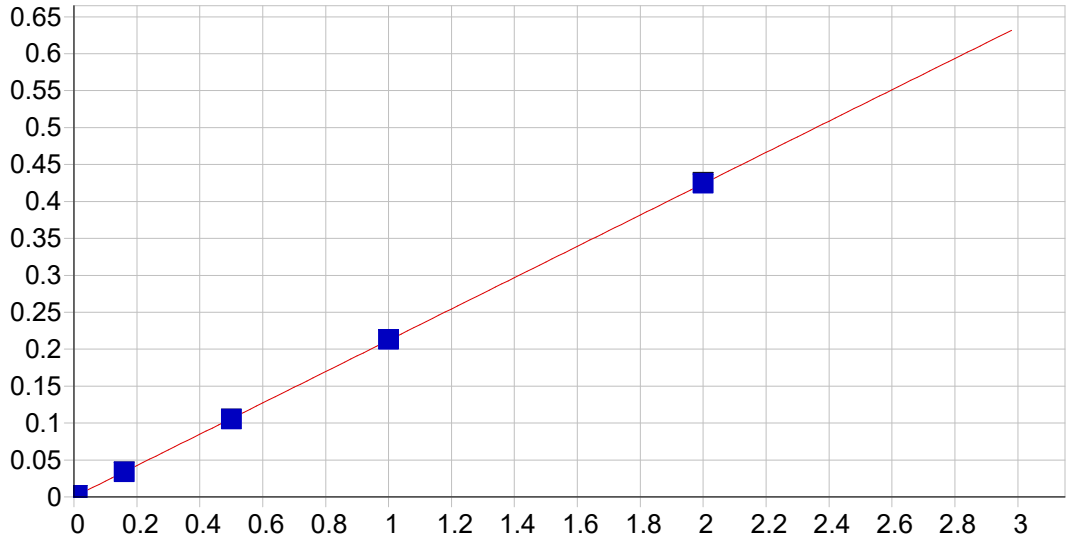


Ca 373.690 { 90}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002759	Re-Slope:	1.000000
A1 (Gain):	0.054722	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999987	Status:	OK.
Std Error of Est:	0.000148		
Predicted MDL:	0.007390		
Predicted MQL:	0.024634		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00002	.000	.000	.00276	.000	1
S2	4.0000	3.9834	-.017	-.415	.22074	.001	1
S3	12.500	12.378	-.122	-.973	.68013	.002	1
S4	25.000	25.168	.168	.673	1.3800	.002	1
S5	50.000	49.979	-.021	-.042	2.7377	.008	1
S1	2.0000	1.9909	-.009	-.455	.11171	.001	1

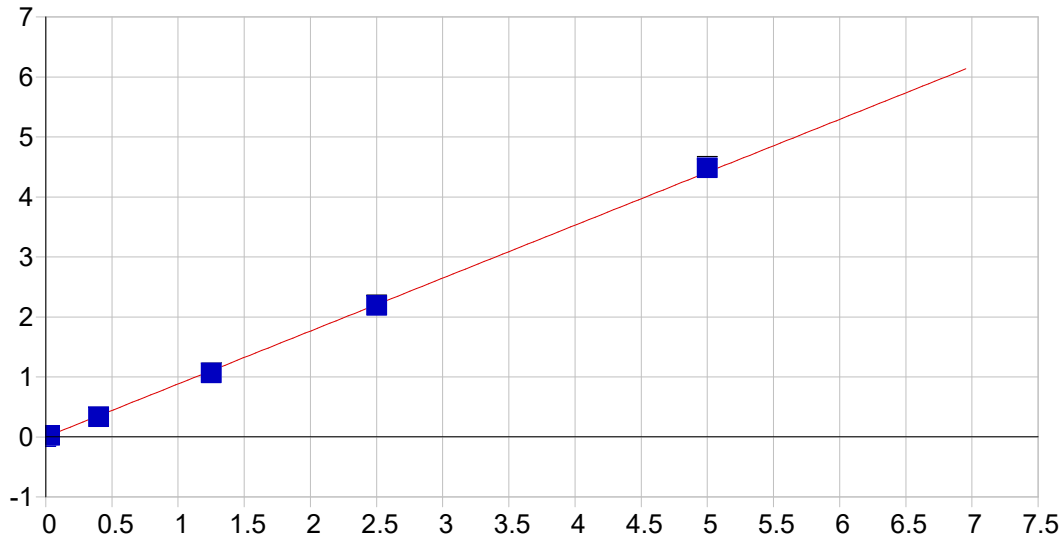


Cr 267.716 {126}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000078	Re-Slope:	1.000000
A1 (Gain):	0.211959	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999985	Status:	OK.
Std Error of Est:	0.000008		
Predicted MDL:	0.000336		
Predicted MQL:	0.001120		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00008	.000	1
S1	.01000	.00950	-.001	-5.00	.00209	.000	1
S3	.50000	.49531	-.005	-.938	.10510	.000	1
S4	1.0000	1.0046	.005	.455	.21307	.000	1
S5	2.0000	2.0022	.002	.108	.42458	.001	1
S2	.16000	.15847	-.002	-.958	.03368	.000	1

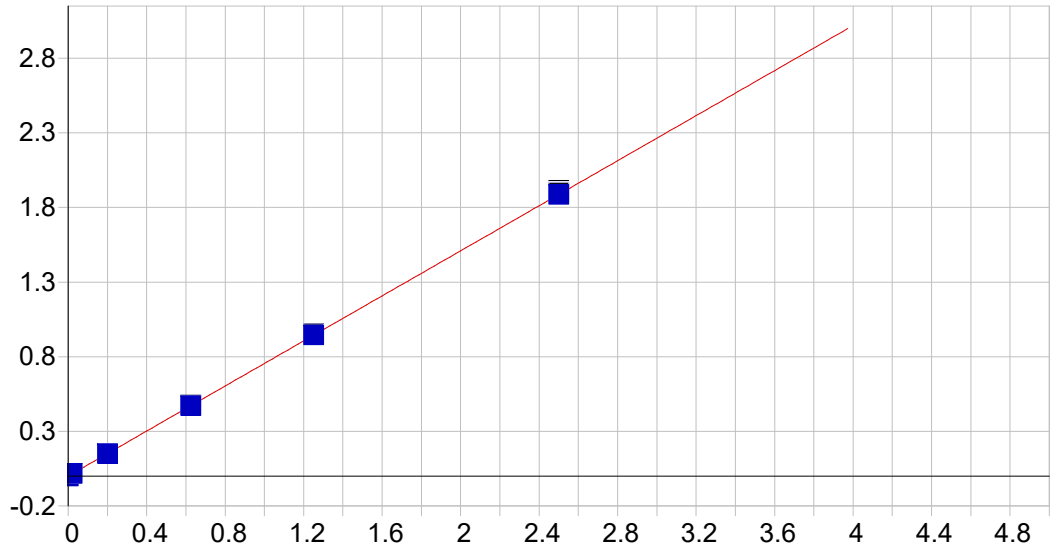


Co 228.616 {448}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000119	Re-Slope:	1.000000
A1 (Gain):	0.882107	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999795	Status:	OK.
Std Error of Est:	0.000363		
Predicted MDL:	0.000183		
Predicted MQL:	0.000611		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00012	.000	1
S1	.03000	.02811	-.002	-6.31	.02480	.000	1
S3	1.2500	1.2088	-.041	-3.29	1.0683	.001	1
S4	2.5000	2.4834	-.017	-.663	2.1945	.006	1
S5	5.0000	5.0790	.079	1.58	4.4878	.021	1
S2	.40000	.38062	-.019	-4.85	.33646	.000	1

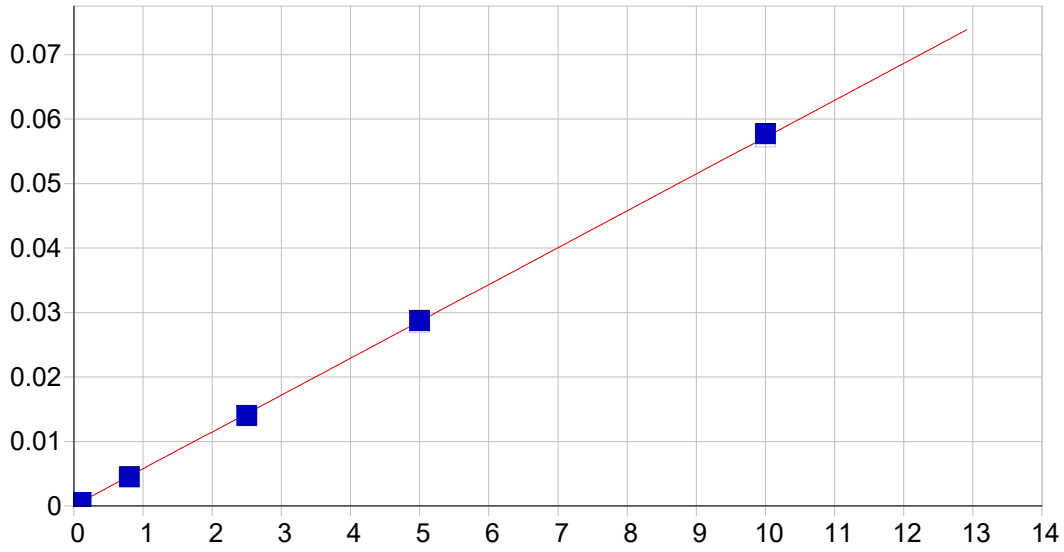


Cu 224.700 {450}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000144	Re-Slope:	1.000000
A1 (Gain):	0.754906	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.000037		
Predicted MDL:	0.000366		
Predicted MQL:	0.001220		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00014	.000	1
S1	.02000	.02112	.001	5.59	.01599	.000	1
S3	.62500	.62311	-.002	-.303	.47474	.000	1
S4	1.2500	1.2528	.003	.226	.95461	.002	1
S5	2.5000	2.4990	-.001	-.039	1.9044	.011	1
S2	.20000	.19891	-.001	-.544	.15146	.000	1

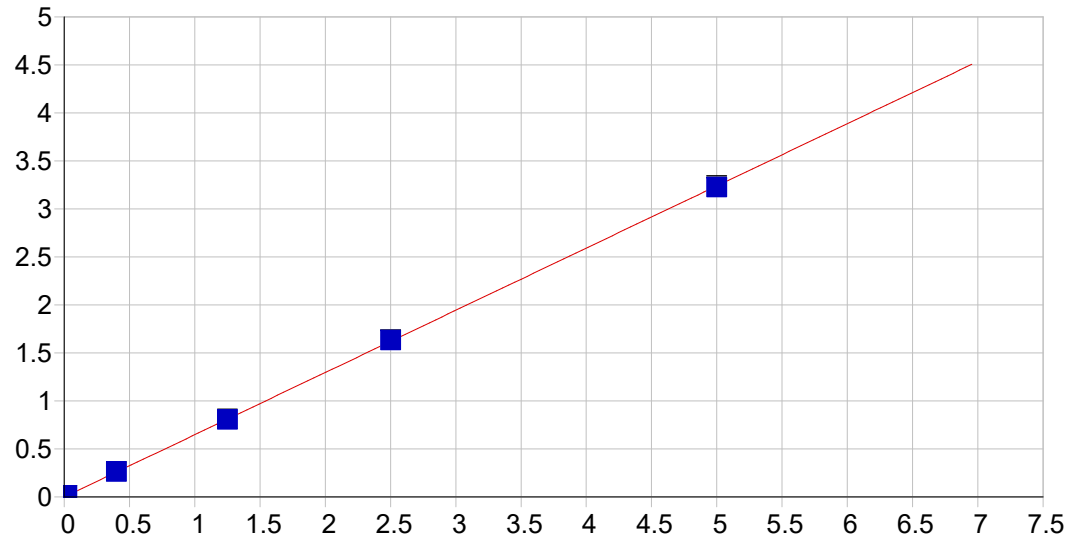


Fe 240.488 {140}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000049	Re-Slope:	1.000000
A1 (Gain):	0.005714	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999891	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.003896		
Predicted MQL:	0.012988		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00005	.000	1
S1	.10000	.09046	-.010	-9.54	.00056	.000	1
S3	2.5000	2.4410	-.059	-2.36	.01388	.000	1
S4	5.0000	5.0119	.012	.238	.02844	.000	1
S5	10.000	10.084	.084	.836	.05718	.000	1
S2	.80000	.77302	-.027	-3.37	.00443	.000	1

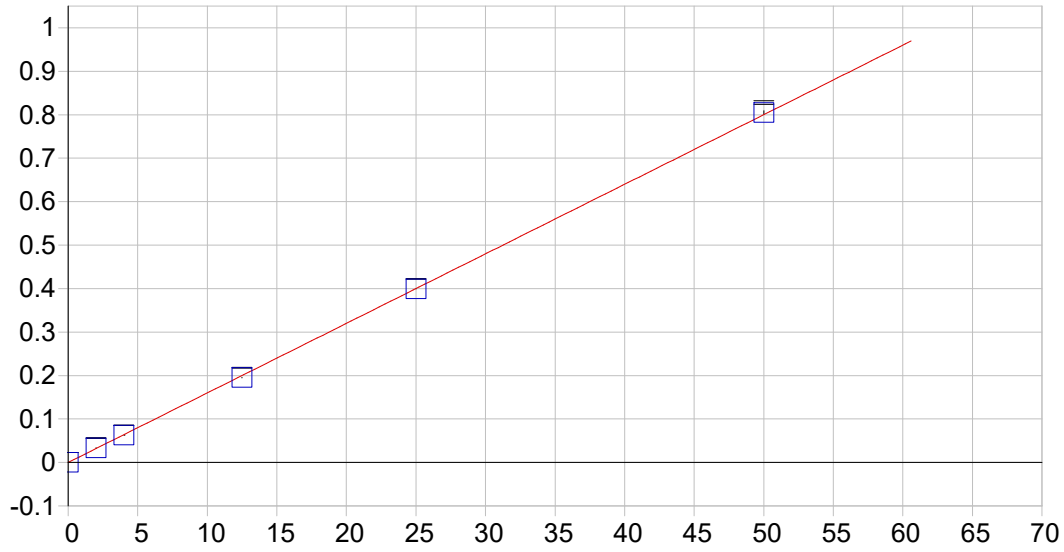


Mn 257.610 {131}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000240	Re-Slope:	1.000000
A1 (Gain):	0.647943	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999982	Status:	OK.
Std Error of Est:	0.000064		
Predicted MDL:	0.000259		
Predicted MQL:	0.000862		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00024	.000	1
S1	.02000	.02061	.001	3.06	.01360	.000	1
S3	1.2500	1.2459	-.004	-.326	.80769	.003	1
S4	2.5000	2.5180	.018	.720	1.6321	.004	1
S5	5.0000	4.9797	-.020	-.406	3.2275	.012	1
S2	.40000	.40575	.006	1.44	.26320	.001	1

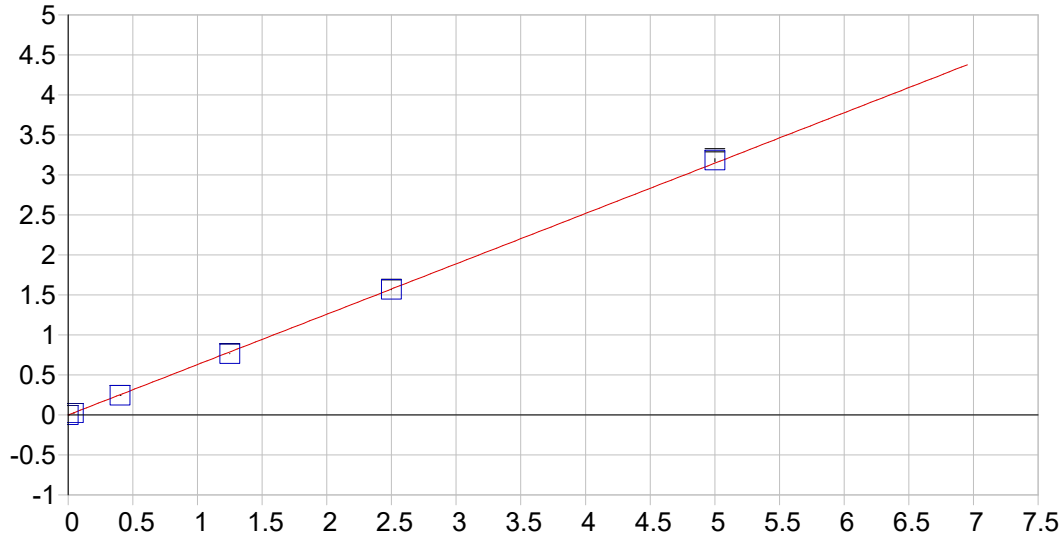


Mg 279.079 {121}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000058	Re-Slope:	1.000000
A1 (Gain):	0.016002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999922	Status:	OK.
Std Error of Est:	0.000105		
Predicted MDL:	0.011297		
Predicted MQL:	0.037657		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	-.00006	.000	1
S2	4.0000	3.9132	-.087	-2.17	.06256	.000	1
S3	12.500	12.213	-.287	-2.30	.19537	.001	1
S4	25.000	24.966	-.034	-.134	.39945	.000	1
S5	50.000	50.319	.319	.637	.80513	.004	1
S1	2.0000	2.0889	.089	4.44	.03337	.000	1

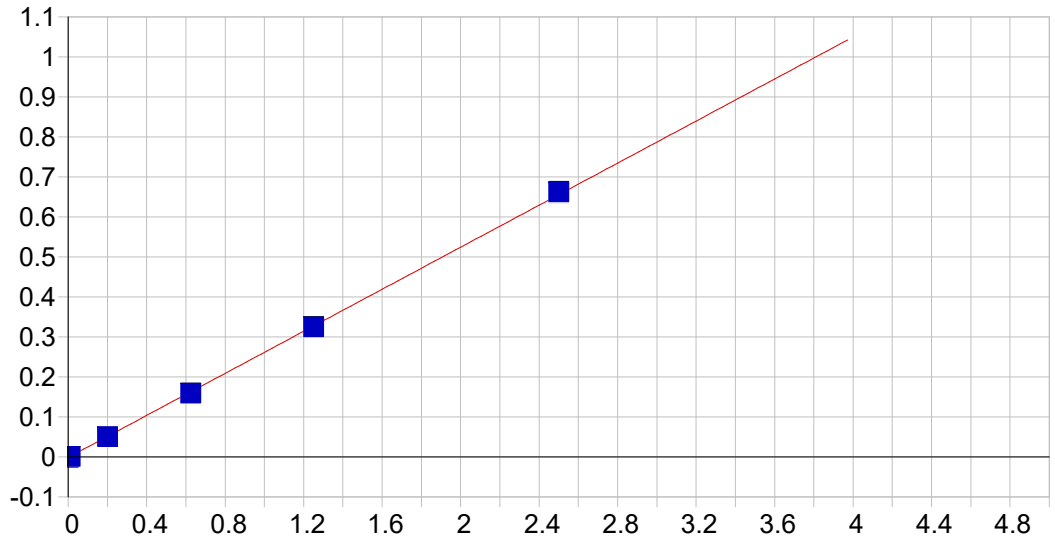


Ni 231.604 {446}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000257	Re-Slope:	1.000000
A1 (Gain):	0.629498	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999877	Status:	OK.
Std Error of Est:	0.000232		
Predicted MDL:	0.000289		
Predicted MQL:	0.000963		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00025	.000	1
S1	.04000	.03748	-.003	-6.29	.02334	.000	1
S3	1.2500	1.2170	-.033	-2.64	.76585	.000	1
S4	2.5000	2.4906	-.009	-.376	1.5676	.005	1
S5	5.0000	5.0591	.059	1.18	3.1844	.018	1
S2	.40000	.38584	-.014	-3.54	.24263	.000	1

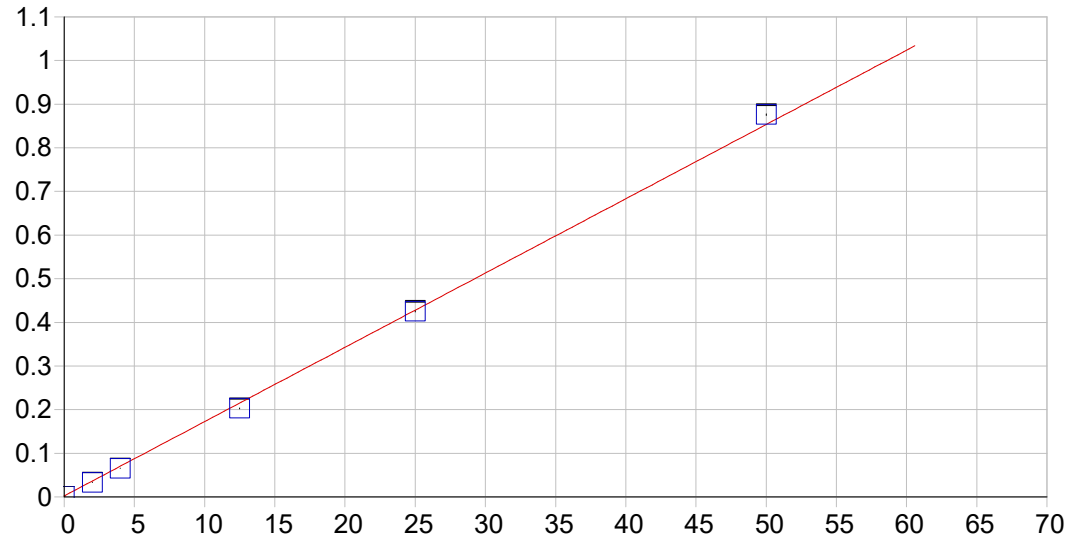


Ag 328.068 {103}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001309	Re-Slope:	1.000000
A1 (Gain):	0.262776	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999928	Status:	OK.
Std Error of Est:	0.000026		
Predicted MDL:	0.000354		
Predicted MQL:	0.001181		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00131	.000	1
S1	.01000	.00949	-.001	-5.08	.00117	.000	1
S3	.62500	.61096	-.014	-2.25	.15859	.000	1
S4	1.2500	1.2425	-.008	-.603	.32388	.001	1
S5	2.5000	2.5245	.024	.980	.65946	.002	1
S2	.20000	.19758	-.002	-1.21	.05040	.000	1

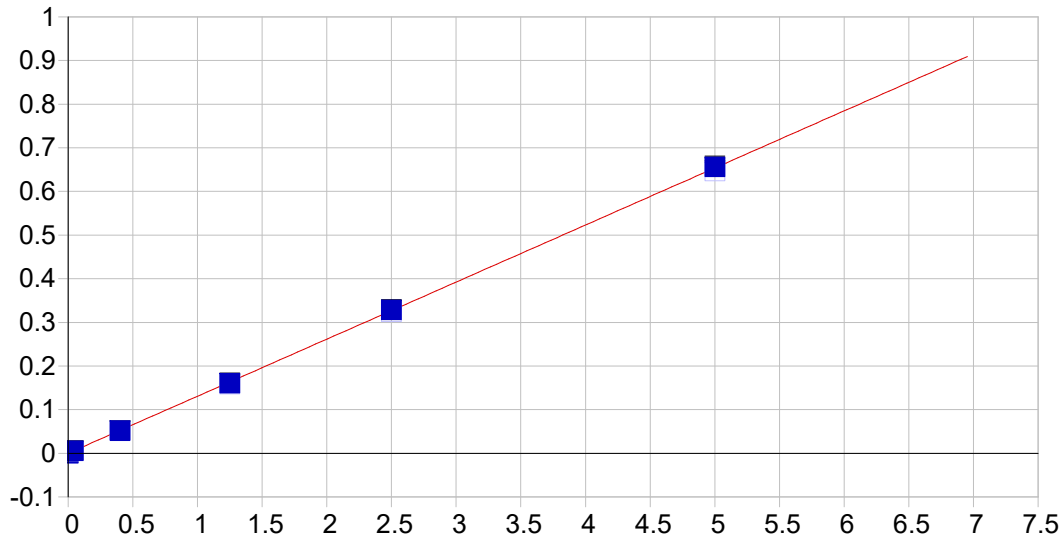


Na 589.592 { 57}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002408	Re-Slope:	1.000000
A1 (Gain):	0.017021	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999378	Status:	OK.
Std Error of Est:	0.000318		
Predicted MDL:	0.008923		
Predicted MQL:	0.029744		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00041	.000	.000	.00241	.000	1
S2	4.0000	3.7083	-.292	-7.29	.06553	.000	1
S3	12.500	11.780	-.720	-5.76	.20292	.001	1
S4	25.000	24.868	-.132	-.530	.42567	.002	1
S5	50.000	51.331	1.33	2.66	.87610	.002	1
S1	2.0000	1.8127	-.187	-9.36	.03326	.000	1

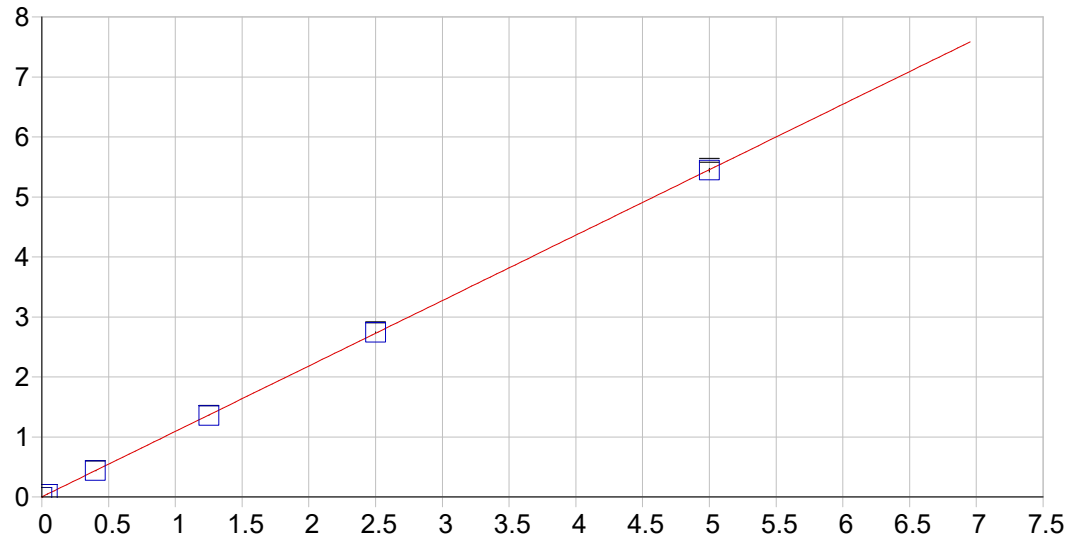


V 292.402 {115}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000006	Re-Slope:	1.000000
A1 (Gain):	0.130767	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999965	Status:	OK.
Std Error of Est:	0.000025		
Predicted MDL:	0.001424		
Predicted MQL:	0.004748		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00001	.000	1
S1	.04000	.04025	.000	.635	.00506	.000	1
S3	1.2500	1.2271	-.023	-1.84	.15807	.001	1
S4	2.5000	2.5108	.011	.433	.32356	.001	1
S5	5.0000	5.0181	.018	.362	.64666	.002	1
S2	.40000	.39378	-.006	-1.56	.05072	.000	1

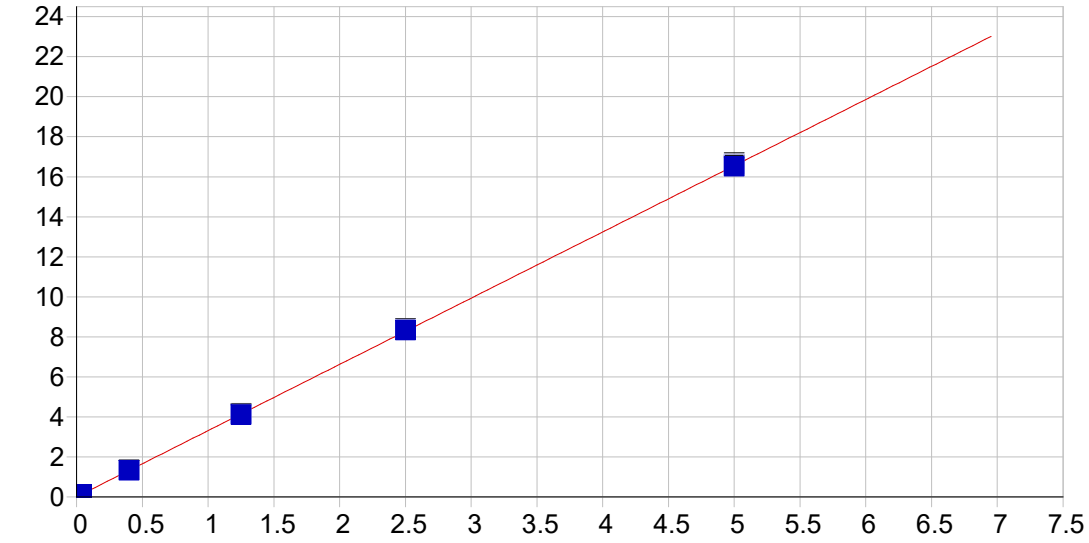


Zn 206.200 {464}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000926	Re-Slope:	1.000000
A1 (Gain):	1.090477	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.000109		
Predicted MDL:	0.000168		
Predicted MQL:	0.000560		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00093	.000	1
S1	.04000	.04065	.001	1.64	.04526	.000	1
S3	1.2500	1.2423	-.008	-.616	1.3556	.002	1
S4	2.5000	2.5154	.015	.616	2.7439	.007	1
S5	5.0000	4.9919	-.008	-.161	5.4445	.031	1
S2	.40000	.39971	-.000	-.071	.43681	.001	1

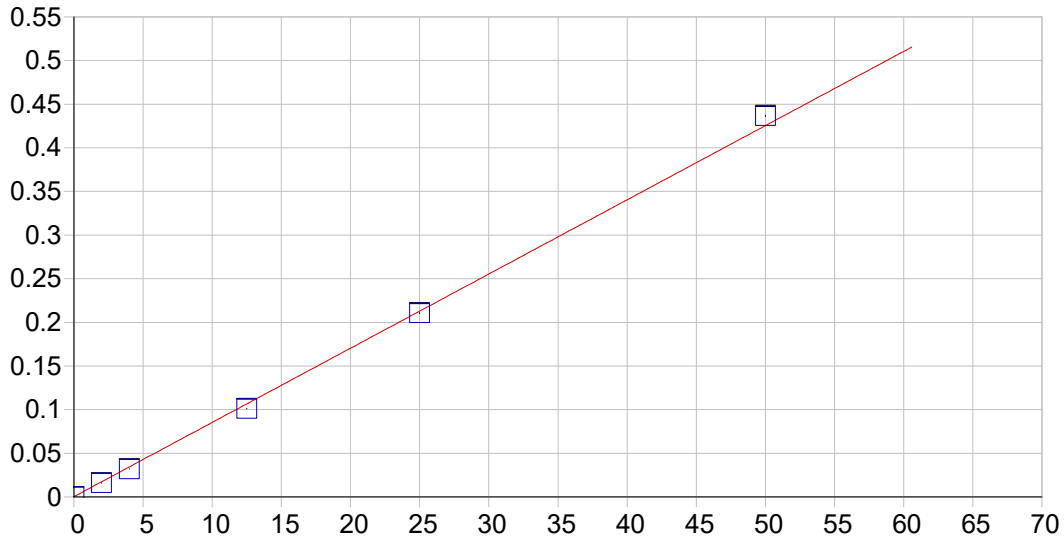


Zn 213.856 {158}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004026	Re-Slope:	1.000000
A1 (Gain):	3.309533	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.000326		
Predicted MDL:	0.000227		
Predicted MQL:	0.000756		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00402	.000	1
S1	.04000	.04078	.001	1.95	.13991	.001	1
S3	1.2500	1.2429	-.007	-.564	4.1464	.024	1
S4	2.5000	2.5152	.015	.608	8.3857	.022	1
S5	5.0000	4.9917	-.008	-.167	16.639	.062	1
S2	.40000	.39942	-.001	-.146	1.3351	.006	1

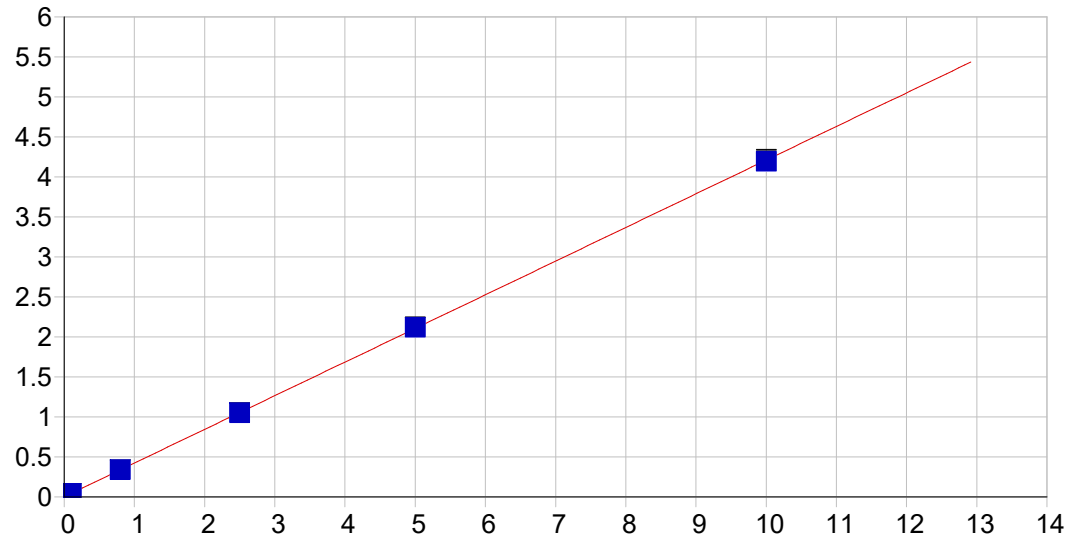


K 766.490 { 44}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000339	Re-Slope:	1.000000
A1 (Gain):	0.008502	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999449	Status:	OK.
Std Error of Est:	0.000149		
Predicted MDL:	0.021055		
Predicted MQL:	0.070182		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00037	.000	.000	.00034	.000	1
S2	4.0000	3.7222	-.278	-6.94	.03198	.000	1
S3	12.500	11.860	-.640	-5.12	.10117	.000	1
S4	25.000	24.739	-.261	-1.05	.21066	.000	1
S5	50.000	51.337	1.34	2.67	.43679	.001	1
S1	2.0000	1.8424	-.158	-7.88	.01600	.000	1

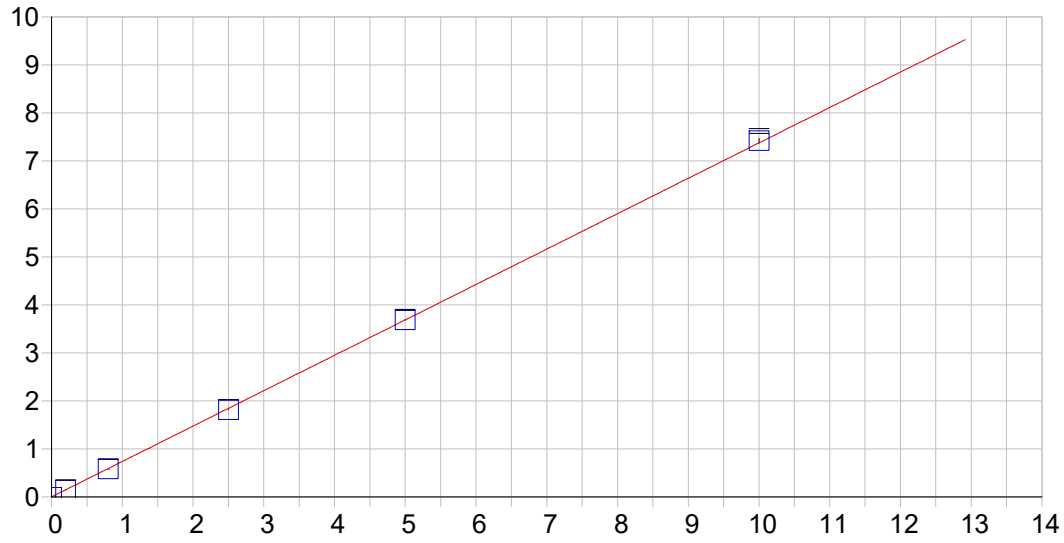


B 249.678 {135}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002518	Re-Slope:	1.000000
A1 (Gain):	0.420683	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999989	Status:	OK.
Std Error of Est:	0.000104		
Predicted MDL:	0.000597		
Predicted MQL:	0.001992		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00252	.000	1
S1	.10000	.09920	-.001	-.800	.04407	.000	1
S3	2.5000	2.4913	-.009	-.348	1.0485	.002	1
S4	5.0000	5.0382	.038	.764	2.1179	.001	1
S5	10.000	9.9720	-.028	-.280	4.1893	.022	1
S2	.80000	.79936	-.001	-.080	.33814	.002	1

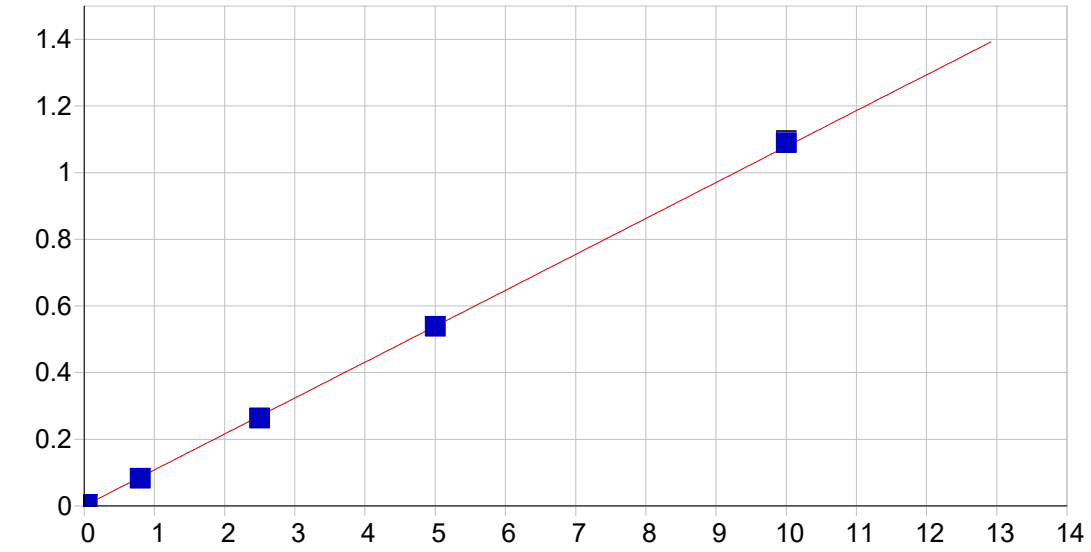


Mo 202.030 {467}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000365	Re-Slope:	1.000000
A1 (Gain):	0.737546	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999962	Status:	OK.
Std Error of Est:	0.000476		
Predicted MDL:	0.000242		
Predicted MQL:	0.000807		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00037	.000	1
S1	.20000	.19349	-.007	-3.25	.14307	.000	1
S3	2.5000	2.4603	-.040	-1.59	1.8149	.002	1
S4	5.0000	5.0009	.001	.018	3.6888	.010	1
S5	10.000	10.058	.058	.582	7.4188	.048	1
S2	.80000	.78708	-.013	-1.61	.58088	.002	1

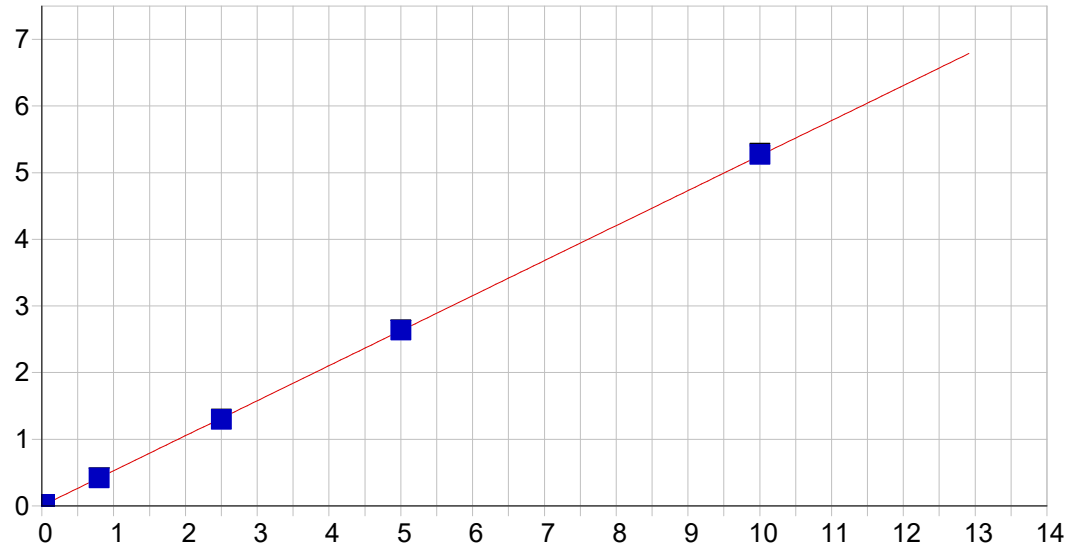


Sn 189.989 {478}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000187	Re-Slope:	1.000000
A1 (Gain):	0.107797	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999871	Status:	OK.
Std Error of Est:	0.000057		
Predicted MDL:	0.000768		
Predicted MQL:	0.002559		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00019	.000	1
S1	.04000	.03741	-.003	-6.47	.00422	.000	1
S3	2.5000	2.4357	-.064	-2.57	.26247	.000	1
S4	5.0000	4.9922	-.008	-.157	.53777	.001	1
S5	10.000	10.111	.111	1.11	1.0890	.006	1
S2	.80000	.76377	-.036	-4.53	.08243	.000	1

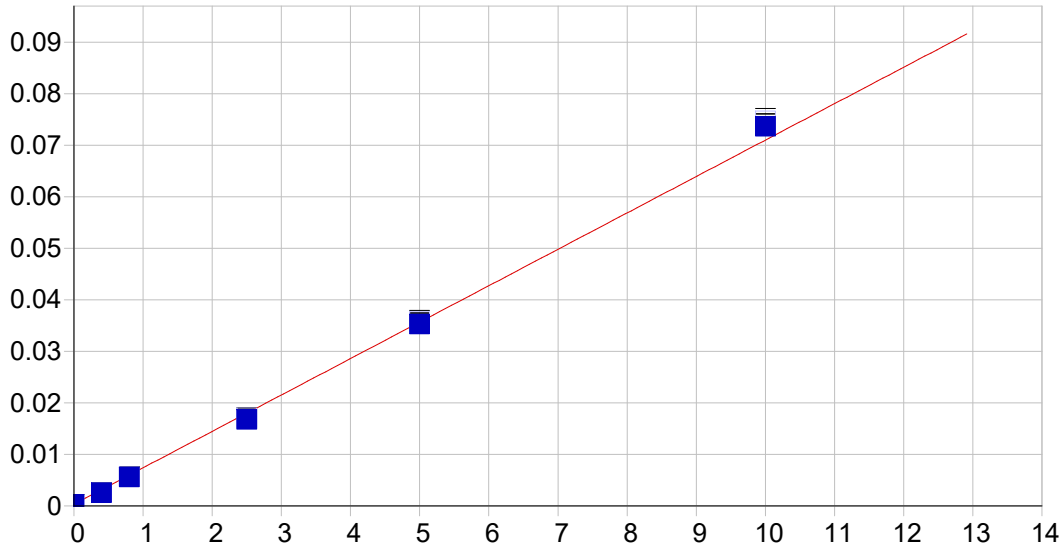


Ti 336.121 {100}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001856	Re-Slope:	1.000000
A1 (Gain):	0.525480	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999977	Status:	OK.
Std Error of Est:	0.000118		
Predicted MDL:	0.000523		
Predicted MQL:	0.001745		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00186	.000	1
S1	.04000	.03865	-.001	-3.37	.02215	.000	1
S3	2.5000	2.4605	-.040	-1.58	1.2943	.005	1
S4	5.0000	5.0149	.015	.298	2.6361	.002	1
S5	10.000	10.031	.031	.312	5.2711	.019	1
S2	.80000	.79481	-.005	-.649	.41936	.001	1

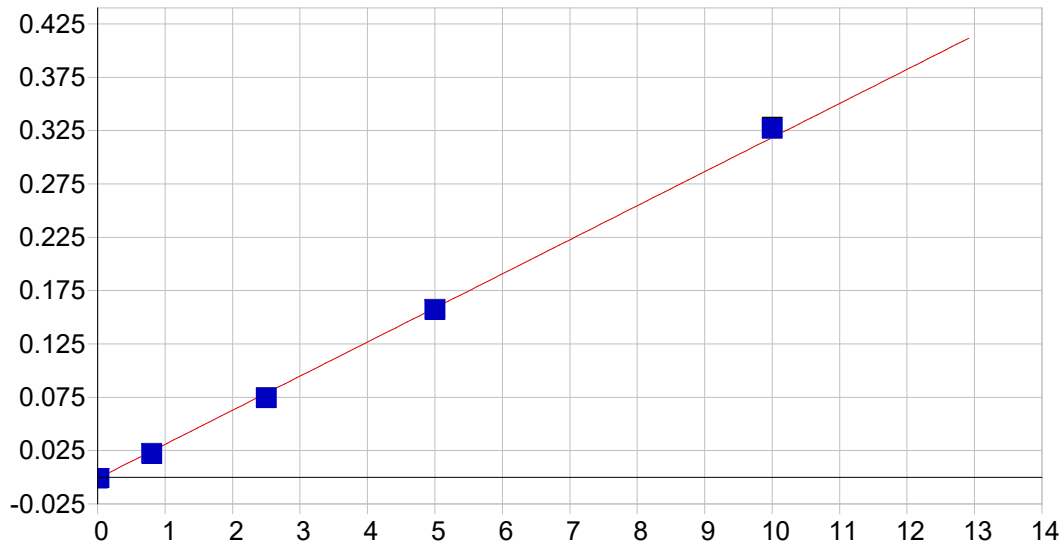


Si 288.158 {117}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000330	Re-Slope:	1.000000
A1 (Gain):	0.007066	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998707	Status:	OK.
Std Error of Est:	0.000039		
Predicted MDL:	0.005557		
Predicted MQL:	0.018524		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00013	.000	.000	.00033	.000	1
S1	.40000	.31153	-.088	-22.1	.00254	.000	1
S3	2.5000	2.3302	-.170	-6.79	.01706	.000	1
S4	5.0000	4.9415	-.058	-1.17	.03578	.000	1
S5	10.000	10.373	.373	3.73	.07469	.001	1
S2	.80000	.74257	-.057	-7.18	.00566	.000	1

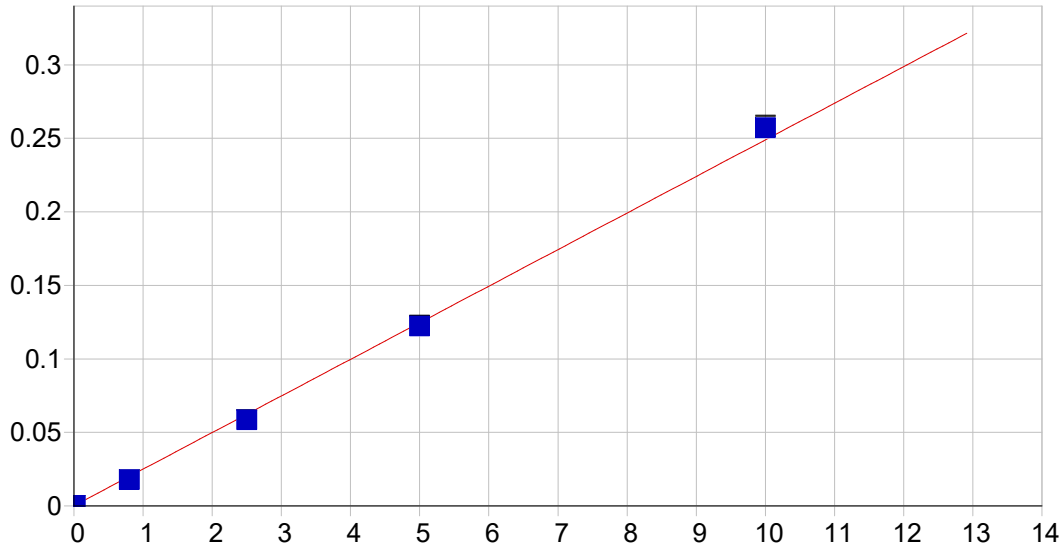


P 177.495 {490}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001107	Re-Slope:	1.000000
A1 (Gain):	0.031957	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999376	Status:	OK.
Std Error of Est:	0.000026		
Predicted MDL:	0.002472		
Predicted MQL:	0.008239		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	-.00111	.000	1
S1	.02000	.01545	-.005	-22.7	-.00061	.000	1
S3	2.5000	2.3635	-.137	-5.46	.07441	.000	1
S4	5.0000	4.9474	-.053	-1.05	.15697	.000	1
S5	10.000	10.267	.267	2.67	.32694	.001	1
S2	.80000	.72679	-.073	-9.15	.02212	.000	1

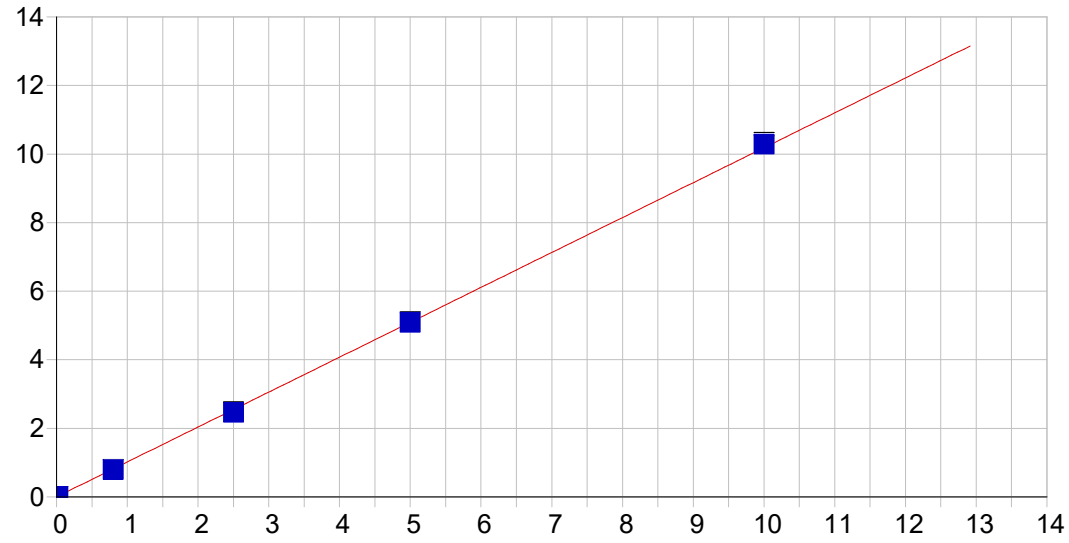


S 182.034 {485}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000138	Re-Slope:	1.000000
A1 (Gain):	0.024888	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999144	Status:	OK.
Std Error of Est:	0.000024		
Predicted MDL:	0.003133		
Predicted MQL:	0.010443		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00014	.000	1
S1	.02000	.02101	.001	5.05	.00064	.000	1
S3	2.5000	2.3459	-.154	-6.16	.05836	.000	1
S4	5.0000	4.9117	-.088	-1.77	.12206	.001	1
S5	10.000	10.328	.328	3.28	.25653	.002	1
S2	.80000	.71338	-.087	-10.8	.01784	.000	1

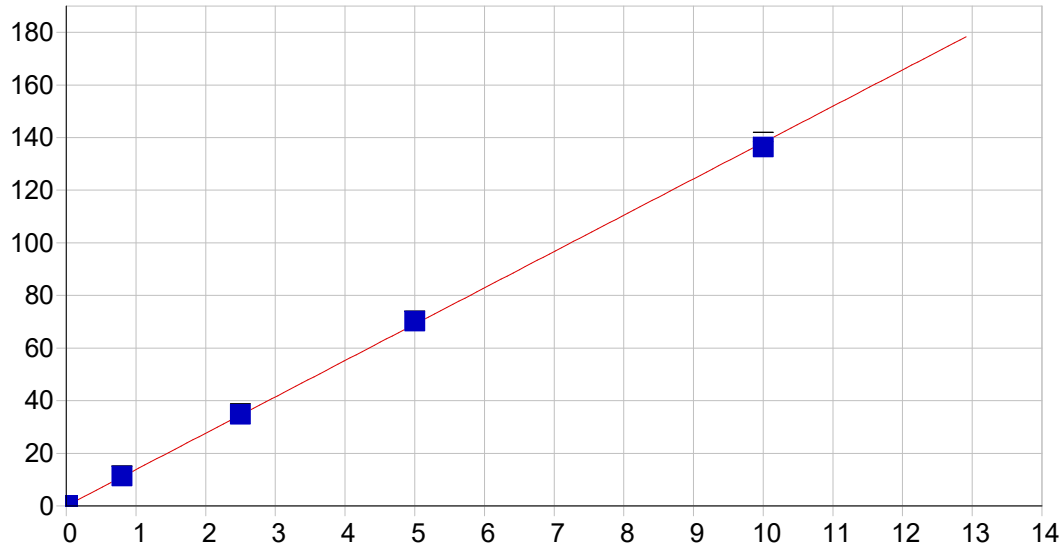


Li 670.784 { 50}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001581	Re-Slope:	1.000000
A1 (Gain):	1.018211	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999888	Status:	OK.
Std Error of Est:	0.000357		
Predicted MDL:	0.000769		
Predicted MQL:	0.002562		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00158	.001	1
S5	10.000	10.102	.102	1.02	10.296	.050	1
S4	5.0000	4.9984	-.002	-.032	5.0956	.017	1
S3	2.5000	2.4192	-.081	-3.23	2.4671	.011	1
S1	.02000	.02018	.000	.888	.02249	.000	1
S2	.80000	.78070	-.019	-2.41	.79723	.003	1

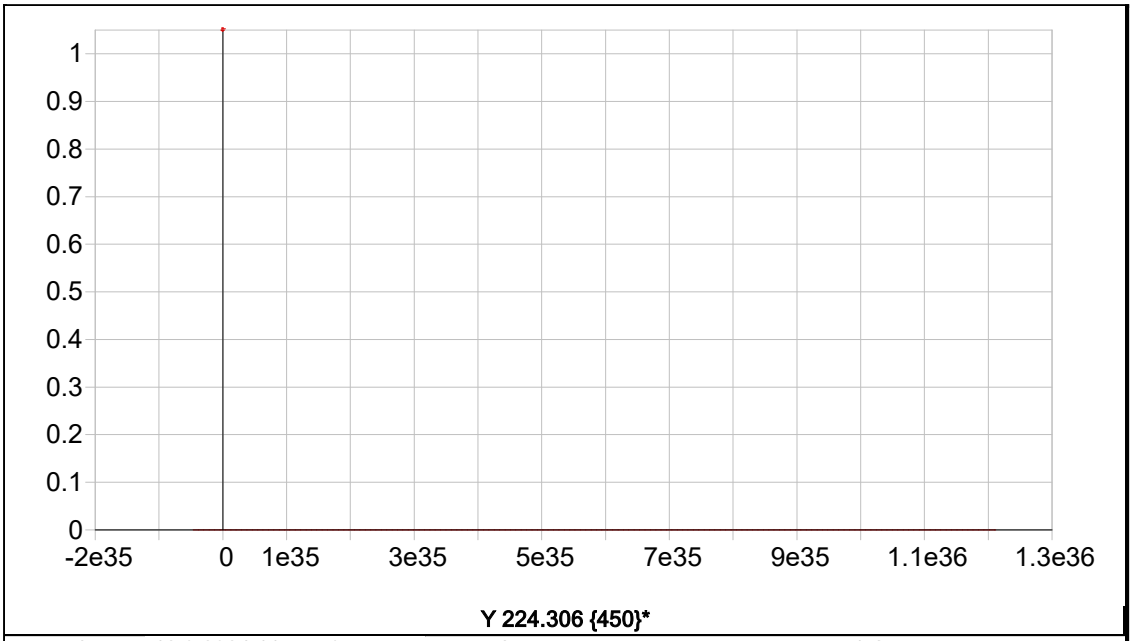


Sr 407.771 { 83}

Date of Fit:	12/9/2024 11:55:50	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001484	Re-Slope:	1.000000
A1 (Gain):	13.811137	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999899	Status:	OK.
Std Error of Est:	0.004602		
Predicted MDL:	0.000034		
Predicted MQL:	0.000114		

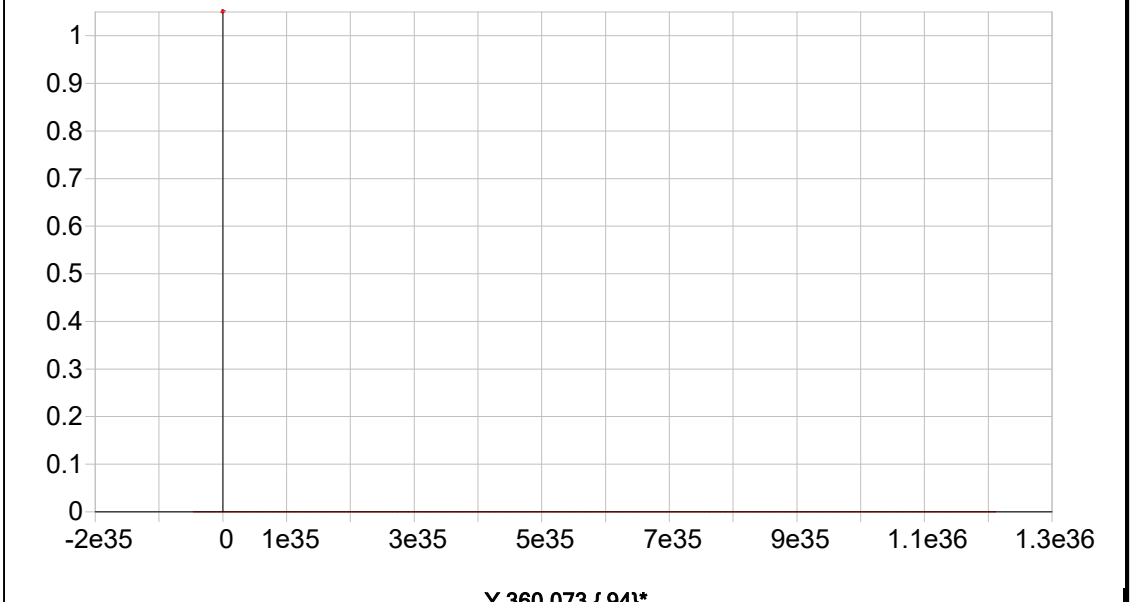
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00147	.000	1
S1	.02000	.02021	.000	1.07	.28204	.004	1
S3	2.5000	2.5205	.021	.821	34.847	.178	1
S4	5.0000	5.0831	.083	1.66	70.274	.120	1
S5	10.000	9.8746	-.125	-1.25	136.52	1.77	1
S2	.80000	.82158	.022	2.70	11.360	.055	1



Y 224.306 {450}*

Date of Fit:	12/9/2024 11:55:50	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

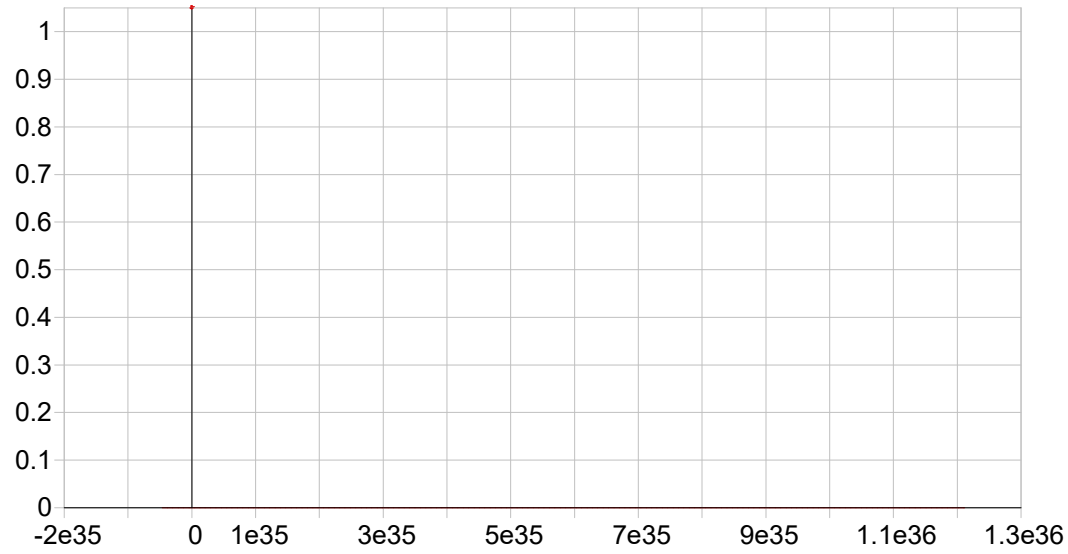


Y 360.073 { 94}*

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					

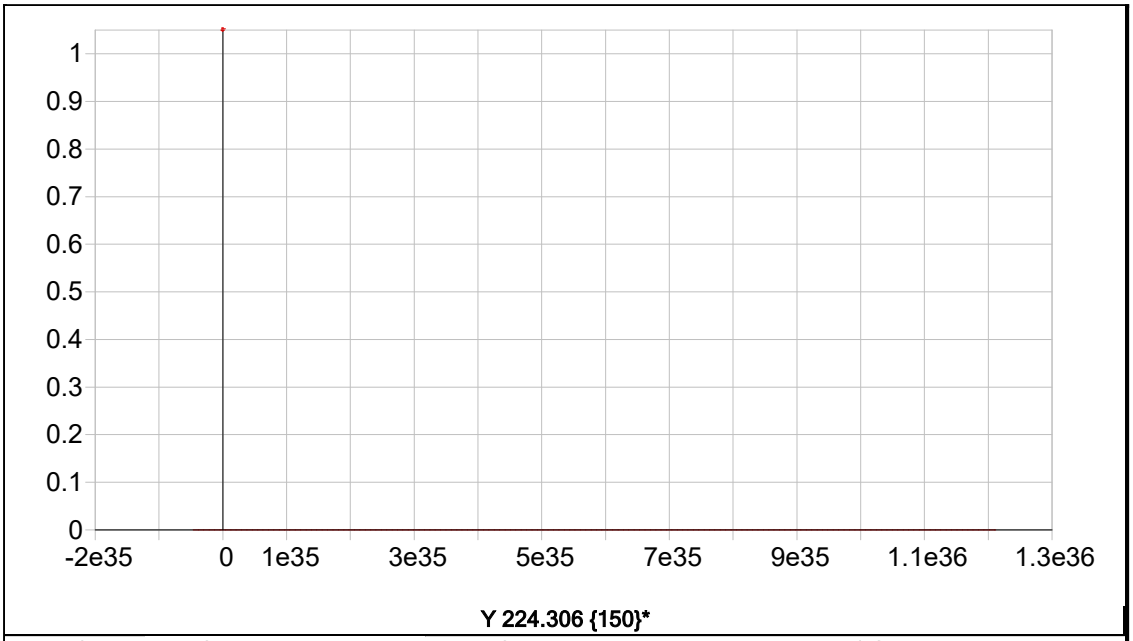
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



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

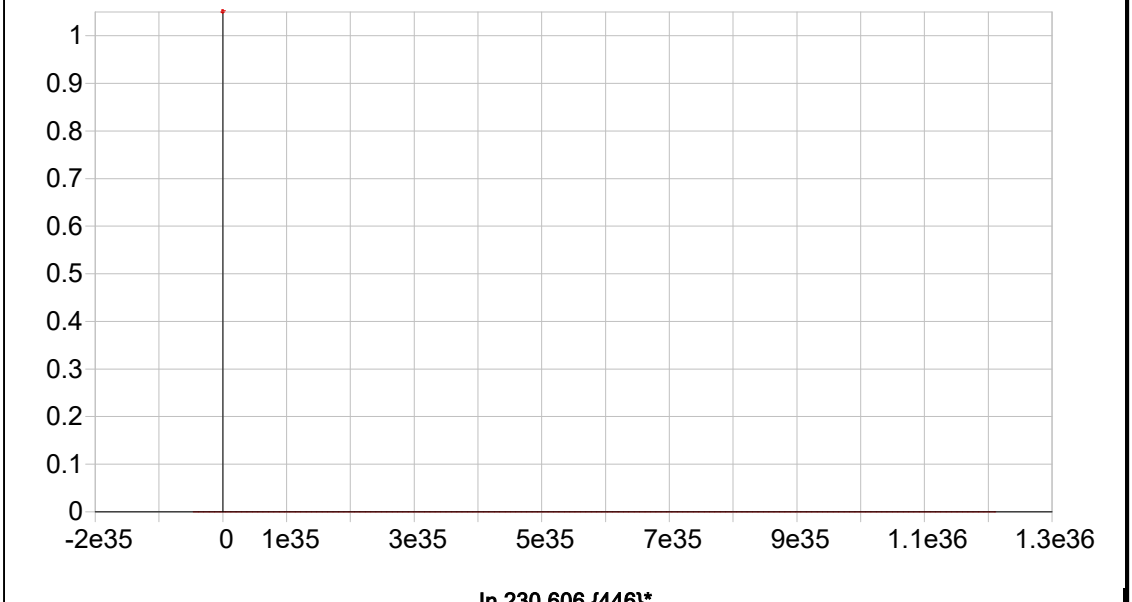


Y 224.306 {150}*

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:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S0 Acquired: 12/9/2024 11:06:00 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	-.00013	-.00029	-.00009	.00041	.00014	.00069	.01422	-.00025
Stddev	.00001	.00005	.00027	.00003	.00003	.00013	.00109	.00014
%RSD	9.4105	15.886	293.10	7.6148	22.688	18.660	7.6662	57.685
#1	-.00014	-.00024	-.00032	.00041	.00017	.00056	.01451	-.00008
#2	-.00013	-.00028	-.00017	.00045	.00013	.00082	.01513	-.00034
#3	-.00012	-.00033	.00021	.00039	.00011	.00071	.01301	-.00031

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	.00009	.00276	.00008	.00012	-.00014	.00005	.00024	-.00006
Stddev	.00021	.00027	.00004	.00013	.00035	.00002	.00015	.00012
%RSD	221.87	9.7156	55.726	110.03	244.58	30.846	60.991	210.46
#1	-.00014	.00305	.00004	.00018	.00014	.00004	.00015	-.00003
#2	.00026	.00271	.00007	-.00003	-.00003	.00005	.00016	.00005
#3	.00017	.00252	.00013	.00022	-.00054	.00007	.00041	-.00019

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	-.00025	-.00131	.00241	-.00001	.00402	.00034	.00252	.00037
Stddev	.00008	.00008	.00013	.00003	.00010	.00022	.00033	.00007
%RSD	30.560	5.8560	5.3830	586.84	2.6061	63.284	12.937	19.289
#1	-.00024	-.00122	.00227	.00002	.00412	.00047	.00222	.00046
#2	-.00019	-.00137	.00246	-.00004	.00404	.00009	.00247	.00032
#3	-.00034	-.00133	.00251	.00001	.00391	.00046	.00286	.00034

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	.00019	.00186	.00033	-.00111	.00014	.00158	.00147
Stddev	.00006	.00015	.00002	.00002	.00007	.00068	.00025
%RSD	33.509	8.1531	4.9530	1.5672	50.057	42.690	17.232
#1	.00013	.00203	.00034	-.00110	.00019	.00201	.00126
#2	.00018	.00177	.00031	-.00113	.00017	.00080	.00175
#3	.00026	.00177	.00034	-.00109	.00006	.00194	.00140

Sample Name: S0 Acquired: 12/9/2024 11:06:00 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	3045.1	67355.	13640.	2164.0	4887.0
Stddev	9.6	388.	50.	15.4	13.6
%RSD	.31503	.57649	.36375	.71382	.27775
#1	3038.6	66945.	13606.	2147.6	4875.7
#2	3056.1	67403.	13618.	2166.3	4902.0
#3	3040.6	67717.	13697.	2178.2	4883.3

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S1 Acquired: 12/9/2024 11:10:27 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.00070	.00175	.00257	.00194	.00685	.00824	.33386	.02157
Stddev	.00003	.00007	.00007	.00013	.00006	.00013	.00394	.00029
%RSD	4.7140	3.8591	2.9065	6.5337	.94316	1.5951	1.1800	1.3380
#1	.00070	.00170	.00249	.00203	.00686	.00821	.33841	.02172
#2	.00066	.00172	.00262	.00179	.00691	.00813	.33162	.02123
#3	.00073	.00182	.00261	.00200	.00678	.00839	.33155	.02174

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	.01193	.11171	.00209	.02480	.01599	.00056	.01360	.03337
Stddev	.00003	.00128	.00007	.00012	.00022	.00001	.00047	.00049
%RSD	.26734	1.1443	3.3199	.48042	1.3543	1.4249	3.4424	1.4536
#1	.01197	.11246	.00215	.02485	.01612	.00057	.01414	.03357
#2	.01191	.11023	.00212	.02467	.01574	.00056	.01340	.03281
#3	.01192	.11242	.00201	.02489	.01611	.00055	.01327	.03372

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	.02334	.00117	.03326	.00506	.13991	.01600	.04407	.14307
Stddev	.00016	.00013	.00014	.00013	.00102	.00008	.00025	.00027
%RSD	.68575	11.028	.42667	2.6350	.72662	.51959	.57293	.19138
#1	.02351	.00109	.03342	.00494	.13993	.01600	.04432	.14337
#2	.02319	.00132	.03323	.00521	.13889	.01609	.04382	.14282
#3	.02332	.00110	.03314	.00504	.14092	.01592	.04407	.14303

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	.00422	.02215	.00254	-.00061	.00064	.02249	.28204
Stddev	.00009	.00009	.00003	.00002	.00004	.00025	.00357
%RSD	2.0854	.41397	1.3514	2.5228	6.6095	1.1040	1.2655
#1	.00428	.02221	.00253	-.00061	.00060	.02255	.28593
#2	.00411	.02205	.00257	-.00063	.00064	.02271	.27892
#3	.00425	.02221	.00250	-.00060	.00068	.02222	.28126

Sample Name: S1 Acquired: 12/9/2024 11:10:27 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	2971.3	65218.	13593.	2093.6	4716.7
Stddev	10.5	132.	123.	2.1	12.8
%RSD	.35422	.20292	.90737	.10252	.27094
#1	2970.0	65066.	13465.	2095.4	4715.8
#2	2982.4	65303.	13711.	2094.2	4730.0
#3	2961.5	65286.	13604.	2091.2	4704.5

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S2 Acquired: 12/9/2024 11:14:48 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.03234	.04449	.18776	.06414	.10715	.12198	5.3003	.15028
Stddev	.00015	.00111	.00062	.00050	.00024	.00059	.0282	.00088
%RSD	.46807	2.5036	.32905	.77595	.22150	.48151	.53243	.58537
#1	.03245	.04574	.18842	.06462	.10738	.12254	5.3321	.15127
#2	.03239	.04362	.18767	.06416	.10716	.12137	5.2906	.14961
#3	.03217	.04410	.18719	.06363	.10691	.12204	5.2782	.14995

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	.80860	.22074	.03368	.33646	.15146	.00443	.26320	.06256
Stddev	.00134	.00056	.00016	.00041	.00035	.00003	.00072	.00012
%RSD	.16520	.25439	.47634	.12157	.23284	.62376	.27424	.18479
#1	.81015	.22115	.03351	.33691	.15158	.00440	.26396	.06269
#2	.80790	.22097	.03383	.33636	.15173	.00444	.26310	.06247
#3	.80777	.22010	.03369	.33612	.15106	.00445	.26253	.06252

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	.24263	.05040	.06553	.05072	1.3351	.03198	.33814	.58088
Stddev	.00035	.00004	.00027	.00018	.0064	.00012	.00153	.00175
%RSD	.14223	.07629	.41069	.35110	.48243	.37891	.45147	.30117
#1	.24299	.05040	.06529	.05090	1.3282	.03189	.33977	.58236
#2	.24230	.05044	.06582	.05054	1.3363	.03212	.33791	.58132
#3	.24258	.05037	.06547	.05073	1.3409	.03194	.33674	.57895

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	.08243	.41936	.00566	.02212	.01784	.79723	11.360
Stddev	.00017	.00115	.00001	.00027	.00004	.00293	.055
%RSD	.20453	.27468	.11510	1.2205	.21490	.36814	.48370
#1	.08262	.42068	.00567	.02242	.01788	.80048	11.421
#2	.08231	.41882	.00567	.02201	.01782	.79644	11.341
#3	.08236	.41858	.00565	.02192	.01782	.79478	11.316

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S2 Acquired: 12/9/2024 11:14:48 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	2841.9	62322.	13117.	1999.3	4440.1
Stddev	6.5	90.	45.	15.7	7.4
%RSD	.22720	.14504	.34686	.78766	.16644
#1	2839.4	62422.	13066.	2015.7	4433.4
#2	2837.1	62296.	13134.	1997.8	4439.0
#3	2849.2	62247.	13152.	1984.3	4448.0

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S3 Acquired: 12/9/2024 11:18:55 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.10309	.14266	.59161	.20391	.33902	.37981	16.363	.47016
Stddev	.00022	.00120	.00133	.00089	.00065	.00087	.104	.00012
%RSD	.21328	.84231	.22415	.43801	.19229	.22859	.63578	.02489
#1	.10324	.14289	.59217	.20337	.33855	.37918	16.406	.47004
#2	.10284	.14135	.59009	.20341	.33874	.37945	16.245	.47027
#3	.10320	.14372	.59256	.20494	.33976	.38080	16.439	.47017

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	2.5665	.68013	.10510	1.0683	.47474	.01388	.80769	.19537
Stddev	.0047	.00231	.00035	.0013	.00044	.00005	.00291	.00056
%RSD	.18268	.33988	.33509	.12541	.09213	.33557	.36074	.28495
#1	2.5702	.67750	.10474	1.0682	.47430	.01383	.80602	.19483
#2	2.5612	.68107	.10510	1.0670	.47474	.01387	.80600	.19534
#3	2.5681	.68183	.10544	1.0697	.47518	.01393	.81106	.19594

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	.76585	.15859	.20292	.15807	4.1464	.10117	1.0485	1.8149
Stddev	.00046	.00013	.00094	.00075	.0243	.00048	.0024	.0023
%RSD	.06040	.08496	.46149	.47613	.58695	.47704	.23322	.12663
#1	.76638	.15851	.20289	.15728	4.1201	.10077	1.0457	1.8144
#2	.76552	.15874	.20200	.15877	4.1508	.10102	1.0503	1.8129
#3	.76564	.15850	.20387	.15816	4.1682	.10170	1.0494	1.8174

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	.26247	1.2943	.01706	.07441	.05836	2.4671	34.847
Stddev	.00035	.0049	.00011	.00023	.00014	.0109	.178
%RSD	.13488	.37646	.62503	.31471	.23340	.44318	.51130
#1	.26257	1.2919	.01695	.07439	.05823	2.4685	34.656
#2	.26208	1.2911	.01708	.07419	.05850	2.4556	34.878
#3	.26277	1.2999	.01716	.07465	.05835	2.4773	35.008

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S3 Acquired: 12/9/2024 11:18:55 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	2823.7	62164.	13308.	1989.8	4314.9
Stddev	2.4	160.	13.	15.5	1.5
%RSD	.08620	.25697	.09760	.77898	.03526
#1	2826.3	62276.	13302.	1999.3	4316.6
#2	2821.5	62234.	13322.	1998.1	4314.2
#3	2823.4	61981.	13298.	1971.9	4313.8

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S4 Acquired: 12/9/2024 11:23:09 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.21194	.28668	1.2050	.41799	.69575	.77756	33.471	.95000
Stddev	.00066	.00068	.0042	.00061	.00145	.00066	.056	.00145
%RSD	.31152	.23667	.34651	.14683	.20856	.08526	.16786	.15218
#1	.21124	.28700	1.2015	.41731	.69430	.77806	33.425	.95159
#2	.21202	.28590	1.2039	.41818	.69576	.77681	33.533	.94967
#3	.21256	.28714	1.2096	.41849	.69720	.77782	33.455	.94875

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	5.2811	1.3800	.21307	2.1945	.95461	.02844	1.6321	.39945
Stddev	.0126	.0021	.00028	.0061	.00170	.00009	.0039	.00039
%RSD	.23755	.15016	.12919	.27887	.17820	.32906	.23818	.09770
#1	5.2721	1.3792	.21317	2.1903	.95336	.02835	1.6287	.39990
#2	5.2757	1.3824	.21275	2.1917	.95393	.02844	1.6363	.39917
#3	5.2954	1.3785	.21327	2.2015	.95655	.02854	1.6312	.39928

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	1.5676	.32388	.42567	.32356	8.3857	.21066	2.1179	3.6888
Stddev	.0048	.00066	.00164	.00051	.0223	.00046	.0012	.0104
%RSD	.30348	.20329	.38610	.15759	.26548	.21931	.05527	.28174
#1	1.5648	.32369	.42388	.32300	8.3678	.21014	2.1184	3.6803
#2	1.5648	.32333	.42603	.32401	8.3786	.21101	2.1165	3.6857
#3	1.5731	.32461	.42710	.32367	8.4106	.21083	2.1187	3.7004

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	.53777	2.6361	.03578	.15697	.12206	5.0956	70.274
Stddev	.00074	.0017	.00021	.00046	.00060	.0169	.120
%RSD	.13721	.06598	.59771	.29083	.49330	.33139	.17103
#1	.53771	2.6343	.03564	.15673	.12184	5.0781	70.298
#2	.53707	2.6378	.03567	.15669	.12159	5.1119	70.380
#3	.53854	2.6363	.03602	.15750	.12274	5.0968	70.143

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S4 Acquired: 12/9/2024 11:23:09 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	2704.7	59717.	12953.	1897.2	4064.5
Stddev	5.4	94.	15.	4.8	8.3
%RSD	.20057	.15777	.11571	.25523	.20467
#1	2709.9	59753.	12956.	1902.8	4071.0
#2	2705.1	59787.	12936.	1894.4	4067.4
#3	2699.0	59610.	12965.	1894.5	4055.2

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: S5 Acquired: 12/9/2024 11:27:23 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.43457	.56866	2.4415	.85321	1.4228	1.5750	65.986	1.8764
Stddev	.00314	.00763	.0127	.00638	.0092	.0042	.454	.0095
%RSD	.72204	1.3416	.52023	.74807	.64653	.26474	.68786	.50554
#1	.43123	.56064	2.4310	.84651	1.4139	1.5780	66.510	1.8854
#2	.43501	.56951	2.4378	.85390	1.4224	1.5768	65.726	1.8774
#3	.43746	.57582	2.4556	.85922	1.4323	1.5702	65.723	1.8665

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	10.734	2.7377	.42458	4.4878	1.9044	.05718	3.2275	.80513
Stddev	.059	.0083	.00147	.0214	.0111	.00010	.0120	.00395
%RSD	.55283	.30322	.34666	.47675	.58107	.18221	.37314	.49087
#1	10.688	2.7469	.42480	4.4694	1.8942	.05713	3.2409	.80694
#2	10.713	2.7354	.42593	4.4827	1.9027	.05712	3.2236	.80785
#3	10.801	2.7308	.42301	4.5113	1.9162	.05730	3.2178	.80060

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	3.1844	.65946	.87610	.64666	16.639	.43679	4.1893	7.4188
Stddev	.0184	.00197	.00188	.00213	.062	.00078	.0216	.0483
%RSD	.57896	.29902	.21414	.32980	.37419	.17818	.51484	.65088
#1	3.1700	.65983	.87824	.64851	16.622	.43601	4.2116	7.3711
#2	3.1780	.66122	.87532	.64714	16.708	.43680	4.1878	7.4176
#3	3.2052	.65733	.87474	.64433	16.587	.43757	4.1686	7.4676

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.0890	5.2711	.07469	.32694	.25653	10.296	136.52
Stddev	.0056	.0186	.00054	.00116	.00186	.050	1.77
%RSD	.51364	.35347	.71974	.35346	.72586	.48245	1.2975
#1	1.0836	5.2918	.07407	.32624	.25473	10.351	138.34
#2	1.0887	5.2661	.07494	.32631	.25642	10.285	136.41
#3	1.0948	5.2555	.07505	.32828	.25845	10.253	134.80

Sample Name: S5 Acquired: 12/9/2024 11:27:23 Type: Cal
Method: NON EPA-6010-200.7(v2508) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	2571.4	57615.	12786.	1805.7	3793.6
Stddev	12.7	96.	71.	5.5	17.2
%RSD	.49484	.16663	.55781	.30200	.45345
#1	2584.6	57637.	12715.	1809.7	3809.5
#2	2570.5	57509.	12785.	1799.5	3796.1
#3	2559.2	57697.	12858.	1808.0	3775.4

Sample Name: ICV01 Acquired: 12/9/2024 11:35:57 Type: Unk
Method: NON EPA-6010-200.7(v2509) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9545510	1.012860	.9714589	.9750129	.9798295	2.493160
Stddev	.0002731	.004544	.0010800	.0024121	.0032948	.016515
%RSD	.0286108	.4486021	.1111759	.2473876	.3362605	.6624248
#1	.9548109	1.010683	.9720615	.9746601	.9761756	2.511755
#2	.9545759	1.018082	.9721031	.9727966	.9825742	2.487523
#3	.9542664	1.009814	.9702120	.9775819	.9807387	2.480201

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5077746	.5245713	.4942862	10.05634	.5167822	.5001949
Stddev	.0046812	.0019201	.0007690	.03640	.0015833	.0006153
%RSD	.9219017	.3660295	.1555725	.3620010	.3063842	.1230110
#1	.5131334	.5267805	.4940854	10.09501	.5149834	.4997857
#2	.5057080	.5233050	.4951357	10.05127	.5179647	.5009025
#3	.5044823	.5236282	.4936375	10.02273	.5173986	.4998965

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5078776	9.630071	.5200024	5.936163	.5497066	.2482311
Stddev	.0017596	.006879	.0026529	.018273	.0009713	.0000443
%RSD	.3464693	.0714340	.5101690	.3078244	.1766966	.0178438
#1	.5061765	9.622832	.5230582	5.932140	.5490576	.2482583
#2	.5096905	9.630858	.5186593	5.956113	.5508233	.2481800
#3	.5077657	9.636522	.5182896	5.920237	.5492390	.2482551

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.40527	.5056076	.9988384	10.16548	F .0177517	F .0005863
Stddev	.01681	.0019095	.0013697	.03922	.0009822	.0001226
%RSD	.1615398	.3776713	.1371320	.3858632	5.533081	20.90698
#1	10.38726	.5070672	1.000381	10.12325	.0184791	.0005154
#2	10.42054	.5063090	.998368	10.17241	.0181416	.0005158
#3	10.40801	.5034465	.997766	10.20077	.0166344	.0007279

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICV01 Acquired: 12/9/2024 11:35:57 Type: Unk
Method: NON EPA-6010-200.7(v2509) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 .0001925	F .0023069	F .0300194	F .0050108	F .0015189	F .0014544
Stddev	.0005334	.0020223	.0039850	.0003240	.0009717	.0014813
%RSD	277.0423	87.66354	13.27458	6.466590	63.97322	101.8478
#1	-.000366	.0045107	.0308052	.0049986	.0005766	.0031137
#2	.000697	.0018735	.0257001	.0046930	.0014627	.0009847
#3	.000246	.0005364	.0335529	.0053408	.0025175	.0002650

Elem	Sr4077
Units	ppm
Avg	F -.006074
Stddev	.001533
%RSD	25.24090
#1	-.004382
#2	-.006471
#3	-.007370

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2902.986	63362.73	13209.24	2049.515	4501.944
Stddev	2.038	103.58	69.94	9.697	3.043
%RSD	.0702157	.1634655	.5294548	.4731382	.0675896
#1	2904.651	63414.65	13130.84	2040.934	4500.493
#2	2900.713	63243.46	13231.66	2047.575	4499.899
#3	2903.595	63430.08	13265.22	2060.035	4505.441

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: LLICV01 Acquired: 12/9/2024 11:49:25 Type: Unk
Method: NON EPA-6010-200.7(v2507) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0187431	.0394865	.0122812	.0211219	.0508833	.1066569
Stddev	.0012047	.0022547	.0005502	.0013275	.0005677	.0083880
%RSD	6.427504	5.710119	4.479727	6.285117	1.115660	7.864464
#1	.0186723	.0378489	.0117277	.0226530	.0513746	.0972712
#2	.0175753	.0420582	.0122880	.0202918	.0502618	.1092785
#3	.0199816	.0385524	.0128280	.0204209	.0510135	.1134210

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0992806	.0061603	.0059072	2.127300	.0112669	.0293634
Stddev	.0004173	.0001099	.0000655	.021523	.0000956	.0000457
%RSD	.4203053	1.783897	1.108402	1.011743	.8487648	.1557342
#1	.0995186	.0061250	.0058318	2.146026	.0113467	.0293227
#2	.0995245	.0062835	.0059405	2.132088	.0112929	.0294129
#3	.0987988	.0060724	.0059494	2.103786	.0111609	.0293547

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0222527	.0934839	.0214610	2.248427	.0395303	.0099354
Stddev	.0001934	.0032065	.0001803	.010039	.0001574	.0000902
%RSD	.8692350	3.430039	.8402418	.4464836	.3982421	.9076234
#1	.0224737	.0970344	.0214797	2.243577	.0393855	.0099506
#2	.0221706	.0907990	.0216313	2.259970	.0396979	.0098386
#3	.0221139	.0926183	.0212721	2.241734	.0395076	.0100170

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.771282	.0420589	.0424524	1.833372	.1056983	.2080678
Stddev	.043789	.0011407	.0006644	.038218	.0018143	.0005992
%RSD	2.472169	2.712032	1.564981	2.084573	1.716500	.2880036
#1	1.810137	.0407422	.0427104	1.870005	.1048018	.2082445
#2	1.723833	.0426885	.0416978	1.793745	.1077864	.2085588
#3	1.779876	.0427460	.0429492	1.836366	.1045068	.2074000

Sample Name: LLICV01 Acquired: 12/9/2024 11:49:25 Type: Unk
Method: NON EPA-6010-200.7(v2507) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	.0394948	.0402019	.3436348	F .0159633	.0212944	.0208121
Stddev	.0004863	.0003719	.0090921	.0017662	.0009498	.0009306
%RSD	1.231284	.9250537	2.645872	11.06433	4.460464	4.471259
#1	.0392410	.0402226	.3515621	.0168230	.0223910	.0198007
#2	.0400555	.0405631	.3337100	.0171350	.0207632	.0210037
#3	.0391879	.0398201	.3456324	.0139318	.0207290	.0216320

Elem	Sr4077
Units	ppm
Avg	.0208205
Stddev	.0001626
%RSD	.7810674
#1	.0209344
#2	.0208929
#3	.0206343

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2787.373	63182.44	13072.60	2009.404	4486.694
Stddev	5.817	1312.53	68.67	81.081	11.113
%RSD	.2087054	2.077364	.5252858	4.035066	.2476906
#1	2785.396	62167.35	13139.04	1948.451	4476.302
#2	2782.802	64664.63	13001.90	2101.424	4485.371
#3	2793.921	62715.34	13076.86	1978.336	4498.409

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICB01 Acquired: 12/9/2024 11:54:38 Type: Unk
Method: NON EPA-6010-200.7(v2507) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	-.000534	-.000921	-.000034	.0010424	.0012444	.0016489	-.000913
Stddev	.002463	.000915	.000744	.0014772	.0010881	.0025269	.000363
%RSD	461.0038	99.41781	2195.314	141.7099	87.43715	153.2431	39.71498
#1	-.003130	-.000279	-.000618	.0025156	.0002911	.0037345	-.001278
#2	-.000243	-.001969	-.000287	-.000439	.0010124	.0023734	-.000910
#3	.001770	-.000515	.000804	.001051	.0024298	-.001161	-.000553

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000047	-.000026	.0044590	.0000759	-.000003	.0005055	-.002728
Stddev	.000016	.000029	.0120818	.0003288	.000108	.0003090	.005243
%RSD	34.35278	112.4337	270.9546	433.4737	4132.459	61.12366	192.1614
#1	-.000038	-.000012	.0174728	-.000242	-.000108	.0003678	.003200
#2	-.000037	-.000059	.0023054	.000414	-.000006	.0008595	-.004631
#3	-.000065	-.000007	-.006401	.000056	.000107	.0002894	-.006754

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001765	-.002809	-.000133	-.000078	-.020592	.0006643	.0010567
Stddev	.0000568	.010358	.000228	.000193	.004719	.0010520	.0001876
%RSD	32.18280	368.7412	171.8040	246.2214	22.91787	158.3731	17.75454
#1	.0001123	.004887	.000079	-.000132	-.024585	.0000281	.0009717
#2	.0002200	-.014585	-.000373	.000136	-.021807	.0000861	.0012718
#3	.0001973	.001272	-.000103	-.000239	-.015384	.0018785	.0009267

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.022108	-.000739	-.000009	-.000007	.0007436	.0128891	-.002975
Stddev	.014398	.000507	.000131	.000493	.0007076	.0023769	.001091
%RSD	65.12549	68.54864	1479.573	7287.694	95.14771	18.44144	36.67252
#1	-.037450	-.001315	.000127	-.000334	.0003063	.0134313	-.002946
#2	-.008891	-.000363	-.000134	-.000246	.0015599	.0102879	-.004080
#3	-.019982	-.000539	-.000020	.000561	.0003646	.0149481	-.001899

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICB01 Acquired: 12/9/2024 11:54:38 Type: Unk
Method: NON EPA-6010-200.7(v2507) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0012160	.0005954	.0001273
Stddev	.0035688	.0003377	.0000281
%RSD	293.4962	56.71085	22.08142
#1	.0053172	.0008129	.0001548
#2	-.000486	.0007669	.0001285
#3	-.001183	.0002064	.0000986

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2834.161	62375.68	12925.90	1948.771	4638.343
Stddev	10.631	155.04	78.31	7.708	13.705
%RSD	.3750962	.2485655	.6058602	.3955162	.2954654
#1	2824.760	62202.15	12890.97	1942.744	4632.453
#2	2845.698	62500.58	12871.13	1946.112	4654.008
#3	2832.026	62424.32	13015.60	1957.456	4628.569

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CRI01 Acquired: 12/9/2024 11:59:03 Type: Unk
Method: NON EPA-6010-200.7(v2507) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0199724	.0399818	.0109639	.0184280	.0501635	.1045357	.0964444
Stddev	.0006802	.0013810	.0012658	.0007124	.0012221	.0013781	.0004332
%RSD	3.405745	3.454164	11.54509	3.865774	2.436202	1.318348	.4491881
#1	.0198043	.0383914	.0101296	.0186493	.0488546	.1033292	.0966946
#2	.0193919	.0408777	.0103417	.0176313	.0512747	.1042402	.0966944
#3	.0207208	.0406763	.0124203	.0190035	.0503611	.1060376	.0959442

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060665	.0056507	2.056312	.0098876	.0286113	.0217525	.0935778
Stddev	.0000163	.0000384	.004535	.0000734	.0001272	.0000979	.0035023
%RSD	.2689539	.6793709	.2205403	.7427204	.4446237	.4501629	3.742630
#1	.0060567	.0056675	2.053627	.0099673	.0284902	.0217481	.0958528
#2	.0060853	.0056068	2.061548	.0098226	.0286000	.0216568	.0895448
#3	.0060574	.0056779	2.053760	.0098728	.0287438	.0218525	.0953358

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0205116	2.163057	.0385942	.0097311	1.799110	.0400263	.0421985
Stddev	.0003764	.014569	.0002711	.0002664	.009246	.0023588	.0001955
%RSD	1.835145	.6735231	.7023488	2.737805	.5138985	5.893218	.4631860
#1	.0208596	2.151963	.0383030	.0097431	1.809330	.0427495	.0419920
#2	.0205633	2.179556	.0388392	.0094590	1.791326	.0386160	.0422227
#3	.0201120	2.157652	.0386403	.0099914	1.796675	.0387135	.0423807

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.914610	.1020704	.2038662	.0383287	.0392843	.3209497	.0155329
Stddev	.004374	.0005726	.0001985	.0008825	.0003169	.0062537	.0009654
%RSD	.2284711	.5610044	.0973755	2.302475	.8067193	1.948513	6.215122
#1	1.919586	.1022692	.2036441	.0378244	.0396038	.3278685	.0145150
#2	1.911371	.1025172	.2040264	.0378140	.0389700	.3192810	.0164354
#3	1.912873	.1014249	.2039279	.0393477	.0392791	.3156995	.0156484

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CRI01 Acquired: 12/9/2024 11:59:03 Type: Unk
Method: NON EPA-6010-200.7(v2507) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0195610	.0194530	.0206158
Stddev	.0010991	.0008087	.0001329
%RSD	5.618923	4.157345	.6446434
#1	.0201891	.0203736	.0207599
#2	.0182918	.0188569	.0205896
#3	.0202019	.0191284	.0204980

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2832.089	62725.57	13127.72	1953.539	4562.177
Stddev	2.299	125.64	43.55	6.907	3.277
%RSD	.0811846	.2002991	.3317320	.3535709	.0718284
#1	2831.399	62687.36	13108.34	1948.125	4562.418
#2	2834.654	62865.88	13097.22	1961.318	4565.327
#3	2830.213	62623.47	13177.59	1951.175	4558.787

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSA01 Acquired: 12/9/2024 12:08:04 Type: Unk
Method: NON EPA-6010-200.7(v2510) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0033481	-.003394	.0118878	-.019648	-.000860	255.5691
Stddev	.0023451	.003164	.0024662	.002758	.000379	1.2315
%RSD	70.04088	93.24036	20.74538	14.03901	44.11147	.4818767
#1	.0057248	-.002500	.0132825	-.020052	-.000645	254.3958
#2	.0010360	-.000773	.0133406	-.022182	-.001298	255.4600
#3	.0032836	-.006908	.0090403	-.016710	-.000637	256.8516

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056235	.0014857	.0033288	242.9371	.0564848	.0020437
Stddev	.0002319	.0000481	.0001958	1.0739	.0002556	.0004163
%RSD	4.122899	3.234145	5.883528	.4420484	.4524963	20.37007
#1	.0058619	.0014490	.0031121	241.7403	.0566330	.0019792
#2	.0053988	.0015401	.0033814	243.2544	.0561897	.0016634
#3	.0056099	.0014681	.0034930	243.8167	.0566318	.0024884

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0186767	95.79661	.0043393	265.2900	.0314931	-.004870
Stddev	.0007458	.34217	.0004133	1.2345	.0004510	.000026
%RSD	3.993423	.3571808	9.524200	.4653550	1.432012	.5344510
#1	.0185656	95.95413	.0047480	263.9235	.0313259	-.004841
#2	.0194718	95.40405	.0039216	265.6214	.0311496	-.004877
#3	.0179926	96.03164	.0043482	266.3249	.0320038	-.004892

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0544858	.0095042	.0315228	.0182906	.0400734	-.000617
Stddev	.0103841	.0004188	.0009985	.0075102	.0008777	.000515
%RSD	19.05841	4.406505	3.167581	41.06034	2.190162	83.45074
#1	.0471100	.0091410	.0321957	.0149582	.0401641	-.000724
#2	.0499866	.0099623	.0319971	.0268904	.0391539	-.000057
#3	.0663607	.0094092	.0303755	.0130233	.0409022	-.001069

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSA01 Acquired: 12/9/2024 12:08:04 Type: Unk
Method: NON EPA-6010-200.7(v2510) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	-.003283	-.000674	.0093072	.0096471	-.005902	F -.040571
Stddev	.000921	.000695	.0029189	.0028760	.007326	.000835
%RSD	28.06444	103.0937	31.36118	29.81207	124.1288	2.058696
#1	-.002734	.000123	.0126748	.0068227	-.014054	-.040552
#2	-.004346	-.000992	.0077417	.0095466	-.003783	-.041415
#3	-.002767	-.001153	.0075051	.0125721	.000131	-.039745

Elem	Sr4077
Units	ppm
Avg	.0072506
Stddev	.0003141
%RSD	4.332440
#1	.0069746
#2	.0075924
#3	.0071849

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2595.852	56279.27	12467.50	1808.630	3716.455
Stddev	1.835	277.85	31.61	10.656	3.652
%RSD	.0707006	.4936926	.2535231	.5891839	.0982697
#1	2595.938	55958.88	12503.42	1799.965	3712.378
#2	2597.642	56453.96	12455.14	1805.395	3717.560
#3	2593.975	56424.99	12443.94	1820.528	3719.427

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSAB01 Acquired: 12/9/2024 12:17:13 Type: Unk
Method: NON EPA-6010-200.7(v2511) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1053358	.0817553	.0523552	.0297554	.6220377	253.3224
Stddev	.0042987	.0021211	.0001403	.0035154	.0037409	1.9817
%RSD	4.080913	2.594480	.2679395	11.81438	.6013954	.7823010
#1	.1070457	.0830172	.0524290	.0338135	.6178717	251.0413
#2	.1085163	.0793064	.0524432	.0278098	.6251095	254.3065
#3	.1004453	.0829423	.0521934	.0276429	.6231319	254.6196

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5081463	.5215614	1.004235	239.2778	.5632307	.5066534
Stddev	.0035429	.0005543	.004650	1.0162	.0038234	.0032289
%RSD	.6972169	.1062762	.4630153	.4247070	.6788304	.6373018
#1	.5041536	.5209221	1.003293	238.7431	.5590040	.5048076
#2	.5109145	.5218546	1.000128	238.6406	.5642399	.5047709
#3	.5093709	.5219075	1.009284	240.4498	.5664483	.5103818

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4978987	95.78502	.4938577	259.0970	1.023976	.1946891
Stddev	.0029468	.60485	.0009927	1.2064	.004145	.0004998
%RSD	.5918407	.6314656	.2010011	.4656329	.4048276	.2566950
#1	.4959349	95.46957	.4937302	258.6337	1.021500	.1941273
#2	.4964740	95.40311	.4929350	258.1909	1.021666	.1948559
#3	.5012870	96.48239	.4949080	260.4665	1.028761	.1950842

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059616	.4998665	.9223834	-.036687	F .0361742	F -.000285
Stddev	.0036505	.0038004	.0034601	.025315	.0007795	.000323
%RSD	61.23251	.7602875	.3751265	69.00161	2.154733	112.9874
#1	.0056817	.4958347	.9192825	-.047309	.0366132	-.000023
#2	.0024592	.5003819	.9217519	-.054962	.0352742	-.000188
#3	.0097440	.5033830	.9261157	-.007792	.0366351	-.000646

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSAB01 Acquired: 12/9/2024 12:17:13 Type: Unk
Method: NON EPA-6010-200.7(v2511) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.002997	F -.002258	F .0089700	F .0187918	F -.002074	F -.039125
Stddev	.001240	.000417	.0021015	.0020939	.005489	.000547
%RSD	41.38488	18.45798	23.42787	11.14277	264.6307	1.397741
#1	-.004380	-.002717	.0082340	.0208187	.000628	-.038612
#2	-.001985	-.002154	.0113404	.0166367	.001540	-.039062
#3	-.002626	-.001903	.0073355	.0189200	-.008390	-.039700

Elem	Sr4077
Units	ppm
Avg	F .0062936
Stddev	.0007096
%RSD	11.27508
#1	.0059702
#2	.0071073
#3	.0058033

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2498.095	55188.39	12499.39	1735.996	3631.868
Stddev	11.530	132.08	34.94	4.178	10.117
%RSD	.4615658	.2393312	.2795644	.2406702	.2785563
#1	2508.524	55326.61	12491.98	1740.806	3637.923
#2	2500.050	55063.45	12468.74	1733.270	3637.491
#3	2485.713	55175.12	12537.44	1733.911	3620.189

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSADLX20 Acquired: 12/9/2024 12:21:26 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSADLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002843	-.001568	.0004203	-.000795	.0002412	12.48817	-.000446
Stddev	.004791	.000291	.0005614	.001409	.0011901	.01307	.000248
%RSD	168.5307	18.54057	133.5746	177.3075	493.4815	.1046598	55.74655
#1	-.001296	-.001234	.0010685	.000215	-.000846	12.47477	-.000577
#2	-.008217	-.001760	.0001034	-.002405	.001513	12.48884	-.000159
#3	.000984	-.001711	.0000889	-.000194	.000056	12.50089	-.000601

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001007	-.000071	12.40978	.0028374	-.000049	.0015950	4.779055
Stddev	.0000680	.000085	.06616	.0001716	.000325	.0001096	.026590
%RSD	67.51820	119.8505	.5331474	6.046344	660.0622	6.872663	.5563959
#1	.0000453	-.000016	12.33355	.0030246	.000109	.0015228	4.782825
#2	.0000802	-.000027	12.45231	.0026876	.000166	.0015411	4.750780
#3	.0001765	-.000168	12.44348	.0028001	-.000423	.0017211	4.803559

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003856	12.75468	.0017085	-.000469	-.032659	.0001084	.0077581
Stddev	.0001730	.04718	.0001612	.000183	.007349	.0013299	.0001122
%RSD	44.86493	.3698909	9.437540	39.00972	22.50305	1226.609	1.445575
#1	.0001968	12.70139	.0017524	-.000260	-.035127	-.000525	.0076722
#2	.0004232	12.79111	.0015298	-.000603	-.038457	-.000787	.0078849
#3	.0005366	12.77155	.0018432	-.000543	-.024393	.001637	.0077171

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.057945	-.001148	-.000089	-.000575	.0004500	-.005034	-.000876
Stddev	.028276	.000445	.000153	.000620	.0001992	.001362	.001654
%RSD	48.79887	38.79403	172.4187	107.7147	44.26933	27.05107	188.7261
#1	-.028935	-.001661	-.000184	.000110	.0003877	-.006530	-.002561
#2	-.085426	-.000931	-.000170	-.000741	.0006730	-.003868	.000745
#3	-.059473	-.000853	.000088	-.001096	.0002894	-.004703	-.000814

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSADLX20 Acquired: 12/9/2024 12:21:26 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSADLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0041731	-.001492	.0004242
Stddev	.0014590	.000131	.0000229
%RSD	34.96261	8.757303	5.404232
#1	.0029480	-.001442	.0003979
#2	.0037840	-.001640	.0004346
#3	.0057871	-.001393	.0004401

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2818.337	61956.63	13046.39	1957.645	4440.895
Stddev	9.514	137.51	45.38	8.555	5.346
%RSD	.3375779	.2219472	.3478597	.4370272	.1203919
#1	2807.460	61800.77	13011.84	1948.961	4434.883
#2	2825.112	62060.81	13029.55	1957.910	4442.685
#3	2822.439	62008.32	13097.79	1966.065	4445.117

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSABDLX20 Acquired: 12/9/2024 12:25:42 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSABDLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012958	.0040236	.0034021	.0023174	.0303785	12.37698	.0244594
Stddev	.0009785	.0007394	.0006906	.0007987	.0011000	.01351	.0003957
%RSD	75.51297	18.37673	20.29917	34.46495	3.620921	.1091947	1.617926
#1	.0020431	.0040541	.0028140	.0018211	.0306993	12.36334	.0240366
#2	.0016559	.0047473	.0041625	.0018924	.0291538	12.39037	.0248210
#3	.0001883	.0032695	.0032296	.0032388	.0312824	12.37723	.0245205

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0267536	.0501428	12.32146	.0294705	.0249331	.0271734	4.774819
Stddev	.0001767	.0001911	.03351	.0002990	.0001313	.0006715	.033837
%RSD	.6603637	.3810361	.2719556	1.014574	.5266101	2.471210	.7086599
#1	.0268574	.0499468	12.29515	.0291729	.0247858	.0267027	4.736579
#2	.0265496	.0501531	12.35918	.0297709	.0249758	.0268750	4.786993
#3	.0268538	.0503285	12.31003	.0294676	.0250378	.0279424	4.800885

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0262456	12.59361	.0520833	.0091111	-.032091	.0256672	.0603673
Stddev	.0004454	.04975	.0003361	.0002878	.007507	.0014572	.0006974
%RSD	1.697006	.3950718	.6452460	3.158636	23.39385	5.677442	1.155240
#1	.0258346	12.54618	.0517820	.0090349	-.035940	.0264758	.0607410
#2	.0267189	12.64540	.0520221	.0094293	-.036893	.0239849	.0595627
#3	.0261834	12.58924	.0524458	.0088691	-.023440	.0265409	.0607981

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.059929	-.001803	-.000182	-.000820	.0005145	-.005943	-.000933
Stddev	.011780	.000293	.000142	.000030	.0001993	.004368	.001780
%RSD	19.65676	16.24890	78.15627	3.695075	38.73102	73.49267	190.7754
#1	-.070766	-.002105	-.000029	-.000836	.0005607	-.009514	-.002469
#2	-.047391	-.001783	-.000309	-.000785	.0006867	-.007243	-.001348
#3	-.061632	-.001520	-.000207	-.000839	.0002962	-.001073	.001018

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: ICSABDLX20 Acquired: 12/9/2024 12:25:42 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSABDLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0040486	-.000975	.0004179
Stddev	.0010571	.000698	.0000398
%RSD	26.10975	71.67000	9.534987
#1	.0051892	-.001777	.0004373
#2	.0031019	-.000501	.0004443
#3	.0038546	-.000646	.0003721

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2801.217	61581.80	13079.80	1937.815	4418.792
Stddev	7.103	119.69	65.99	12.700	9.312
%RSD	.2535618	.1943639	.5045408	.6553916	.2107357
#1	2808.730	61448.03	13013.59	1925.535	4427.392
#2	2800.310	61618.60	13080.22	1950.897	4420.081
#3	2794.612	61678.78	13145.58	1937.012	4408.903

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV01 Acquired: 12/9/2024 12:29:57 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.835532	5.076304	4.852588	4.878060	4.891930	9.761322
Stddev	.015118	.039412	.014417	.017553	.022507	.034439
%RSD	.3126441	.7763827	.2971087	.3598310	.4600935	.3528101
#1	4.834024	5.079899	4.844095	4.875229	4.891355	9.749775
#2	4.821224	5.035218	4.844435	4.862095	4.869715	9.800050
#3	4.851348	5.113795	4.869235	4.896857	4.914719	9.734140

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.638312	.2486427	2.433095	24.29016	.9928027	2.416268
Stddev	.081112	.0005032	.007570	.10274	.0024431	.006289
%RSD	.8415554	.2023768	.3111072	.4229884	.2460786	.2602925
#1	9.549730	.2489978	2.428660	24.23254	.9913102	2.412646
#2	9.656259	.2488634	2.428790	24.40878	.9956221	2.412629
#3	9.708948	.2480669	2.441835	24.22916	.9914758	2.423531

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.221091	4.760479	2.386429	24.22546	2.422162	1.227268
Stddev	.004354	.029905	.007960	.07447	.008124	.002132
%RSD	.3565992	.6281974	.3335553	.3074086	.3353928	.1737262
#1	1.218749	4.747539	2.382970	24.15776	2.417724	1.228490
#2	1.218409	4.794675	2.395534	24.30523	2.417225	1.228508
#3	1.226115	4.739222	2.380785	24.21341	2.431539	1.224806

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.99170	2.446467	2.479674	23.95458	4.929151	4.960464
Stddev	.19254	.011359	.002644	.14865	.009329	.019799
%RSD	.8025228	.4643178	.1066145	.6205625	.1892670	.3991383
#1	23.96480	2.439902	2.476660	23.88559	4.937582	4.958047
#2	24.19627	2.459583	2.481605	24.12519	4.930743	4.941984
#3	23.81402	2.439915	2.480755	23.85295	4.919129	4.981360

Sample Name: CCV01 Acquired: 12/9/2024 12:29:57 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.868532	4.824477	F 4.676249	4.935094	4.803482	4.857646
Stddev	.017439	.018822	.044128	.030986	.017572	.034657
%RSD	.3581905	.3901379	.9436560	.6278686	.3658127	.7134454
#1	4.855812	4.818569	4.627235	4.927364	4.795937	4.853649
#2	4.861373	4.845544	4.712816	4.908704	4.790942	4.894128
#3	4.888411	4.809318	4.688695	4.969213	4.823566	4.825161

Elem	Sr4077
Units	ppm
Avg	4.883716
Stddev	.021514
%RSD	.4405178
#1	4.894415
#2	4.897783
#3	4.858951

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2694.313	59021.89	12806.44	1840.149	4073.082
Stddev	9.285	208.63	48.55	6.811	13.147
%RSD	.3446326	.3534871	.3791270	.3701523	.3227845
#1	2695.841	58991.36	12776.97	1839.652	4078.275
#2	2702.741	58830.21	12779.87	1833.600	4082.840
#3	2684.359	59244.11	12862.48	1847.195	4058.131

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB01 Acquired: 12/9/2024 12:34:09 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	-.000420	-.001770	.0000077	.0002316	.0007893	-.000408	.0004524
Stddev	.001968	.001738	.0006868	.0004589	.0015071	.006241	.0004158
%RSD	469.1909	98.17951	8910.182	198.1690	190.9402	1529.155	91.91609
#1	.001848	-.003497	.0000996	-.000232	.0024514	-.002134	-.000026
#2	-.001691	-.000022	.0006439	.000240	.0004051	-.005604	.000655
#3	-.001415	-.001790	-.000720	.000686	-.000488	.006514	.000728

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000005	.0000092	-.009204	-.000040	-.000060	-.000030	-.005175
Stddev	.0000107	.0000121	.000597	.000223	.000187	.000206	.003472
%RSD	1973.221	132.1644	6.485340	563.5214	312.5323	693.2415	67.08875
#1	.0000017	.0000207	-.008515	.000217	-.000265	-.000016	-.009153
#2	.0000106	.0000103	-.009554	-.000147	.000103	-.000243	-.002754
#3	-.000011	-.000003	-.009544	-.000188	-.000018	.000169	-.003619

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000561	.0007703	.0000581	-.000378	-.037049	-.000169	-.000159
Stddev	.0001090	.0089304	.0001825	.000055	.006268	.000585	.000308
%RSD	194.3008	1159.376	313.7745	14.55473	16.91876	346.2420	194.3343
#1	.0001324	-.008686	.0001283	-.000319	-.044285	-.000785	-.000508
#2	.0001048	.009060	.0001951	-.000386	-.033269	-.000100	.000076
#3	-.000069	.001937	-.000149	-.000428	-.033593	.000378	-.000044

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.070294	.0050658	.0004476	.0004004	.0005830	-.003844	-.002129
Stddev	.004475	.0005114	.0001087	.0004044	.0004768	.004176	.001169
%RSD	6.365911	10.09426	24.27710	101.0026	81.79167	108.6245	54.90666
#1	-.073127	.0054823	.0003288	-.000045	.0002130	-.002511	-.003200
#2	-.072620	.0044951	.0004719	.000745	.0011211	-.000498	-.002306
#3	-.065136	.0052201	.0005420	.000501	.0004149	-.008524	-.000882

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB01 Acquired: 12/9/2024 12:34:09 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000221	.0004554	.0001203
Stddev	.001218	.0002673	.0000384
%RSD	550.5344	58.69477	31.89138
#1	.000530	.0004345	.0001518
#2	-.001626	.0007326	.0001315
#3	.000433	.0001992	.0000776

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2987.528	64389.37	13156.83	2058.887	4836.756
Stddev	9.888	110.55	47.14	7.499	13.207
%RSD	.3309598	.1716873	.3582757	.3642174	.2730455
#1	2976.775	64261.99	13104.99	2050.515	4823.023
#2	2996.227	64460.28	13168.36	2061.161	4849.364
#3	2989.582	64445.84	13197.13	2064.986	4837.882

Sample Name: PB165436BL Acquired: 12/9/2024 12:38:30 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004539	-.002450	.0000124	-.000748	.0009460	.0019432	.0000125
Stddev	.0021538	.000259	.0007392	.001018	.0005349	.0020115	.0002647
%RSD	474.5024	10.57247	5966.008	136.0322	56.54314	103.5181	2121.853
#1	.0028229	-.002690	.0008634	-.001906	.0004754	.0042243	-.000292
#2	-.001386	-.002485	-.000356	.000006	.0008349	.0004238	.000187
#3	-.000075	-.002175	-.000470	-.000344	.0015277	.0011814	.000143

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000049	-.000015	-.012072	-.000203	-.000148	.0001372	-.001721
Stddev	.000022	.000024	.001219	.000164	.000061	.0002251	.002991
%RSD	45.70589	162.5614	10.09397	80.66769	41.40292	164.0242	173.7981
#1	-.000024	-.000035	-.011952	-.000345	-.000200	.0001803	.001471
#2	-.000066	-.000022	-.013346	-.000024	-.000163	.0003377	-.004459
#3	-.000058	.000012	-.010917	-.000241	-.000081	-.000106	-.002175

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001707	.0013832	.0000649	-.000299	-.039475	.0005474	-.000136
Stddev	.0001461	.0075105	.0000834	.000130	.004294	.0006286	.000079
%RSD	85.54390	542.9915	128.5302	43.28292	10.87797	114.8299	57.97411
#1	.0002766	-.001599	.0000248	-.000449	-.043153	.0012515	-.000062
#2	.0000041	.009927	.0001609	-.000228	-.040517	.0003486	-.000219
#3	.0002315	-.004178	.0000091	-.000221	-.034756	.0000423	-.000126

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.053998	.0006019	.0000013	-.000349	.0000551	-.011050	-.002938
Stddev	.005232	.0009825	.0000883	.000317	.0001034	.005191	.000994
%RSD	9.688445	163.2455	6574.710	90.67660	187.5937	46.97942	33.83021
#1	-.047959	-.000467	-.000098	-.000424	.0000123	-.013941	-.003741
#2	-.056883	.001465	.000070	-.000621	-.000020	-.014153	-.001826
#3	-.057152	.000808	.000032	-.000002	.000173	-.005057	-.003248

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165436BL Acquired: 12/9/2024 12:38:30 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0014851	-.000346	.0000252
Stddev	.0018250	.000825	.0000214
%RSD	122.8871	238.3365	84.92218
#1	.0018013	-.000822	.0000023
#2	.0031315	-.000822	.0000447
#3	-.000477	.000606	.0000286

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2953.662	64701.85	13093.43	2073.799	4793.322
Stddev	10.974	64.42	7.87	9.181	13.679
%RSD	.3715542	.0995680	.0601110	.4427165	.2853860
#1	2960.394	64774.51	13087.69	2084.391	4804.032
#2	2959.595	64651.73	13102.40	2068.108	4798.021
#3	2940.999	64679.29	13090.19	2068.899	4777.912

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165436BS Acquired: 12/9/2024 12:42:50 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7368132	2.059080	.9310746	1.873533	.7535239	1.937580
Stddev	.0017532	.006072	.0015540	.001777	.0021902	.007320
%RSD	.2379490	.2948778	.1668992	.0948588	.2906652	.3777702
#1	.7376630	2.058184	.9298550	1.871482	.7523405	1.933341
#2	.7379796	2.065550	.9305445	1.874600	.7521798	1.933367
#3	.7347970	2.053506	.9328242	1.874518	.7560512	1.946032

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1917188	.2046797	.1869055	1.004727	.3884750	.1894371
Stddev	.0007522	.0006568	.0003861	.009211	.0023677	.0008438
%RSD	.3923331	.3209164	.2066013	.9168104	.6094858	.4454143
#1	.1913242	.2049660	.1866084	1.000170	.3861063	.1887826
#2	.1925862	.2039284	.1867661	.998683	.3884770	.1891394
#3	.1912461	.2051449	.1873420	1.015329	.3908417	.1903894

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2980879	2.753959	.1988317	1.937981	.4754844	.0708377
Stddev	.0004367	.034745	.0013581	.014771	.0012010	.0002707
%RSD	.1464829	1.261652	.6830602	.7621839	.2525833	.3821023
#1	.2976483	2.719939	.1978202	1.943639	.4747336	.0705397
#2	.2985215	2.752552	.1982995	1.921217	.4748502	.0710683
#3	.2980938	2.789387	.2003753	1.949086	.4768696	.0709051

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 2.580436	.2931682	.1977132	8.832901	.2973489	.3935685
Stddev	.023786	.0035692	.0004104	.101319	.0023611	.0011715
%RSD	.9217995	1.217449	.2075939	1.147064	.7940335	.2976566
#1	2.554341	.2894087	.1973083	8.718301	.2993520	.3925199
#2	2.586065	.2935854	.1981289	8.869811	.2947457	.3933527
#3	2.600904	.2965104	.1977024	8.910591	.2979489	.3948328

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165436BS Acquired: 12/9/2024 12:42:50 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6572290	.1914339	F .6136545	5.367966	F -.003237	.1997635
Stddev	.0017864	.0009632	.0101570	.016686	.001578	.0002893
%RSD	.2718110	.5031714	1.655166	.3108489	48.73647	.1448308
#1	.6569971	.1906500	.6022452	5.386513	-.004395	.1999900
#2	.6555698	.1911426	.6170065	5.354173	-.003877	.1994376
#3	.6591200	.1925092	.6217118	5.363210	-.001440	.1998630

Elem	Sr4077
Units	ppm
Avg	.1981045
Stddev	.0003678
%RSD	.1856793
#1	.1976906
#2	.1982286
#3	.1983942

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2871.803	63336.67	12831.53	2013.776	4552.901
Stddev	3.935	150.69	52.82	11.914	7.957
%RSD	.1370102	.2379124	.4116791	.5916088	.1747579
#1	2872.346	63451.72	12775.54	2017.558	4552.082
#2	2875.438	63392.20	12880.49	2000.430	4561.235
#3	2867.625	63166.10	12838.54	2023.339	4545.385

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165287BL Acquired: 12/9/2024 12:46:50 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001611	-.000739	-.000468	-.001864	.0008800	.0004227	-.000992
Stddev	.001168	.000365	.000099	.001503	.0013398	.0057078	.000311
%RSD	72.48005	49.31566	21.07118	80.62785	152.2493	1350.236	31.36219
#1	-.002791	-.000425	-.000358	-.002963	.0002947	-.001309	-.001170
#2	-.000455	-.000654	-.000549	-.000151	.0024128	-.004219	-.001174
#3	-.001588	-.001139	-.000497	-.002479	-.000068	.006796	-.000633

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000030	-.000039	-.009148	-.000001	.0000343	.0000486	-.004094
Stddev	.000048	.000041	.003967	.000027	.0000787	.0002484	.000725
%RSD	161.0928	104.6845	43.36225	1859.753	229.3614	511.7220	17.71984
#1	-.000062	-.000030	-.013563	.000020	.0000021	.0001495	-.003406
#2	-.000052	-.000004	-.005883	-.000032	.0001241	.0002306	-.004852
#3	.000025	-.000085	-.007998	.000008	-.000023	-.000234	-.004023

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002904	.0021389	-.000208	-.000335	-.039406	.0005923	-.000155
Stddev	.0000301	.0045051	.000114	.000142	.012327	.0001183	.000275
%RSD	10.37696	210.6261	55.04491	42.33531	31.28291	19.96542	177.3833
#1	.0002777	.0058234	-.000105	-.000252	-.045201	.0006129	-.000313
#2	.0003249	.0034771	-.000187	-.000254	-.047767	.0004651	.000162
#3	.0002688	-.002884	-.000331	-.000499	-.025249	.0006989	-.000313

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.043805	-.000968	-.000148	.0001422	.0002941	-.010684	-.002205
Stddev	.011043	.000291	.000134	.0004826	.0000860	.002789	.000337
%RSD	25.20891	30.03281	90.59021	339.3235	29.25246	26.10775	15.29956
#1	-.037247	-.000647	-.000260	.0001994	.0003892	-.011988	-.002278
#2	-.037613	-.001045	-.000185	-.000366	.0002216	-.012582	-.001837
#3	-.056554	-.001214	.000001	.000594	.0002716	-.007481	-.002499

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165287BL Acquired: 12/9/2024 12:46:50 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0022200	-.000288	.0000219
Stddev	.0006833	.000295	.0000201
%RSD	30.77709	102.3161	91.76533
#1	.0022051	-.000239	.0000378
#2	.0015443	-.000021	-.000001
#3	.0029106	-.000605	.000029

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2877.187	63390.94	13050.56	2001.299	4703.188
Stddev	11.353	231.80	33.96	18.517	16.013
%RSD	.3945985	.3656710	.2601912	.9252415	.3404616
#1	2885.617	63157.06	13015.71	1980.472	4709.663
#2	2881.667	63395.16	13052.41	2007.526	4714.948
#3	2864.277	63620.60	13083.55	2015.901	4684.951

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165287BS Acquired: 12/9/2024 12:51:11 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7365068	2.073346	.9293406	1.877296	.7532062	1.965584
Stddev	.0027226	.014859	.0052372	.009375	.0055535	.011902
%RSD	.3696585	.7166596	.5635422	.4993790	.7373114	.6054970
#1	.7392251	2.077707	.9296759	1.877333	.7545153	1.958418
#2	.7337799	2.056795	.9239437	1.867903	.7471151	1.979323
#3	.7365154	2.085537	.9344021	1.886652	.7579881	1.959011

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1920135	.2059565	.1870069	1.010471	.3929550	.1891182
Stddev	.0010908	.0007521	.0010244	.005393	.0010894	.0008265
%RSD	.5680735	.3651650	.5477697	.5337310	.2772228	.4370267
#1	.1912036	.2052457	.1866271	1.005313	.3922355	.1887443
#2	.1932538	.2067440	.1862267	1.010028	.3942083	.1885447
#3	.1915831	.2058799	.1881669	1.016072	.3924212	.1900656

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2971319	2.787135	.1990184	1.958526	.4752928	.0717665
Stddev	.0011921	.017263	.0010125	.013814	.0025652	.0003909
%RSD	.4012067	.6193877	.5087282	.7053273	.5396998	.5446694
#1	.2975974	2.767334	.1978759	1.944582	.4731205	.0719889
#2	.2957773	2.795053	.1998045	1.972207	.4746352	.0719954
#3	.2980211	2.799020	.1993747	1.958789	.4781227	.0713151

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.592704	.2970121	.2007023	8.935552	.2970664	.3929090
Stddev	.020055	.0022301	.0009140	.051259	.0023041	.0013634
%RSD	.7735281	.7508453	.4554087	.5736508	.7756190	.3469976
#1	2.575700	.2944748	.2011746	8.886581	.2949575	.3934428
#2	2.614821	.2986614	.2012836	8.988828	.2995256	.3913595
#3	2.587591	.2979000	.1996488	8.931247	.2967163	.3939247

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165287BS Acquired: 12/9/2024 12:51:11 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6582632	.1931004	F .6261072	5.334494	F -.008704	.2014375
Stddev	.0024576	.0007004	.0030013	.029921	.004121	.0019205
%RSD	.3733468	.3626935	.4793664	.5608993	47.34915	.9534013
#1	.6577069	.1924022	.6227212	5.330788	-.013418	.2004026
#2	.6561313	.1938029	.6271608	5.306598	-.005781	.2036535
#3	.6609512	.1930961	.6284398	5.366095	-.006913	.2002564

Elem	Sr4077
Units	ppm
Avg	.1999055
Stddev	.0011224
%RSD	.5614525
#1	.1991155
#2	.2011902
#3	.1994107

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2884.582	62881.28	12773.30	1966.504	4575.977
Stddev	8.398	184.16	47.92	10.232	10.453
%RSD	.2911359	.2928753	.3751334	.5202952	.2284271
#1	2878.772	62833.27	12755.60	1955.363	4576.224
#2	2894.211	62725.87	12736.75	1968.669	4586.304
#3	2880.763	63084.69	12827.55	1975.479	4565.403

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165390TB Acquired: 12/9/2024 12:55:12 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000904	-.000284	-.000605	.0002211	-.000522	-.006272
Stddev	.001767	.001386	.000147	.0002468	.000904	.000379
%RSD	195.4552	488.2788	24.31159	111.6091	173.1559	6.034941
#1	-.000699	-.001831	-.000438	.0001078	-.001085	-.005886
#2	.000751	.000845	-.000716	.0005043	-.001001	-.006643
#3	-.002766	.000134	-.000659	.0000514	.000520	-.006287

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001058	-.000005	-.000106	-.016415	-.000121	.0000532
Stddev	.0006187	.000053	.000005	.003582	.000028	.0000682
%RSD	584.5977	1104.405	4.883711	21.82321	23.17581	128.1595
#1	.0004540	.000053	-.000110	-.013037	-.000124	-.000025
#2	.0004720	-.000051	-.000107	-.020171	-.000148	.000086
#3	-.000609	-.000016	-.000100	-.016035	-.000092	.000099

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000054	-.004266	.0020927	-.009389	.0006218	-.000566
Stddev	.000351	.002422	.0001784	.004145	.0004195	.000130
%RSD	648.2788	56.77308	8.525695	44.14468	67.46759	23.03895
#1	.000348	-.001981	.0022227	-.014089	.0010702	-.000635
#2	-.000212	-.004013	.0018893	-.007820	.0005560	-.000648
#3	-.000298	-.006804	.0021660	-.006258	.0002390	-.000416

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 318.8705	.0004444	.0010164	-.007952	-.003230	-.000317
Stddev	1.0211	.0007100	.0000357	.010147	.000315	.000104
%RSD	.3202319	159.7378	3.514942	127.6049	9.764607	32.85476
#1	317.9621	.0006065	.0009761	-.002275	-.003387	-.000384
#2	319.9757	-.000333	.0010287	-.019667	-.002867	-.000371
#3	318.6737	.001059	.0010443	-.001914	-.003436	-.000197

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165390TB Acquired: 12/9/2024 12:55:12 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001124	.0006494	-.019250	.0023705	F .0346733	-.002430
Stddev	.001294	.0004239	.002950	.0026534	.0013376	.000728
%RSD	115.0998	65.28301	15.32603	111.9355	3.857752	29.94510
#1	-.002512	.0003288	-.015909	.0051688	.0346658	-.002503
#2	-.000910	.0004893	-.020341	-.000109	.0360147	-.003118
#3	.000049	.0011300	-.021499	.002052	.0333395	-.001668

Elem	Sr4077
Units	ppm
Avg	-.000111
Stddev	.000041
%RSD	36.64994
#1	-.000081
#2	-.000157
#3	-.000095

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2714.804	60555.03	13429.80	1956.118	4069.317
Stddev	25.729	51.59	80.42	3.724	29.246
%RSD	.9477172	.0851924	.5988450	.1903836	.7187006
#1	2739.736	60528.90	13477.48	1960.358	4098.241
#2	2688.347	60614.46	13336.94	1953.378	4039.759
#3	2716.329	60521.74	13474.96	1954.617	4069.951

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165392TB Acquired: 12/9/2024 12:59:41 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003392	-.000768	-.000471	.0015214	-.004019	-.004158
Stddev	.002896	.000693	.000633	.0009723	.000755	.000478
%RSD	85.36494	90.32012	134.5838	63.90573	18.78146	11.50286
#1	-.000759	-.000727	-.001141	.0012859	-.004866	-.004694
#2	-.006494	-.001481	.000119	.0025897	-.003419	-.004009
#3	-.002924	-.000096	-.000390	.0006885	-.003770	-.003773

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001910	.0000520	-.000183	-.021855	-.000212	-.000187
Stddev	.002102	.0000400	.000030	.002020	.000098	.000013
%RSD	110.0254	76.84265	16.57980	9.242582	46.40103	7.117897
#1	.000139	.0000695	-.000148	-.022860	-.000294	-.000201
#2	-.001809	.0000803	-.000196	-.019530	-.000240	-.000175
#3	-.004061	.0000063	-.000205	-.023176	-.000103	-.000184

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000299	-.004095	.0017818	-.001862	.0005680	-.000109
Stddev	.000451	.003942	.0001141	.006481	.0002555	.000451
%RSD	150.9380	96.25757	6.404005	348.1093	44.98929	415.3558
#1	-.000383	-.001417	.0018162	.001274	.0006045	-.000600
#2	-.000701	-.002247	.0016545	-.009314	.0002961	-.000014
#3	.000188	-.008621	.0018748	.002455	.0008032	.000288

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 332.5079	.0006513	.0004817	.0076418	-.004505	-.000324
Stddev	7.3145	.0006485	.0001223	.0216843	.000632	.000138
%RSD	2.199812	99.57313	25.39587	283.7604	14.03475	42.46033
#1	324.0918	.0008469	.0003881	.0049858	-.003782	-.000390
#2	336.0994	.0011794	.0004369	.0305317	-.004780	-.000166
#3	337.3324	-.000073	.0006201	-.012592	-.004954	-.000416

Sample Name: PB165392TB Acquired: 12/9/2024 12:59:41 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001146	.0003778	-.019487	.0065721	F .0299360	-.002449
Stddev	.000182	.0004388	.003203	.0011587	.0012000	.000519
%RSD	15.85373	116.1312	16.43640	17.63128	4.008478	21.19113
#1	-.001005	.0005279	-.017718	.0059381	.0306585	-.002021
#2	-.001351	-.000116	-.017560	.0058686	.0285508	-.002299
#3	-.001081	.000722	-.023185	.0079095	.0305986	-.003026

Elem	Sr4077
Units	ppm
Avg	-.000147
Stddev	.000025
%RSD	16.94979
#1	-.000138
#2	-.000174
#3	-.000127

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2262.986	58727.95	13437.82	1777.239	3679.751
Stddev	199.682	179.86	241.14	42.318	178.296
%RSD	8.823817	.3062551	1.794470	2.381116	4.845331
#1	2461.000	58928.31	13215.81	1824.421	3852.422
#2	2266.280	58580.44	13403.28	1764.657	3690.514
#3	2061.678	58675.10	13694.36	1742.639	3496.317

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5100-04 Acquired: 12/9/2024 13:04:10 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002049	.0014957	.0001571	.0004130	.0000456	-.004809	-.005764
Stddev	.000989	.0012294	.0002076	.0009929	.0012775	.003956	.000391
%RSD	48.28099	82.19705	132.1877	240.4395	2804.068	82.26557	6.788219
#1	-.002328	.0004356	.0000790	.0009881	.0014896	-.000268	-.006214
#2	-.000950	.0028434	-.000000	-.000734	-.000937	-.006650	-.005508
#3	-.002868	.0012080	.000392	.000984	-.000416	-.007510	-.005568

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000182	-.000150	.2548822	.0016812	-.000119	.0120933	.0239202
Stddev	.000039	.000059	.0070592	.0002016	.000119	.0002159	.0035520
%RSD	21.31207	39.26482	2.769590	11.99282	99.55423	1.785149	14.84917
#1	-.000224	-.000207	.2518868	.0016347	-.000201	.0121092	.0208960
#2	-.000177	-.000153	.2498146	.0015069	.000017	.0118700	.0230330
#3	-.000147	-.000090	.2629452	.0019020	-.000173	.0123009	.0278317

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000009	.1645629	.0003789	.0004071	-.084596	-.001310	.2949841
Stddev	.000193	.0059591	.0001866	.0002312	.001319	.000224	.0022404
%RSD	2210.284	3.621144	49.23516	56.78505	1.559196	17.13312	.7595047
#1	-.000229	.1591148	.0002136	.0005248	-.084438	-.001567	.2924093
#2	.000127	.1636471	.0005812	.0005557	-.085986	-.001154	.2964889
#3	.000076	.1709269	.0003419	.0001408	-.083363	-.001208	.2960540

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.050229	.5406719	.4474061	-.001391	.0006280	.3485833	.9081094
Stddev	.016525	.0015822	.0034142	.000520	.0002446	.0088045	.0058420
%RSD	32.89898	.2926439	.7631072	37.39611	38.95739	2.525794	.6433201
#1	-.032364	.5389907	.4441931	-.000801	.0004854	.3384385	.9053055
#2	-.064967	.5408931	.4470340	-.001588	.0009105	.3542308	.9041979
#3	-.053357	.5421319	.4509911	-.001783	.0004881	.3530807	.9148249

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5100-04 Acquired: 12/9/2024 13:04:10 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.200042	-.002237	-.000056
Stddev	.014767	.000457	.000034
%RSD	1.230565	20.44289	59.94463
#1	1.189519	-.002627	-.000064
#2	1.193683	-.001734	-.000085
#3	1.216923	-.002351	-.000019

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2706.803	64372.17	14242.66	1912.468	4598.896
Stddev	23.886	318.01	67.77	12.029	38.135
%RSD	.8824554	.4940227	.4758528	.6289569	.8292227
#1	2728.107	64688.30	14304.97	1926.268	4629.416
#2	2711.321	64375.92	14252.52	1906.929	4611.125
#3	2680.980	64052.31	14170.50	1904.207	4556.146

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5100-03 Acquired: 12/9/2024 13:08:26 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024801	.0037484	.0682521	.0006201	.0030037	.1212116	.1785793
Stddev	.0038351	.0004935	.0010276	.0009685	.0003402	.0021421	.0014271
%RSD	154.6323	13.16472	1.505652	156.1793	11.32477	1.767270	.7991432
#1	.0004207	.0040545	.0679010	.0014305	.0027794	.1236714	.1780367
#2	.0069050	.0031791	.0694093	-.000452	.0028366	.1202071	.1801981
#3	.0001147	.0040115	.0674461	.000882	.0033951	.1197562	.1775030

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001623	.0003125	7.064242	.0036841	.0024806	.0112405	2.642658
Stddev	.0000105	.0000200	.026746	.0002987	.0001539	.0003042	.012960
%RSD	6.470139	6.405034	.3786115	8.106918	6.203985	2.706142	.4904169
#1	.0001621	.0003262	7.061943	.0033639	.0026214	.0110002	2.631308
#2	.0001519	.0003219	7.092064	.0039552	.0023163	.0111388	2.656780
#3	.0001729	.0002896	7.038720	.0037331	.0025040	.0115825	2.639888

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1192150	3.002211	.0059443	-.000410	140.9400	.0048791	.5761003
Stddev	.0002948	.008233	.0002155	.000154	1.8814	.0007282	.0051227
%RSD	.2472914	.2742456	3.625592	37.58086	1.334870	14.92526	.8891979
#1	.1190308	3.010537	.0057067	-.000294	138.9036	.0040383	.5733097
#2	.1195550	2.994073	.0061271	-.000352	142.6134	.0052996	.5820124
#3	.1190592	3.002023	.0059992	-.000585	141.3032	.0052996	.5729788

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.64896	.1019450	.0035244	.0005063	.0077883	1.713241	1.341492
Stddev	.10086	.0007384	.0001567	.0006413	.0004043	.008972	.004662
%RSD	.9471101	.7243087	4.447373	126.6803	5.190911	.5236725	.3474881
#1	10.57225	.1025349	.0033454	.0012206	.0077828	1.707316	1.346128
#2	10.76320	.1011169	.0036371	.0003183	.0081953	1.723563	1.336806
#3	10.61143	.1021832	.0035907	-.000020	.0073868	1.708844	1.341541

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5100-03 Acquired: 12/9/2024 13:08:26 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.797321	.0025812	.0374920
Stddev	.026656	.0003009	.0002320
%RSD	.3921616	11.65682	.6187691
#1	6.824961	.0023003	.0374416
#2	6.771772	.0028987	.0377450
#3	6.795231	.0025446	.0372893

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2611.542	59837.43	13841.27	1825.116	4092.362
Stddev	24.210	281.38	48.51	13.767	35.356
%RSD	.9270217	.4702467	.3504771	.7543102	.8639522
#1	2628.769	60107.82	13893.34	1836.792	4118.856
#2	2621.994	59546.21	13797.35	1809.935	4106.016
#3	2583.862	59858.27	13833.12	1828.621	4052.215

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5103-01 Acquired: 12/9/2024 13:12:48 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.006228	-.002919	.0006697	.0049654	.0010627	.0065708	-.006364
Stddev	.004523	.000614	.0002124	.0014698	.0006470	.0041260	.000525
%RSD	72.62340	21.05274	31.71572	29.60169	60.88213	62.79206	8.243755
#1	-.007039	-.003615	.0004254	.0065509	.0004384	.0020970	-.006079
#2	-.001355	-.002453	.0008103	.0046971	.0017302	.0073894	-.006044
#3	-.010292	-.002689	.0007733	.0036482	.0010194	.0102262	-.006970

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000127	-.000042	5.086674	.0007067	-.000180	.0436942	.1163028
Stddev	.000032	.000051	.044834	.0001302	.000051	.0001670	.0009628
%RSD	25.37394	121.0793	.8814089	18.42099	28.14825	.3821562	.8278744
#1	-.000094	-.000089	5.072453	.0007230	-.000234	.0435177	.1172441
#2	-.000128	.000012	5.136894	.0008280	-.000174	.0437151	.1153198
#3	-.000158	-.000049	5.050675	.0005692	-.000133	.0438497	.1163446

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0850251	.0708867	.0020118	-.000022	.9465794	-.000225	.4252361
Stddev	.0005522	.0087326	.0001795	.000154	.0040132	.000590	.0002849
%RSD	.6494365	12.31907	8.921137	708.7446	.4239653	262.0731	.0669973
#1	.0845391	.0663868	.0019600	-.000164	.9493644	.000389	.4255593
#2	.0856255	.0809515	.0022115	.000143	.9483944	-.000786	.4251277
#3	.0849108	.0653219	.0018639	-.000044	.9419793	-.000278	.4250214

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1615551	.0314901	.0388507	.0004268	.0005658	.0002742	.4635455
Stddev	.0148435	.0002053	.0001298	.0007335	.0006176	.0033667	.0023515
%RSD	9.187874	.6520460	.3341634	171.8735	109.1473	1228.065	.5072868
#1	.1601980	.0315883	.0388446	-.000405	.0000814	.0040260	.4612427
#2	.1770305	.0316279	.0387241	.000983	.0012612	-.002483	.4659429
#3	.1474368	.0312541	.0389835	.000702	.0003548	-.000720	.4634510

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5103-01 Acquired: 12/9/2024 13:12:48 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.756785	-.001091	.0018753
Stddev	.011341	.000179	.0000513
%RSD	.6455716	16.44895	2.736649
#1	1.744844	-.001246	.0019133
#2	1.758098	-.001132	.0018955
#3	1.767412	-.000895	.0018169

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2658.157	62635.24	14198.90	1814.412	4563.036
Stddev	5.049	89.65	75.31	7.592	10.877
%RSD	.1899480	.1431298	.5304140	.4184518	.2383768
#1	2662.992	62721.28	14161.69	1808.333	4570.202
#2	2658.562	62542.37	14149.43	1811.981	4568.386
#3	2652.918	62642.08	14285.57	1822.922	4550.520

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5103-02DLX5 Acquired: 12/9/2024 13:17:06 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0247481	.0853439	.0018206	.0454092	.0121258	.0065401	-.000901
Stddev	.0030346	.0005530	.0004125	.0006005	.0009547	.0033030	.000300
%RSD	12.26197	.6479740	22.65605	1.322498	7.873059	50.50339	33.32128
#1	.0245683	.0847751	.0016618	.0454793	.0129697	.0028532	-.001193
#2	.0218074	.0858796	.0015111	.0459716	.0110896	.0075382	-.000593
#3	.0278686	.0853769	.0022888	.0447767	.0123181	.0092290	-.000916

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001746	-.000486	.0855510	.0005282	-.002726	.0068125	-.005403
Stddev	.000057	.000024	.0054318	.0000982	.000027	.0000906	.003731
%RSD	3.252247	4.909351	6.349210	18.58488	.9828769	1.329533	69.06220
#1	-.001803	-.000502	.0797353	.0005212	-.002719	.0068575	-.002214
#2	-.001748	-.000497	.0904930	.0006296	-.002756	.0067083	-.004488
#3	-.001689	-.000458	.0864246	.0004337	-.002704	.0068718	-.009506

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028437	.0273407	.0005389	.0003052	56.56585	-.030540	.0120223
Stddev	.0001262	.0051040	.0001043	.0004688	.19670	.000902	.0001763
%RSD	4.439005	18.66805	19.35334	153.6051	.3477287	2.953626	1.466708
#1	.0029055	.0321246	.0004204	-.000155	56.79280	-.031132	.0119316
#2	.0026984	.0279297	.0006166	.000289	56.44461	-.030987	.0119099
#3	.0029270	.0219678	.0005797	.000782	56.46015	-.029502	.0122256

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	186.5706	.0566689	8.919750	.0117990	.0005131	1.107650	.4746752
Stddev	.0875	.0003720	.025513	.0004273	.0000978	.007036	.0011283
%RSD	.0468884	.6564096	.2860249	3.621595	19.05940	.6351992	.2376900
#1	186.6382	.0570736	8.942890	.0113653	.0004017	1.103301	.4733740
#2	186.4718	.0563418	8.892390	.0118122	.0005530	1.115767	.4753820
#3	186.6019	.0565915	8.923969	.0122196	.0005847	1.103882	.4752695

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5103-02DLX5 Acquired: 12/9/2024 13:17:06 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.8818557	.0049435	.0042286
Stddev	.0049638	.0004697	.0000250
%RSD	.5628846	9.500910	.5901283
#1	.8846826	.0044293	.0042254
#2	.8761241	.0050515	.0042551
#3	.8847604	.0053498	.0042055

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2581.436	59652.93	13993.20	1759.901	4298.064
Stddev	11.669	314.14	74.32	9.160	14.856
%RSD	.4520187	.5266104	.5311320	.5204943	.3456521
#1	2576.434	59371.56	13940.84	1749.407	4293.204
#2	2594.772	59595.35	13960.49	1764.004	4314.741
#3	2573.102	59991.87	14078.26	1766.293	4286.246

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV02 Acquired: 12/9/2024 13:30:53 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	5.086063	5.207744	4.854195	5.242911	5.205421	9.928373	9.937925
Stddev	.021425	.030034	.012451	.028953	.018653	.051164	.057147
%RSD	.4212422	.5767208	.2564946	.5522279	.3583405	.5153283	.5750352
#1	5.070104	5.181247	4.847696	5.233490	5.197381	9.870981	9.999417
#2	5.077673	5.201614	4.846339	5.219842	5.192136	9.944933	9.927909
#3	5.110413	5.240370	4.868551	5.275401	5.226746	9.969206	9.886448

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2336174	2.431004	23.55020	.9840748	2.433660	1.283670	4.888192
Stddev	.0006587	.006162	.05573	.0009507	.006157	.003831	.014664
%RSD	.2819700	.2534617	.2366376	.0966092	.2529939	.2984759	.2999958
#1	.2330042	2.429233	23.50589	.9846793	2.434146	1.281848	4.873043
#2	.2343138	2.425922	23.61277	.9829789	2.427275	1.281090	4.902319
#3	.2335342	2.437857	23.53195	.9845661	2.439560	1.288072	4.889213

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.345542	23.41029	2.434303	1.244166	25.57811	2.425530	2.538280
Stddev	.001388	.06470	.005887	.001192	.05139	.009658	.005590
%RSD	.0591585	.2763851	.2418405	.0958249	.2009254	.3981843	.2202271
#1	2.344279	23.33566	2.432426	1.245421	25.61800	2.416092	2.542229
#2	2.347027	23.45069	2.429583	1.244028	25.59622	2.435394	2.540728
#3	2.345321	23.44451	2.440900	1.243048	25.52012	2.425105	2.531884

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.78157	4.737605	5.193822	4.844177	4.857275	4.915799	4.724775
Stddev	.01992	.007655	.019991	.005335	.014862	.051429	.012326
%RSD	.0772626	.1615699	.3849000	.1101285	.3059664	1.046205	.2608779
#1	25.75930	4.730058	5.176143	4.839324	4.840140	4.862482	4.723210
#2	25.79768	4.745363	5.189806	4.843317	4.866645	4.919810	4.713307
#3	25.78773	4.737393	5.215515	4.849889	4.865042	4.965106	4.737809

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV02 Acquired: 12/9/2024 13:30:53 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.866317	5.030139	4.980004
Stddev	.012378	.009633	.027141
%RSD	.2543510	.1915141	.5450038
#1	4.855758	5.019433	4.962027
#2	4.863255	5.038107	5.011225
#3	4.879938	5.032877	4.966760

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2549.706	58507.42	13411.80	1748.794	3956.434
Stddev	6.552	76.02	11.05	7.898	11.777
%RSD	.2569668	.1299314	.0823624	.4516472	.2976714
#1	2549.460	58420.49	13412.79	1739.782	3949.456
#2	2556.377	58561.46	13400.30	1754.517	3970.032
#3	2543.280	58540.30	13422.32	1752.081	3949.815

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB02 Acquired: 12/9/2024 13:35:04 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	-.002320	-.000406	.0003370	.0002866	.0027721	-.000111	-.005320
Stddev	.002638	.002084	.0008916	.0030610	.0010539	.001954	.000362
%RSD	113.6893	513.3847	264.6131	1067.975	38.01674	1760.150	6.796625
#1	-.003752	.000886	.0006723	.0000254	.0033955	-.002309	-.005665
#2	.000724	.000706	-.000674	.0034698	.0015554	.000547	-.005351
#3	-.003933	-.002810	.001012	-.002635	.0033655	.001429	-.004944

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000010	.0000285	-.005016	.0002530	.0000661	.0002956	.0010560
Stddev	.000071	.0000485	.002009	.0002669	.0000586	.0001608	.0013259
%RSD	708.6411	169.8701	40.04953	105.5185	88.62435	54.38536	125.5588
#1	-.000073	.0000540	-.004312	.0002522	.0000007	.0003327	.0025300
#2	.000067	-.000027	-.003454	-.000014	.0001138	.0004346	.0006773
#3	-.000024	.000059	-.007282	.000520	.0000838	.0001195	-.000039

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002779	.0003816	.0001357	-.000480	-.014785	-.000874	.0008242
Stddev	.0001131	.0161733	.0001276	.000243	.012371	.000966	.0002698
%RSD	40.69492	4238.570	94.01236	50.53760	83.66978	110.4547	32.72788
#1	.0002305	.0172839	.0000076	-.000253	-.024973	.000151	.0011141
#2	.0004069	-.014948	.0001366	-.000736	-.018362	-.001007	.0005805
#3	.0001962	-.001191	.0002628	-.000452	-.001020	-.001766	.0007781

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0118295	.0100374	.0009225	.0008629	.0009861	-.010599	.0013860
Stddev	.0153761	.0006310	.0003861	.0005321	.0001169	.002319	.0016952
%RSD	129.9806	6.285979	41.85880	61.66419	11.85498	21.87827	122.3085
#1	-.002481	.0107515	.0013097	.0009680	.0011148	-.013169	.0002841
#2	.028086	.0095552	.0009203	.0002861	.0009573	-.009962	.0005359
#3	.009884	.0098055	.0005374	.0013347	.0008863	-.008665	.0033381

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB02 Acquired: 12/9/2024 13:35:04 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0032740	.0009187	.0004024
Stddev	.0011952	.0009596	.0000831
%RSD	36.50652	104.4497	20.64351
#1	.0045813	-.000119	.0004801
#2	.0030034	.001773	.0004122
#3	.0022372	.001102	.0003149

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2777.200	62219.41	13578.70	1891.802	4589.416
Stddev	6.962	180.59	86.35	2.284	13.316
%RSD	.2506969	.2902445	.6359011	.1207393	.2901537
#1	2769.332	62024.73	13531.73	1889.185	4574.876
#2	2782.562	62381.45	13526.03	1892.825	4601.018
#3	2779.707	62252.05	13678.35	1893.396	4592.354

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165416BL Acquired: 12/9/2024 13:39:40 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001122	-.000716	-.000419	-.000871	.0005028	-.001959	-.004653
Stddev	.001576	.001219	.000216	.000829	.0007488	.004538	.000429
%RSD	140.5284	170.2296	51.46238	95.15984	148.9345	231.7222	9.228099
#1	-.002886	-.000575	-.000173	-.001153	-.000071	-.005915	-.004188
#2	-.000627	-.002000	-.000507	-.001523	.001350	-.002956	-.004736
#3	.000148	.000426	-.000577	.000062	.000230	.002996	-.005035

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000034	-.000078	-.006106	.0002114	.0000117	-.000082	-.003933
Stddev	.000032	.000051	.000966	.0001817	.0002760	.000144	.001368
%RSD	94.72409	66.19460	15.82790	85.91002	2358.048	175.7856	34.78706
#1	-.000035	-.000095	-.007162	.0003968	-.000193	.000058	-.002706
#2	-.000065	-.000020	-.005267	.0000337	-.000097	-.000075	-.005408
#3	-.000001	-.000118	-.005888	.0002039	.000326	-.000229	-.003684

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000030	.0018088	-.000169	-.000601	-.010603	.0004408	.0004384
Stddev	.000246	.0035660	.000091	.000144	.002857	.0008042	.0003036
%RSD	832.5771	197.1523	54.08445	23.96800	26.94603	182.4364	69.25810
#1	-.000103	-.001039	-.000096	-.000573	-.012865	.0013067	.0001059
#2	.000245	.000656	-.000271	-.000758	-.007392	-.000283	.0005083
#3	-.000230	.005809	-.000139	-.000474	-.011552	.000298	.0007009

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.020998	.0035207	.0001890	.0005612	.0003664	-.015991	.0019007
Stddev	.009958	.0002988	.0001298	.0006717	.0003111	.003973	.0019499
%RSD	47.42058	8.486942	68.69090	119.6799	84.91481	24.84781	102.5920
#1	-.032249	.0038645	.0003043	.0012702	.0004450	-.011579	.0002625
#2	-.013321	.0033234	.0000484	.0004789	.0006306	-.017107	.0040575
#3	-.017425	.0033743	.0002144	-.000066	.0000235	-.019286	.0013820

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165416BL Acquired: 12/9/2024 13:39:40 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0028794	-.000279	.0000439
Stddev	.0034612	.000318	.0000196
%RSD	120.2076	114.3201	44.71163
#1	.0039690	.000084	.0000228
#2	.0056647	-.000409	.0000615
#3	-.000996	-.000511	.0000473

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2791.765	62956.36	13482.54	1930.137	4599.224
Stddev	10.191	107.77	33.90	6.918	18.906
%RSD	.3650536	.1711799	.2514012	.3584230	.4110800
#1	2787.697	62888.82	13451.92	1922.711	4586.967
#2	2803.362	63080.64	13476.74	1936.400	4620.998
#3	2784.237	62899.61	13518.96	1931.299	4589.707

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165416BS Acquired: 12/9/2024 13:44:00 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7414632	1.953068	.9147774	1.895755	.7733960	1.932469
Stddev	.0069990	.025385	.0045074	.006391	.0046507	.005645
%RSD	.9439416	1.299751	.4927326	.3371230	.6013332	.2921235
#1	.7371573	1.961676	.9121858	1.888668	.7681109	1.938638
#2	.7376932	1.973031	.9121644	1.897514	.7752140	1.927561
#3	.7495390	1.924499	.9199821	1.901082	.7768630	1.931208

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1922370	.1923932	.1848333	.9576949	.3784567	.1872881
Stddev	.0003243	.0006518	.0006396	.0041927	.0015369	.0007165
%RSD	.1687133	.3387871	.3460305	.4377953	.4061034	.3825596
#1	.1919080	.1924701	.1844051	.9615882	.3771507	.1867858
#2	.1925564	.1930031	.1845262	.9582405	.3801503	.1869699
#3	.1922468	.1917063	.1855685	.9532561	.3780690	.1881086

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3022874	2.786738	.1940535	1.846775	.4693345	.0706565
Stddev	.0009086	.033110	.0010806	.012779	.0015851	.0004062
%RSD	.3005752	1.188139	.5568777	.6919888	.3377429	.5749576
#1	.3012683	2.749175	.1929004	1.832317	.4679421	.0703101
#2	.3025813	2.799353	.1950430	1.851447	.4690018	.0711036
#3	.3030127	2.811687	.1942172	1.856561	.4710596	.0705558

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.717676	.2878975	.1988332	9.208873	.2841663	.3962413
Stddev	.019647	.0020355	.0011383	.068474	.0004949	.0010515
%RSD	.7229497	.7070208	.5724927	.7435621	.1741727	.2653595
#1	2.696984	.2856328	.1982074	9.134422	.2839188	.3953203
#2	2.719966	.2895745	.2001472	9.223043	.2847362	.3960167
#3	2.736078	.2884851	.1981452	9.269152	.2838439	.3973869

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: PB165416BS Acquired: 12/9/2024 13:44:00 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6421623	.1914836	F .6221412	5.351982	F -.007438	.2052175
Stddev	.0011129	.0013472	.0029652	.009381	.000963	.0007927
%RSD	.1733050	.7035775	.4766077	.1752811	12.95407	.3862636
#1	.6413727	.1905235	.6193950	5.345210	-.006427	.2043126
#2	.6416790	.1930237	.6252852	5.362690	-.008346	.2055513
#3	.6434351	.1909037	.6217434	5.348047	-.007539	.2057888

Elem	Sr4077
Units	ppm
Avg	.1996145
Stddev	.0002687
%RSD	.1346116
#1	.1994028
#2	.1999168
#3	.1995239

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2770.177	63054.71	13281.34	1945.288	4445.680
Stddev	10.706	235.21	60.18	9.505	18.043
%RSD	.3864600	.3730182	.4530962	.4886136	.4058561
#1	2779.500	63266.96	13236.62	1950.110	4460.137
#2	2772.546	62801.84	13257.64	1934.338	4451.443
#3	2758.485	63095.33	13349.76	1951.415	4425.459

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5095-04 Acquired: 12/9/2024 13:48:00 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005287	-.010523	-.000943	.0022413	.0025515	-.047317	.5223577
Stddev	.002199	.001783	.000005	.0009361	.0014647	.005187	.0014552
%RSD	41.59405	16.94609	.5700234	41.76803	57.40849	10.96222	.2785910
#1	-.004647	-.009220	-.000948	.0023281	.0023926	-.041358	.5207096
#2	-.007735	-.012555	-.000937	.0012647	.0040892	-.049782	.5228984
#3	-.003479	-.009793	-.000945	.0031309	.0011726	-.050813	.5234653

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000350	.0002655	171.0265	.0008136	.0015322	.0029530	.0113116
Stddev	.000045	.0000660	.4665	.0001285	.0000396	.0000943	.0015850
%RSD	12.76520	24.84329	.2727457	15.78819	2.581787	3.191818	14.01177
#1	-.000372	.0002750	170.5033	.0008430	.0014866	.0030294	.0104565
#2	-.000379	.0003262	171.3989	.0009248	.0015530	.0029819	.0103380
#3	-.000298	.0001953	171.1774	.0006730	.0015571	.0028477	.0131405

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.670173	2.115746	.0032370	-.000482	344.1169	.0006087	.0222659
Stddev	.008721	.030067	.0001629	.000025	3.0846	.0012413	.0000772
%RSD	.3266120	1.421086	5.031843	5.156759	.8963720	203.9240	.3464741
#1	2.660103	2.081783	.0031184	-.000457	346.8720	-.000165	.0223047
#2	2.675253	2.138965	.0034227	-.000506	340.7844	-.000049	.0223160
#3	2.675164	2.126490	.0031698	-.000482	344.6942	.002040	.0221771

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6164760	.0068525	.0010298	-.004684	-.003661	.5307209	.0089917
Stddev	.0164489	.0002556	.0001054	.001083	.000112	.0019189	.0004724
%RSD	2.668208	3.729458	10.23930	23.11911	3.057987	.3615681	5.253538
#1	.6296919	.0069949	.0011299	-.005928	-.003683	.5294883	.0085872
#2	.6216819	.0065575	.0009197	-.004175	-.003540	.5297426	.0095109
#3	.5980541	.0070053	.0010399	-.003950	-.003760	.5329318	.0088771

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5095-04 Acquired: 12/9/2024 13:48:00 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4635919	-.028069	.2169904
Stddev	.0045088	.000277	.0002251
%RSD	.9725760	.9857388	.1037450
#1	.4654353	-.028078	.2167517
#2	.4584535	-.027787	.2170208
#3	.4668869	-.028341	.2171988

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2391.310	54503.96	12961.93	1656.044	3579.427
Stddev	8.243	177.25	19.81	8.530	11.611
%RSD	.3447247	.3251966	.1528422	.5150946	.3243824
#1	2394.508	54451.25	12971.80	1655.635	3580.121
#2	2397.476	54701.58	12939.12	1664.772	3590.675
#3	2381.947	54359.04	12974.87	1647.726	3567.484

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5096-04 Acquired: 12/9/2024 13:52:28 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.007167	-.009935	.0082051	.0018619	.0012831	.0251113	.3739606
Stddev	.002689	.000213	.0009407	.0007305	.0016635	.0028699	.0023231
%RSD	37.52319	2.143228	11.46464	39.23818	129.6449	11.42885	.6212187
#1	-.009063	-.009752	.0071642	.0011705	.0023740	.0284104	.3737296
#2	-.004089	-.010169	.0089943	.0017888	.0021069	.0237329	.3763905
#3	-.008348	-.009883	.0084567	.0026262	-.000632	.0231905	.3717615

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000086	.0002304	22.38118	.0014997	-.000558	.0194805	.0202503
Stddev	.000055	.0000230	.03565	.0001272	.000177	.0001320	.0024002
%RSD	64.74120	9.972610	.1592962	8.483984	31.73499	.6775724	11.85245
#1	-.000040	.0002566	22.38833	.0014501	-.000603	.0194728	.0175973
#2	-.000147	.0002138	22.41271	.0014046	-.000363	.0196162	.0208826
#3	-.000069	.0002207	22.34249	.0016442	-.000708	.0193526	.0222710

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0322201	1.676781	.0029539	-.000062	298.3068	.0008135	.1111363
Stddev	.0001927	.008702	.0002567	.000205	2.3804	.0004148	.0001544
%RSD	.5981555	.5189900	8.688925	328.5179	.7979834	50.99698	.1388840
#1	.0320035	1.667598	.0026619	-.000298	300.6050	.0006088	.1109582
#2	.0323727	1.684905	.0030555	.000053	295.8519	.0005407	.1112186
#3	.0322841	1.677840	.0031441	.000058	298.4636	.0012909	.1112320

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7408390	.0358519	.0005108	-.001552	-.000135	.9251310	.0427530
Stddev	.0094857	.0008793	.0001637	.000368	.000392	.0048686	.0025966
%RSD	1.280398	2.452609	32.04917	23.70761	290.0374	.5262610	6.073572
#1	.7332525	.0355356	.0003412	-.001332	.000202	.9242490	.0456823
#2	.7377902	.0368455	.0006679	-.001977	-.000043	.9207637	.0418427
#3	.7514741	.0351744	.0005234	-.001347	-.000566	.9303803	.0407341

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5096-04 Acquired: 12/9/2024 13:52:28 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5044734	-.002549	.0981377
Stddev	.0022600	.001232	.0005327
%RSD	.4479905	48.34209	.5427999
#1	.5024575	-.002308	.0981452
#2	.5040462	-.003883	.0986666
#3	.5069165	-.001455	.0976013

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2577.180	58239.01	13640.74	1770.990	3974.897
Stddev	12.224	21.49	24.20	1.924	6.531
%RSD	.4743220	.0369058	.1774313	.1086586	.1642977
#1	2581.690	58247.93	13619.86	1772.382	3976.085
#2	2586.508	58254.61	13635.08	1771.793	3980.752
#3	2563.342	58214.50	13667.26	1768.794	3967.853

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5096-08 Acquired: 12/9/2024 13:56:55 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009132	-.008188	.0191356	.0030919	.0009759	-.002384	.5290150
Stddev	.001965	.000478	.0010905	.0002616	.0012927	.001810	.0014844
%RSD	21.51410	5.833266	5.698644	8.460816	132.4592	75.91179	.2806047
#1	-.010541	-.008260	.0191375	.0028040	-.000480	-.002956	.5299646
#2	-.006888	-.007679	.0180441	.0031565	.001417	-.003840	.5297760
#3	-.009968	-.008626	.0202251	.0033151	.001990	-.000358	.5273044

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000108	.0008965	65.70697	.0005049	-.000677	.0321794	.0070417
Stddev	.000004	.0000654	.11193	.0001463	.000097	.0003608	.0025579
%RSD	3.818647	7.292353	.1703416	28.97576	14.36221	1.121107	36.32547
#1	-.000103	.0009711	65.76003	.0006428	-.000686	.0325664	.0096123
#2	-.000110	.0008686	65.57838	.0005203	-.000576	.0318524	.0070162
#3	-.000111	.0008496	65.78250	.0003515	-.000770	.0321193	.0044966

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3354041	2.781161	.0029917	-.000204	345.7307	-.000552	.0881724
Stddev	.0013767	.014866	.0001988	.000080	1.1557	.000846	.0003452
%RSD	.4104685	.5345099	6.645579	39.44884	.3342738	153.3883	.3915347
#1	.3369537	2.795517	.0032166	-.000287	344.9432	.000388	.0880949
#2	.3343221	2.765833	.0028394	-.000126	345.1913	-.001253	.0885498
#3	.3349364	2.782133	.0029190	-.000198	347.0574	-.000789	.0878725

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4336275	.0235507	.0004683	-.002829	-.001382	.5998084	.0242832
Stddev	.0160805	.0002906	.0002276	.000754	.000280	.0050799	.0012394
%RSD	3.708377	1.234022	48.59024	26.66041	20.27861	.8469283	5.104011
#1	.4500933	.0233290	.0007230	-.003670	-.001121	.6045183	.0250739
#2	.4328271	.0238797	.0002848	-.002601	-.001678	.5944255	.0228548
#3	.4179621	.0234434	.0003973	-.002214	-.001345	.6004815	.0249210

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5096-08 Acquired: 12/9/2024 13:56:55 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5134754	-.009898	.1432679
Stddev	.0062669	.000081	.0004693
%RSD	1.220483	.8178596	.3275527
#1	.5075279	-.009858	.1438095
#2	.5128793	-.009844	.1429813
#3	.5200190	-.009991	.1430130

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2451.408	55767.23	13025.94	1704.781	3713.615
Stddev	14.727	137.20	16.28	2.164	17.359
%RSD	.6007489	.2460178	.1249827	.1269250	.4674499
#1	2461.996	55636.17	13015.68	1706.956	3723.904
#2	2457.639	55909.83	13044.72	1704.758	3723.369
#3	2434.590	55755.70	13017.43	1702.628	3693.573

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5110-01 Acquired: 12/9/2024 14:01:22 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036223	-.004971	-.000580	.0034458	.0016084	.0307836	.2079524
Stddev	.0017491	.001727	.000646	.0014839	.0007373	.0041259	.0009615
%RSD	48.28782	34.74682	111.4822	43.06305	45.84372	13.40292	.4623825
#1	.0055858	-.005254	-.001320	.0027000	.0016837	.0314220	.2081066
#2	.0030503	-.003120	-.000296	.0051545	.0008363	.0345532	.2088276
#3	.0022308	-.006539	-.000124	.0024827	.0023052	.0263758	.2069231

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000074	.0005082	15.29445	.0003483	.0005293	.0094465	.0228801
Stddev	.000069	.0000902	.05869	.0001702	.0001374	.0002467	.0041548
%RSD	92.41080	17.74804	.3837023	48.86050	25.95244	2.611529	18.15897
#1	.000004	.0005833	15.31042	.0004686	.0006876	.0093111	.0274331
#2	-.000122	.0005332	15.34350	.0004228	.0004411	.0092971	.0219135
#3	-.000105	.0004082	15.22943	.0001536	.0004592	.0097312	.0192939

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0723452	2.725781	.0055487	-.000569	284.1995	-.001092	1.035109
Stddev	.0001204	.032172	.0002184	.000336	.5979	.000137	.004776
%RSD	.1664807	1.180296	3.935644	59.02243	.2103775	12.52063	.4613590
#1	.0723936	2.760965	.0054522	-.000752	284.8050	-.001196	1.039134
#2	.0724340	2.718516	.0053952	-.000773	284.1840	-.001144	1.036360
#3	.0722081	2.697863	.0057987	-.000181	283.6095	-.000937	1.029832

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.518055	.2194085	.0821743	-.001532	.0000246	1.610450	.0628036
Stddev	.050342	.0007734	.0006601	.000460	.0001310	.002521	.0023826
%RSD	.7723435	.3525052	.8033275	29.99911	533.7181	.1565610	3.793668
#1	6.529807	.2202824	.0823536	-.001961	-.000085	1.609475	.0636740
#2	6.561482	.2191305	.0814431	-.001047	.000170	1.613313	.0601083
#3	6.462877	.2188124	.0827263	-.001589	-.000011	1.608562	.0646287

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5110-01 Acquired: 12/9/2024 14:01:22 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.602704	.0028645	.1306665
Stddev	.009269	.0004146	.0006621
%RSD	.5783073	14.47338	.5067433
#1	1.594641	.0023971	.1306648
#2	1.600641	.0030084	.1313294
#3	1.612830	.0031879	.1300051

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2597.366	58619.99	13522.18	1808.430	3985.413
Stddev	6.887	157.86	55.25	7.603	6.428
%RSD	.2651591	.2692945	.4085956	.4204283	.1612800
#1	2597.612	58503.07	13482.25	1801.052	3985.652
#2	2604.127	58557.35	13499.05	1807.999	3991.717
#3	2590.360	58799.56	13585.24	1816.240	3978.869

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5110-02 Acquired: 12/9/2024 14:05:47 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.007987	-.006539	.2797381	.0026507	.0000270	-.004176	.1419766
Stddev	.001246	.002062	.0004726	.0030123	.0011555	.001391	.0006095
%RSD	15.60116	31.53747	.1689554	113.6434	4277.198	33.30159	.4292708
#1	-.006816	-.008851	.2795511	.0039286	-.000917	-.003156	.1420898
#2	-.007847	-.005873	.2793876	-.000790	-.000317	-.005760	.1425215
#3	-.009297	-.004891	.2802756	.004813	.001315	-.003612	.1413185

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000147	.0047620	47.66996	.0195127	.0001789	.0343710	.0842334
Stddev	.000045	.0000679	.15129	.0003903	.0000666	.0000997	.0029073
%RSD	30.55000	1.426588	.3173666	2.000404	37.25843	.2901470	3.451445
#1	-.000156	.0048404	47.70952	.0190734	.0001246	.0343923	.0809440
#2	-.000098	.0047211	47.79754	.0196451	.0002533	.0342623	.0864587
#3	-.000186	.0047245	47.50283	.0198196	.0001588	.0344583	.0852976

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1016896	.6206745	.0158739	-.000240	286.9409	-.000594	.6942363
Stddev	.0006445	.0068046	.0001303	.000060	1.4859	.000989	.0014472
%RSD	.6337639	1.096321	.8205745	24.87082	.5178592	166.4355	.2084589
#1	.1013071	.6204863	.0157471	-.000300	286.5022	.000449	.6941157
#2	.1024337	.6275712	.0158673	-.000238	288.5968	-.000712	.6957401
#3	.1013280	.6139659	.0160074	-.000181	285.7237	-.001519	.6928532

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8272410	.0408185	.0004191	-.003304	-.000647	.1314637	.0249086
Stddev	.0379718	.0002329	.0001328	.000539	.000223	.0069395	.0029816
%RSD	4.590172	.5705769	31.69165	16.32519	34.44279	5.278657	11.97020
#1	.7888683	.0409357	.0003006	-.003884	-.000753	.1251447	.0221640
#2	.8647988	.0409694	.0003941	-.002818	-.000391	.1388905	.0280810
#3	.8280558	.0405502	.0005626	-.003210	-.000798	.1303560	.0244808

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5110-02 Acquired: 12/9/2024 14:05:47 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.064831	-.008166	.0453727
Stddev	.004118	.000370	.0001532
%RSD	.1994438	4.527767	.3375330
#1	2.067257	-.008590	.0453862
#2	2.067159	-.007912	.0455187
#3	2.060076	-.007996	.0452133

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2600.338	59573.17	13804.55	1843.024	3982.430
Stddev	18.846	46.70	56.11	12.676	19.225
%RSD	.7247385	.0783833	.4064703	.6877663	.4827453
#1	2611.965	59561.08	13748.53	1848.708	3986.000
#2	2610.455	59624.73	13804.38	1828.501	3999.620
#3	2578.594	59533.71	13860.75	1851.863	3961.670

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-02 Acquired: 12/9/2024 14:10:12 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.008626	-.008067	.0149275	.0041185	.0017239	-.004951	.2598516
Stddev	.001882	.000846	.0009841	.0018044	.0013534	.008389	.0010095
%RSD	21.81728	10.49101	6.592288	43.81303	78.51150	169.4532	.3885076
#1	-.008500	-.008281	.0146312	.0061965	.0032695	.004722	.2587375
#2	-.010567	-.007134	.0141257	.0032110	.0007510	-.009339	.2601116
#3	-.006810	-.008785	.0160257	.0029479	.0011511	-.010236	.2607058

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000201	.0004383	84.91184	.0012365	.0009473	.0062744	.0140009
Stddev	.000018	.0000615	.66095	.0005088	.0000828	.0007211	.0039914
%RSD	9.046047	14.03996	.7783940	41.14936	8.738089	11.49323	28.50855
#1	-.000193	.0005085	84.37863	.0007467	.0010428	.0068692	.0168917
#2	-.000222	.0003936	84.70556	.0017624	.0009033	.0054723	.0156641
#3	-.000188	.0004127	85.65133	.0012004	.0008959	.0064816	.0094468

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2938118	4.562687	.0060340	-.000275	317.7478	.0011792	.1947774
Stddev	.0031730	.035797	.0002897	.000265	2.0309	.0007321	.0017380
%RSD	1.079932	.7845645	4.800260	96.23194	.6391445	62.07832	.8922730
#1	.2917974	4.530535	.0063310	-.000159	315.9962	.0004501	.1927724
#2	.2921686	4.556266	.0057523	-.000578	317.2733	.0011735	.1957046
#3	.2974694	4.601260	.0060188	-.000088	319.9739	.0019141	.1958551

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.370054	.0389795	.0008816	-.002980	-.001618	1.918810	.0334392
Stddev	.007764	.0003643	.0000662	.000252	.000200	.014472	.0013478
%RSD	.3275884	.9347337	7.511139	8.455320	12.37521	.7542427	4.030450
#1	2.363713	.0393122	.0009346	-.003103	-.001543	1.902101	.0348648
#2	2.367737	.0390361	.0008074	-.002690	-.001465	1.927401	.0321858
#3	2.378713	.0385901	.0009029	-.003148	-.001844	1.926929	.0332672

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-02 Acquired: 12/9/2024 14:10:12 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.297385	-.012027	.3116564
Stddev	.006250	.000210	.0012253
%RSD	.4817250	1.744834	.3931628
#1	1.300585	-.011834	.3108543
#2	1.290183	-.012251	.3110480
#3	1.301387	-.011997	.3130668

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2381.332	55183.17	12906.47	1681.007	3649.754
Stddev	22.956	77.47	55.26	9.745	29.514
%RSD	.9639802	.1403786	.4281320	.5797034	.8086568
#1	2395.203	55269.54	12940.83	1692.026	3667.744
#2	2393.959	55119.82	12935.84	1673.521	3665.826
#3	2354.835	55160.17	12842.72	1677.476	3615.692

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5117-02 Acquired: 12/9/2024 14:14:36 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009666	-.010083	.0037899	.0053431	-.001189	.1301554	.1681890
Stddev	.001196	.001166	.0012569	.0007783	.001337	.0043450	.0008789
%RSD	12.36886	11.56090	33.16416	14.56549	112.4510	3.338324	.5225426
#1	-.009114	-.009317	.0049236	.0062091	-.002129	.1253070	.1677790
#2	-.008847	-.011424	.0024383	.0051182	-.001780	.1336969	.1691979
#3	-.011038	-.009508	.0040077	.0047021	.000342	.1314624	.1675899

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000073	-.000080	4.339226	.0046418	.0081629	.0123283	.0703302
Stddev	.000032	.000062	.004710	.0004011	.0001061	.0002633	.0026203
%RSD	44.04440	77.12500	.1085551	8.640718	1.299120	2.135889	3.725663
#1	-.000040	-.000061	4.336448	.0041786	.0081133	.0120383	.0714422
#2	-.000076	-.000030	4.344665	.0048758	.0080908	.0123942	.0673374
#3	-.000104	-.000149	4.336566	.0048708	.0082846	.0125524	.0722112

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3474341	.6950280	.0042586	-.000160	359.2029	.0003573	.0631244
Stddev	.0011559	.0085816	.0002702	.000309	3.3688	.0003781	.0003771
%RSD	.3326875	1.234718	6.344138	193.6587	.9378625	105.8109	.5974153
#1	.3461103	.6860625	.0045699	-.000147	356.0366	.0005462	.0627497
#2	.3482434	.7031658	.0041210	.000143	362.7430	-.000078	.0635038
#3	.3479485	.6958558	.0040849	-.000475	358.8290	.000604	.0631196

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6856436	.0132339	.0004431	-.000534	.0003006	.3362163	.0104975
Stddev	.0201195	.0003801	.0001663	.000464	.0003427	.0038701	.0014858
%RSD	2.934389	2.872208	37.52627	86.90117	113.9973	1.151077	14.15419
#1	.6636730	.0136529	.0006313	-.001062	-.000093	.3318184	.0120299
#2	.7031681	.0131376	.0003164	-.000341	.000460	.3377280	.0103994
#3	.6900899	.0129112	.0003815	-.000197	.000535	.3391023	.0090631

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5117-02 Acquired: 12/9/2024 14:14:36 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4246528	-.001235	.0163473
Stddev	.0029842	.000277	.0000767
%RSD	.7027507	22.42788	.4690349
#1	.4261693	-.001400	.0163273
#2	.4265744	-.001389	.0164320
#3	.4212149	-.000915	.0162827

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2319.718	54040.57	12892.67	1620.019	3603.827
Stddev	22.340	286.43	17.60	15.618	24.177
%RSD	.9630281	.5300358	.1365013	.9640620	.6708814
#1	2337.585	54243.80	12888.92	1638.047	3622.757
#2	2326.897	53712.97	12877.25	1611.395	3612.132
#3	2294.671	54164.93	12911.84	1610.614	3576.591

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5133-02 Acquired: 12/9/2024 14:19:03 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003371	-.009548	-.000432	.0034913	-.000105	.0306000	.1621792
Stddev	.001777	.002199	.000446	.0011766	.001253	.0035461	.0013834
%RSD	52.72484	23.03165	103.0872	33.70197	1194.466	11.58866	.8530101
#1	-.004640	-.008576	-.000749	.0035930	-.000757	.0346876	.1636935
#2	-.004132	-.008003	-.000625	.0046137	-.000897	.0283462	.1618625
#3	-.001340	-.012066	.000077	.0022671	.001340	.0287663	.1609817

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000077	-.000006	15.61768	.0008879	.0020480	.0110931	.1222108
Stddev	.000065	.000048	.13064	.0002745	.0001462	.0000754	.0087067
%RSD	83.71886	766.2051	.8365060	30.91626	7.140884	.6792785	7.124373
#1	-.000025	-.000007	15.71568	.0006488	.0019194	.0110071	.1310341
#2	-.000058	.000042	15.66800	.0008274	.0022071	.0111475	.1219728
#3	-.000150	-.000053	15.46936	.0011877	.0020174	.0111247	.1136255

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1257109	2.140523	.0057238	-.000508	382.8555	-.000645	.1963249
Stddev	.0008895	.033567	.0002013	.000276	5.4622	.001079	.0016263
%RSD	.7075678	1.568170	3.517031	54.40136	1.426708	167.2938	.8283547
#1	.1264972	2.158461	.0056000	-.000813	388.2191	-.000147	.1970635
#2	.1258900	2.161310	.0056153	-.000273	383.0478	.000095	.1974507
#3	.1247454	2.101798	.0059561	-.000438	377.2997	-.001884	.1944604

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.407781	.1063007	.0007382	-.001168	.0005572	2.841891	.0456605
Stddev	.044933	.0009347	.0001976	.000328	.0004362	.014457	.0030803
%RSD	.7012302	.8792989	26.76252	28.09426	78.27511	.5087188	6.746129
#1	6.436968	.1064683	.0009397	-.001444	.0009629	2.858051	.0470723
#2	6.430339	.1071403	.0007301	-.001254	.0006129	2.830183	.0421273
#3	6.356038	.1052936	.0005448	-.000805	.0000959	2.837440	.0477818

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5133-02 Acquired: 12/9/2024 14:19:03 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.924822	.0007829	.1738731
Stddev	.012811	.0004520	.0013139
%RSD	.4380108	57.73508	.7556868
#1	2.911340	.0002636	.1752667
#2	2.936836	.0009969	.1736958
#3	2.926288	.0010882	.1726568

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2321.369	53019.45	12708.05	1600.778	3595.044
Stddev	10.617	184.12	115.96	3.755	11.405
%RSD	.4573684	.3472693	.9124648	.2346000	.3172300
#1	2331.587	52888.38	12600.60	1600.907	3606.876
#2	2322.128	52940.01	12692.60	1596.961	3594.135
#3	2310.393	53229.95	12830.96	1604.468	3584.121

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV03 Acquired: 12/9/2024 14:23:29 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	4.934826	4.897242	4.785882	5.013135	5.060656	9.735083	9.919439
Stddev	.024950	.054595	.019496	.023154	.024391	.014075	.026940
%RSD	.5055910	1.114817	.4073552	.4618761	.4819709	.1445841	.2715877
#1	4.916099	4.916089	4.773400	4.998642	5.036995	9.720047	9.948679
#2	4.925230	4.835721	4.775899	5.000925	5.059257	9.737259	9.895626
#3	4.963150	4.939918	4.808347	5.039839	5.085717	9.747944	9.914013

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2334942	2.418761	23.52573	.9666185	2.406157	1.258726	4.865960
Stddev	.0008159	.009500	.08729	.0019809	.008377	.005324	.037060
%RSD	.3494400	.3927496	.3710295	.2049333	.3481403	.4229325	.7616087
#1	.2330658	2.413223	23.42732	.9656894	2.400124	1.255628	4.844456
#2	.2344351	2.413329	23.59382	.9652729	2.402626	1.255677	4.844672
#3	.2329817	2.429730	23.55603	.9688932	2.415721	1.264873	4.908753

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.355615	23.19771	2.413936	1.220154	25.93967	2.418007	2.498642
Stddev	.003531	.06395	.007971	.002318	.18005	.003790	.006305
%RSD	.1498908	.2756586	.3301879	.1899449	.6940973	.1567308	.2523354
#1	2.351927	23.13188	2.408468	1.221994	26.14314	2.414652	2.497397
#2	2.358965	23.25959	2.410259	1.217551	25.87489	2.417251	2.493053
#3	2.355951	23.20165	2.423082	1.220916	25.80098	2.422118	2.505477

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.37288	4.718512	5.044259	4.777357	4.839185	4.729013	4.788941
Stddev	.09402	.013704	.021290	.025592	.007688	.029166	.016229
%RSD	.3705469	.2904278	.4220588	.5356945	.1588632	.6167450	.3388785
#1	25.39486	4.720008	5.026940	4.766463	4.834799	4.705462	4.789221
#2	25.26982	4.731406	5.037810	4.759015	4.848062	4.719940	4.772574
#3	25.45396	4.704121	5.068028	4.806594	4.834694	4.761637	4.805028

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV03 Acquired: 12/9/2024 14:23:29 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.777020	5.023725	4.958551
Stddev	.034226	.012228	.039978
%RSD	.7164790	.2434137	.8062513
#1	4.762056	5.030614	5.004403
#2	4.752823	5.030954	4.940257
#3	4.816180	5.009606	4.930993

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2582.690	58787.34	13268.86	1783.719	3974.547
Stddev	7.463	143.32	37.94	5.217	10.946
%RSD	.2889800	.2437923	.2858994	.2924794	.2753940
#1	2590.433	58678.39	13248.03	1782.082	3983.546
#2	2582.096	58949.69	13245.91	1789.559	3977.732
#3	2575.541	58733.94	13312.65	1779.518	3962.361

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB03 Acquired: 12/9/2024 14:27:41 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	-.002317	-.002103	-.000326	.0004743	.0009419	.0006984	-.003648
Stddev	.005896	.000335	.000170	.0012345	.0005812	.0043384	.000381
%RSD	254.4289	15.91218	52.19660	260.2479	61.70965	621.2277	10.43099
#1	-.000554	-.002487	-.000372	-.000316	.0015964	-.003456	-.004086
#2	-.008894	-.001951	-.000137	.001897	.0007432	.000351	-.003405
#3	.002496	-.001872	-.000467	-.000157	.0004860	.005200	-.003453

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000072	-.000030	-.007330	-.000000	-.000102	.0001786	-.005022
Stddev	.000060	.000054	.004855	.000238	.000055	.0002888	.003359
%RSD	82.45538	179.9209	66.23617	89903.99	53.93464	161.7322	66.88120
#1	-.000097	-.000046	-.004241	-.000250	-.000165	-.000106	-.001183
#2	-.000004	.000030	-.004823	.000025	-.000062	.000471	-.007416
#3	-.000116	-.000073	-.012927	.000225	-.000080	.000171	-.006466

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000132	-.009726	.0000728	-.000522	.1749302	.0002561	.0001431
Stddev	.000184	.005076	.0002514	.000069	.0229342	.0002622	.0002272
%RSD	139.7617	52.18869	345.1490	13.23423	13.11051	102.3792	158.7994
#1	.000049	-.012048	.0001612	-.000446	.1511063	.0000322	-.000119
#2	-.000126	-.013227	-.000211	-.000580	.1768274	.0001916	.000281
#3	-.000319	-.003905	.000268	-.000542	.1968569	.0005445	.000267

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0890968	.0035332	.0005898	.0006800	.0006809	-.018577	.0015481
Stddev	.0210758	.0006005	.0001905	.0005901	.0001524	.005376	.0005239
%RSD	23.65491	16.99629	32.29964	86.78673	22.38157	28.94049	33.83929
#1	.0654447	.0029574	.0006153	.0000539	.0005100	-.013386	.0011710
#2	.1058850	.0041557	.0007662	.0007601	.0007300	-.018224	.0021463
#3	.0959607	.0034864	.0003878	.0012259	.0008027	-.024122	.0013270

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB03 Acquired: 12/9/2024 14:27:41 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000139	.0059729	.0001533
Stddev	.002921	.0004335	.0000312
%RSD	2101.458	7.257892	20.35420
#1	.002943	.0055670	.0001712
#2	-.000494	.0064295	.0001173
#3	-.002867	.0059221	.0001714

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2735.869	62249.22	13340.77	1931.558	4518.220
Stddev	13.355	62.89	39.85	3.069	19.237
%RSD	.4881609	.1010258	.2987069	.1588784	.4257547
#1	2737.455	62310.81	13357.63	1928.128	4523.366
#2	2748.360	62185.11	13295.26	1932.501	4534.360
#3	2721.791	62251.75	13369.42	1934.045	4496.934

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02 Acquired: 12/9/2024 14:32:02 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.011030	-.012364	-.000100	.0056382	.0013519	.0417219	.2677547
Stddev	.002304	.002080	.001046	.0028462	.0002969	.0032033	.0008576
%RSD	20.89266	16.82588	1042.243	50.47972	21.96149	7.677833	.3202884
#1	-.008428	-.014519	-.001151	.0069936	.0013270	.0408934	.2681157
#2	-.012812	-.010367	.000940	.0075534	.0010683	.0452581	.2667756
#3	-.011850	-.012207	-.000089	.0023677	.0016605	.0390142	.2683728

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004322	.0005998	27.82172	.0028630	.0095155	.0171474	.1843852
Stddev	.0000637	.0000182	.03997	.0000403	.0003290	.0005730	.0018056
%RSD	14.73143	3.041417	.1436719	1.408725	3.457695	3.341507	.9792692
#1	.0004716	.0006107	27.79061	.0028902	.0096350	.0172607	.1858984
#2	.0004663	.0005787	27.86680	.0028821	.0091434	.0165262	.1848708
#3	.0003588	.0006099	27.80775	.0028167	.0097680	.0176553	.1823864

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3560401	13.85743	.0089566	-.000353	383.1504	.0037074	.2352093
Stddev	.0002432	.03915	.0002680	.000112	3.9823	.0003893	.0013044
%RSD	.0683099	.2825147	2.992814	31.64975	1.039365	10.49927	.5545828
#1	.3559774	13.87591	.0092510	-.000227	379.3975	.0032601	.2338901
#2	.3558343	13.88392	.0087266	-.000392	382.7257	.0039692	.2364984
#3	.3563085	13.81247	.0088923	-.000439	387.3281	.0038928	.2352394

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.97237	.1147982	.0007829	-.002436	-.000095	7.571389	.1454764
Stddev	.02892	.0002870	.0003833	.000480	.000362	.023959	.0019614
%RSD	.2415345	.2500097	48.96427	19.70839	382.3623	.3164437	1.348264
#1	11.98345	.1147133	.0011897	-.002452	-.000387	7.551229	.1470654
#2	11.93955	.1145632	.0004284	-.001948	-.000208	7.597877	.1432842
#3	11.99411	.1151181	.0007306	-.002907	.000311	7.565061	.1460795

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02 Acquired: 12/9/2024 14:32:02 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.409706	.0077541	.1135802
Stddev	.135336	.0005698	.0003270
%RSD	2.501730	7.348026	.2879198
#1	5.445501	.0077858	.1138634
#2	5.260070	.0071692	.1132223
#3	5.523546	.0083074	.1136549

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2319.378	52669.38	12510.67	1604.695	3567.789
Stddev	46.681	140.15	19.77	9.555	78.012
%RSD	2.012642	.2661023	.1580171	.5954167	2.186569
#1	2300.830	52683.34	12496.79	1614.708	3539.465
#2	2372.482	52522.76	12501.92	1595.676	3656.007
#3	2284.822	52802.03	12533.30	1603.701	3507.896

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02DUP Acquired: 12/9/2024 14:36:25 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005737	-.009830	.0004416	.0033345	.0004188	.0408927	.2612571
Stddev	.001364	.001012	.0004356	.0032104	.0009465	.0030198	.0009241
%RSD	23.77152	10.29731	98.64353	96.27851	226.0191	7.384709	.3537008
#1	-.006192	-.008829	.0008560	.0051839	-.000398	.0442649	.2621074
#2	-.004204	-.010853	-.000012	-.000373	.001456	.0384381	.2613902
#3	-.006815	-.009807	.000481	.005192	.000198	.0399752	.2602737

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004449	.0005536	27.89231	.0026583	.0097121	.0174498	.1822675
Stddev	.0000377	.0001004	.10398	.0005734	.0001655	.0004109	.0037217
%RSD	8.462552	18.14464	.3727811	21.57111	1.704235	2.355014	2.041908
#1	.0004356	.0006695	27.99500	.0033020	.0095760	.0178406	.1846637
#2	.0004127	.0004963	27.89483	.0024708	.0096640	.0170214	.1841590
#3	.0004863	.0004948	27.78710	.0022021	.0098963	.0174876	.1779799

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3537178	13.93061	.0090421	-.000162	375.5747	.0047590	.2359320
Stddev	.0011507	.04477	.0001410	.000049	2.0852	.0003532	.0019079
%RSD	.3253055	.3213544	1.558816	30.19270	.5552039	7.422236	.8086712
#1	.3550448	13.94784	.0091275	-.000106	377.0828	.0050695	.2340173
#2	.3529971	13.96421	.0088795	-.000183	376.4462	.0043747	.2378331
#3	.3531114	13.87979	.0091194	-.000197	373.1952	.0048328	.2359457

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.87955	.1123140	.0007971	-.001951	-.000335	7.616662	.1453018
Stddev	.05825	.0005840	.0002068	.000501	.000563	.027041	.0025866
%RSD	.4903017	.5199847	25.94642	25.68714	168.1892	.3550254	1.780172
#1	11.90927	.1129409	.0005584	-.002370	-.000955	7.608268	.1423258
#2	11.91695	.1122158	.0009228	-.001396	.000144	7.646905	.1465701
#3	11.81244	.1117853	.0009101	-.002087	-.000193	7.594814	.1470094

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02DUP Acquired: 12/9/2024 14:36:25 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.460289	.0074472	.1120505
Stddev	.037254	.0008063	.0006704
%RSD	.6822791	10.82687	.5982953
#1	5.482008	.0083552	.1127229
#2	5.417272	.0071713	.1120465
#3	5.481588	.0068150	.1113821

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2297.727	52201.42	12452.41	1575.735	3526.435
Stddev	3.603	92.42	74.40	6.498	10.608
%RSD	.1568229	.1770502	.5975056	.4123957	.3008183
#1	2294.586	52150.59	12373.15	1580.856	3517.949
#2	2301.661	52145.57	12463.33	1568.425	3538.328
#3	2296.934	52308.10	12520.75	1577.924	3523.027

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02LX5 Acquired: 12/9/2024 14:40:48 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004315	-.002745	-.000318	.0001998	.0003826	.0038672	.0485630
Stddev	.001745	.001398	.001257	.0008144	.0005029	.0034596	.0005181
%RSD	40.42679	50.93504	395.7882	407.6597	131.4508	89.45940	1.066898
#1	-.004704	-.003917	.000766	.0011317	.0009339	.0010814	.0482315
#2	-.005833	-.003122	-.000023	-.000375	-.000051	.0027806	.0482975
#3	-.002409	-.001197	-.001696	-.000157	.000265	.0077397	.0491601

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000394	.0000404	5.521858	.0004004	.0016799	.0040553	.0299062
Stddev	.0000368	.0000344	.011209	.0005138	.0003263	.0004455	.0025102
%RSD	93.23614	85.14965	.2029925	128.3453	19.42117	10.98631	8.393441
#1	.0000813	.0000451	5.518432	-.000163	.0020492	.0036335	.0328046
#2	.0000246	.0000039	5.512762	.000844	.0014306	.0040111	.0284839
#3	.0000124	.0000722	5.534380	.000520	.0015600	.0045213	.0284302

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0691907	2.741400	.0017375	-.000628	69.38703	.0010852	.0441733
Stddev	.0006983	.015180	.0003954	.000277	.32886	.0007930	.0004062
%RSD	1.009295	.5537185	22.75711	44.03045	.4739518	73.06894	.9195675
#1	.0697020	2.750182	.0014252	-.000753	69.71571	.0019930	.0437516
#2	.0683950	2.723873	.0021821	-.000311	69.05799	.0007352	.0442063
#3	.0694750	2.750147	.0016051	-.000820	69.38737	.0005275	.0445620

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.141654	.0225820	-.000022	.0002163	.0002291	1.360660	.0274071
Stddev	.039915	.0005673	.000202	.0002579	.0002142	.011147	.0010273
%RSD	1.863732	2.512399	919.4072	119.2379	93.46450	.8192498	3.748317
#1	2.107326	.0232370	-.000251	-.000081	.0004707	1.354237	.0281995
#2	2.132184	.0222640	.000056	.000357	.0000625	1.373532	.0277754
#3	2.185452	.0222449	.000129	.000373	.0001542	1.354211	.0262464

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02LX5 Acquired: 12/9/2024 14:40:48 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.021031	.0079388	.0219083
Stddev	.010843	.0006563	.0000096
%RSD	1.061998	8.267597	.0436380
#1	1.032740	.0072293	.0219088
#2	1.011336	.0085243	.0218985
#3	1.019017	.0080627	.0219176

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2629.183	58378.80	13005.98	1789.862	4135.929
Stddev	14.876	155.76	28.88	17.735	21.500
%RSD	.5658220	.2668022	.2220517	.9908591	.5198318
#1	2612.910	58233.51	12976.40	1782.965	4111.309
#2	2632.557	58359.64	13007.42	1776.611	4151.007
#3	2642.083	58543.25	13034.11	1810.009	4145.469

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02MS Acquired: 12/9/2024 14:45:07 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7995653	1.836254	.9173389	1.996302	.8145559	2.042949	.4245704
Stddev	.0081354	.016841	.0044454	.010319	.0059159	.002626	.0004297
%RSD	1.017476	.9171547	.4845982	.5169238	.7262674	.1285464	.1012107
#1	.8028642	1.855377	.9179363	1.997722	.8165613	2.041111	.4242151
#2	.7902986	1.823634	.9126250	1.985346	.8078980	2.045957	.4250480
#3	.8055330	1.829751	.9214554	2.005837	.8192084	2.041780	.4244481

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1943840	.1963145	25.04017	.3979642	.2049499	.3076161	3.205053
Stddev	.0005907	.0005104	.06567	.0015913	.0004243	.0013314	.006024
%RSD	.3038702	.2600157	.2622404	.3998488	.2070149	.4328258	.1879668
#1	.1937025	.1967049	24.98494	.3980625	.2049153	.3073552	3.204317
#2	.1947491	.1957369	25.11278	.3963260	.2045439	.3064344	3.199430
#3	.1947003	.1965017	25.02280	.3995040	.2053904	.3090587	3.211411

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5114849	13.97737	.4957300	.0757836	313.9714	.3056607	.4090070
Stddev	.0009032	.03508	.0008642	.0004972	1.4485	.0023721	.0025399
%RSD	.1765828	.2509598	.1743342	.6561484	.4613486	.7760630	.6209865
#1	.5104961	13.94971	.4955997	.0758397	315.5996	.3029262	.4113975
#2	.5116919	14.01682	.4949383	.0752607	312.8259	.3068908	.4092832
#3	.5122665	13.96558	.4966520	.0762504	313.4887	.3071652	.4063403

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.35600	.3616618	.4207418	.6779061	.1996849	6.994176	6.147440
Stddev	.05362	.0015565	.0017987	.0035108	.0003462	.020147	.019157
%RSD	.2634241	.4303698	.4275028	.5178959	.1733938	.2880593	.3116237
#1	20.40593	.3601451	.4213348	.6750893	.2000763	7.009015	6.164856
#2	20.29932	.3632552	.4187214	.6767895	.1994186	6.971240	6.126921
#3	20.36274	.3615850	.4221690	.6818394	.1995598	7.002274	6.150544

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02MS Acquired: 12/9/2024 14:45:07 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.848221	.2198081	.3001934
Stddev	.027346	.0008927	.0004486
%RSD	.5640389	.4061184	.1494338
#1	4.873055	.2198316	.2998504
#2	4.818915	.2206888	.3007010
#3	4.852694	.2189039	.3000286

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2497.944	55947.46	12756.36	1720.533	3767.058
Stddev	16.391	114.10	10.51	9.668	18.347
%RSD	.6561600	.2039371	.0823893	.5618915	.4870363
#1	2491.038	55851.20	12761.82	1710.960	3759.636
#2	2516.658	56073.50	12744.24	1720.347	3787.953
#3	2486.137	55917.70	12763.01	1730.292	3753.585

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02MSD Acquired: 12/9/2024 14:49:14 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8052476	1.861708	.9166796	2.009415	.8197345	2.009126	.4240350
Stddev	.0090184	.008147	.0065589	.020480	.0058487	.008281	.0006729
%RSD	1.119956	.4376157	.7155028	1.019192	.7134909	.4121472	.1586830
#1	.7968068	1.852303	.9100783	1.988292	.8180039	2.017334	.4247078
#2	.8041863	1.866220	.9167655	2.010770	.8149464	2.000775	.4233620
#3	.8147497	1.866600	.9231952	2.029184	.8262533	2.009270	.4240350

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1931958	.1961902	24.84301	.3903915	.2053848	.3089388	3.174515
Stddev	.0005691	.0011147	.05738	.0015815	.0009473	.0026026	.017333
%RSD	.2945811	.5681635	.2309651	.4051196	.4612344	.8424392	.5460072
#1	.1938526	.1953550	24.90407	.3891454	.2048368	.3065797	3.154828
#2	.1928507	.1957597	24.83474	.3898583	.2048389	.3085059	3.187480
#3	.1928839	.1974559	24.79021	.3921707	.2064786	.3117307	3.181238

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5031524	13.84225	.4958003	.0743918	311.7414	.3025951	.4025785
Stddev	.0002465	.05088	.0033397	.0007935	2.2855	.0014605	.0007369
%RSD	.0489965	.3675706	.6735889	1.066724	.7331374	.4826757	.1830553
#1	.5028684	13.86189	.4930026	.0734791	309.3678	.3035062	.4017550
#2	.5032782	13.88039	.4949007	.0749189	313.9272	.3009105	.4028049
#3	.5033107	13.78448	.4994976	.0747773	311.9292	.3033687	.4031758

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.96690	.3611297	.4210607	.6798107	.1984007	6.840316	6.182869
Stddev	.08264	.0014550	.0028649	.0063877	.0004515	.015534	.028432
%RSD	.4138816	.4029109	.6804086	.9396353	.2275478	.2270982	.4598439
#1	19.89122	.3617716	.4198516	.6737422	.1984532	6.836048	6.161320
#2	19.95442	.3621533	.4189986	.6792142	.1979253	6.827362	6.172195
#3	20.05508	.3594640	.4243320	.6864758	.1988236	6.857538	6.215093

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02MSD Acquired: 12/9/2024 14:49:14 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.788712	.2182535	.2979389
Stddev	.036421	.0007182	.0004436
%RSD	.7605522	.3290536	.1488889
#1	4.764862	.2190762	.2984313
#2	4.770640	.2177514	.2975704
#3	4.830635	.2179331	.2978149

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2484.946	56943.17	12843.35	1772.209	3748.820
Stddev	21.275	232.62	21.08	8.273	28.973
%RSD	.8561490	.4085155	.1641535	.4667951	.7728488
#1	2501.508	57208.83	12820.48	1777.866	3769.760
#2	2492.378	56844.72	12847.55	1776.048	3760.945
#3	2460.952	56775.96	12862.01	1762.715	3715.755

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02A Acquired: 12/9/2024 14:53:20 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8194187	1.850836	.9209456	2.057203	.8317628	2.059051	.4317073
Stddev	.0039714	.022178	.0024615	.008906	.0035674	.008636	.0042297
%RSD	.4846602	1.198287	.2672793	.4328956	.4288935	.4194251	.9797592
#1	.8150246	1.834396	.9191224	2.051931	.8301392	2.057586	.4335393
#2	.8204795	1.842050	.9199688	2.052192	.8292960	2.068326	.4347122
#3	.8227519	1.876061	.9237455	2.067485	.8358532	2.051241	.4268705

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1938202	.1962585	25.10169	.3959125	.2065108	.3123610	3.218525
Stddev	.0010217	.0003310	.12525	.0015338	.0003988	.0012823	.006199
%RSD	.5271555	.1686736	.4989651	.3874152	.1930879	.4105235	.1925957
#1	.1941164	.1958783	25.11866	.3941641	.2065503	.3112553	3.225400
#2	.1946611	.1964150	25.21758	.3970315	.2060938	.3120611	3.213362
#3	.1926831	.1964823	24.96881	.3965420	.2068883	.3137668	3.216813

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5083640	13.96598	.4987049	.0755478	319.3864	.3085051	.4101840
Stddev	.0040693	.04706	.0006611	.0005989	2.1237	.0031141	.0014981
%RSD	.8004750	.3369433	.1325713	.7927648	.6649426	1.009411	.3652178
#1	.5094549	13.94279	.4980436	.0749115	320.7677	.3113302	.4094770
#2	.5117766	14.02013	.4987051	.0756311	320.4506	.3090191	.4119047
#3	.5038604	13.93502	.4993659	.0761007	316.9410	.3051660	.4091702

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.61908	.3627745	.4278948	.6827750	.2016168	7.018643	6.130752
Stddev	.08504	.0019449	.0009149	.0016297	.0022080	.013134	.017781
%RSD	.4124119	.5361203	.2138199	.2386952	1.095158	.1871256	.2900292
#1	20.59500	.3624862	.4272040	.6808969	.2028809	7.005110	6.122028
#2	20.71356	.3648475	.4275481	.6836106	.2029024	7.031337	6.119017
#3	20.54868	.3609899	.4289324	.6838175	.1990673	7.019481	6.151210

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-02A Acquired: 12/9/2024 14:53:20 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.787460	.2248540	.3055330
Stddev	.021584	.0028477	.0026334
%RSD	.4508528	1.266457	.8618860
#1	4.768642	.2251419	.3066870
#2	4.782716	.2275469	.3073924
#3	4.811021	.2218734	.3025197

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2438.452	55757.27	12700.78	1705.295	3701.839
Stddev	7.736	110.93	64.49	4.379	7.602
%RSD	.3172573	.1989512	.5077739	.2567686	.2053680
#1	2444.312	55883.90	12667.96	1700.374	3708.777
#2	2441.362	55677.22	12659.30	1706.754	3703.027
#3	2429.683	55710.69	12775.08	1708.759	3693.713

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01 Acquired: 12/9/2024 14:57:27 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0760240	-.014473	4.713551	-.037723	-.003121	69.89795	1.429792
Stddev	.0044266	.000976	.007854	.001902	.001859	.03253	.004347
%RSD	5.822604	6.746336	.1666283	5.043053	59.56801	.0465359	.3040018
#1	.0719345	-.015323	4.722290	-.037480	-.002135	69.92836	1.427187
#2	.0807242	-.014688	4.711281	-.039735	-.005266	69.86366	1.434810
#3	.0754133	-.013407	4.707082	-.035953	-.001963	69.90183	1.427379

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065700	.0107384	113.3248	.5179915	.0804455	.7527327	184.6852
Stddev	.0000164	.0002653	.4837	.0002790	.0002122	.0043508	1.2203
%RSD	.2502170	2.470502	.4268386	.0538583	.2637481	.5780073	.6607253
#1	.0065876	.0110446	112.7721	.5176711	.0804975	.7575789	183.3047
#2	.0065671	.0105937	113.5316	.5181225	.0802121	.7514566	185.6200
#3	.0065551	.0105768	113.6708	.5181809	.0806267	.7491626	185.1309

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.044083	31.78757	.2191059	-.001833	2.255461	.2870010	2.142828
Stddev	.034391	.15523	.0007144	.000058	.028743	.0015804	.001225
%RSD	.6818122	.4883276	.3260382	3.157396	1.274370	.5506681	.0571834
#1	5.004386	31.62273	.2198368	-.001832	2.223848	.2852495	2.141645
#2	5.064858	31.80904	.2190716	-.001892	2.280020	.2874328	2.144092
#3	5.063006	31.93095	.2184093	-.001776	2.262514	.2883206	2.142746

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.70562	.0981511	.0040032	1.445176	3.667639	9.804421	8.746097
Stddev	.03964	.0012412	.0003617	.002718	.011249	.036964	.006739
%RSD	.2695830	1.264553	9.035048	.1880730	.3067043	.3770102	.0770561
#1	14.67878	.0967284	.0043946	1.447785	3.656123	9.764219	8.749807
#2	14.75116	.0990122	.0039338	1.445384	3.678599	9.812105	8.738318
#3	14.68693	.0987128	.0036813	1.442361	3.668195	9.836939	8.750166

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01 Acquired: 12/9/2024 14:57:27 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.725435	.0824086	.3695578
Stddev	.001241	.0001968	.0011743
%RSD	.0455475	.2387901	.3177559
#1	2.724556	.0823821	.3696739
#2	2.726855	.0822264	.3706697
#3	2.724894	.0826173	.3683298

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2652.370	60722.06	14016.77	1815.129	3718.468
Stddev	16.788	111.27	12.05	2.082	15.745
%RSD	.6329477	.1832458	.0859809	.1146973	.4234379
#1	2634.678	60679.56	14003.67	1812.837	3701.971
#2	2654.355	60638.30	14019.28	1816.904	3720.101
#3	2668.077	60848.32	14027.38	1815.645	3733.334

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01DUP Acquired: 12/9/2024 15:01:31 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0795320	-.013303	4.518934	-.036258	-.005612	67.07183	1.377015
Stddev	.0012004	.004033	.021594	.002340	.001378	.31050	.011047
%RSD	1.509273	30.31835	.4778498	6.454420	24.56132	.4629401	.8022646
#1	.0788587	-.010184	4.501194	-.033664	-.006981	67.19438	1.380620
#2	.0809179	-.017858	4.512631	-.036900	-.005631	67.30235	1.385809
#3	.0788195	-.011867	4.542979	-.038211	-.004224	66.71875	1.364615

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063691	.0102512	109.2803	.4938205	.0770205	.7223787	175.2846
Stddev	.0000749	.0001386	.3571	.0018062	.0002773	.0031328	1.0311
%RSD	1.175346	1.351750	.3267295	.3657532	.3600119	.4336752	.5882518
#1	.0064541	.0103644	109.1105	.4917517	.0768074	.7191222	174.2067
#2	.0063407	.0100966	109.6906	.4946259	.0769201	.7226430	176.2614
#3	.0063127	.0102925	109.0399	.4950838	.0773340	.7253710	175.3858

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.862268	30.79933	.2101344	-.002314	2.080582	.2753767	2.035328
Stddev	.021030	.08127	.0014437	.000392	.020570	.0014077	.005234
%RSD	.4325180	.2638685	.6870299	16.93011	.9886561	.5111751	.2571713
#1	4.857130	30.71945	.2086442	-.002628	2.073759	.2756172	2.041358
#2	4.885391	30.88192	.2102325	-.002439	2.103696	.2766487	2.031951
#3	4.844283	30.79660	.2115266	-.001875	2.064290	.2738643	2.032677

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.87689	.0938681	.0037033	1.387937	3.530139	9.318443	8.415153
Stddev	.08238	.0018572	.0001193	.008857	.018395	.043947	.085835
%RSD	.5936702	1.978473	3.220675	.6381659	.5210714	.4716105	1.020000
#1	13.88241	.0917596	.0035749	1.379172	3.537031	9.268312	8.317445
#2	13.95638	.0952608	.0038107	1.387755	3.544091	9.350325	8.449608
#3	13.79189	.0945840	.0037242	1.396884	3.509293	9.336692	8.478408

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01DUP Acquired: 12/9/2024 15:01:31 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.608009	.0776411	.3566006
Stddev	.022799	.0008117	.0043864
%RSD	.8742026	1.045396	1.230063
#1	2.582294	.0779728	.3594771
#2	2.615984	.0782343	.3587726
#3	2.625750	.0767161	.3515519

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2791.219	63510.20	14393.51	1930.647	3907.492
Stddev	6.942	170.33	55.87	5.696	10.163
%RSD	.2486964	.2681857	.3881349	.2950434	.2600861
#1	2799.234	63649.17	14353.98	1931.849	3916.549
#2	2787.160	63320.19	14369.13	1924.446	3909.425
#3	2787.262	63561.23	14457.42	1935.647	3896.501

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01LX5 Acquired: 12/9/2024 15:05:36 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0153631	-.005323	.9463470	-.008530	-.001203	14.04834	.2848181
Stddev	.0010042	.001509	.0034141	.001140	.000688	.04886	.0005681
%RSD	6.536546	28.34186	.3607658	13.36236	57.16229	.3477971	.1994600
#1	.0149031	-.004874	.9449982	-.007571	-.000438	14.00995	.2848762
#2	.0165149	-.004090	.9438133	-.009790	-.001771	14.03174	.2842232
#3	.0146713	-.007005	.9502294	-.008229	-.001400	14.10334	.2853550

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014685	.0012933	23.53206	.1071066	.0151399	.1624259	37.13299
Stddev	.0000358	.0000796	.12400	.0008283	.0001314	.0013668	.05045
%RSD	2.441635	6.156517	.5269371	.7733256	.8677098	.8414659	.1358685
#1	.0015098	.0012196	23.41164	.1080414	.0150216	.1610299	37.18871
#2	.0014454	.0012827	23.52518	.1064641	.0151167	.1624865	37.11985
#3	.0014502	.0013777	23.65936	.1068144	.0152813	.1637614	37.09040

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.068674	6.618980	.0423523	-.001235	.5132977	.0596928	.4439419
Stddev	.003185	.028642	.0003579	.000176	.0165021	.0015881	.0002911
%RSD	.2979995	.4327253	.8450740	14.27727	3.214925	2.660402	.0655683
#1	1.066677	6.602877	.0419392	-.001086	.4964312	.0605316	.4441414
#2	1.066997	6.602013	.0425462	-.001189	.5140523	.0578612	.4436079
#3	1.072346	6.652049	.0425713	-.001430	.5294096	.0606856	.4440765

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.848779	.0171216	.0004140	.2806129	.7575592	1.853203	1.647850
Stddev	.022969	.0001608	.0001792	.0010639	.0027682	.000940	.005415
%RSD	.8062735	.9391654	43.28693	.3791461	.3654146	.0507107	.3285884
#1	2.837308	.0171231	.0006202	.2793864	.7577026	1.853646	1.642269
#2	2.833804	.0169601	.0003262	.2811649	.7547220	1.852123	1.648201
#3	2.875224	.0172817	.0002956	.2812873	.7602529	1.853838	1.653081

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01LX5 Acquired: 12/9/2024 15:05:36 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5137417	.0184873	.0746144
Stddev	.0030495	.0002476	.0002150
%RSD	.5935766	1.339216	.2881937
#1	.5144796	.0184884	.0747209
#2	.5103910	.0182392	.0743670
#3	.5163545	.0187344	.0747555

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2837.936	63669.62	13785.69	1975.409	4376.472
Stddev	8.090	139.68	24.41	7.417	11.815
%RSD	.2850803	.2193860	.1770911	.3754679	.2699611
#1	2842.949	63509.87	13781.55	1969.679	4382.836
#2	2842.257	63730.21	13811.91	1983.787	4383.741
#3	2828.603	63768.77	13763.62	1972.762	4362.840

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01MS Acquired: 12/9/2024 15:09:47 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7434402	1.856253	4.967979	1.596955	.6039377	81.86994
Stddev	.0065778	.017311	.016993	.008250	.0062107	.20706
%RSD	.8847811	.9325898	.3420491	.5165881	1.028369	.2529155
#1	.7396799	1.854754	4.954187	1.593559	.5999462	81.73826
#2	.7396052	1.839740	4.962788	1.590944	.6007737	81.76296
#3	.7510355	1.874265	4.986962	1.606360	.6110933	82.10861

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.532034	.1776241	.1963638	134.1248	.7974188	.2989398
Stddev	.002094	.0003893	.0009443	.5273	.0007007	.0008740
%RSD	.1366772	.2191527	.4809124	.3931093	.0878749	.2923694
#1	1.534357	.1774034	.1955244	133.7065	.7979543	.2981099
#2	1.531451	.1773953	.1961807	133.9508	.7966258	.2988576
#3	1.530293	.1780735	.1973863	134.7171	.7976765	.2998520

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.153992	186.8747	3.738636	42.92619	.7242695	.0614459
Stddev	.003065	.7206	.006527	.24027	.0028391	.0002318
%RSD	.2655695	.3856043	.1745954	.5597331	.3919876	.3772969
#1	1.152724	186.2667	3.734268	42.73142	.7214137	.0611797
#2	1.151765	186.6868	3.735499	42.85247	.7243033	.0616040
#3	1.157487	187.6707	3.746139	43.19469	.7270915	.0615538

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.580991	.5356760	3.921689	24.10704	.3406175	.3637778
Stddev	.005707	.0019792	.022271	.04410	.0034388	.0013179
%RSD	.1245721	.3694692	.5678872	.1829302	1.009591	.3622714
#1	4.583256	.5369805	3.915250	24.14782	.3396710	.3630741
#2	4.574499	.5366488	3.903346	24.06024	.3377511	.3629611
#3	4.585217	.5333987	3.946469	24.11305	.3444305	.3652981

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01MS Acquired: 12/9/2024 15:09:47 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.221273	3.960652	9.114031	F 13.30487	3.465302	.2824781
Stddev	.009502	.005191	.037839	.06571	.018173	.0011967
%RSD	.4277566	.1310686	.4151713	.4938640	.5244412	.4236534
#1	2.217230	3.961390	9.078089	13.25300	3.453104	.2838597
#2	2.214462	3.955131	9.110485	13.28287	3.456614	.2818122
#3	2.232128	3.965434	9.153517	13.37876	3.486189	.2817625

Elem	Sr4077
Units	ppm
Avg	.5107258
Stddev	.0009499
%RSD	.1859995
#1	.5118145
#2	.5102978
#3	.5100652

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2814.082	64323.80	14178.89	1971.429	3849.141
Stddev	6.648	91.41	36.41	18.315	7.447
%RSD	.2362227	.1421031	.2567595	.9290360	.1934655
#1	2817.618	64225.22	14141.10	1953.135	3855.909
#2	2818.213	64405.74	14213.73	1989.766	3850.349
#3	2806.414	64340.45	14181.86	1971.385	3841.164

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV04 Acquired: 12/9/2024 15:13:44 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.845613	5.092131	4.717162	4.943010	4.937896	9.581144	9.626097
Stddev	.025084	.046629	.019141	.021846	.019262	.010663	.017576
%RSD	.5176638	.9156976	.4057646	.4419522	.3900810	.1112929	.1825857
#1	4.820739	5.059938	4.706377	4.934157	4.920923	9.593061	9.624682
#2	4.845198	5.070851	4.705847	4.926981	4.933934	9.572503	9.644338
#3	4.870902	5.145603	4.739261	4.967893	4.958831	9.577867	9.609272

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2344364	2.373986	23.18121	.9521911	2.360736	1.224573	4.715135
Stddev	.0009010	.009255	.06544	.0010081	.009105	.004919	.016927
%RSD	.3843436	.3898319	.2822812	.1058717	.3857023	.4017252	.3590008
#1	.2339848	2.368221	23.12694	.9510277	2.355050	1.221193	4.695644
#2	.2338504	2.369075	23.16282	.9528078	2.355920	1.222309	4.726156
#3	.2354739	2.384660	23.25388	.9527376	2.371238	1.230217	4.723604

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.318397	23.03421	2.365125	1.198558	23.84071	2.364989	2.414608
Stddev	.006750	.07984	.009060	.003482	.21646	.005482	.013566
%RSD	.2911384	.3466341	.3830483	.2905133	.9079295	.2318156	.5618402
#1	2.314803	22.99348	2.359789	1.199230	23.98019	2.367137	2.425961
#2	2.314205	22.98294	2.360002	1.201654	23.95059	2.358758	2.418280
#3	2.326184	23.12620	2.375586	1.194788	23.59135	2.369072	2.399584

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.26584	4.715975	4.970100	4.747229	4.741096	4.613371	4.631539
Stddev	.11733	.010006	.026916	.021577	.003380	.022588	.029437
%RSD	.4835086	.2121705	.5415517	.4545081	.0712946	.4896219	.6355828
#1	24.30746	4.719451	4.946508	4.733171	4.744885	4.588799	4.616475
#2	24.35668	4.704695	4.964375	4.736445	4.738389	4.633233	4.612682
#3	24.13338	4.723779	4.999418	4.772072	4.740015	4.618079	4.665459

Sample Name: CCV04 Acquired: 12/9/2024 15:13:44 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.706415	4.843014	4.843994
Stddev	.014384	.021626	.041567
%RSD	.3056307	.4465416	.8581134
#1	4.709129	4.863434	4.861667
#2	4.690867	4.845252	4.796511
#3	4.719249	4.820356	4.873804

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2668.133	60076.86	13315.84	1860.415	4087.016
Stddev	8.715	180.01	38.54	18.776	11.422
%RSD	.3266226	.2996369	.2893990	1.009264	.2794619
#1	2675.057	59978.50	13282.05	1840.147	4094.166
#2	2670.996	59967.45	13357.81	1863.882	4093.039
#3	2658.347	60284.62	13307.66	1877.217	4073.844

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB04 Acquired: 12/9/2024 15:17:55 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	-.001196	-.002098	-.000670	.0004023	-.000062	-.001250	-.004261
Stddev	.000822	.001789	.000773	.0010925	.001753	.003752	.000239
%RSD	68.72167	85.26875	115.3879	271.5760	2828.494	300.1525	5.617274
#1	-.000443	-.003995	-.000396	.0016565	.000450	-.000166	-.003985
#2	-.002072	-.000442	-.001543	-.000109	.001378	.001840	-.004399
#3	-.001072	-.001858	-.000071	-.000341	-.002014	-.005425	-.004400

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000050	-.000000	-.003764	.0000750	-.000027	.0002583	-.002982
Stddev	.000017	.000121	.002391	.0000632	.000113	.0002166	.003250
%RSD	34.18572	50584.41	63.52028	84.26817	421.8739	83.85490	109.0055
#1	-.000065	-.000140	-.005266	.0001181	.000063	.0001160	.000418
#2	-.000032	.000070	-.001007	.0001044	-.000153	.0001513	-.003304
#3	-.000052	.000069	-.005019	.0000024	.000011	.0005075	-.006058

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000021	-.000908	.0000008	-.000192	.0881289	-.000089	.0000688
Stddev	.000107	.006846	.0001815	.000558	.0173465	.001472	.0001942
%RSD	510.6982	753.6258	22658.23	290.9277	19.68310	1650.517	282.4687
#1	-.000067	.006602	-.000013	.000164	.0707639	-.000123	.0002477
#2	.000101	-.006801	-.000174	.000095	.0881661	.001400	-.000138
#3	-.000097	-.002526	.000189	-.000835	.1054569	-.001544	.000096

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1280331	.0031908	.0005772	.0003654	.0007779	-.019770	.0020892
Stddev	.0396884	.0001740	.0002991	.0002162	.0004014	.001321	.0008986
%RSD	30.99858	5.454036	51.82986	59.16266	51.59686	6.682106	43.01337
#1	.0822125	.0033048	.0006632	.0005814	.0011456	-.019969	.0029764
#2	.1502159	.0029905	.0008239	.0001490	.0003497	-.020981	.0011795
#3	.1516707	.0032772	.0002445	.0003659	.0008385	-.018361	.0021118

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB04 Acquired: 12/9/2024 15:17:55 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0007137	.0014380	.0001059
Stddev	.0036005	.0007613	.0000110
%RSD	504.5019	52.93961	10.41988
#1	-.002734	.0023077	.0000940
#2	.000426	.0011139	.0001158
#3	.004450	.0008924	.0001078

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2796.129	62652.34	13433.92	1912.119	4629.624
Stddev	7.115	133.15	23.97	6.283	13.067
%RSD	.2544687	.2125292	.1784357	.3286040	.2822510
#1	2787.961	62580.65	13416.37	1906.330	4614.717
#2	2800.983	62570.39	13424.16	1911.227	4639.100
#3	2799.443	62805.98	13461.23	1918.801	4635.053

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01MSD Acquired: 12/9/2024 15:22:15 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7496301	1.800765	4.928865	1.600661	.6046226	82.17342
Stddev	.0049187	.011734	.005400	.005880	.0009671	.28256
%RSD	.6561522	.6515943	.1095638	.3673681	.1599477	.3438638
#1	.7460937	1.807298	4.932617	1.602834	.6038636	82.14888
#2	.7552472	1.807779	4.922676	1.605145	.6042928	81.90393
#3	.7475494	1.787219	4.931304	1.594003	.6057115	82.46746

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.514256	.1744079	.1943811	133.2425	.7992938	.2968353
Stddev	.004960	.0002065	.0003991	.4004	.0036271	.0008145
%RSD	.3275387	.1183879	.2053068	.3005271	.4537936	.2743873
#1	1.510455	.1746268	.1946094	132.7835	.8011464	.2971425
#2	1.512446	.1743801	.1939203	133.4242	.8016204	.2959119
#3	1.519866	.1742167	.1946136	133.5199	.7951144	.2974516

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.151923	187.4184	3.684437	42.64454	.7195430	.0618450
Stddev	.001246	.5334	.016074	.09759	.0009420	.0002392
%RSD	.1081975	.2846173	.4362693	.2288517	.1309103	.3867604
#1	1.150720	186.8795	3.665879	42.53320	.7196822	.0618587
#2	1.151839	187.9462	3.693963	42.68514	.7185392	.0615993
#3	1.153209	187.4296	3.693471	42.71528	.7204077	.0620771

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.553277	.5355772	3.927716	24.45277	.3412069	.3643213
Stddev	.016326	.0018324	.020935	.05218	.0008388	.0005471
%RSD	.3585489	.3421433	.5330132	.2133962	.2458252	.1501817
#1	4.548556	.5346568	3.924974	24.40875	.3404903	.3648622
#2	4.571443	.5343874	3.949887	24.51041	.3421294	.3637681
#3	4.539832	.5376874	3.908287	24.43916	.3410008	.3643336

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01MSD Acquired: 12/9/2024 15:22:15 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.197262	3.932324	9.243232	F 12.97644	3.418699	.2814836
Stddev	.002834	.009589	.022312	.05965	.005659	.0006038
%RSD	.1289908	.2438552	.2413862	.4597037	.1655347	.2144891
#1	2.200535	3.924718	9.265317	13.02541	3.424888	.2814668
#2	2.195652	3.929159	9.220700	12.99392	3.413789	.2808884
#3	2.195600	3.943096	9.243679	12.91001	3.417421	.2820955

Elem	Sr4077
Units	ppm
Avg	.5062496
Stddev	.0016108
%RSD	.3181900
#1	.5058183
#2	.5048983
#3	.5080322

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2798.012	63810.35	14339.23	1929.526	3853.890
Stddev	5.324	244.96	16.13	8.715	6.187
%RSD	.1902823	.3838887	.1124833	.4516737	.1605385
#1	2796.818	63556.44	14321.11	1928.713	3848.304
#2	2793.387	63829.34	14344.55	1921.246	3852.825
#3	2803.832	64045.26	14352.03	1938.620	3860.540

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01A Acquired: 12/9/2024 15:26:12 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7366629	1.792882	4.905578	1.582164	.5973813	81.80608
Stddev	.0054710	.030711	.022919	.011955	.0059571	.29111
%RSD	.7426791	1.712943	.4672002	.7556368	.9971972	.3558537
#1	.7309911	1.764295	4.896063	1.578575	.5947165	81.47007
#2	.7419083	1.789003	4.888950	1.572414	.5932217	81.96593
#3	.7370893	1.825348	4.931722	1.595503	.6042056	81.98225

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.511404	.1756926	.1939767	132.7714	.7977026	.2951442
Stddev	.008067	.0003117	.0008669	.3041	.0009413	.0009915
%RSD	.5337692	.1773901	.4469152	.2290694	.1179992	.3359520
#1	1.502852	.1758368	.1937090	132.4226	.7966330	.2950753
#2	1.518879	.1759060	.1932753	132.9811	.7984047	.2941888
#3	1.512482	.1753349	.1949459	132.9106	.7980702	.2961683

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.144042	185.3829	3.676204	42.60345	.7171600	.0606290
Stddev	.004363	1.0169	.015599	.13013	.0023341	.0003838
%RSD	.3813474	.5485454	.4243184	.3054547	.3254584	.6329668
#1	1.144432	184.2116	3.661759	42.45751	.7170958	.0610647
#2	1.139497	185.8962	3.692745	42.70744	.7148588	.0603414
#3	1.148196	186.0407	3.674109	42.64539	.7195256	.0604808

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.487851	.5329905	3.914154	24.01558	.3409615	.3602977
Stddev	.040337	.0027570	.022188	.19365	.0016705	.0018084
%RSD	.8988145	.5172654	.5668769	.8063704	.4899310	.5019263
#1	4.441280	.5345736	3.903509	23.79764	.3391864	.3600171
#2	4.510439	.5345907	3.899295	24.08118	.3411953	.3586460
#3	4.511834	.5298070	3.939660	24.16791	.3425028	.3622301

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5112-01A Acquired: 12/9/2024 15:26:12 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.193012	3.924179	9.213202	F 13.03818	3.406118	.2795534
Stddev	.013902	.012112	.026012	.07925	.016374	.0015851
%RSD	.6339018	.3086390	.2823386	.6078446	.4807089	.5670038
#1	2.189375	3.910268	9.183291	13.00633	3.393369	.2779123
#2	2.181291	3.932381	9.230540	12.97982	3.400402	.2810757
#3	2.208371	3.929887	9.225773	13.12841	3.424584	.2796721

Elem	Sr4077
Units	ppm
Avg	.5034779
Stddev	.0024282
%RSD	.4822914
#1	.5007126
#2	.5052618
#3	.5044593

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2836.481	64593.38	14324.23	1958.228	3893.233
Stddev	13.096	20.85	52.19	6.236	15.461
%RSD	.4616885	.0322785	.3643584	.3184335	.3971176
#1	2829.406	64582.41	14275.41	1957.725	3891.259
#2	2851.593	64617.43	14318.05	1964.699	3909.586
#3	2828.445	64580.31	14379.24	1952.258	3878.854

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5133-01 Acquired: 12/9/2024 15:30:07 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7628304	.0052958	.2037760	-.061440	.0274257	56.69095	2.320216
Stddev	.0112536	.0041115	.0025819	.000505	.0008691	.39682	.011314
%RSD	1.475248	77.63603	1.267050	.8225411	3.168879	.6999733	.4876430
#1	.7584492	.0090165	.2018483	-.060950	.0279432	56.31989	2.312920
#2	.7544262	.0008818	.2027703	-.061960	.0279116	56.64367	2.314479
#3	.7756157	.0059892	.2067095	-.061410	.0264224	57.10929	2.333250

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0108016	.0175102	58.94594	.6560921	.0647541	1.377454	276.9400
Stddev	.0002164	.0004176	.61409	.0097163	.0006316	.007696	3.9266
%RSD	2.003492	2.384781	1.041787	1.480930	.9753675	.5587476	1.417850
#1	.0107116	.0171174	58.47271	.6549342	.0640580	1.370805	275.8938
#2	.0106447	.0179488	58.72522	.6470067	.0649141	1.375671	273.6425
#3	.0110485	.0174643	59.63988	.6663355	.0652904	1.385885	281.2838

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.562441	15.51698	.2081757	-.009356	65.85296	.2075849	2.799901
Stddev	.033361	.14715	.0017156	.000400	.68636	.0019839	.042266
%RSD	.9364746	.9483008	.8240904	4.270523	1.042265	.9557071	1.509542
#1	3.541816	15.40245	.2066187	-.009197	65.87615	.2053043	2.799179
#2	3.544577	15.46554	.2078934	-.009060	65.15529	.2089118	2.758001
#3	3.600931	15.68294	.2100148	-.009810	66.52742	.2085388	2.842523

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.84739	.2764335	.0933227	.1480960	1.126864	2.485591	4.999620
Stddev	.25432	.0030371	.0009116	.0011793	.007781	.033395	.049225
%RSD	1.023519	1.098671	.9768378	.7962856	.6905434	1.343547	.9845802
#1	24.79234	.2768609	.0927822	.1473265	1.121654	2.471538	4.957718
#2	24.62510	.2732053	.0928107	.1475077	1.123128	2.461519	4.987311
#3	25.12472	.2792343	.0943752	.1494536	1.135808	2.523716	5.053832

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5133-01 Acquired: 12/9/2024 15:30:07 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.898243	.0154458	.6892817
Stddev	.052053	.0001809	.0055315
%RSD	.7545789	1.171027	.8025089
#1	6.860434	.0152697	.6829684
#2	6.876683	.0156311	.6932780
#3	6.957611	.0154366	.6915986

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3006.422	68567.02	15741.07	2097.062	3861.361
Stddev	15.542	740.05	77.86	17.641	22.375
%RSD	.5169695	1.079308	.4946121	.8412251	.5794581
#1	3014.579	68419.64	15757.82	2092.875	3875.610
#2	3016.187	69369.67	15809.19	2116.419	3872.900
#3	2988.499	67911.75	15656.20	2081.890	3835.572

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-01 Acquired: 12/9/2024 15:34:20 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0689336	-.023707	.5054972	-.031915	.0056895	97.89474
Stddev	.0020519	.001101	.0036797	.001317	.0021872	.41755
%RSD	2.976641	4.644939	.7279463	4.126791	38.44324	.4265331
#1	.0666138	-.024958	.5012548	-.031416	.0082119	97.48149
#2	.0696758	-.023277	.5074130	-.030921	.0045372	97.88626
#3	.0705111	-.022885	.5078237	-.033409	.0043193	98.31647

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.535855	.0276790	.0296573	92.86538	.4745426	.2707577
Stddev	.006900	.0000712	.0002091	.66888	.0013059	.0015704
%RSD	.4492582	.2571573	.7048903	.7202711	.2751899	.5799831
#1	1.527888	.0276467	.0294502	92.17967	.4757223	.2690985
#2	1.539879	.0276297	.0296535	92.90042	.4731393	.2709538
#3	1.539799	.0277606	.0298683	93.51605	.4747662	.2722207

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2935295	144.4003	4.140683	95.66728	.3292374	-.004957
Stddev	.0008209	.9031	.026762	.76499	.0025708	.000213
%RSD	.2796651	.6253852	.6463279	.7996380	.7808356	4.289293
#1	.2926377	143.5075	4.113350	94.87664	.3264893	-.005164
#2	.2936975	144.3803	4.141864	95.72145	.3296395	-.004969
#3	.2942535	145.3132	4.166835	96.40375	.3315835	-.004739

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.434767	.4644453	1.208190	22.70864	.1104562	.0149038
Stddev	.017188	.0029805	.002093	.12311	.0001855	.0004804
%RSD	.3162595	.6417281	.1732117	.5421309	.1679621	3.223628
#1	5.415629	.4610747	1.205806	22.57450	.1105581	.0146129
#2	5.439780	.4655283	1.209725	22.73497	.1105683	.0146402
#3	5.448890	.4667329	1.209038	22.81646	.1102420	.0154583

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5136-01 Acquired: 12/9/2024 15:34:20 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0300528	.6513588	2.308346	F 39.42189	F 11.72762	.0363439
Stddev	.0008207	.0029588	.019134	.24862	.07921	.0012012
%RSD	2.731025	.4542563	.8289120	.6306694	.6754165	3.305058
#1	.0292512	.6480036	2.289030	39.16330	11.65587	.0354144
#2	.0308915	.6524785	2.308715	39.44321	11.71436	.0359171
#3	.0300157	.6535945	2.327293	39.65917	11.81262	.0377002

Elem	Sr4077
Units	ppm
Avg	.3624356
Stddev	.0014105
%RSD	.3891621
#1	.3608294
#2	.3634721
#3	.3630053

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3755.577	86522.18	19881.25	2616.170	3652.184
Stddev	11.383	57.84	12.76	8.030	16.896
%RSD	.3030851	.0668464	.0641632	.3069428	.4626235
#1	3757.838	86456.03	19873.33	2616.316	3664.466
#2	3765.660	86547.24	19874.45	2608.067	3659.170
#3	3743.234	86563.25	19895.96	2624.126	3632.915

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5137-01 Acquired: 12/9/2024 15:38:23 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000096	-.023416	.0249855	-.026670	.0009853	64.31156	.0805963
Stddev	.005947	.002645	.0005646	.002416	.0014697	.42926	.0006655
%RSD	6170.044	11.29342	2.259532	9.059581	149.1575	.6674646	.8257473
#1	.004793	-.026278	.0249413	-.028933	.0026619	63.88815	.0799369
#2	.001635	-.022909	.0255708	-.024125	-.000080	64.30008	.0805841
#3	-.006717	-.021062	.0244443	-.026951	.000375	64.74644	.0812678

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019196	.0050200	43.60270	.0575946	.1405573	1.212009	136.2455
Stddev	.0000651	.0005377	.26547	.0002695	.0026837	.018871	.4926
%RSD	3.391021	10.71146	.6088410	.4679008	1.909363	1.556970	.3615487
#1	.0018552	.0048317	43.30641	.0573046	.1391594	1.204521	135.6795
#2	.0019854	.0046017	43.68275	.0578374	.1388611	1.198031	136.4797
#3	.0019181	.0056265	43.81893	.0576417	.1436514	1.233474	136.5773

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8683358	57.73130	.3020253	-.003317	7.211885	.5313694	.2766754
Stddev	.0052002	.36229	.0059453	.000336	.023936	.0024276	.0012153
%RSD	.5988735	.6275399	1.968469	10.11594	.3319011	.4568532	.4392460
#1	.8624133	57.32396	.2997053	-.003667	7.186976	.5291249	.2754060
#2	.8704395	57.85248	.2975899	-.002998	7.213964	.5310374	.2767919
#3	.8721547	58.01747	.3087808	-.003287	7.234713	.5339459	.2778282

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.02039	.0756577	.0000800	.0064098	2.091048	4.524258	8.941992
Stddev	.08975	.0007529	.0001737	.0007745	.010009	.011976	.167658
%RSD	.7466628	.9951454	216.9701	12.08300	.4786565	.2647169	1.874953
#1	11.92998	.0749449	-.000083	.0068773	2.079519	4.510428	8.883814
#2	12.02172	.0764452	.000061	.0055158	2.096118	4.531193	8.811173
#3	12.10947	.0755829	.000262	.0068363	2.097508	4.531151	9.130990

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: P5137-01 Acquired: 12/9/2024 15:38:23 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.272878	.1206865	-.023095
Stddev	.035665	.0004927	.000151
%RSD	1.569162	.4082648	.6528586
#1	2.260822	.1206897	-.023168
#2	2.244804	.1201922	-.023196
#3	2.313009	.1211776	-.022922

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2896.290	66273.61	15028.26	2002.520	4001.774
Stddev	35.321	122.99	13.30	1.888	65.100
%RSD	1.219534	.1855755	.0885184	.0943037	1.626772
#1	2908.972	66133.19	15018.60	2001.374	4026.421
#2	2923.519	66362.19	15022.74	2004.699	4050.952
#3	2856.378	66325.46	15043.43	2001.485	3927.950

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: LR1 Acquired: 12/9/2024 15:42:06 Type: Unk
Method: NON EPA-6010-200.7(v2512) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0130892	-.033237	.0509394	-.276965	-.015836	2134.523	.0100731
Stddev	.0056519	.014076	.0035085	.017758	.002994	11.738	.0005176
%RSD	43.17982	42.34927	6.887682	6.411797	18.90986	.5499029	5.138425
#1	.0150520	-.035816	.0543618	-.266121	-.016050	2121.828	.0104233
#2	.0174980	-.018050	.0511057	-.267315	-.018717	2144.983	.0103175
#3	.0067176	-.045845	.0473507	-.297459	-.012739	2136.757	.0094786

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097143	.1077308	1881.231	.0013010	.0399015	-.001342	947.8118
Stddev	.0002336	.0017544	7.273	.0033707	.0006824	.008881	7.9332
%RSD	2.404922	1.628475	.3866102	259.0827	1.710325	661.8559	.8369968
#1	.0095747	.1062702	1882.595	-.000645	.0394925	-.009709	956.2630
#2	.0099840	.1072456	1887.726	.005193	.0406893	-.002291	946.6470
#3	.0095841	.1096768	1873.373	-.000645	.0395226	.007975	940.5255

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.115395	1965.975	.0136363	-.062993	1913.390	.0746606	.2588828
Stddev	.001520	5.264	.0010058	.002036	18.167	.0013786	.0020487
%RSD	1.317439	.2677446	7.376134	3.232022	.9494612	1.846422	.7913411
#1	-.114805	1962.686	.0146266	-.060653	1934.143	.0762454	.2584217
#2	-.117121	1972.046	.0126156	-.063968	1905.665	.0737391	.2571040
#3	-.114258	1963.194	.0136667	-.064358	1900.362	.0739973	.2611227

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1473.776	.3816489	-.014537	.0061908	-.034927	.1152306	.0743680
Stddev	16.626	.0069296	.000566	.0061351	.001603	.0063034	.0044570
%RSD	1.128153	1.815694	3.892426	99.10095	4.589583	5.470241	5.993232
#1	1490.110	.3895712	-.015049	.0050158	-.035105	.1184993	.0759382
#2	1474.344	.3767147	-.014633	.0128284	-.036433	.1079643	.0778274
#3	1456.872	.3786609	-.013930	.0007281	-.033242	.1192283	.0693383

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: LR1 Acquired: 12/9/2024 15:42:06 Type: Unk
Method: NON EPA-6010-200.7(v2512) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.207068	-.305372	-.936885
Stddev	.003564	.001293	.007977
%RSD	1.721310	.4235822	.8514703
#1	-.203010	-.305110	-.945392
#2	-.209693	-.306777	-.935691
#3	-.208501	-.304230	-.929572

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1685.171	39978.73	10608.67	1164.844	2282.845
Stddev	4.707	100.04	63.41	2.855	4.974
%RSD	.2793348	.2502396	.5976784	.2451210	.2179024
#1	1687.468	39932.01	10676.05	1166.790	2286.617
#2	1688.288	39910.59	10550.18	1161.566	2284.711
#3	1679.756	40093.58	10599.78	1166.176	2277.207

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: LR2 Acquired: 12/9/2024 15:47:04 Type: Unk
Method: NON EPA-6010-200.7(v2512) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045134	-.034862	248.4315	.0114929	.0004711	.0390046	^F *****
Stddev	.0021366	.003039	.5807	.0013306	.0009098	.0073309	-----
%RSD	47.33827	8.717295	.2337412	11.57775	193.1186	18.79507	-----
#1	.0063594	-.035770	247.7955	.0129350	.0013376	.0472858	^ -----
#2	.0050079	-.031472	248.9336	.0112307	.0005523	.0363835	^ -----
#3	.0021729	-.037343	248.5653	.0103128	-.000477	.0333444	^ -----

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003239	-.005684	.2073186	.0103129	-.012108	272.9120	-.014318
Stddev	.000078	.000069	.0082944	.0000669	.000085	2.9181	.003307
%RSD	2.404250	1.216967	4.000785	.6484028	.6982609	1.069245	23.09863
#1	-.003287	-.005665	.2143349	.0102890	-.012069	269.8609	-.010894
#2	-.003280	-.005625	.2094561	.0103885	-.012205	275.6758	-.014565
#3	-.003149	-.005760	.1981646	.0102613	-.012051	273.1993	-.017494

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.42575	-.098685	54.32547	.0043451	.5080625	-.017362	38.49158
Stddev	.18287	.009766	.14027	.0002249	.0211248	.001431	.32430
%RSD	.4414393	9.895889	.2581988	5.174966	4.157907	8.241570	.8425191
#1	41.45365	-.087861	54.22582	.0045874	.4837343	-.018105	38.86283
#2	41.23054	-.101356	54.48587	.0043047	.5217629	-.015712	38.34838
#3	41.59307	-.106837	54.26472	.0041431	.5186902	-.018268	38.26353

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5863226	-.003331	-.006931	-.006105	-.039439	-.021223	3.225521
Stddev	.0086513	.000225	.000205	.000789	.000261	.002905	.042728
%RSD	1.475512	6.744734	2.964898	12.92475	.6606959	13.68918	1.324688
#1	.5960557	-.003387	-.006997	-.005464	-.039292	-.020615	3.187154
#2	.5834038	-.003523	-.006700	-.005863	-.039285	-.024384	3.217841
#3	.5795082	-.003084	-.007095	-.006986	-.039740	-.018669	3.271568

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: LR2 Acquired: 12/9/2024 15:47:04 Type: Unk
Method: NON EPA-6010-200.7(v2512) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001831	.0023326	.0018429
Stddev	.004589	.0007485	.0000310
%RSD	250.6729	32.09059	1.683459
#1	-.006951	.0015842	.0018091
#2	.001913	.0030813	.0018496
#3	-.000454	.0023323	.0018700

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2390.700	62519.44	13599.16	1821.007	4291.326
Stddev	19.648	78.34	76.20	7.207	22.417
%RSD	.8218597	.1253090	.5603574	.3957841	.5223807
#1	2413.370	62477.12	13534.03	1816.299	4317.048
#2	2380.135	62471.35	13682.97	1817.418	4280.981
#3	2378.593	62609.84	13580.49	1829.304	4275.950

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV05 Acquired: 12/9/2024 15:52:52 Type: Unk
Method: NON EPA-6010-200.7(v2513) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.805608	4.866889	4.608517	4.896960	4.927207	9.431417	9.702992
Stddev	.027934	.035378	.018189	.033137	.033776	.037798	.108848
%RSD	.5812760	.7269155	.3946764	.6766952	.6855004	.4007617	1.121801
#1	4.790482	4.872357	4.604050	4.892434	4.919240	9.404920	9.583639
#2	4.788500	4.829095	4.592977	4.866318	4.898127	9.414631	9.728552
#3	4.837843	4.899215	4.628522	4.932128	4.964255	9.474701	9.796786

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2288567	2.319855	22.65343	.9254780	2.316360	1.218524	4.667854
Stddev	.0006876	.006701	.16562	.0028616	.008556	.008139	.030828
%RSD	.3004580	.2888338	.7310866	.3092020	.3693846	.6679681	.6604317
#1	.2283549	2.317962	22.47833	.9263179	2.314584	1.216083	4.637809
#2	.2285747	2.314304	22.67440	.9222904	2.308831	1.211884	4.666343
#3	.2296405	2.327298	22.80757	.9278256	2.325665	1.227605	4.699409

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.301671	24.37508	2.323332	1.176028	23.77141	2.334512	2.352075
Stddev	.017314	.22494	.009274	.004476	.08928	.016561	.020841
%RSD	.7522486	.9228164	.3991523	.3805811	.3755655	.7094127	.8860819
#1	2.283179	24.15801	2.319764	1.175719	23.87449	2.319895	2.365629
#2	2.304335	24.36009	2.316373	1.171715	23.71908	2.331142	2.328077
#3	2.317499	24.60713	2.333860	1.180650	23.72065	2.352500	2.362519

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.40962	4.650129	4.901329	4.628788	4.704203	4.548532	4.574988
Stddev	.09426	.017432	.029843	.019058	.026334	.048618	.018918
%RSD	.3861674	.3748614	.6088780	.4117376	.5597931	1.068862	.4135029
#1	24.35963	4.639047	4.890662	4.628951	4.676260	4.503082	4.571802
#2	24.35089	4.641119	4.878285	4.609648	4.707787	4.542719	4.557865
#3	24.51835	4.670222	4.935040	4.647764	4.728561	4.599795	4.595296

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCV05 Acquired: 12/9/2024 15:52:52 Type: Unk
Method: NON EPA-6010-200.7(v2513) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.615096	4.919489	4.837621
Stddev	.021195	.016049	.031873
%RSD	.4592625	.3262337	.6588482
#1	4.613430	4.901240	4.854786
#2	4.594783	4.925822	4.857233
#3	4.637076	4.931406	4.800845

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2652.051	60633.87	13428.29	1857.055	4084.124
Stddev	17.929	173.52	24.87	18.713	19.125
%RSD	.6760437	.2861772	.1852233	1.007696	.4682755
#1	2657.022	60544.85	13441.60	1839.747	4085.410
#2	2666.971	60833.83	13443.67	1876.913	4102.574
#3	2632.162	60522.93	13399.60	1854.505	4064.389

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB05 Acquired: 12/9/2024 15:56:54 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	-.000524	-.000960	-.000754	.0001082	.0001021	-.003837	-.005924
Stddev	.003270	.000857	.000095	.0006931	.0006689	.003120	.000431
%RSD	624.5354	89.22136	12.61094	640.8119	655.3322	81.30259	7.277223
#1	-.004299	-.000526	-.000734	-.000672	-.000425	-.003119	-.006060
#2	.001317	-.001947	-.000671	.000654	.000855	-.007253	-.006272
#3	.001411	-.000408	-.000858	.000342	-.000124	-.001139	-.005442

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000039	-.000145	-.017779	-.000038	-.000154	.0003051	-.008473
Stddev	.000007	.000056	.002696	.000408	.000080	.0001250	.002626
%RSD	17.40980	38.92259	15.16154	1070.700	52.26846	40.96910	30.99365
#1	-.000044	-.000192	-.016851	-.000457	-.000231	.0002868	-.010014
#2	-.000041	-.000160	-.020816	.000358	-.000160	.0001903	-.009964
#3	-.000031	-.000083	-.015670	-.000015	-.000071	.0004383	-.005441

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000260	-.008224	-.000107	-.000046	.2573356	-.000068	-.000642
Stddev	.000027	.001547	.000314	.000111	.0163615	.000928	.000120
%RSD	10.52847	18.80642	293.2006	238.7835	6.358047	1356.527	18.67696
#1	-.000289	-.008633	-.000469	-.000151	.2456373	-.000464	-.000605
#2	-.000256	-.006514	.000085	-.000057	.2503372	.000992	-.000775
#3	-.000235	-.009525	.000063	.000069	.2760324	-.000733	-.000544

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2131418	.0022235	.0004776	-.000075	.0003186	-.013345	.0024146
Stddev	.0212578	.0007830	.0002433	.000202	.0003513	.003580	.0015654
%RSD	9.973550	35.21345	50.94420	267.6266	110.2732	26.82664	64.83207
#1	.1906917	.0029276	.0005023	.000110	.0002740	-.012570	.0041973
#2	.2157711	.0023627	.0007076	-.000046	-.000008	-.017249	.0012645
#3	.2329627	.0013803	.0002229	-.000290	.000690	-.010216	.0017820

Reviewed By:jaswal
On:12/11/2024
11:11:49 PM
Inst Id :P4
LB :LB133834

Sample Name: CCB05 Acquired: 12/9/2024 15:56:54 Type: Unk
Method: NON EPA-6010-200.7(v2508) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

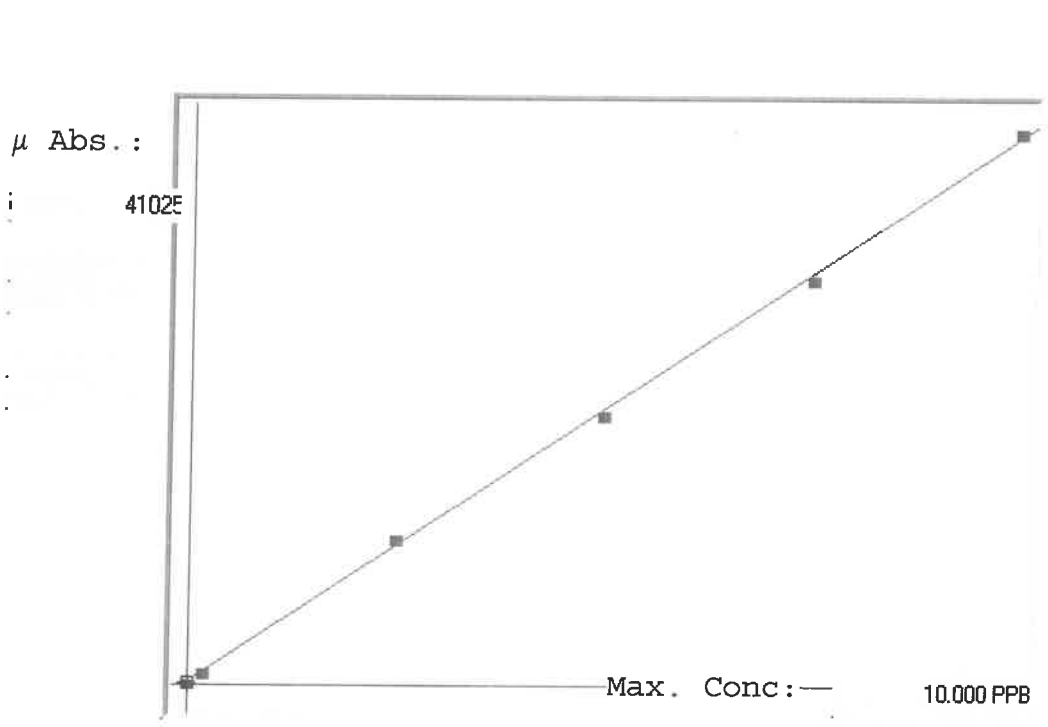
Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0000872	.0019654	.0000127
Stddev	.0006557	.0003160	.0000198
%RSD	752.2148	16.07532	155.5131
#1	-.000493	.0017865	.0000191
#2	-.000045	.0017795	.0000285
#3	.000799	.0023302	-.000009

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2812.632	63610.26	13516.84	1944.286	4674.115
Stddev	16.879	194.70	54.10	11.728	31.479
%RSD	.6001279	.3060785	.4002337	.6032032	.6734803
#1	2795.871	63386.47	13460.28	1931.339	4639.413
#2	2829.627	63740.71	13568.08	1954.198	4700.834
#3	2812.396	63703.62	13522.17	1947.322	4682.099

Reviewed By:mohan
On:12/10/2024 8:52:27 PM
Inst Id :CV1
LB :LB133829

LB133829

7470A INSTRUMENT ID: CV1



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	%D
0.0	0.000	0.010	0.010	279	0.000	279	0				
0.2	0.200	0.173	-0.027	939	0.0 %	939					-14
2.5	2.500	2.621	0.121	10838	0.0 %	10838					5
5.0	5.000	4.911	-0.089	20098	0.0 %	20098					-2
7.5	7.500	7.398	-0.102	30151	0.0 %	30151					-1
10.0	10.000	10.087	0.087	41025	0.0 %	41025					1

Reviewed By:mohan
On:12/10/2024 8:52:27 PM
Inst Id :CV1
LB :LB133829

LB133829 INSTRUMENT ID : CV1

Method: 7470A Operator: Admin Date of Analysis: 09 Dec 2024 10:31:36

Sample ID	Extended ID	µ Abs	Conc	Stnd Conc	Method	Units	Date	Type	Type
0.0 - 1		279	-	0.0000	7470A	PPB	09 Dec 2024 11:15:41	S	Std
0.2 - 1		939	-	0.2000	7470A	PPB	09 Dec 2024 11:21:10	S	Std
2.5 - 1		10838	-	2.5000	7470A	PPB	09 Dec 2024 11:23:27	S	Std
5.0 - 1		20098	-	5.0000	7470A	PPB	09 Dec 2024 11:28:27	S	Std
7.5 - 1		30151	-	7.5000	7470A	PPB	09 Dec 2024 11:33:19	S	Std
10.0 - 1		41025	-	10.0000	7470A	PPB	09 Dec 2024 11:38:22	S	Std
ICV13 - 1	ICV13	15890	3.8706		7470A	PPB	09 Dec 2024 11:46:21	U	SMPL
ICB13 - 1	ICB13	90	-0.0371		7470A	PPB	09 Dec 2024 11:48:35	U	SMPL
CCV05 - 1	CCV05	18754	4.5790		7470A	PPB	09 Dec 2024 11:50:51	U	SMPL
CCB05 - 1	CCB05	87	-0.0378		7470A	PPB	09 Dec 2024 11:53:06	U	SMPL
CRA - 1	CRA	892	0.1613		7470A	PPB	09 Dec 2024 11:58:00	U	SMPL
HighStd - 1	HighStd	39391	9.6830		7470A	PPB	09 Dec 2024 12:00:15	U	SMPL
ChkStd - 1	ChkStd	26995	6.6172		7470A	PPB	09 Dec 2024 12:02:30	U	SMPL
PB165486BL - 1	PBW	437	0.0488		7470A	PPB	09 Dec 2024 12:07:24	U	SMPL
PB165486BS - 1	LCSW	13970	3.3958		7470A	PPB	09 Dec 2024 12:12:14	U	SMPL
P5095-04 - 1	MH-764	333	0.0230		7470A	PPB	09 Dec 2024 12:14:30	U	SMPL
P5096-04 - 1	MH-B	586	0.0856		7470A	PPB	09 Dec 2024 12:16:47	U	SMPL
P5096-08 - 1	MH-A	522	0.0698		7470A	PPB	09 Dec 2024 12:19:04	U	SMPL
P5100-04 - 1	3167	590	0.0866		7470A	PPB	09 Dec 2024 12:21:21	U	SMPL
P5103-02 - 1	423	2656	0.5976		7470A	PPB	09 Dec 2024 12:23:37	U	SMPL
CCV06 - 1	CCV06	19966	4.8787		7470A	PPB	09 Dec 2024 12:25:52	U	SMPL
CCB06 - 1	CCB06	129	-0.0274		7470A	PPB	09 Dec 2024 12:28:09	U	SMPL
P5110-01 - 1	ELIZ-COMP-1	2039	0.4450		7470A	PPB	09 Dec 2024 12:30:26	U	SMPL
P5110-02 - 1	ELIZ-COMP-2	41	-0.0492		7470A	PPB	09 Dec 2024 12:32:41	U	SMPL
P5112-02 - 1	10TH-ST-SOIL	688	0.1108		7470A	PPB	09 Dec 2024 12:35:00	U	SMPL
P5117-02 - 1	TAPIAL2-IDW-SOIL-120424-00-T2	301	0.0151		7470A	PPB	09 Dec 2024 12:37:15	U	SMPL
P5133-02 - 1	MOO-24-00374	25	-0.0531		7470A	PPB	09 Dec 2024 12:39:31	U	SMPL
P5136-02 - 1	COMP-1	338	0.0243		7470A	PPB	09 Dec 2024 12:41:47	U	SMPL
P5136-02MS - 1	COMP-1MS	15584	3.7950		7470A	PPB	09 Dec 2024 12:46:21	U	SMPL
P5136-02MSD - 1	COMP-1MSD	15878	3.8677		7470A	PPB	09 Dec 2024 12:48:38	U	SMPL
PB165487BL - 1	PBW	328	0.0218		7470A	PPB	09 Dec 2024 12:50:55	U	SMPL
CCV07 - 1	CCV07	20330	4.9688		7470A	PPB	09 Dec 2024 12:53:13	U	SMPL
CCB07 - 1	CCB07	99	-0.0348		7470A	PPB	09 Dec 2024 12:55:28	U	SMPL
PB165487BS - 1	LCSW	13521	3.2847		7470A	PPB	09 Dec 2024 13:00:24	U	SMPL
P5100-03 - 1	3154	36	-0.0504		7470A	PPB	09 Dec 2024 13:02:39	U	SMPL
P5103-01 - 1	422	231	-0.0022		7470A	PPB	09 Dec 2024 13:04:55	U	SMPL
P5103-01DUP - 1	422DUP	162	-0.0193		7470A	PPB	09 Dec 2024 13:07:11	U	SMPL
P5103-01MS - 1	422MS	9900	2.3892		7470A	PPB	09 Dec 2024 13:09:26	U	SMPL
P5103-01MSD - 1	422MSD	10169	2.4557		7470A	PPB	09 Dec 2024 13:12:55	U	SMPL
PB165491BL - 1	PBW	-72	-0.0771		7470A	PPB	09 Dec 2024 13:15:11	U	SMPL
PB165491BS - 1	LCSW	13338	3.2395		7470A	PPB	09 Dec 2024 13:23:31	U	SMPL
P5160-01 - 1	112524	3285	0.7531		7470A	PPB	09 Dec 2024 13:25:47	U	SMPL
P5160-01DUP - 1	112524DUP	3173	0.7254		7470A	PPB	09 Dec 2024 13:28:03	U	SMPL
CCV08 - 1	CCV08	19373	4.7321		7470A	PPB	09 Dec 2024 13:37:32	U	SMPL
CCB08 - 1	CCB08	317	0.0191		7470A	PPB	09 Dec 2024 13:48:11	U	SMPL
P5160-01MS - 1	112524MS	8063	1.9348		7470A	PPB	09 Dec 2024 13:50:28	U	SMPL
P5160-01MSD - 1	112524MSD	7600	1.8203		7470A	PPB	09 Dec 2024 13:52:45	U	SMPL
PB165390TB - 1	PB165390TB	581	0.0844		7470A	PPB	09 Dec 2024 14:03:05	U	SMPL
PB165392TB - 1	PB165392TB	430	0.0470		7470A	PPB	09 Dec 2024 14:13:13	U	SMPL
P5136-02LX5 - 1		-45	-0.0705		7470A	PPB	09 Dec 2024 14:15:31	U	SMPL
P5136-02A - 1		9138	2.2007		7470A	PPB	09 Dec 2024 14:17:49	U	SMPL
P5103-01LX5 - 1		-2076	-0.5728		7470A	PPB	09 Dec 2024 14:28:43	U	SMPL
P5103-01A - 1		8910	2.1443		7470A	PPB	09 Dec 2024 14:31:05	U	SMPL
P5160-01LX5 - 1		484	0.0604		7470A	PPB	09 Dec 2024 14:49:32	U	SMPL
P5160-01A - 1		8620	2.0726		7470A	PPB	09 Dec 2024 14:51:51	U	SMPL
CCV09 - 1	CCV09	20559	5.0254		7470A	PPB	09 Dec 2024 15:27:09	U	SMPL
CCB09 - 1	CCB09	-90	-0.0816		7470A	PPB	09 Dec 2024 15:35:05	U	SMPL
P3136-02DUP - 1	COMP-1DUP	36	-0.0504		7470A	PPB	09 Dec 2024 15:37:24	U	SMPL
CCV10 - 1	CCV10	21388	5.2304		7470A	PPB	09 Dec 2024 15:39:41	U	SMPL
CCB10 - 1	CCB10	-39	-0.0690		7470A	PPB	09 Dec 2024 15:47:24	U	SMPL

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB165436

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : WATER

Pippete ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

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

Start Digest Date: 12/06/2024 **Time :** 11:10 **Temp :** 96 °C

End Digest Date: 12/06/2024 **Time :** 14:15 **Temp :** 96 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: JPP

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6000
LFS-2	1.00	M6009
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	3.00	M6126
1:1 HCL	5.00	MP83105
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1CELL #55 Temp: 96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/6/24 15:00	JPP Met dig	[illegible]
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB165436

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
P5095-04	MH-764	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	1
P5096-04	MH-B	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	2
P5096-08	MH-A	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	3
P5100-03	3154	<2	5	25	Brown	Colorless	Clear	Clear	N/A	4
P5100-04	3167	<2	50	50	Brown	Colorless	Clear	Clear	N/A	5
P5103-01	422	<2	5	25	Light Pink	Colorless	Clear	Clear	N/A	6
P5103-02	423	<2	50	50	Brown	Colorless	Clear	Clear	N/A	7
P5110-01	ELIZ-COMP-1	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	8
P5110-02	ELIZ-COMP-2	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	9
P5112-02	10TH-ST-SOIL	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	10
P5117-02	TAPIAL2-IDW-SOIL-120424-00 T2	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	11
P5133-02	MOO-24-00374	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	12
P5136-02	COMP-1	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	13
P5136-02MS	COMP-1MS	<2	5	25	Colorless	Colorless	Clear	Clear	M6000,M6009	15
P5136-02MSD	COMP-1MSD	<2	5	25	Colorless	Colorless	Clear	Clear	M6000,M6009	16
P5136-02DUP	COMP-1DUP	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	14
PB165390TB	PB165390TB	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	17
PB165392TB	PB165392TB	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	18
PB165436BL	PBW436	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	19
PB165436BS	LCS436	<2	5	25	Colorless	Colorless	Clear	Clear	m6000,M6009	20

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB165390

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	P Pos
P5095-04	MH-764	01	100.02	2000	N/A	N/A	N/A	7.6	1.5	T
P5096-04	MH-B	02	100.03	2000	N/A	N/A	N/A	6.2	1.0	T
P5096-08	MH-A	03	100.02	2000	N/A	N/A	N/A	6.0	1.5	T-
P5100-04	3167	N/A	N/A	N/A	N/A	N/A	N/A	8.6	1.0	N/
P5103-02	423	N/A	N/A	N/A	N/A	N/A	N/A	8.6	1.0	N/
P5110-01	ELIZ-COMP-1	04	100.02	2000	N/A	N/A	N/A	5.0	1.5	T-1
P5110-02	ELIZ-COMP-2	05	100.03	2000	N/A	N/A	N/A	4.5	1.0	T-1
P5112-02	10TH-ST-SOIL	06	100.03	2000	N/A	N/A	N/A	6.0	1.5	T-1
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2	07	100.02	2000	N/A	N/A	N/A	3.5	1.0	T-1
P5133-02	MOO-24-00374	08	100.03	2000	N/A	N/A	N/A	3.5	1.5	T-1
P5136-02	COMP-1	09	100.02	2000	N/A	N/A	N/A	3.5	1.0	T-1
PB165390TB	LEB390	10	N/A	2000	N/A	N/A	N/A	4.94	1.5	T-1

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB165392

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	P
P5100-03	3154	N/A	N/A	N/A	N/A	N/A	N/A	6.4	1.0	N
P5103-01	422	N/A	N/A	N/A	N/A	N/A	N/A	8.0	1.5	N/
PB165392TB	LEB392	N/A	N/A	N/A	N/A	N/A	N/A	4.94	1.0	N/A

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB165486

SOP ID : M7470A-Mercury-19

SDG No : NA

Matrix : WATER

Pippete ID: HG A

Balance ID : N/A

Filter paper ID : NA

pH Strip ID : M4909

Hood ID : #1

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

Start Digest Date: 12/09/2024 **Time :** 08:55 **Temp :** 94 °C

End Digest Date: 12/09/2024 **Time :** 10:55 **Temp :** 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature: MB

Supervisor Signature: MC

Temp : 1. 94°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP83522
CCV	30mL	MP83524
CRA	30mL	MP83526
Blank Spike	0.48mL	MP83515
Matrix Spike	0.48mL	MP83515

Chemical Used	ML/SAMPLE USED	Lot Number
HNO3/H2SO4(1:2)	2.5mL	MP83207
KMnO4 (5%)	4.5mL	MP83208
K2S2O8 (5%)	2.5mL	MP83209
Hydroxylamine HCL (12%)	2.0mL	MP83210
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	MP83516
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP83517
2.5 ppb	S2.5	30mL	MP83518
5.0 ppb	S5.0	30mL	MP83519
7.5 ppb	S7.5	30mL	MP83520
10.0 ppb	S10.0	30mL	MP83521
ICV	ICV	30mL	MP83522
ICB	ICB	30mL	MP83523
CCV	CCV	30mL	MP83524
CCB	CCB	30mL	MP83525
CRI	CRI	30mL	MP83526
CHK STD	CHK STD	30mL	MP83527

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/9/24 9:11	MB - DIG - LAB	MB - DIGEST LAB
	Preparation Group	**Analysis Group**

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB165486

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Comment	Prep Pos
P5095-04	MH-764	3	30	<2	N/A	3-1
P5096-04	MH-B	3	30	<2	N/A	2
P5096-08	MH-A	3	30	<2	N/A	3
P5100-04	3167	3	30	<2	N/A	4
P5103-02	423	3	30	<2	N/A	5
P5110-01	ELIZ-COMP-1	3	30	<2	N/A	6
P5110-02	ELIZ-COMP-2	3	30	<2	N/A	7
P5112-02	10TH-ST-SOIL	3	30	<2	N/A	8
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2	3	30	<2	N/A	9
P5133-02	MOO-24-00374	3	30	<2	N/A	10
P5136-02	COMP-1	3	30	<2	N/A	11
P5136-02DUP	COMP-1DUP	3	30	<2	N/A	12
P5136-02MS	COMP-1MS	3	30	<2	MP83515	13
P5136-02MSD	COMP-1MSD	3	30	<2	MP83515	14
PB165390TB	PB165390TB	3	30	<2	N/A	15
PB165486BL	PBW486	30	30	<2	N/A	16
PB165486BS	LCS486	30	30	<2	MP83515	17

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB165390

SOP ID : M1311-TCLP-15
SDG No : N/A
Weigh By : JP
Balance ID : WC SC-7
pH Meter ID : WC PH METER-1
Extraction By : JP
Filter By : JP
Pippete ID : WC
Tumbler ID : T-1 / T-2
TCLP Filter ID : 114771

Start Prep Date : 12/05/2024 **Time :** 16:40
End Prep Date : 12/06/2024 **Time :** 09:25
Combination Ratio : 20
ZHE Cleaning Batch : N/A
Initial Room Temperature: 23 °C
Final Room Temperature: 22 °C
TCLP Technician Signature : JP
Supervisor By : 12

Standared Name	MLS USED	STD REF. # FROM LOG
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE U	Lot Number
TCLP-FLUID-1	N/A	WP110801
HCL-TCLP,1N	N/A	WP110803
HNO3-TCLP,1N	N/A	WP110804
pH Strips	N/A	W1931,W1934,W2350,W2755
pH Strips	N/A	W1937,W1938,W1939,W1940,W1941,W1942
1 Liter Amber	N/A	90424-08
120ml Plastic bottle	N/A	405130101
1:1 HNO3	N/A	MP83122

Extraction Conformance/Non-Conformance Comments:

Matrix spikes are added after fiftation and before preservation. TUMBLER T-1 checked,30 rpm. Particle size reduction is not required. p5100-04 and p5103-02 is oil samples so no fluid determation. P5136-02 IS USED FOR MS-MSD.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/06/24 10:30	JP Ext Room	Ext
	Preparation Group	Analysis Group Met Dig

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 # LB133829

Review By	jaswal	Review On	12/10/2024 8:51:40 PM
Supervise By	mohan	Supervise On	12/10/2024 8:52:27 PM

STD. NAME	STD REF.#
ICAL Standard	MP83516,MP83517,MP83518,MP83519,MP83520,MP83521
ICV Standard	MP83522
CCV Standard	MP83524
ICSA Standard	
CRI Standard	MP83526
LCS Standard	
Chk Standard	MP83523,MP83525,MP83527,MP83529

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	12/09/24 11:15		Mohan	OK
2	S0.2	S0.2	CAL2	12/09/24 11:21		Mohan	OK
3	S2.5	S2.5	CAL3	12/09/24 11:23		Mohan	OK
4	S5	S5	CAL4	12/09/24 11:28		Mohan	OK
5	S7.5	S7.5	CAL5	12/09/24 11:33		Mohan	OK
6	S10	S10	CAL6	12/09/24 11:38		Mohan	OK
7	ICV13	ICV13	ICV	12/09/24 11:46		Mohan	OK
8	ICB13	ICB13	ICB	12/09/24 11:48		Mohan	OK
9	CCV05	CCV05	CCV	12/09/24 11:50		Mohan	OK
10	CCB05	CCB05	CCB	12/09/24 11:53		Mohan	OK
11	CRA	CRA	CRDL	12/09/24 11:58		Mohan	OK
12	HighStd	HighStd	HIGH STD	12/09/24 12:00		Mohan	OK
13	ChkStd	ChkStd	SAM	12/09/24 12:02		Mohan	OK
14	PB165486BL	PB165486BL	MB	12/09/24 12:07		Mohan	OK
15	PB165486BS	PB165486BS	LCS	12/09/24 12:12		Mohan	OK
16	P5095-04	MH-764	SAM	12/09/24 12:14		Mohan	OK
17	P5096-04	MH-B	SAM	12/09/24 12:16		Mohan	OK
18	P5096-08	MH-A	SAM	12/09/24 12:19		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 # LB133829

Review By	jaswal	Review On	12/10/2024 8:51:40 PM
Supervise By	mohan	Supervise On	12/10/2024 8:52:27 PM

STD. NAME	STD REF.#
ICAL Standard	MP83516,MP83517,MP83518,MP83519,MP83520,MP83521
ICV Standard	MP83522
CCV Standard	MP83524
ICSA Standard	
CRI Standard	MP83526
LCS Standard	
Chk Standard	MP83523,MP83525,MP83527,MP83529

19	P5100-04	3167	SAM	12/09/24 12:21		Mohan	OK
20	P5103-02	423	SAM	12/09/24 12:23		Mohan	OK
21	CCV06	CCV06	CCV	12/09/24 12:25		Mohan	OK
22	CCB06	CCB06	CCB	12/09/24 12:28		Mohan	OK
23	P5110-01	ELIZ-COMP-1	SAM	12/09/24 12:30		Mohan	OK
24	P5110-02	ELIZ-COMP-2	SAM	12/09/24 12:32		Mohan	OK
25	P5112-02	10TH-ST-SOIL	SAM	12/09/24 12:35		Mohan	OK
26	P5117-02	TAPIAL2-IDW-SOIL-1	SAM	12/09/24 12:37		Mohan	OK
27	P5133-02	MOO-24-00374	SAM	12/09/24 12:39		Mohan	OK
28	P5136-02	COMP-1	SAM	12/09/24 12:41		Mohan	OK
29	P5136-02MS	COMP-1MS	MS	12/09/24 12:46		Mohan	OK
30	P5136-02MSD	COMP-1MSD	MSD	12/09/24 12:48		Mohan	OK
31	PB165487BL	PB165487BL	MB	12/09/24 12:50		Mohan	OK
32	CCV07	CCV07	CCV	12/09/24 12:53		Mohan	OK
33	CCB07	CCB07	CCB	12/09/24 12:55		Mohan	OK
34	PB165487BS	PB165487BS	LCS	12/09/24 13:00		Mohan	OK
35	P5100-03	3154	SAM	12/09/24 13:02		Mohan	OK
36	P5103-01	422	SAM	12/09/24 13:04		Mohan	OK
37	P5103-01DUP	422DUP	DUP	12/09/24 13:07		Mohan	OK
38	P5103-01MS	422MS	MS	12/09/24 13:09		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 # LB133829

Review By	jaswal	Review On	12/10/2024 8:51:40 PM
Supervise By	mohan	Supervise On	12/10/2024 8:52:27 PM

STD. NAME	STD REF.#
ICAL Standard	MP83516,MP83517,MP83518,MP83519,MP83520,MP83521
ICV Standard	MP83522
CCV Standard	MP83524
ICSA Standard	
CRI Standard	MP83526
LCS Standard	
Chk Standard	MP83523,MP83525,MP83527,MP83529

39	P5103-01MSD	422MSD	MSD	12/09/24 13:12		Mohan	OK
40	PB165491BL	PB165491BL	MB	12/09/24 13:15		Mohan	OK
41	PB165491BS	PB165491BS	LCS	12/09/24 13:23		Mohan	OK
42	P5160-01	112524	SAM	12/09/24 13:25		Mohan	OK
43	P5160-01DUP	112524DUP	DUP	12/09/24 13:28		Mohan	OK
44	CCV08	CCV08	CCV	12/09/24 13:37		Mohan	OK
45	CCB08	CCB08	CCB	12/09/24 13:48		Mohan	OK
46	P5160-01MS	112524MS	MS	12/09/24 13:50		Mohan	OK
47	P5160-01MSD	112524MSD	MSD	12/09/24 13:52		Mohan	OK
48	PB165390TB	PB165390TB	MB	12/09/24 14:03		Mohan	OK
49	PB165392TB	PB165392TB	MB	12/09/24 14:13		Mohan	OK
50	P5136-02L	COMP-1L	SD	12/09/24 14:15		Mohan	OK
51	P5136-02A	COMP-1A	PS	12/09/24 14:17		Mohan	OK
52	P5103-01L	422L	SD	12/09/24 14:28		Mohan	OK
53	P5103-01A	422A	PS	12/09/24 14:31		Mohan	OK
54	P5160-01L	112524L	SD	12/09/24 14:49		Mohan	OK
55	P5160-01A	112524A	PS	12/09/24 14:51		Mohan	OK
56	CCV09	CCV09	CCV	12/09/24 15:27		Mohan	OK
57	CCB09	CCB09	CCB	12/09/24 15:35		Mohan	OK
58	P5136-02DUP	COMP-1DUP	DUP	12/09/24 15:37		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 # LB133829

Review By	jaswal	Review On	12/10/2024 8:51:40 PM
Supervise By	mohan	Supervise On	12/10/2024 8:52:27 PM

STD. NAME	STD REF.#
ICAL Standard	MP83516,MP83517,MP83518,MP83519,MP83520,MP83521
ICV Standard	MP83522
CCV Standard	MP83524
ICSA Standard	
CRI Standard	MP83526
LCS Standard	
Chk Standard	MP83523,MP83525,MP83527,MP83529

59	CCV10	CCV10	CCV	12/09/24 15:39		Mohan	OK
60	CCB10	CCB10	CCB	12/09/24 15:47		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 # LB133834

Review By	kareem	Review On	12/11/2024 5:57:24 PM
Supervise By	jaswal	Supervise On	12/11/2024 11:11:49 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	12/09/24 11:06		Kareem	OK
2	S1	S1	CAL2	12/09/24 11:10		Kareem	OK
3	S2	S2	CAL3	12/09/24 11:14		Kareem	OK
4	S3	S3	CAL4	12/09/24 11:18		Kareem	OK
5	S4	S4	CAL5	12/09/24 11:23		Kareem	OK
6	S5	S5	CAL6	12/09/24 11:27		Kareem	OK
7	ICV01	ICV01	ICV	12/09/24 11:35		Kareem	OK
8	LLICV01	LLICV01	LLICV	12/09/24 11:49		Kareem	OK
9	ICB01	ICB01	ICB	12/09/24 11:54		Kareem	OK
10	CRI01	CRI01	CRDL	12/09/24 11:59		Kareem	OK
11	ICSA01	ICSA01	ICSA	12/09/24 12:08		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	12/09/24 12:17		Kareem	OK
13	ICSADL	ICSADL	ICSA	12/09/24 12:21		Kareem	OK
14	ICSABDL	ICSABDL	ICSAB	12/09/24 12:25		Kareem	OK
15	CCV01	CCV01	CCV	12/09/24 12:29		Kareem	OK
16	CCB01	CCB01	CCB	12/09/24 12:34		Kareem	OK
17	PB165436BL	PB165436BL	MB	12/09/24 12:38		Kareem	OK
18	PB165436BS	PB165436BS	LCS	12/09/24 12:42	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	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 # LB133834

Review By	kareem	Review On	12/11/2024 5:57:24 PM
Supervise By	jaswal	Supervise On	12/11/2024 11:11:49 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

19	PB165287BL	PB165287BL	MB	12/09/24 12:46		Kareem	OK
20	PB165287BS	PB165287BS	LCS	12/09/24 12:51	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
21	PB165390TB	PB165390TB	MB	12/09/24 12:55		Kareem	OK
22	PB165392TB	PB165392TB	MB	12/09/24 12:59		Kareem	OK
23	P5100-04	3167	SAM	12/09/24 13:04		Kareem	OK
24	P5100-03	3154	SAM	12/09/24 13:08		Kareem	OK
25	P5103-01	422	SAM	12/09/24 13:12		Kareem	OK
26	P5103-02DL	423DL	SAM	12/09/24 13:17	Straight 5x Dilution for all elements	Kareem	OK
27	CCV02	CCV02	CCV	12/09/24 13:30		Kareem	OK
28	CCB02	CCB02	CCB	12/09/24 13:35		Kareem	OK
29	PB165416BL	PB165416BL	MB	12/09/24 13:39		Kareem	OK
30	PB165416BS	PB165416BS	LCS	12/09/24 13:44	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
31	P5095-04	MH-764	SAM	12/09/24 13:48		Kareem	OK
32	P5096-04	MH-B	SAM	12/09/24 13:52		Kareem	OK
33	P5096-08	MH-A	SAM	12/09/24 13:56		Kareem	OK
34	P5110-01	ELIZ-COMP-1	SAM	12/09/24 14:01		Kareem	OK
35	P5110-02	ELIZ-COMP-2	SAM	12/09/24 14:05		Kareem	OK
36	P5112-02	10TH-ST-SOIL	SAM	12/09/24 14:10		Kareem	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 # LB133834

Review By	kareem	Review On	12/11/2024 5:57:24 PM
Supervise By	jaswal	Supervise On	12/11/2024 11:11:49 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

37	P5117-02	TAPIAL2-IDW-SOIL-1	SAM	12/09/24 14:14		Kareem	OK
38	P5133-02	MOO-24-00374	SAM	12/09/24 14:19		Kareem	OK
39	CCV03	CCV03	CCV	12/09/24 14:23		Kareem	OK
40	CCB03	CCB03	CCB	12/09/24 14:27		Kareem	OK
41	P5136-02	COMP-1	SAM	12/09/24 14:32		Kareem	OK
42	P5136-02DUP	COMP-1DUP	DUP	12/09/24 14:36		Kareem	OK
43	P5136-02L	COMP-1L	SD	12/09/24 14:40		Kareem	OK
44	P5136-02MS	COMP-1MS	MS	12/09/24 14:45	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
45	P5136-02MSD	COMP-1MSD	MSD	12/09/24 14:49	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
46	P5136-02A	COMP-1A	PS	12/09/24 14:53	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
47	P5112-01	10TH-ST-SOIL	SAM	12/09/24 14:57		Kareem	OK
48	P5112-01DUP	10TH-ST-SOILDUP	DUP	12/09/24 15:01		Kareem	OK
49	P5112-01L	10TH-ST-SOILL	SD	12/09/24 15:05		Kareem	OK
50	P5112-01MS	10TH-ST-SOILMS	MS	12/09/24 15:09	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
51	CCV04	CCV04	CCV	12/09/24 15:13		Kareem	OK
52	CCB04	CCB04	CCB	12/09/24 15:17		Kareem	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 # LB133834

Review By	kareem	Review On	12/11/2024 5:57:24 PM
Supervise By	jaswal	Supervise On	12/11/2024 11:11:49 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

53	P5112-01MSD	10TH-ST-SOILMSD	MSD	12/09/24 15:22	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
54	P5112-01A	10TH-ST-SOILA	PS	12/09/24 15:26	0.1ml of m6010 and m6001 were added to 10ml of the sample	Kareem	OK
55	P5133-01	MOO-24-00374	SAM	12/09/24 15:30		Kareem	OK
56	P5136-01	COMP-1	SAM	12/09/24 15:34		Kareem	OK
57	P5137-01	LAW-OILY-STONES	SAM	12/09/24 15:38		Kareem	OK
58	LR1	LR1	HIGH STD	12/09/24 15:42		Kareem	OK
59	LR2	LR2	HIGH STD	12/09/24 15:47		Kareem	OK
60	CCV05	CCV05	CCV	12/09/24 15:52		Kareem	OK
61	CCB05	CCB05	CCB	12/09/24 15:56		Kareem	OK

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB165390

SOP ID : M1311-TCLP-15

SDG No : N/A

Weigh By : JP

Balance ID : WC SC-7

pH Meter ID : WC PH METER-1

Extraction By : JP

Filter By : JP

Pippete ID : WC

Tumbler ID : T-1 / T-2

TCLP Filter ID : 114771

Start Prep Date : 12/05/2024 **Time :** 16:40

End Prep Date : 12/06/2024 **Time :** 09:25

Combination Ratio : 20

ZHE Cleaning Batch : N/A

Initial Room Temperature: 23 °C

Final Room Temperature: 22 °C

TCLP Technician Signature : JP

Supervisor By : 12

Standared Name	MLS USED	STD REF. # FROM LOG
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE U	Lot Number
TCLP-FLUID-1	N/A	WP110801
HCL-TCLP,1N	N/A	WP110803
HNO3-TCLP,1N	N/A	WP110804
pH Strips	N/A	W1931,W1934,W2350,W2755
pH Strips	N/A	W1937,W1938,W1939,W1940,W1941,W1942
1 Liter Amber	N/A	90424-08
120ml Plastic bottle	N/A	405130101
1:1 HNO3	N/A	MP83122

Extraction Conformance/Non-Conformance Comments:

Matrix spikes are added after fiftation and before preservation. TUMBLER T-1 checked,30 rpm. Particle size reduction is not required. p5100-04 and p5103-02 is oil samples so no fluid determation. P5136-02 IS USED FOR MS-MSD.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/06/24 10:30	JP TCLP Room	EXT
	Preparation Group	Analysis Group: MET DIG

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB165390

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
P5095-04	MH-764	01	100.02	2000	N/A	N/A	N/A	7.6	1.5	T-1
P5096-04	MH-B	02	100.03	2000	N/A	N/A	N/A	6.2	1.0	T-1
P5096-08	MH-A	03	100.02	2000	N/A	N/A	N/A	6.0	1.5	T-1
P5100-04	3167	N/A	N/A	N/A	N/A	N/A	N/A	8.6	1.0	N/A
P5103-02	423	N/A	N/A	N/A	N/A	N/A	N/A	8.6	1.0	N/A
P5110-01	ELIZ-COMP-1	04	100.02	2000	N/A	N/A	N/A	5.0	1.5	T-1
P5110-02	ELIZ-COMP-2	05	100.03	2000	N/A	N/A	N/A	4.5	1.0	T-1
P5112-02	10TH-ST-SOIL	06	100.03	2000	N/A	N/A	N/A	6.0	1.5	T-1
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2	07	100.02	2000	N/A	N/A	N/A	3.5	1.0	T-1
P5133-02	MOO-24-00374	08	100.03	2000	N/A	N/A	N/A	3.5	1.5	T-1
P5136-02	COMP-1	09	100.02	2000	N/A	N/A	N/A	3.5	1.0	T-1
PB165390TB	LEB390	10	N/A	2000	N/A	N/A	N/A	4.94	1.5	T-1

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
P5095-04	MH-764	N/A	N/A	N/A	N/A	100	N/A
P5096-04	MH-B	N/A	N/A	N/A	N/A	100	N/A
P5096-08	MH-A	N/A	N/A	N/A	N/A	100	N/A
P5100-04	3167	N/A	N/A	N/A	N/A	<0.5	N/A
P5103-02	423	N/A	N/A	N/A	N/A	<0.5	N/A
P5110-01	ELIZ-COMP-1	N/A	N/A	N/A	N/A	100	N/A
P5110-02	ELIZ-COMP-2	N/A	N/A	N/A	N/A	100	N/A
P5112-02	10TH-ST-SOIL	N/A	N/A	N/A	N/A	100	N/A
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2	N/A	N/A	N/A	N/A	100	N/A
P5133-02	MOO-24-00374	N/A	N/A	N/A	N/A	100	N/A
P5136-02	COMP-1	N/A	N/A	N/A	N/A	100	N/A
PB165390TB	LEB390	N/A	N/A	N/A	N/A	N/A	N/A

Alliance TECHNICAL GROUP

TCLP Fluid Determination

PB165390

Hot Block ID : WC S-1 /WC S-2

Thermometer ID : FLASHPOINT

SampleID	ClientID	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or 2	pH Extraction Fluid
P5095-04	MH-764	5.02	96.5	9.5	4.0	#1	4.94
P5096-04	MH-B	5.03	96.5	8.6	3.5	#1	4.94
P5096-08	MH-A	5.02	96.5	8.6	3.5	#1	4.94
P5100-04	3167	N/A	N/A	N/A	N/A	N/A	N/A
P5103-02	423	N/A	N/A	N/A	N/A	N/A	N/A
P5110-01	ELIZ-COMP-1	5.02	96.5	6.8	2.5	#1	4.94
P5110-02	ELIZ-COMP-2	5.03	96.5	6.4	2.5	#1	4.94
P5112-02	10TH-ST-SOIL	5.02	96.5	8.4	3.0	#1	4.94
P5117-02	TAPIAL2-IDW-SOIL-120424-00-T2	5.01	96.5	6.4	2.5	#1	4.94
P5133-02	MOO-24-00374	5.02	96.5	6.0	2.5	#1	4.94
P5136-02	COMP-1	5.03	96.5	6.2	2.5	#1	4.94
PB165390TB	LEB390	N/A	N/A	N/A	N/A	#1	4.94

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

Prep Standard - Chemical Standard Summary

Order ID : P5117

Test : TCLP ICP Metals,TCLP Mercury

Prepbatch ID : PB165436,PB165486,

Sequence ID/Qc Batch ID: LB133829,LB133834,LB133834,

Standard ID :
MP83105,MP83207,MP83208,MP83209,MP83210,MP83500,MP83515,MP83516,MP83517,MP83518,MP83519,MP83520,MP83521,MP83522,MP83523,MP83524,MP83525,MP83526,MP83527,MP83529,MP83552,MP83553,MP83554,MP83555,MP83556,MP83557,MP83558,MP83559,MP83560,MP83561,MP83562,MP83565,MP83566,

Chemical ID :
M4371,M4465,M4916,M5062,M5130,M5192,M5218,M5223,M5288,M5295,M5296,M5390,M5393,M5429,M5466,M5467,M5497,M5515,M5658,M5673,M5697,M5698,M5747,M5748,M5768,M5798,M5799,M5800,M5801,M5802,M5806,M5814,M5815,M5816,M5817,M5818,M5819,M5820,M5875,M5882,M5884,M5953,M5959,M5962,M5970,M5978,M5982,M5985,M6000,M6009,M6021,M6023,M6028,M6030,M6033,M6111,M6119,M6121,M6126,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	MP83105	11/07/2024	12/27/2024	Janvi Patel	None	None	Sarabjit Jaswal 11/07/2024

FROM 1000.00000ml of M6111 + 1000.00000ml of W3112 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3965	2:1 H2SO4 : HNO3	MP83207	11/11/2024	05/09/2025	Mohan Bera	None	None	Sarabjit Jaswal 11/11/2024

FROM 1600.00000ml of M5673 + 800.00000ml of M6119 = Final Quantity: 3200.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP83208	11/11/2024	05/11/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 11/11/2024

FROM 100.00000gram of M4916 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
66	POTASSIUM PERSULFATE SOLUTION 5 %	MP83209	11/11/2024	05/11/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 11/11/2024

FROM 100.00000ml of M4465 + 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	MP83210	11/11/2024	05/11/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 11/11/2024

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
902	ICP AES CAL BLK (SO/ICB/CCB)	MP83500	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/09/2024

FROM 125.00000ml of M6121 + 2350.00000ml of W3112 + 25.00000ml of M6126 = Final Quantity: 2500.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP83515	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 1.00000ml of M6126 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1340	Hg 0.00 PPB STD	MP83516	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 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
1341	Hg 0.2 PPB STD	MP83517	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP83515 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1342	Hg 2.5 PPB STD	MP83518	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 245.00000ml of W3112 + 2.50000ml of MP83515 = 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
1343	Hg 5.0 PPB STD	MP83519	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 242.50000ml of W3112 + 5.00000ml of MP83515 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1344	Hg 7.5 PPB STD	MP83520	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 240.00000ml of W3112 + 7.50000ml of MP83515 = 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
1345	Hg 10.0 PPB STD	MP83521	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 237.50000ml of W3112 + 10.00000ml of MP83515 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1346	Hg ICV SOLUTION	MP83522	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M5953 + 2.50000ml of M6126 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP83523	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1358	CCV (Hg 5.0 PPB SOLUTION)	MP83524	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 485.00000ml of W3112 + 5.00000ml of M6126 + 10.00000ml of MP83515 = Final Quantity: 500.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP83525	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 495.00000ml of W3112 + 5.00000ml of M6126 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP83526	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP83515 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP83527	12/09/2024	12/10/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 12/09/2024

FROM 2.50000ml of M6126 + 240.50000ml of W3112 + 7.00000ml of MP83515 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
68	STANNOUS CHLORIDE SOLUTION	MP83529	12/09/2024	12/10/2024	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 12/09/2024

FROM 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6121 = 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
514	CAL BLK (S0/ICB/CCB)	MP83552	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 125.00000ml of M6121 + 2350.00000ml of W3112 + 25.00000ml of M6126 = 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)	MP83553	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 5.00000ml of M5296 + 5.00000ml of M5393 + 5.00000ml of M5467 + 5.00000ml of M5802 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M5982 + 455.00000ml of MP83500 = 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	MP83554	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 50.00000ml of MP83500 + 50.00000ml of MP83553 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP83555	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 25.00000ml of MP83553 + 75.00000ml of MP83500 = 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	MP83556	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 16.00000ml of MP83553 + 184.00000ml of MP83500 = 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	MP83557	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 0.00600ml of M5816 + 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5515 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6033 + 0.06000ml of M5747 + 0.10000ml of M5697 + 0.10000ml of M5698 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M5982 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5819 + 0.20000ml of M5978 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.25000ml of M5467 + 0.25000ml of M5802 + 0.50000ml of M5390 + 0.50000ml of M5814 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M5768 + 1.00000ml of M5806 + 2.00000ml of M5818 + 77.68000ml of MP83500 = 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	MP83558	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 2.00000ml of MP83557 + 98.00000ml of MP83500 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
912	ICP AES ICV SOLN	MP83559	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 0.02500ml of M5429 + 0.02500ml of M5815 + 0.02500ml of M5817 + 0.10000ml of M5466 + 0.25000ml of M5218 + 0.25000ml of M5982 + 10.00000ml of M5295 + 89.77500ml of MP83500 = Final Quantity: 100.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP83560	12/06/2024	12/28/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 25.00000ml of M5130 + 225.00000ml of MP83500 = 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	MP83561	12/06/2024	12/28/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 0.01000ml of M5815 + 0.01000ml of M5817 + 0.10000ml of M5296 + 0.10000ml of M5970 + 0.10000ml of M5982 + 10.00000ml of M5130 + 10.00000ml of M5223 + 79.50000ml of MP83500 = 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	MP83562	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 50.00000ml of MP83500 + 50.00000ml of MP83553 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP83565	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 1.00000ml of M5959 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6126 = 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	MP83566	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 200.00000ml of M6126 + 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-3238-05 / Potassium Persulfate (2.5kg)	0000234156	08/06/2025	07/23/2019 / jaswal	07/25/2019 / manojkumar	M4465

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 #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	12/28/2024	05/20/2024 / jaswal	04/20/2021 / bin	M5130

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57042 / Mo, 1000 PPM, 125 ml	051722	05/17/2025	07/01/2022 / bin	06/17/2022 / jaswal	M5192

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	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	S2-MEB711674	11/02/2026	07/01/2022 / bin	09/10/2021 / bin	M5218

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	12/28/2024	05/20/2024 / jaswal	04/20/2021 / bin	M5223

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	071122	07/11/2025	09/01/2022 / jaswal	07/21/2022 / jaswal	M5288

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV-1014	02/05/2025	08/07/2024 / jaswal	04/20/2021 / bin	M5295

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	S2-MEB711673	11/02/2026	09/19/2022 / jaswal	08/20/2022 / jaswal	M5296

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	072122	07/21/2025	08/07/2024 / jaswal	09/18/2022 / bin	M5390

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB714159	01/13/2027	10/12/2022 / bin	09/19/2022 / bin	M5393

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57103 / Li, 10000 PPM, 125 ml	070622	07/06/2025	01/30/2023 / bin	01/26/2023 / bin	M5429

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	061322	06/13/2025	03/06/2023 / bin	03/01/2023 / bin	M5466

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.	58120 / Ca, 10000 PPM, 500 ml	031523	03/15/2026	03/18/2023 / bin	03/17/2023 / bin	M5497

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	092122	09/21/2025	08/01/2024 / Jaswal	03/17/2023 / bin	M5515

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.	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 #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	23D2462010	03/20/2028	09/21/2023 / mohan	09/05/2023 / mohan	M5673

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	102523	10/25/2026	04/03/2024 / jaswal	10/27/2023 / jaswal	M5697

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58025 / Mn, 1000 PPM, 500 ml	102623	10/26/2026	04/18/2024 / jaswal	10/27/2023 / jaswal	M5698

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

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.	58112 / Mg, 10000 PPM, 500 ml	091823	09/18/2026	01/08/2024 / bin	01/03/2024 / bin	M5768

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.	57051 / Sb, 1000 PPM, 125 ml	120523	12/05/2026	08/07/2024 / jaswal	01/03/2024 / jaswal	M5802

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.	58111 / Na, 10000 PPM, 500 ml	122223	12/22/2026	08/01/2024 / Jaswal	01/03/2024 / jaswal	M5806

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57005 / B, 1000 PPM, 125 ml	071123	07/11/2026	03/26/2024 / Sohil	01/03/2024 / jaswal	M5814

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57115 / P, 10000 PPM, 125 ml	041723	04/17/2026	05/21/2024 / Jaswal	02/09/2024 / jaswal	M5815

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57116 / S, 10000 PPM, 125 ml	071123	07/11/2026	03/01/2024 / jaswal	02/09/2024 / jaswal	M5817

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57014 / Si, 1000 PPM, 125 ml	122023	12/20/2026	03/06/2024 / jaswal	02/09/2024 / jaswal	M5818

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	111623	11/16/2026	03/20/2024 / jaswal	02/09/2024 / jaswal	M5819

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 #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	T2-MEB714417	01/27/2027	04/19/2024 / jaswal	02/22/2024 / jaswal	M5875

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 #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV5-0415	01/01/2025	07/01/2024 / mohan	03/30/2023 / mohan	M5953

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	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	07/01/2024 / Jaswal	06/14/2024 / Jaswal	M5959

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57034 / Se, 1000 PPM, 125 ml	060624	06/06/2027	07/02/2024 / Jaswal	06/14/2024 / Jaswal	M5962

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5978

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	031524	03/15/2027	07/01/2024 / Jaswal	06/11/2024 / Jaswal	M5982

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	T2-MEB723367	08/30/2026	08/13/2024 / Jaswal	05/14/2024 / Jaswal	M6000

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	08/13/2024 / Jaswal	05/14/2024 / Jaswal	M6009

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

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	011623	01/16/2026	08/07/2024 / Jaswal	01/03/2024 / Jaswal	M6033

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)	22F0762009	05/09/2027	11/04/2024 / Eman	09/29/2024 / Janvi	M6111

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)	24B1362001	05/09/2025	11/09/2024 / Janvi	10/09/2024 / Janvi	M6119

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)	0000275677	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6121

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	06/03/2025	12/03/2024 / Janvi	11/12/2024 / Janvi	M6126

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

M6028

R 8/15/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57048
Lot Number: 070124
Description: Cadmium (Cd)

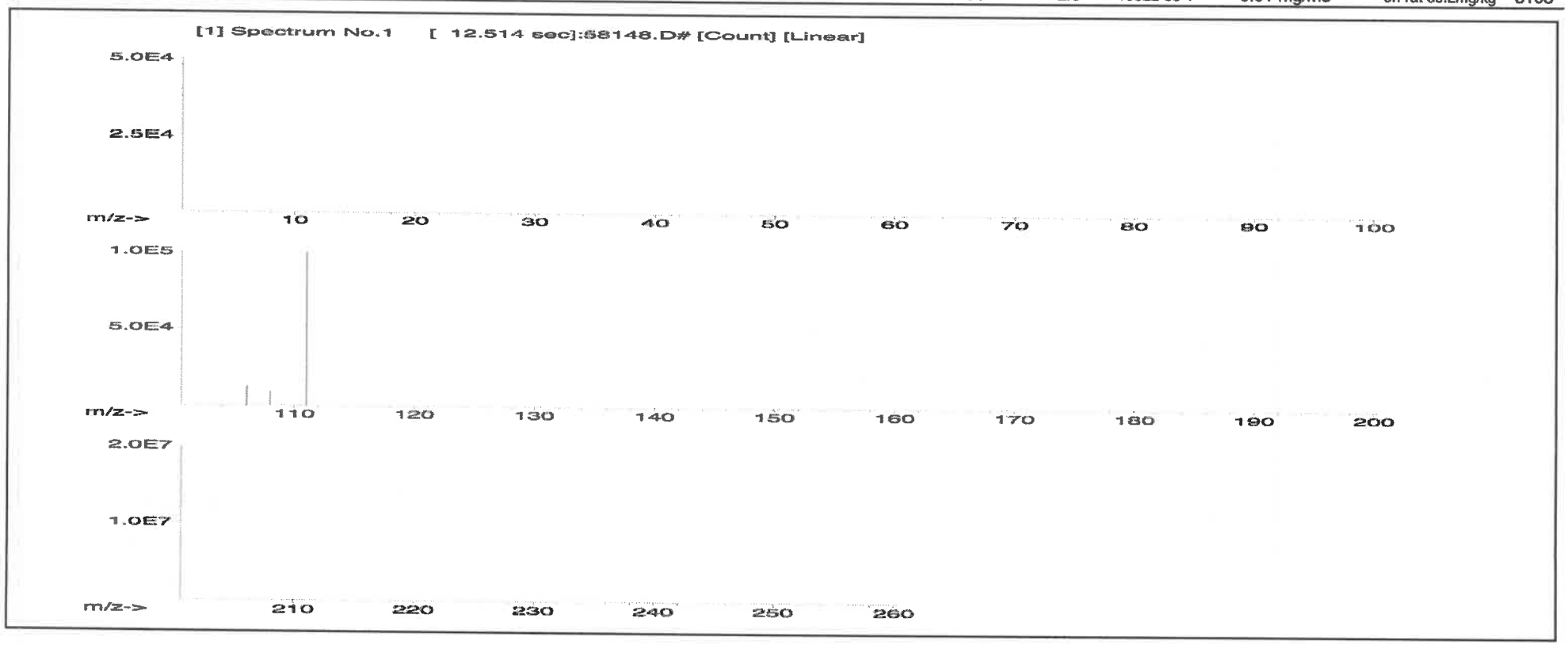
Expiration Date: 070127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.100	Flask Uncertainty	

Aleah O'Brady
Formulated By: Aleah O'Brady 070124

Pedro Rentas
Reviewed By: Pedro L. Rentas 070124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cadmium nitrate tetrahydrate (Cd)	IN024	CDM092021A1	1000	99.999	0.10	36.5	5.4797	5.4804	**1000.1**	**2.0**	10022-68-1	0.01 mg/m3	orl-rat 60.2mg/kg	3108



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	T	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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:	CHEM-CLP-4
Lot Number:	S2-MEB711673
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 ± 6 µg/mL**	**Molybdenum, Mo**	**1 000 ± 6 µg/mL**
Silicon, Si	**1 000 ± 7 µg/mL**	**Tin, Sn**	**1 000 ± 6 µg/mL**
Titanium, Ti	**1 000 ± 7 µg/mL**		

Density: 1.030 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

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**

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

November 02, 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

- **November 02, 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:

Michael Booth
Director, 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:	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 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
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:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

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

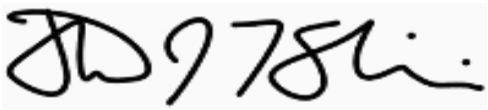
- Sealed TCT Bag Open Date: _____

- 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

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-MEB714159
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 ± 8 µg/mL**	**Cadmium, Cd**	**500.0 ± 2.1 µg/mL**
Lead, Pb	**1 000 ± 5 µg/mL**	**Selenium, Se**	**1 000 ± 8 µg/mL**
Thallium, Tl	**1 000 ± 7 µg/mL**		

Density: 1.043 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:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

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**

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 13, 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 13, 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

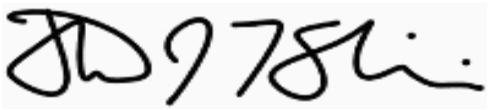
- Sealed TCT Bag Open Date: _____

- 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

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

ThermoFisher SCIENTIFIC

M4913-16

MB

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P279	Quality Test / Release Date	01/12/2021
Lot Number	210306		
Description	POTASSIUM PERMANGANATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Jan/2026

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Dark purple to purple green crystals
ASSAY	%	>= 99	99.3
CHLORIDE & CHLORATE	%	<= 0.005	<0.005
IDENTIFICATION	PASS/FAIL	= PASS TEST	pass test
INSOLUBLE MATTER	%	<= 0.2	<0.2
MERCURY (Hg)	ppm	<= 0.05	<0.004
SULFATE (SO4)	%	<= 0.02	<0.02

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

M5062
M5063
M3

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSHG-10PPM
Lot Number:	S2-HG709270
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance.

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

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.

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



QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

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.

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5192 R: 06/17/22

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

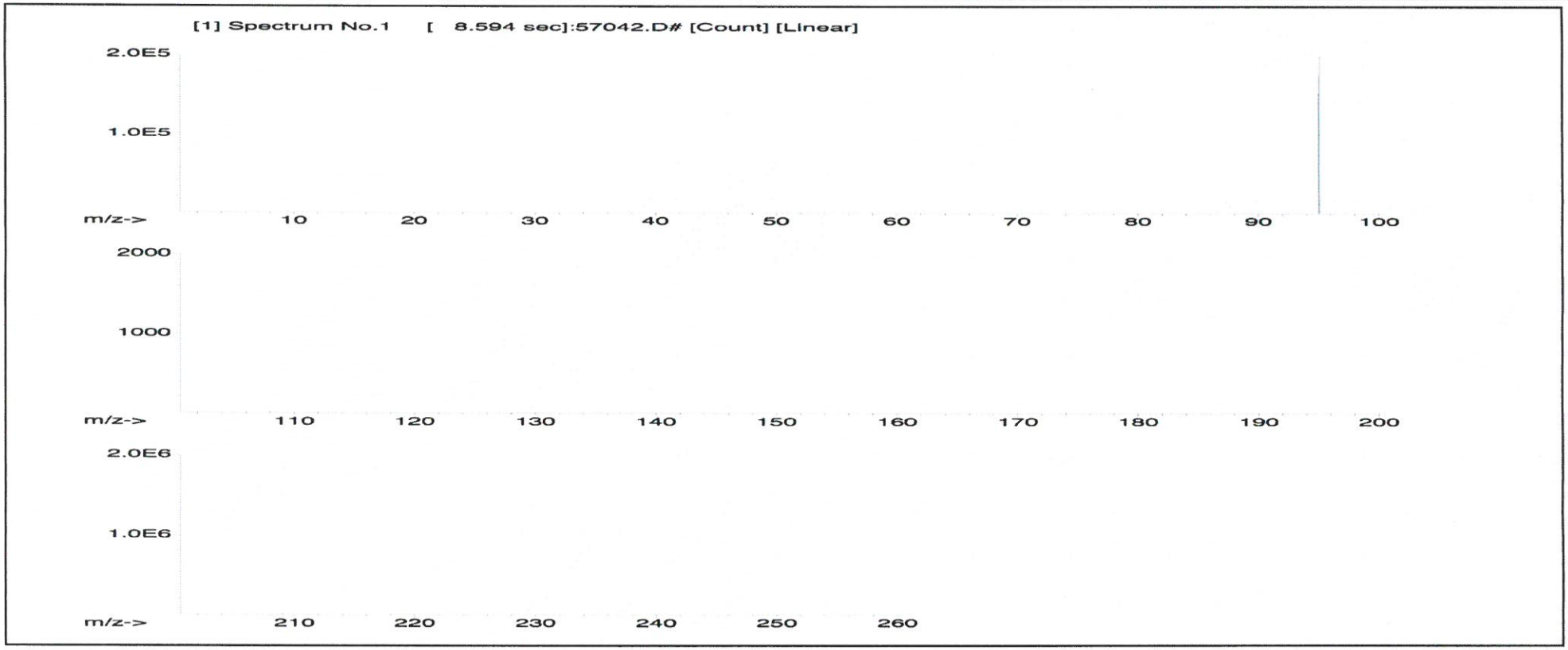
Part Number: 57042
Lot Number: 051722
Description: Molybdenum (Mo)
Expiration Date: 051725
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 3000.41

Lot #	Solvent:		
MKBQ8597V	Ammonium hydroxide		
0.5%	15.0 (mL)	Ammonium hydroxide	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

Formulated By: Lawrence Barry 051722

Reviewed By: Pedro L. Rentas 051722

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium molybdate (Mo)	58142	022222	0.1000	300.0	0.084	1000	10001.0	**1000.0**	**2.1**	13106-76-8	5 mg(Mo)/m3	orl-rat 333 mg/kg	3134



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass 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	T	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:



* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated 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

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-QC-4
Lot Number:	S2-MEB711674
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

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
Boron, B	**1 000 ± 7 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	**1 001 ± 6 µg/mL**		

Density: 1.032 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

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**

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

November 02, 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

- **November 02, 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:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

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.

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5288 R: 07/21/2022

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

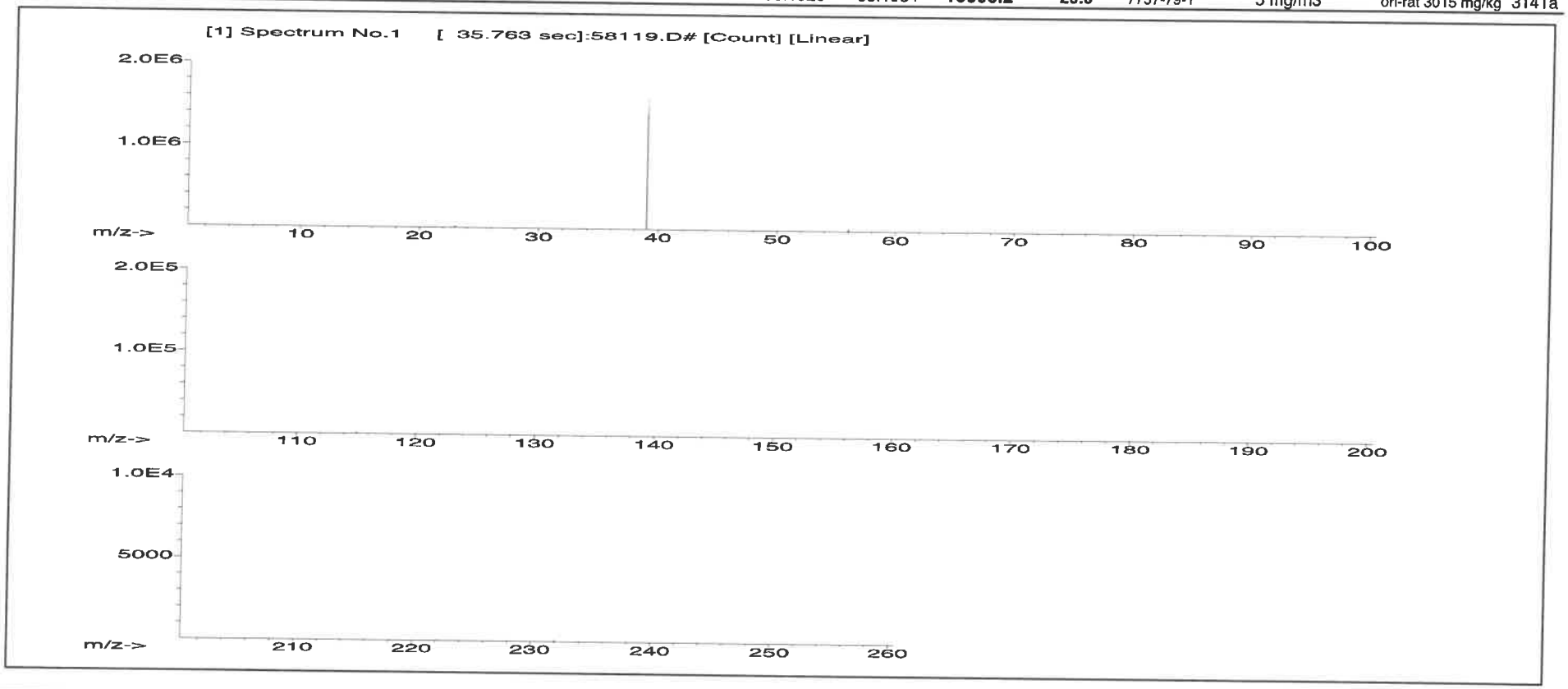
Part Number: 58119
Lot Number: 071122
Description: Potassium (K)

Expiration Date: 071125
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

	Lot #		
Solvent:	20510011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	071122
Reviewed By:	Pedro L. Rentas	071122

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	KD022021A1	10000	99.999	0.10	37.6	53.1925	53.1934	**10000.2**	**20.0**	7757-79-1	5 mg/m3	orl-rat 3015 mg/kg	3141a



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	T	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

R : 4/20/21

QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Metals in Dilute Acidic or Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets Available Upon Request

M5291
M5292
M5293
M5294
M5295

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

(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 Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

ICV1-1014 For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415 For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

ICV6-0400 For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) *CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS*

ICV1-1014		
Element	**Concentration (µg/L) (after 10-fold dilution)**	**Concentration (µg/L) (after 50-fold dilution)**
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	**Concentration (µg/L) (after 100-fold dilution)**	**Analyte**	**Concentration (µg/L) (after 100-fold dilution)**
Hg	4.0	CN^-	99

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

R: 09/08/22 (BA)

Certified Reference Material CRM

M5387 . M5389 . M5390 . M5391 . M5392

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57056
Lot Number: 072122
Description: Barium (Ba)

Expiration Date: 072125
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 2000.02 ± 0.058 Flask Uncertainty

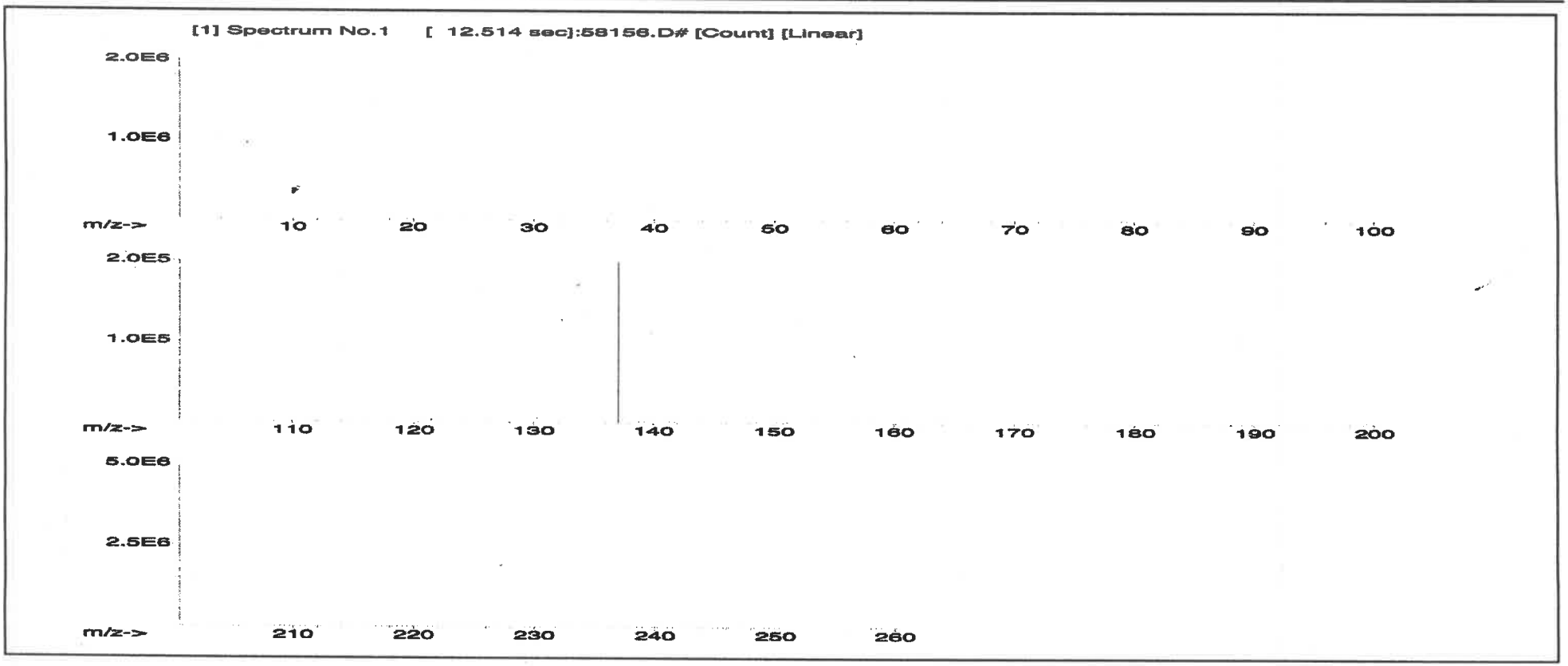
	Lot #		
Solvent:	20510011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	072122
Reviewed By:	Pedro L. Rentas	072122

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	3.82426	**1000.0**	2.0	10022-31-8	0.5 mg/m3	orl-rat 355 mg/kg	3104a



5611-METALS

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	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:

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

M5429 R1 01/26/23 BH

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57103
Lot Number: 070622
Description: Lithium (Li)

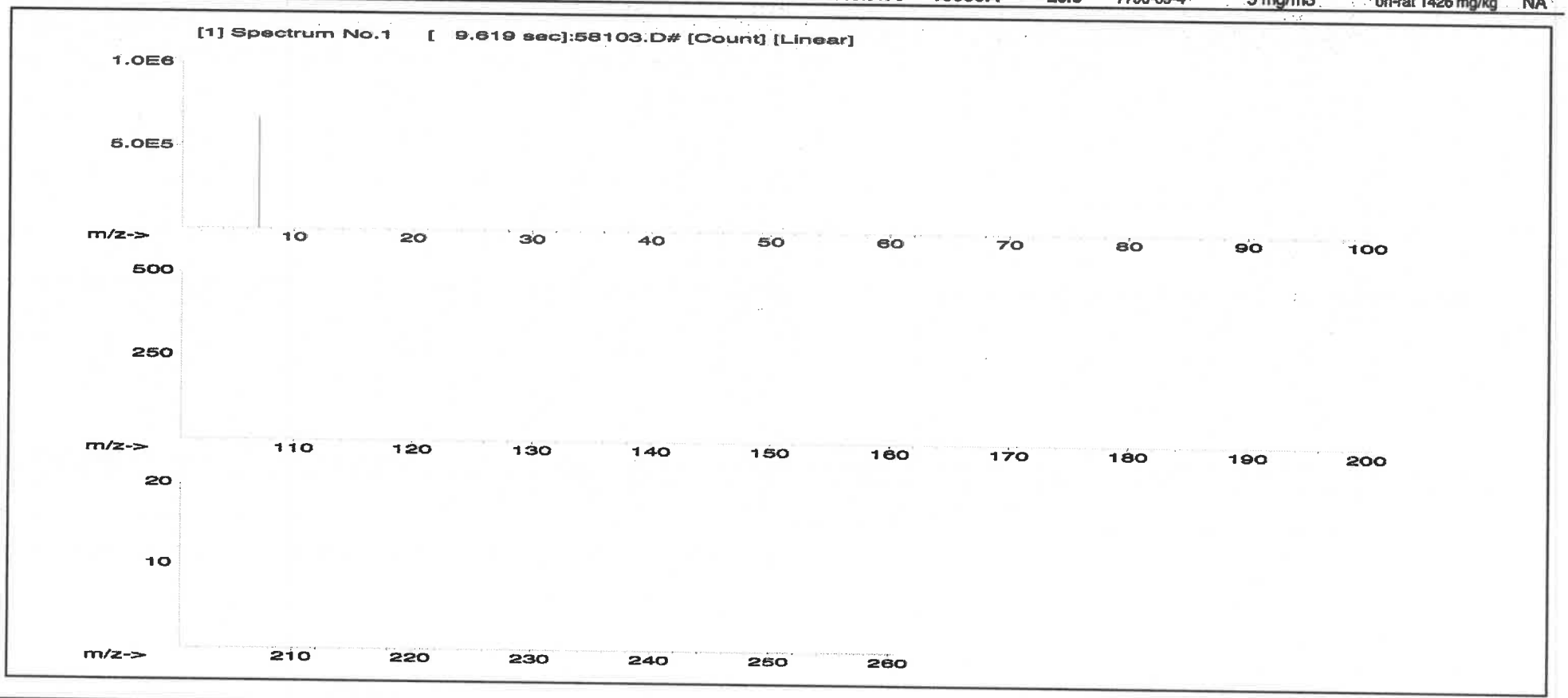
Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1000.12

	Lot #			
Solvent:	20510011	Nitric Acid		
2%	20.0 (mL)	Nitric Acid		

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	070622
Reviewed By:	Pedro L. Rentas	070622

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	IN019	LIZ042018A1	10000	99.999	0.10	10.0	100.0134	100.0173	**10000.4**	**20.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	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	T	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

M 5466

Certified Reference Material CRM

R: 03/01/23 BH

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

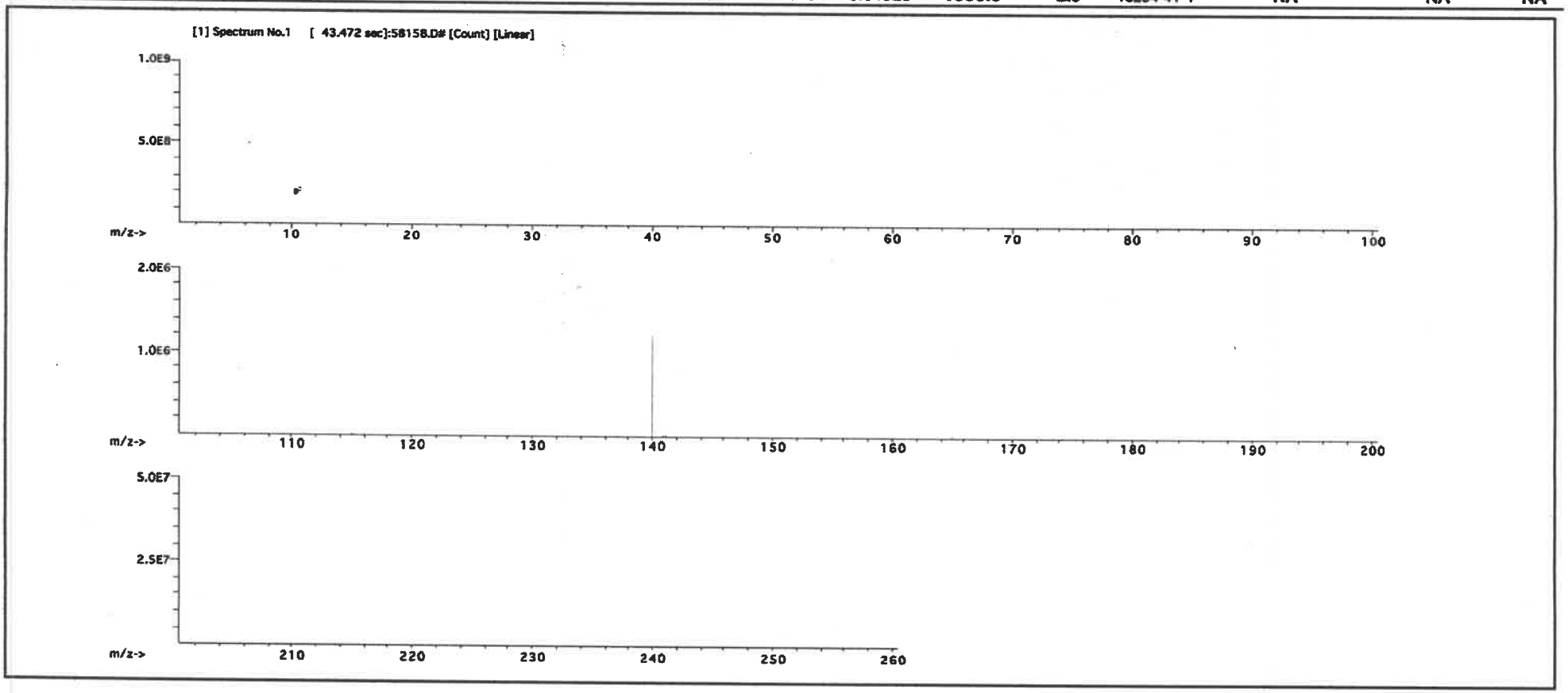
Part Number: 57058
Lot Number: 061322
Description: Cerium (Ce)

Expiration Date: 061325
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1000.12

	Lot #			
Solvent:	20510011	Nitric Acid		
2%	20.0 (mL)	Nitric Acid		
		5E-05	Balance Uncertainty	
		0.058	Flask Uncertainty	

Formulated By: Lawrence Barry 061322
Reviewed By: Pedro L. Rentas 061322

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	3.04923	1000.0	2.0	10294-41-4	NA	NA	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 Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	T	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5467 R: 03/01/23 (LA)

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57058
Lot Number: 020623
Description: Cerium (Ce)

Expiration Date: 020626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

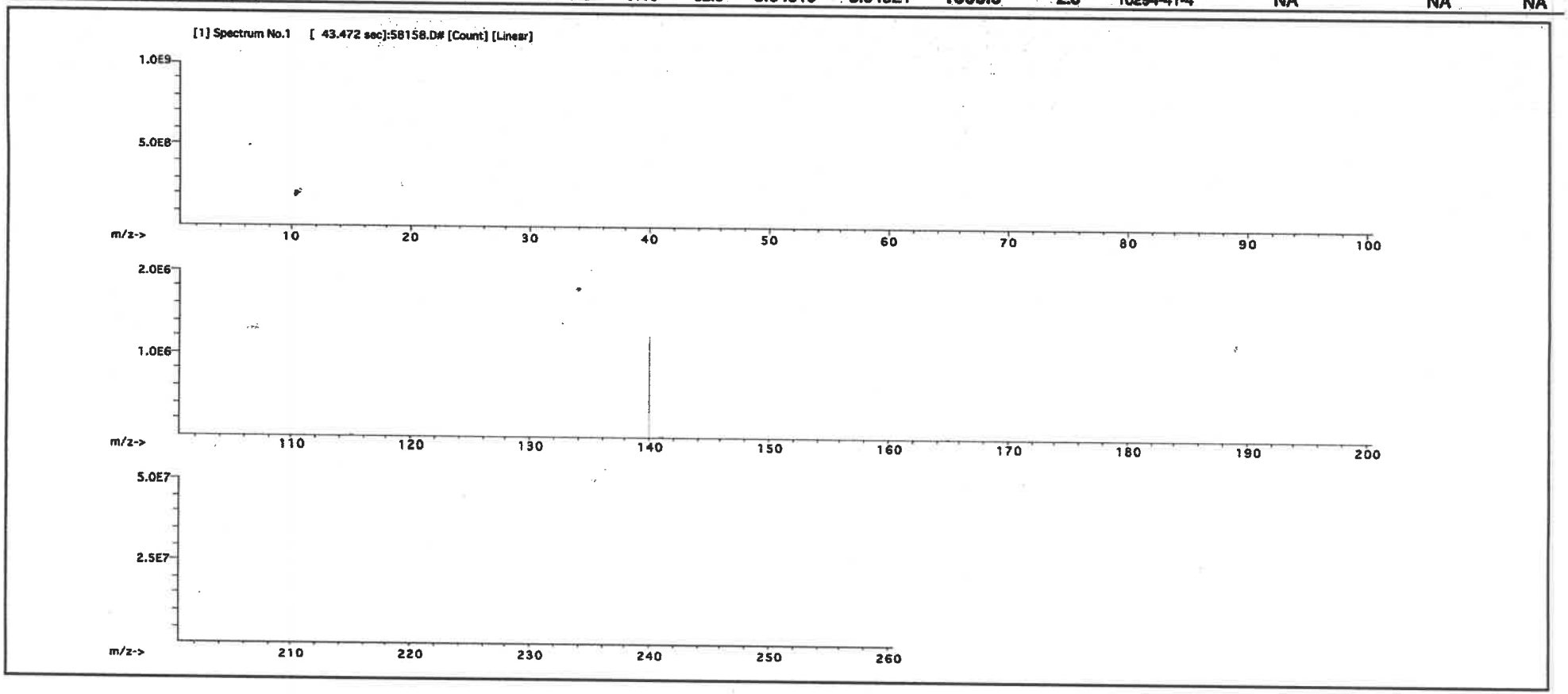
Weight shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

	Lot #			
Solvent:	21110221	Nitric Acid		
2%	20.0 (mL)	Nitric Acid		

5E-05 Balance Uncertainty

Formulated By:	Lawrence Barry	020623
Reviewed By:	Pedro L. Rentas	020623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	3.04921	**1000.0**	**2.0**	10294-41-4	NA	NA	NA



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	T	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5497 - M5498 R: 03/17/23 (BA)

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 031523
Description: Calcium (Ca)

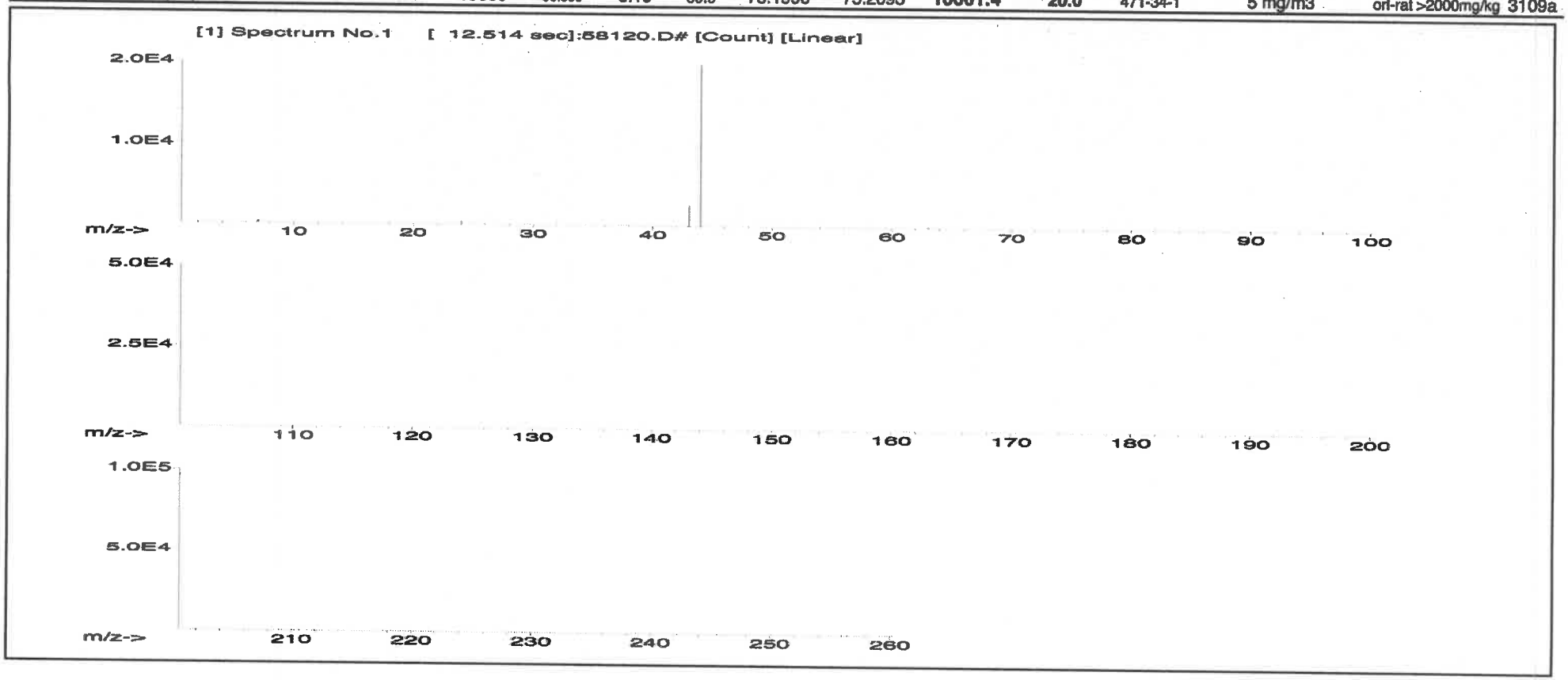
Expiration Date: 031526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41

	Lot #		
Solvent:	21110221	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

Giovanni Esposito
Formulated By: Giovanni Esposito 031523

Pedro Rentas
Reviewed By: Pedro L. Rentas 031523

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD072022A1	10000	99.999	0.10	39.9	75.1990	75.2093	**10001.4**	**20.0**	471-34-1	5 mg/m3	orl-rat >2000mg/kg	3109a



Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<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

M5514 , M5515 R: 03/17/23

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

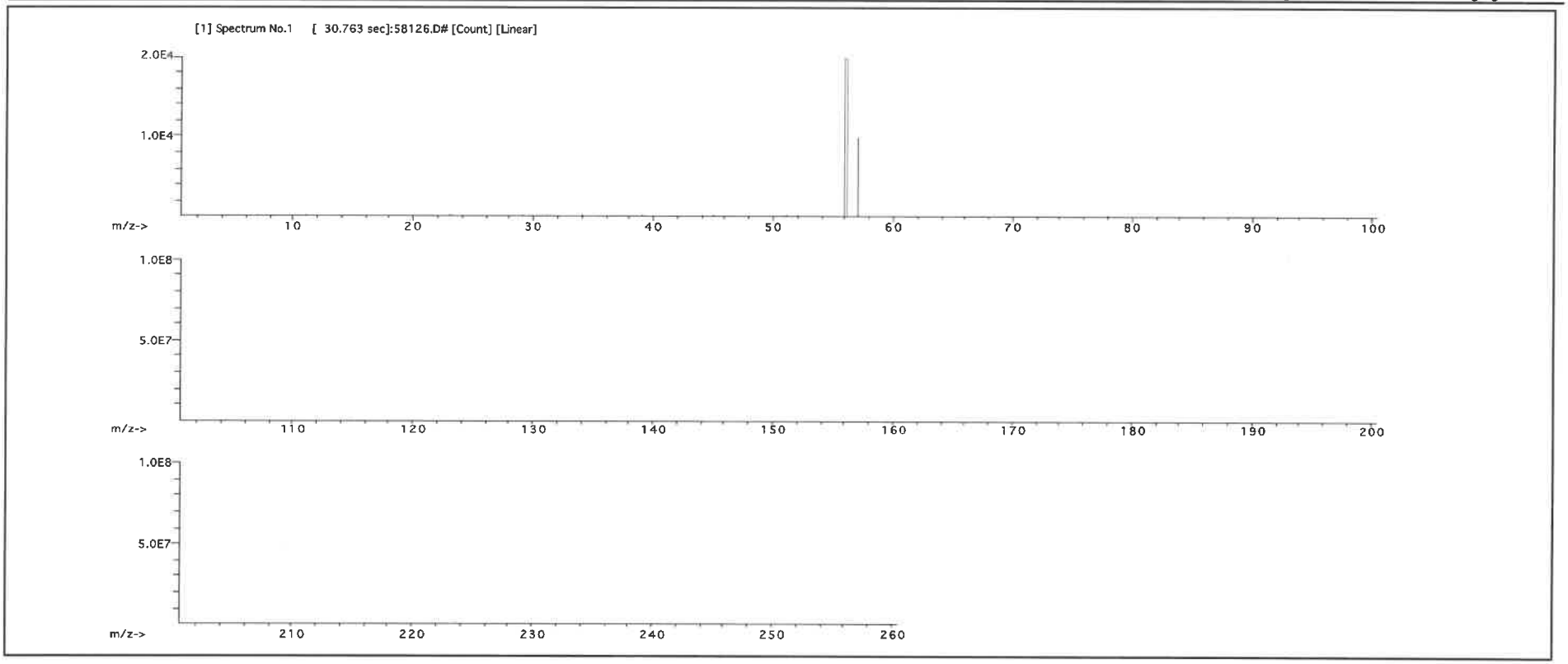
CERTIFIED WEIGHT REPORT:

Part Number:	**58126**		**Lot #**		
Lot Number:	**092122**		**Solvent:**	20510011	Nitric Acid
Description:	**Iron (Fe)**		7.0%	350.0 (mL)	Nitric Acid
Expiration Date:	092125				
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	092122
Reviewed By:	Pedro L. Rentas	092122

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	2224912-500	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



PLUS METALS

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.10	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	<0.05
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:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5658 R ! 8/25/23

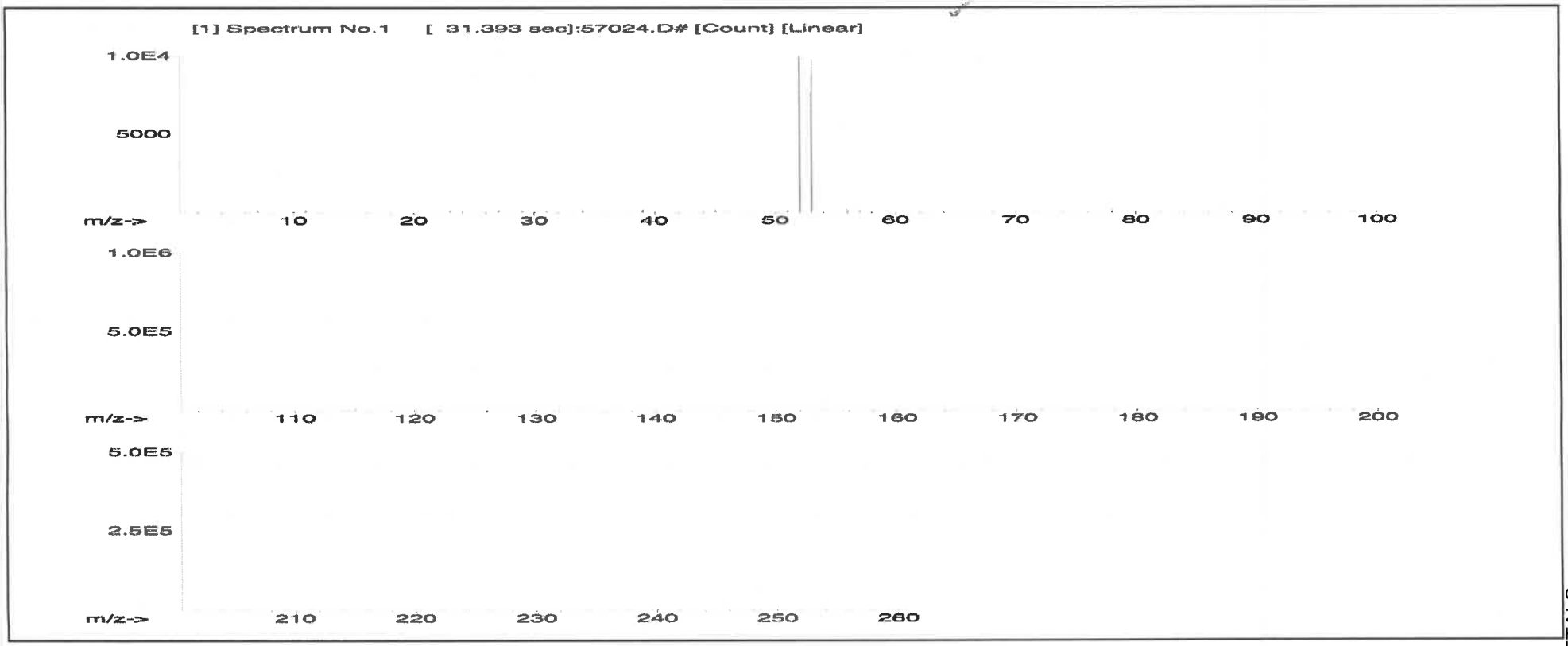
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58024**	21110221	Nitric Acid	
Lot Number:	**060523**			
Description:	**Chromium (Cr)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	060523
Reviewed By:	Pedro L. Rentas	060523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Chromium(III) nitrate nonahydrate (Cr)	58124	071122	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	7789-02-8	0.5 mg(Cr)/m3	orl-rat 3250 mg/kg	3112a



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	T	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

9673-33
A-3

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H_2SO_4)	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO2)	≤ 2 ppm	< 2 ppm
Ammonium (NH_4)	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO_3)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO_4)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities – Sodium (Na)	≤ 500.0 ppb	5.4 ppb
Trace Impurities – Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.4 ppb

For Laboratory,Research,or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5697 R: 10/27/23

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

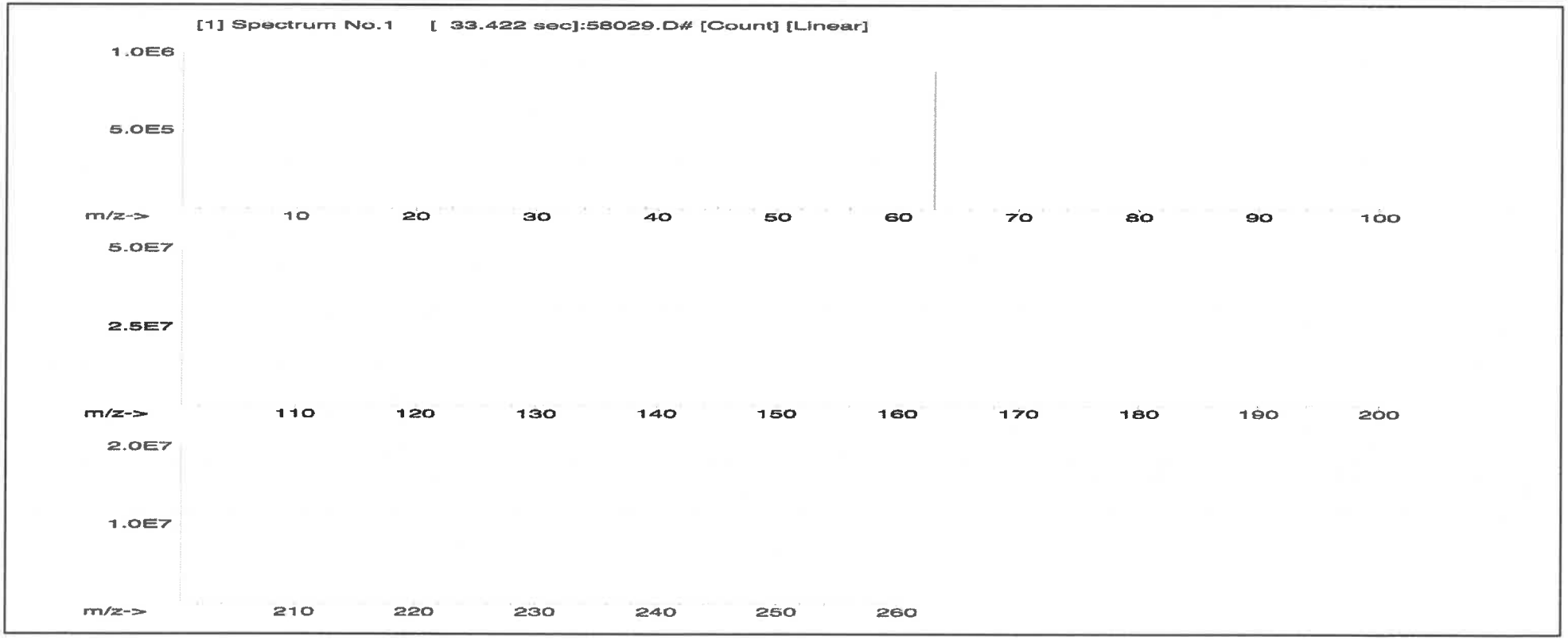
		Lot #	Solvent:
Part Number:	**58029**	24002546	Nitric Acid
Lot Number:	**102523**		
Description:	**Copper (Cu)**		

2.0%	40.0 (mL)	Nitric Acid	

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Copper(II) nitrate trihydrate (Cu)	58129	100223	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	10031-43-3	1 mg/m3	orl-rat 794 mg/kg	3114



Absolute Standards, Inc.
300-368-1131
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

M5648 R: 10/27/23

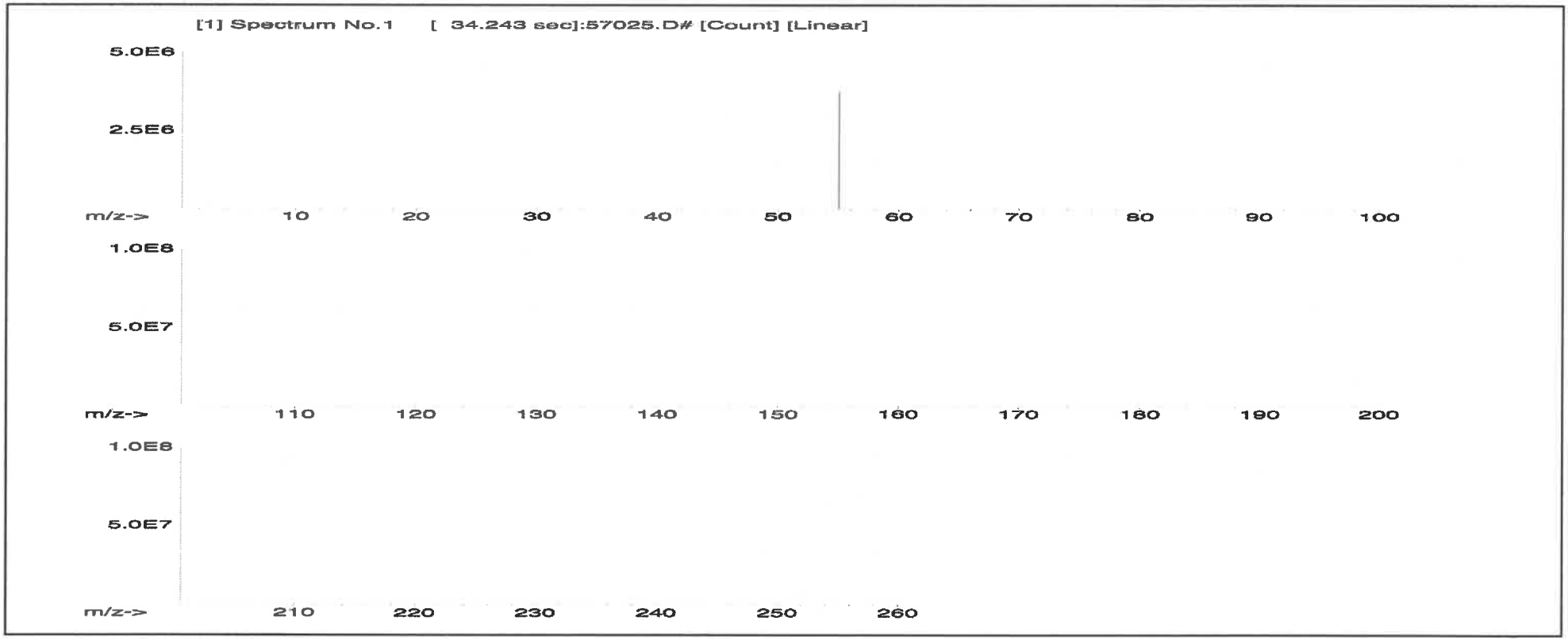
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:
Part Number:	**58025**	24002546	Nitric Acid
Lot Number:	**102623**		
Description:	**Manganese (Mn)**		
		2.0%	60.0 (mL) Nitric Acid
Expiration Date:	102626		
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):	3000.41	0.058	Flask Uncertainty

Formulated By:	Benson Chan	102623
Reviewed By:	Pedro L. Rentas	102623

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. Manganese(II) nitrate tetrahydrate (Mn)	58125	071123	0.1000	300.0	0.084	1000	10000.1	**1000.0**	**2.1**	20694-39-7	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 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)

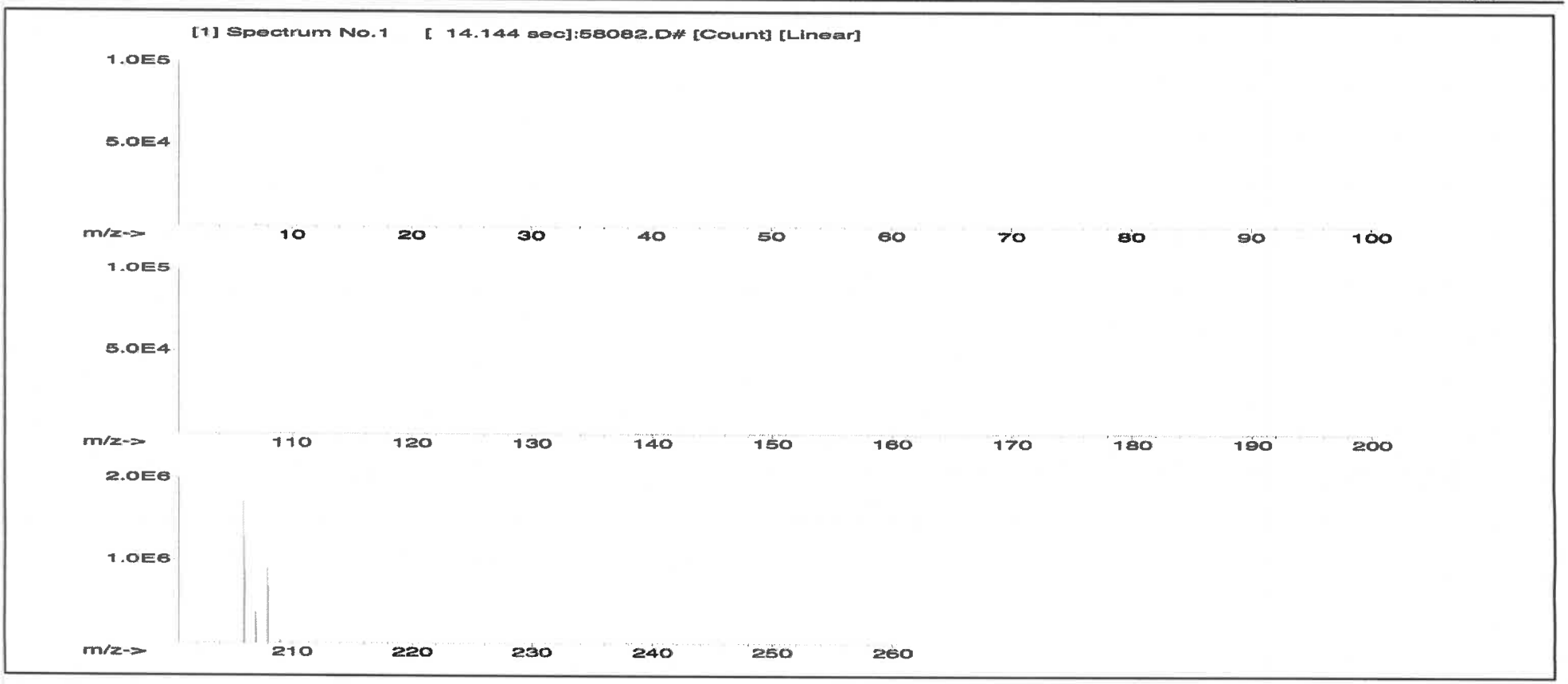
Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 0.06 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

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

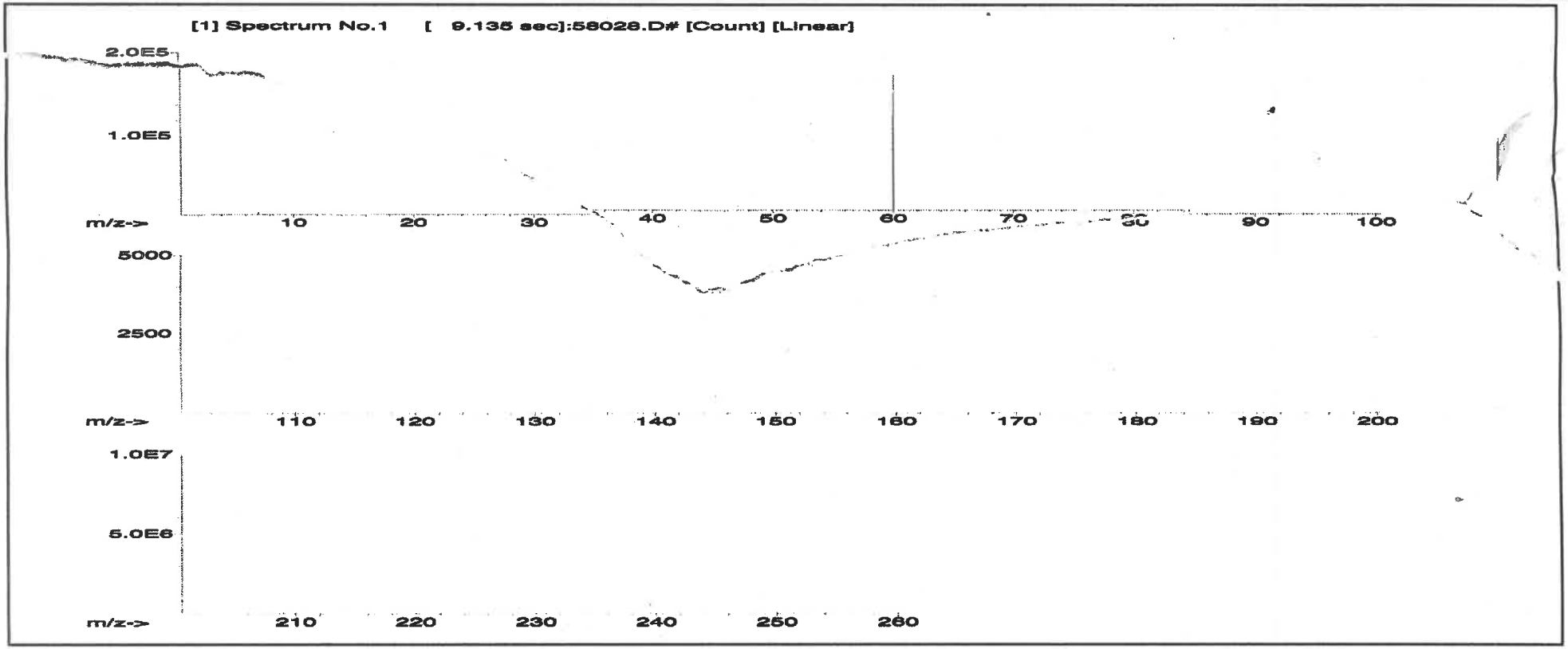
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

M5768 M5769 (BP) R:1/3/24

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 091823
Description: Magnesium (Mg)

Expiration Date: 091826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02 ± 0.058 Flask Uncertainty

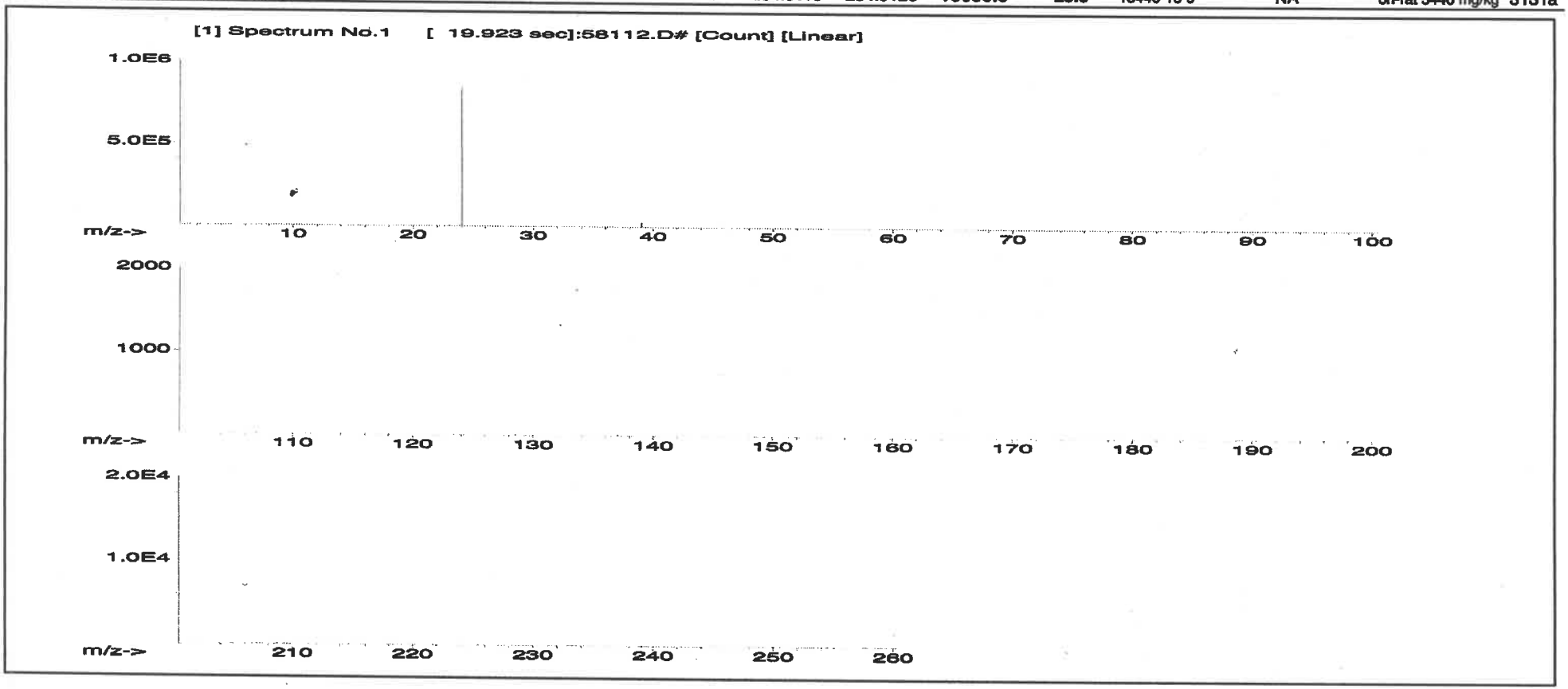
	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

M5768, M5769 (BP) R: 1/3/24

Formulated By:	Lawrence Barry	091823
Reviewed By:	Pedro L. Rentas	091823

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	234.9118	234.9126	**10000.0**	**20.0**	13446-18-9	NA	ori-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

R: 02/09/24 M5798

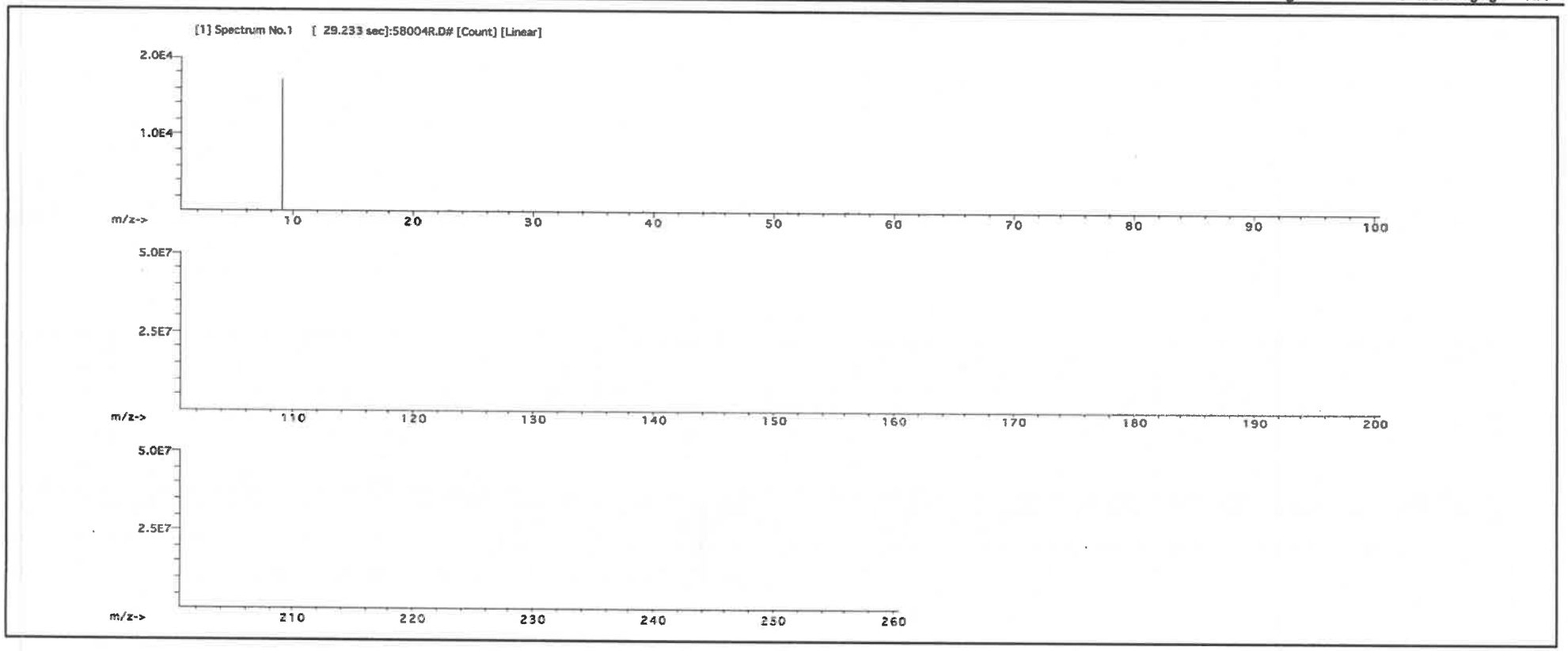
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



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)

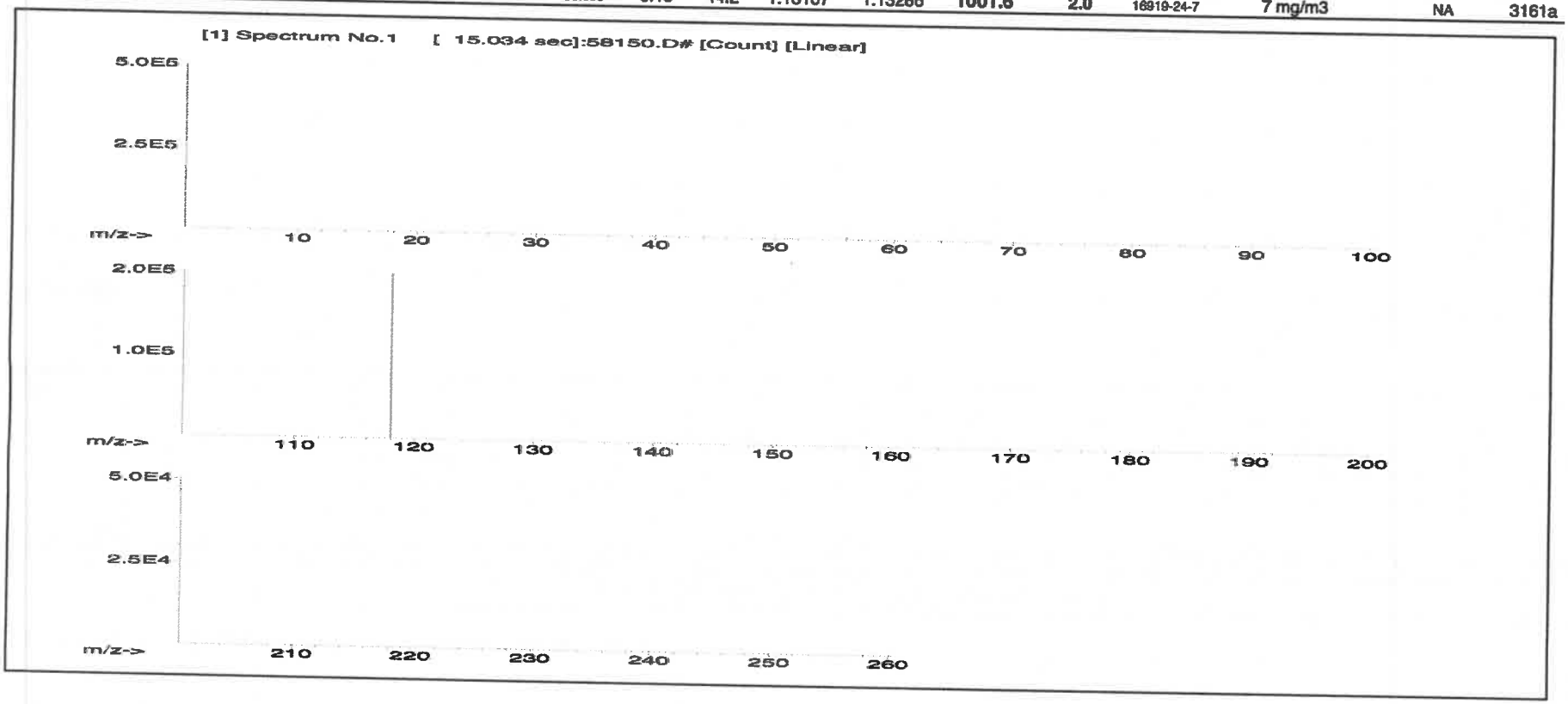
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

Solvents:	Lot #	
	21110221	Nitric Acid
	22D0562008	Hydrochloric acid
2%	10.0	Nitric Acid
6%	30.0	Hydrochloric acid
	(mL)	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rentas	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium hexafluorostannate(IV) (Sn)	IN010	SND042023A1	1000	99.999	0.10	44.2	1.13107	1.13286	**1001.6**	**2.0**	16919-24-7	7 mg/m3	NA	3161a



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	T	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 IM5800 BH

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

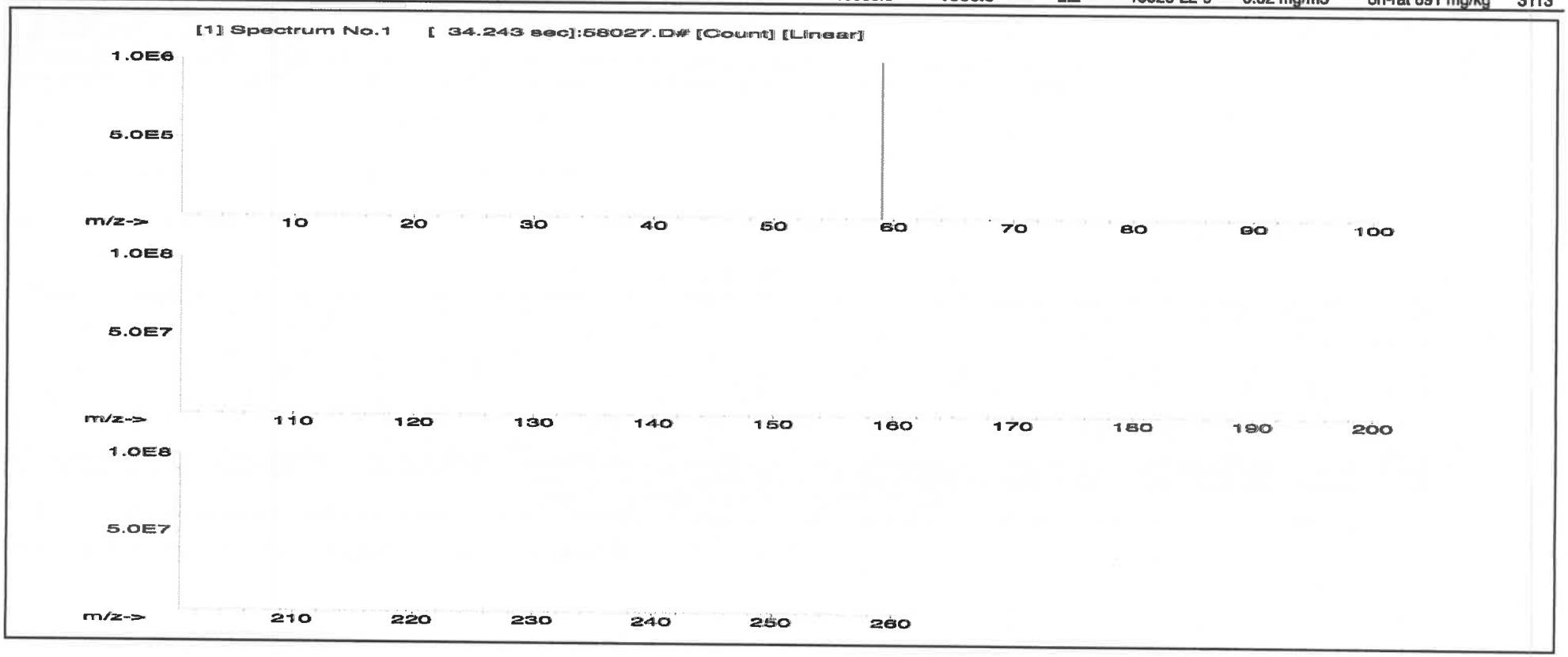
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57027**	24002546	Nitric Acid		
Lot Number:	**091923**				
Description:	**Cobalt (Co)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	091926				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Formulated By: Lawrence Barry 091923

Reviewed By: Pedro L. Rentas 091923

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cobalt(II) nitrate hexahydrate (Co)	58127	050923	0.1000	200.0	0.084	1000	10000.0	**1000.0**	**2.2**	10026-22-9	0.02 mg/m3	orl-rat 691 mg/kg	3113



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	T	Gé	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 M5801 BH

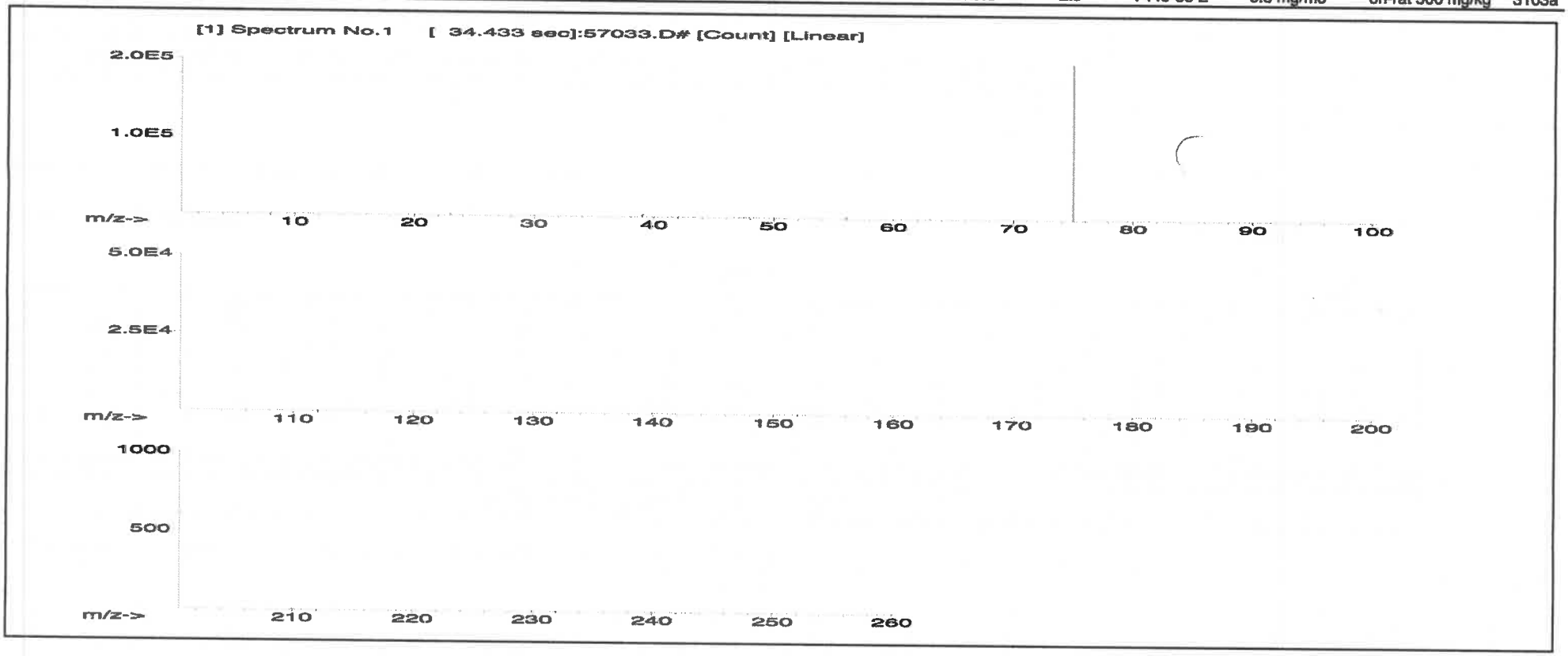
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**	24002546	Nitric Acid		
Lot Number:	**111323**				
Description:	**Arsenic (As)**	2.0%	80.0 (mL)	Nitric Acid	
Expiration Date:	111326				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	4000.0	0.06	Flask Uncertainty		

Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rentas	111323

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	**1000.0**	2.0	7440-38-2	0.5 mg/m3	orl-rat 500 mg/kg	3103a



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

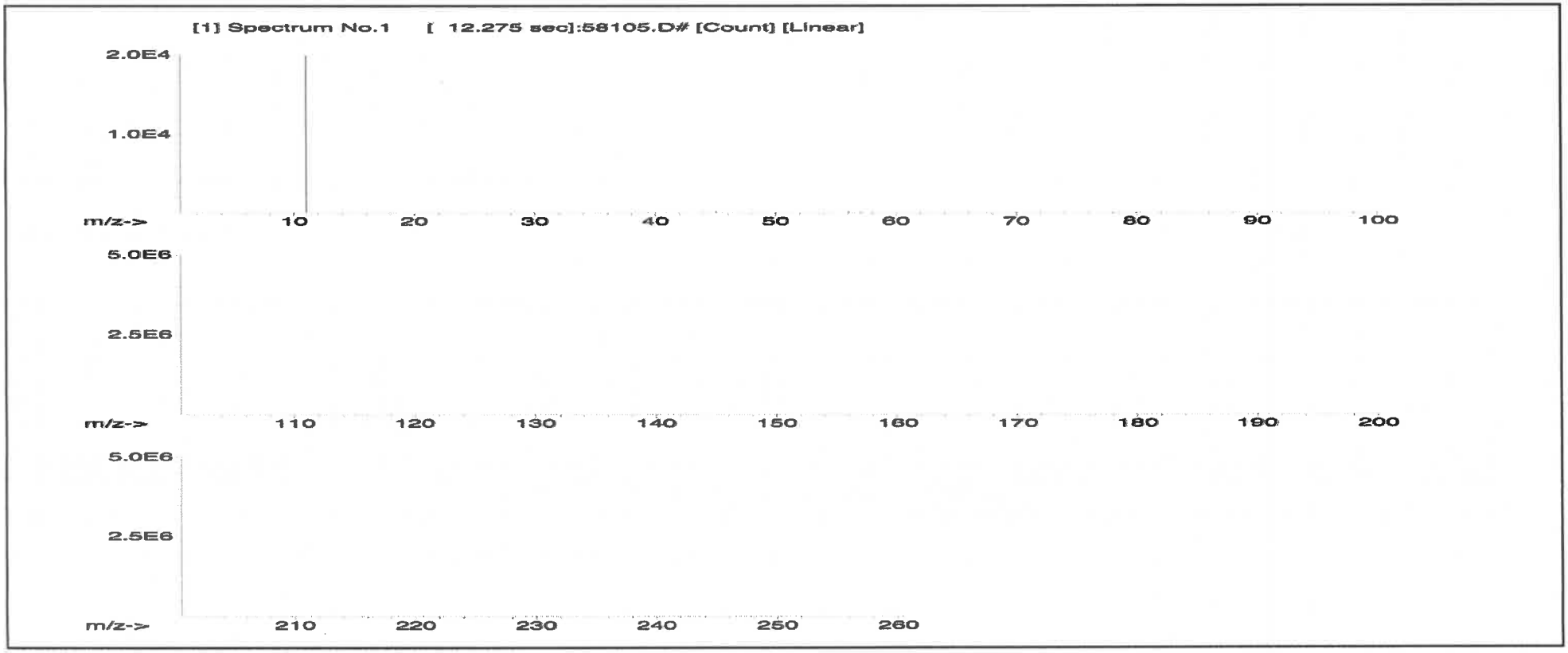
Weight shown below was diluted to (mL): 1999.48 0.058 Flask Uncertainty

	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

R1 02/09/24. M58165

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

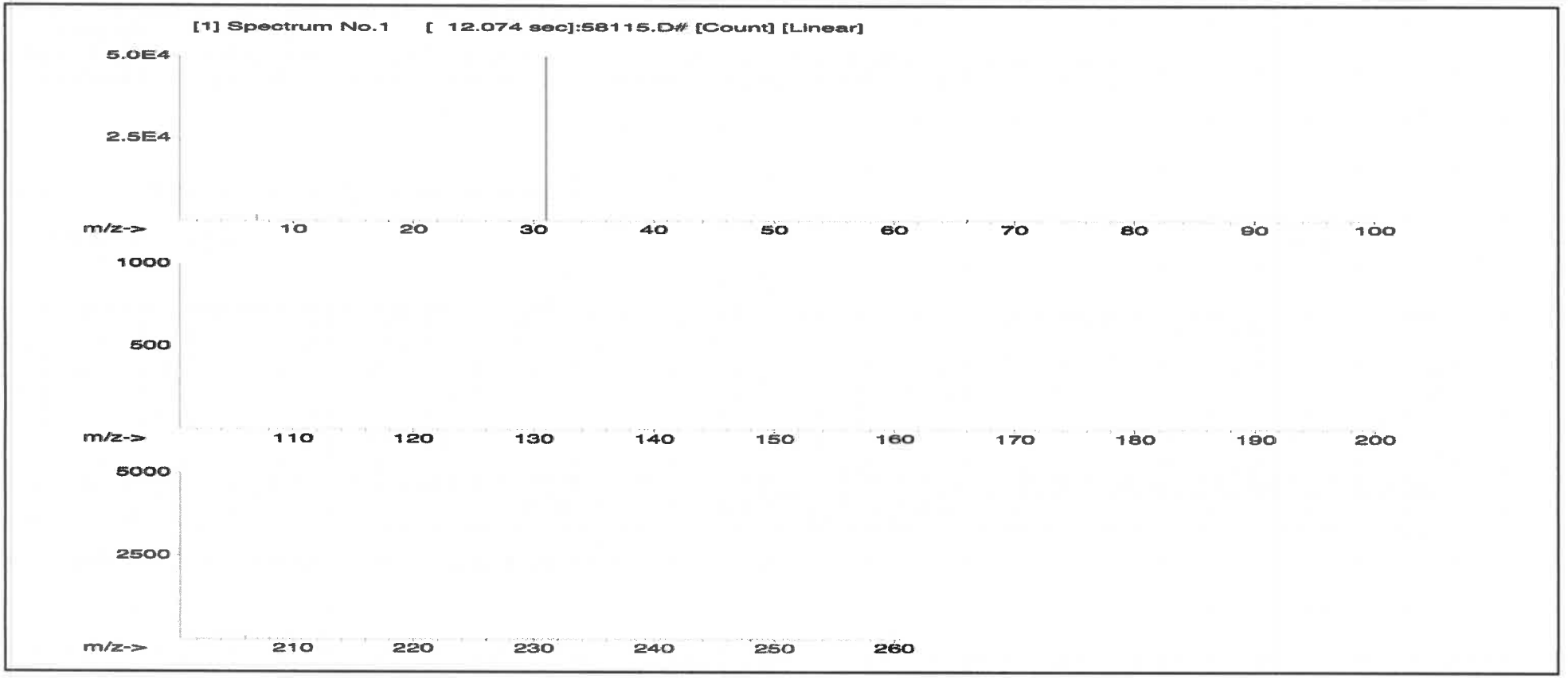
Part Number: 57115
Lot Number: 041723
Description: Phosphorous (P)

Expiration Date: 041726
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

		Lot #	
Solvent:	21110221		Nitric Acid
	2%	40.0 (mL)	Nitric Acid
		5E-05	Balance Uncertainty

Formulated By:	Lawrence Barry	041723
Reviewed By:	Pedro L. Rentas	041723

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	10000	99.999	0.10	27.5	72.7287	72.7289	**10000.0**	**20.0**	7722-76-1	5 mg/m3	orl-rat >2000mg/kg	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 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	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).

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)

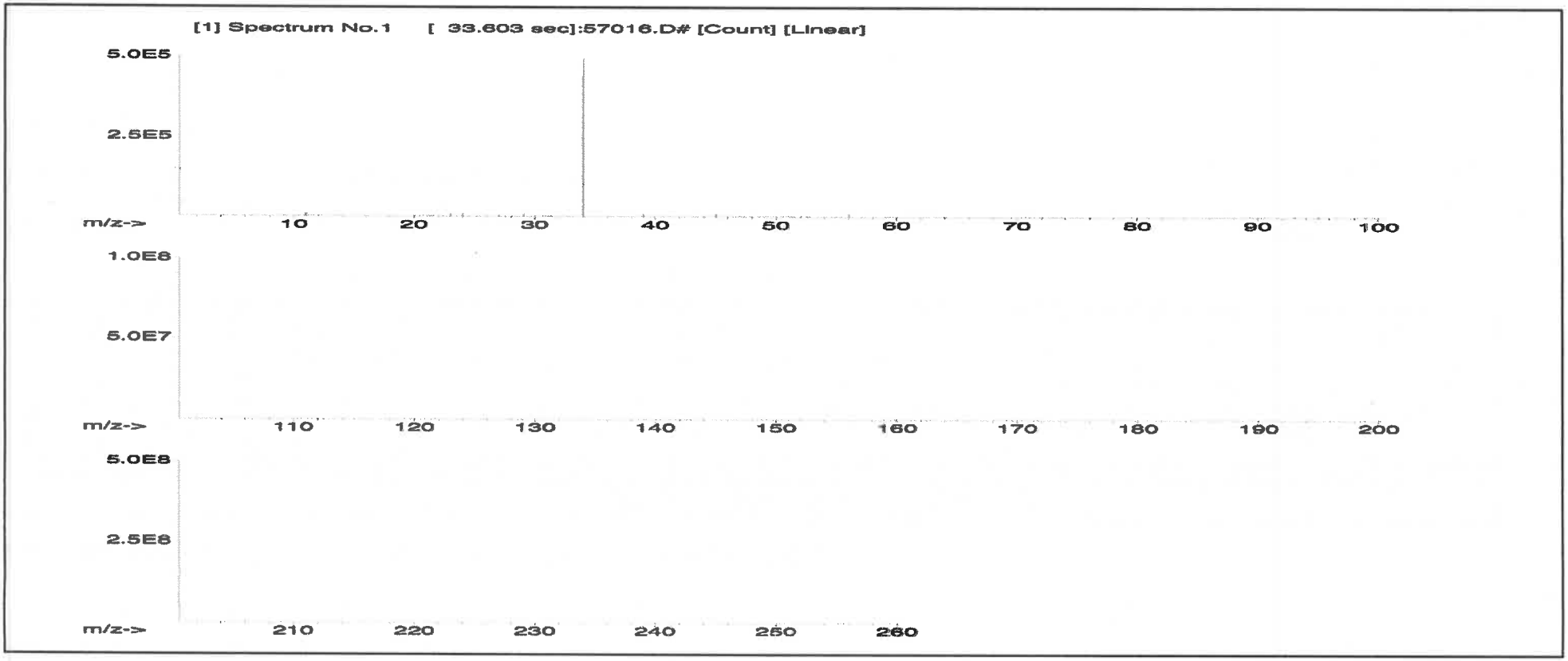
Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

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:

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 M5817

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

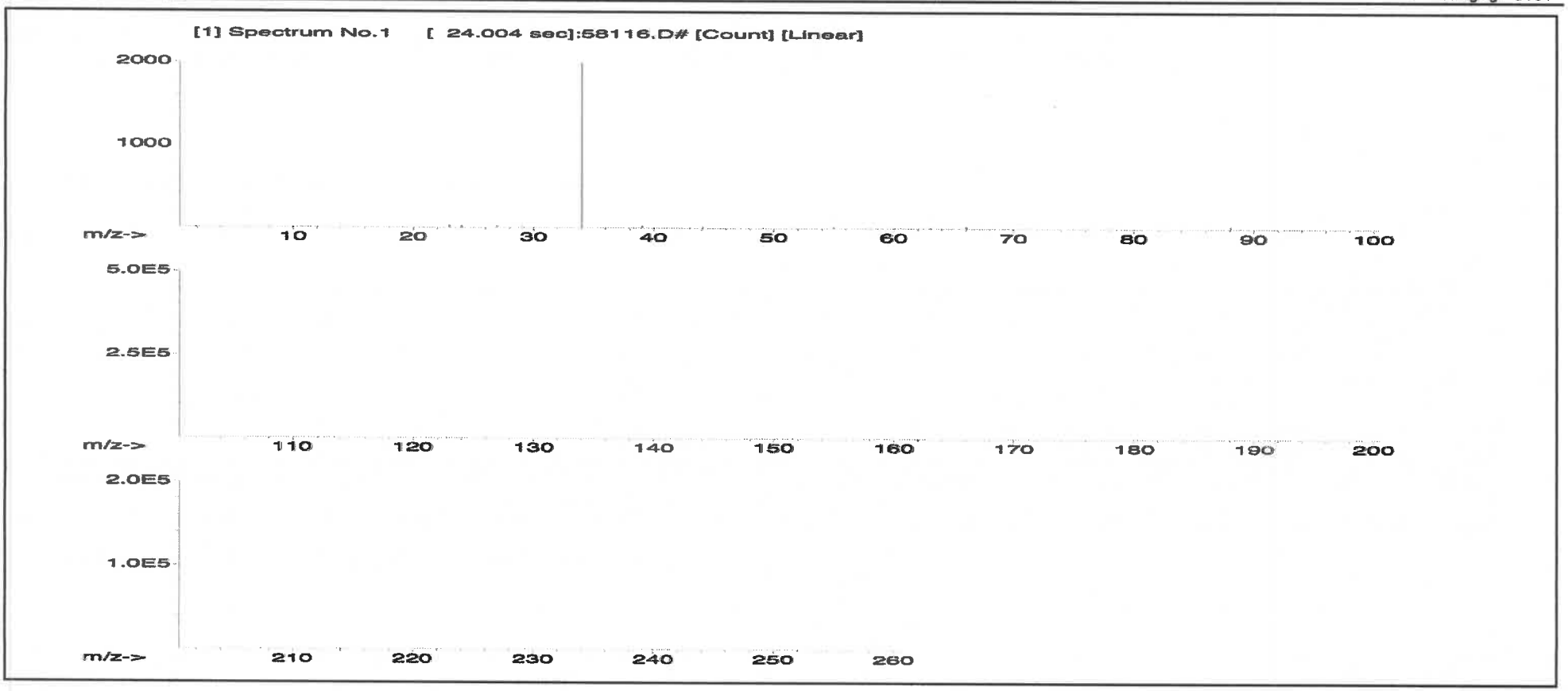
Part Number: 57116
Lot Number: 071123
Description: Sulfur (S)

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1999.48 0.058 Flask Uncertainty

Lot #
Solvent: 071123 ASTM Type 1 Water

Formulated By:	Lawrence Barry	071123
Reviewed By:	Pedro L. Rentas	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	10000	99.9	0.10	24.3	82.4675	82.4682	**10000.1**	**20.0**	7783-20-2	NA	ori-rat 4250mg/kg	3181



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	T	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 M.5818

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57014
Lot Number: 122023
Description: Silicon (Si)

Expiration Date: 122026
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

Solvent: 24002546 Nitric Acid

2% 40.0 (mL) Nitric Acid

5E-05 Balance Uncertainty

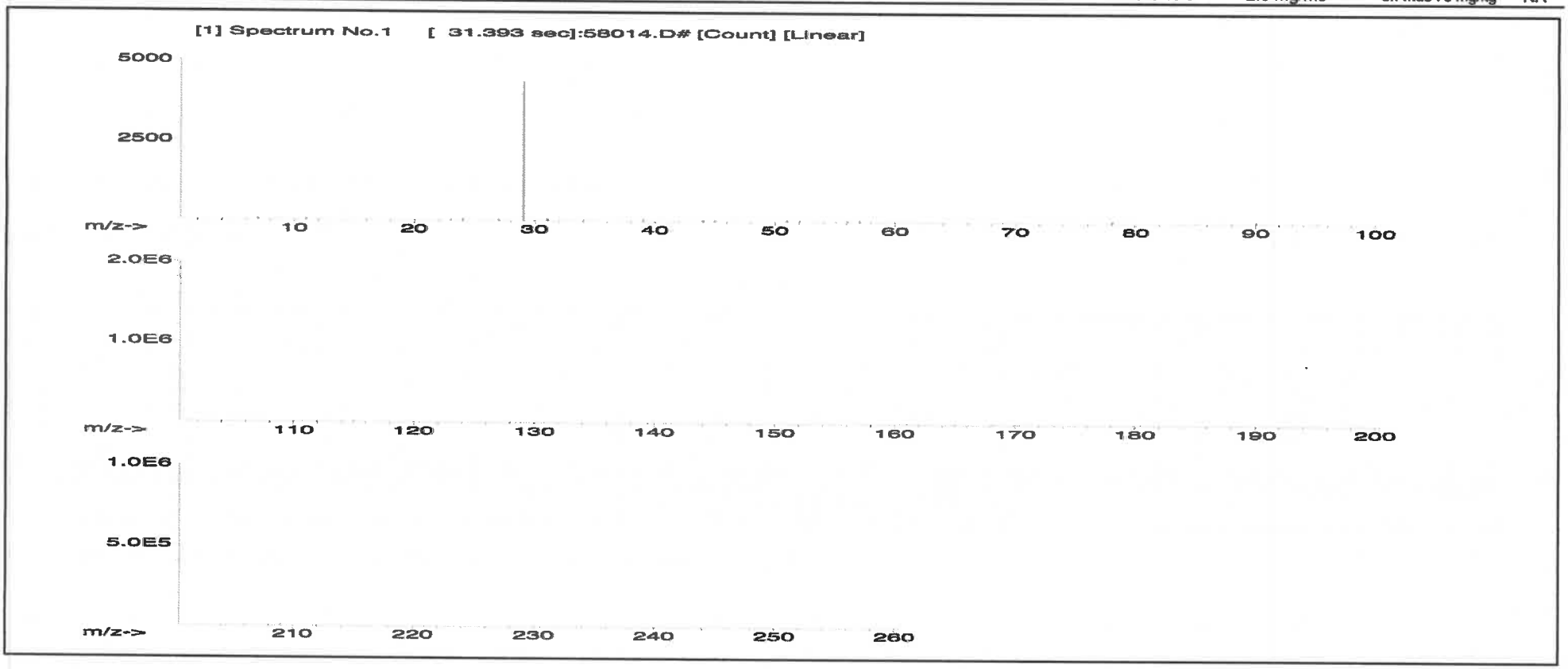
Aleah O'Brady

Formulated By:	Aleah O'Brady	122023

Pedro Rentas

Reviewed By:	Pedro L. Rentas	122023

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 hexafluorosilicate (Si)	IN009	SID082022A1	1000	99.999	0.10	14.4	13.8854	13.8855	**1000.0**	**2.0**	16919-19-0	2.5 mg/m3	orl-mus 70 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	<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	T	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: 02/09/24 M5819

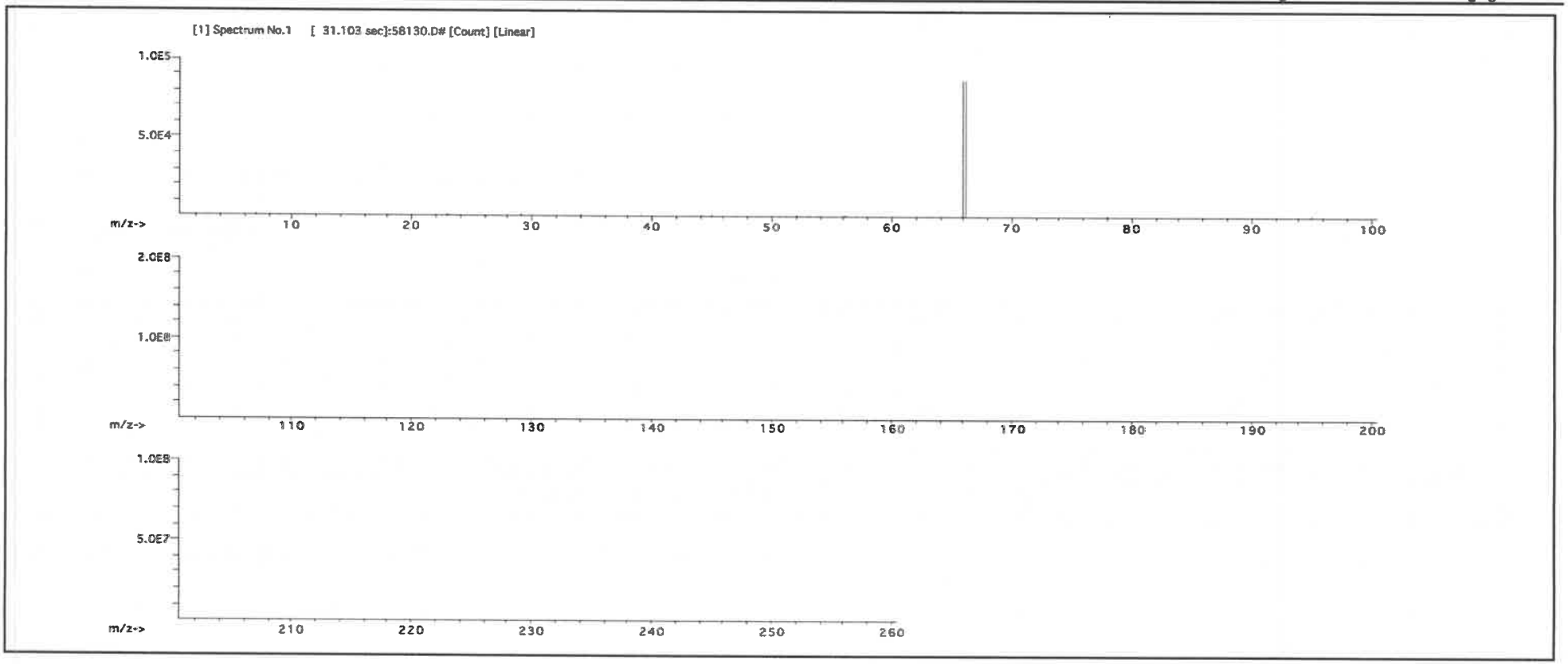
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**58030**			
Lot Number:	**111623**			
Description:	**Zinc (Zn)**			
			Lot #	
		Solvent:	24002546	Nitric Acid
		2%	60.0 (mL)	Nitric Acid
Expiration Date:	111626			
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):	3000.4	0.06	Flask Uncertainty	

Formulated By:	Benson Chan	111623
Reviewed By:	Pedro L. Rentas	111623

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	12.3475	12.3502	**1000.2**	**2.0**	10196-18-6	1 mg/m3	orl-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:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 M5820

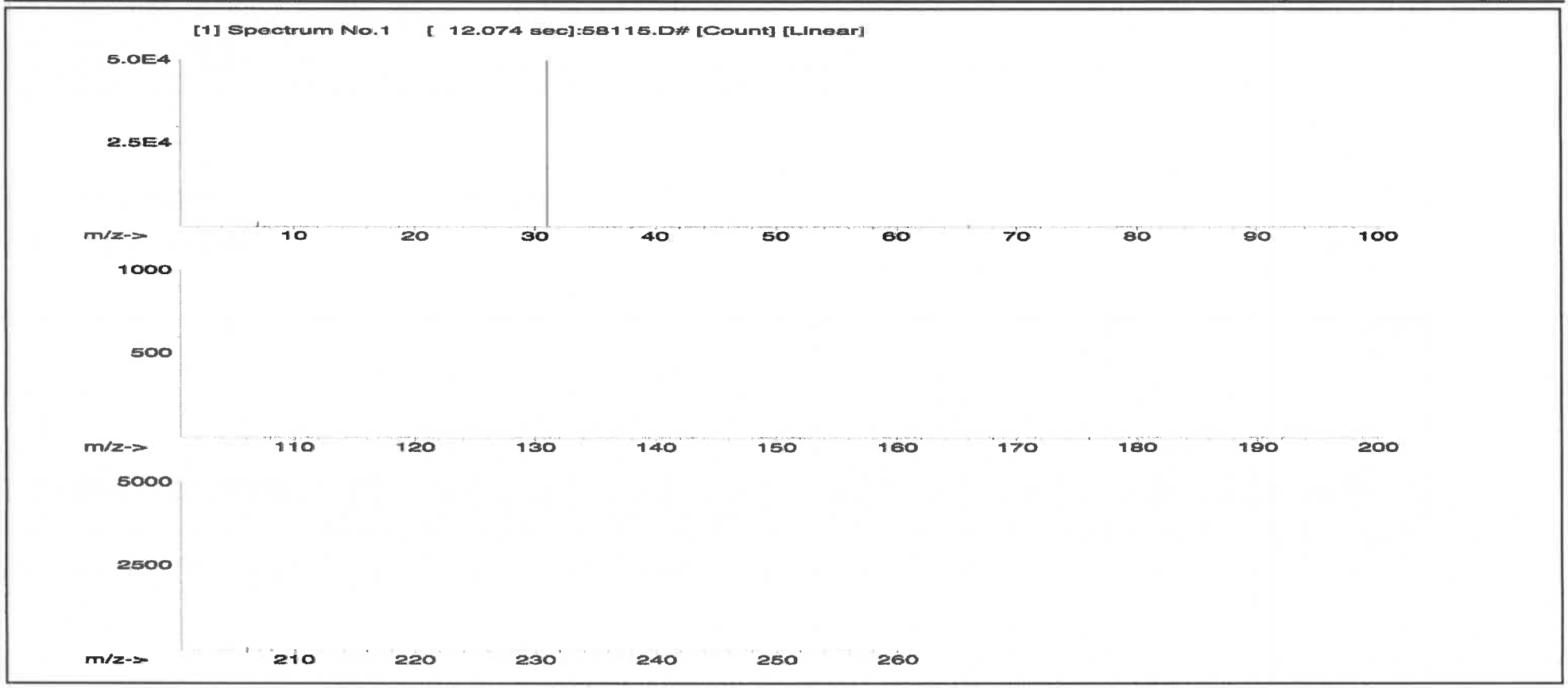
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57015**		**Lot #**		
Lot Number:	**091123**	**Solvent:**	24002546	Nitric Acid	
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

MT884
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

QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

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.

MSS28 - 37
MSS53
3/30/23

Contains Metals in Dilute Acidic or Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

(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 Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

ICV1-1014 For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415 For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

ICV6-0400 For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) *CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS*

ICV1-1014		
Element	**Concentration (µg/L) (after 10-fold dilution)**	**Concentration (µg/L) (after 50-fold dilution)**
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	**Concentration (µg/L) (after 100-fold dilution)**	**Analyte**	**Concentration (µg/L) (after 100-fold dilution)**
Hg	4.0	CN^-	99

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

M5959 R: 6/14/24.

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:	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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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	<	0.004600	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



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5962 R! 06/14/24.

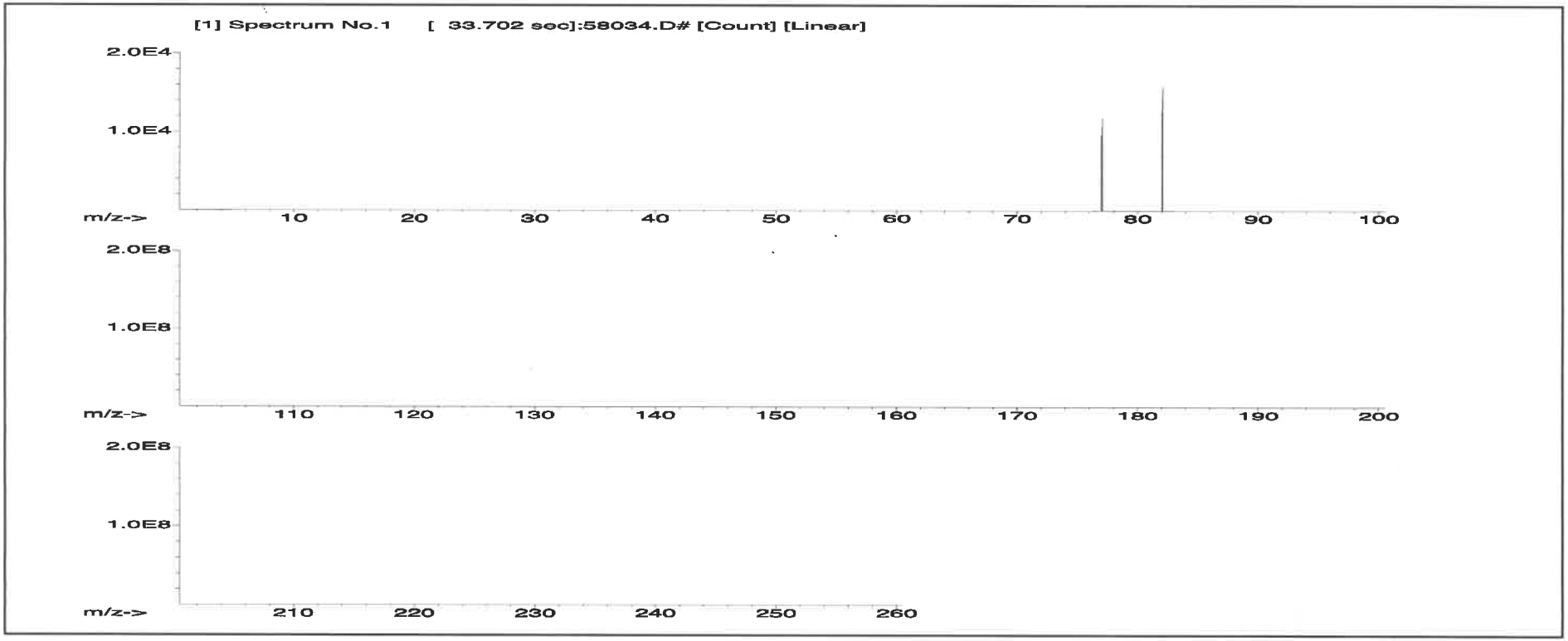
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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:

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

M5970, M5971 R: 7/01/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

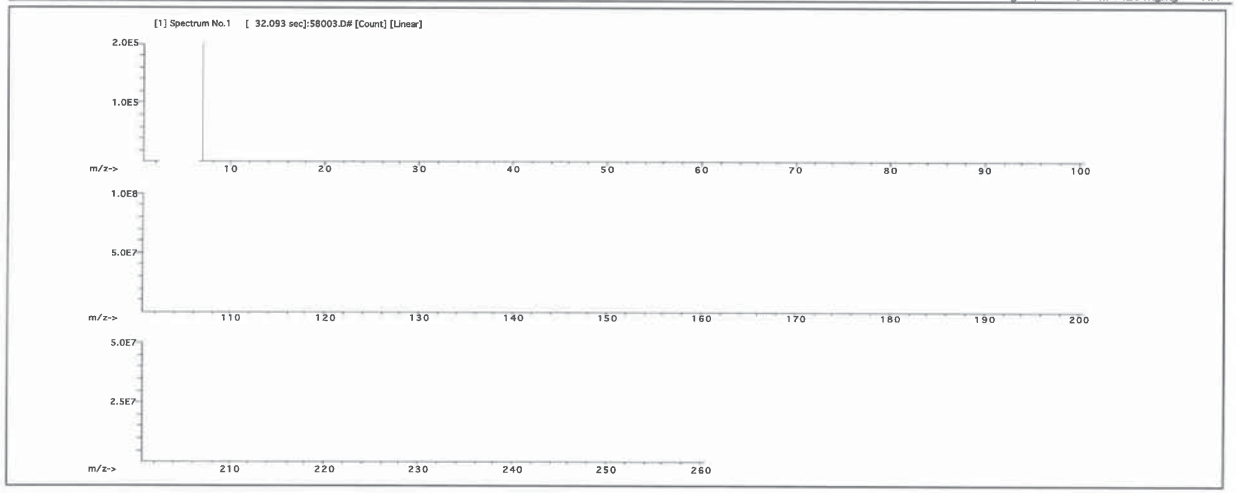
Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 062127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11

Lot #	Solvent:			
24002546	Nitric Acid			
2.0%	5.0 (mL)	Nitric Acid		
			5E-05	Balance Uncertainty
			0.016	Flask Uncertainty

Giovanni Esposito
Formulated By: Giovanni Esposito 062124

Pedro Rentas
Reviewed By: Pedro L. Rentas 062124

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	**1000.0**	**2.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	T	Ni	<0.02	Pr	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

MS978, MS979

INORGANIC VENTURES

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

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 865.01

ACCREDITED Reference Material Producer Certificate 865.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGT11
Lot Number:	T2-TI719972
Matrix:	2% (v/v) HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Titanium
Starting Material:	TI Metal
Starting Material Lot#:	2094
Starting Material Purity:	99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**1002 ± 4 µg/mL**
	ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/MM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \Sigma(w_i)\,(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{Char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance

$$w_i = (1/u_{Char\ i})^2 \,/\, (\Sigma(1/u_{Char\ i})^2)$$

CRM/RM Expanded Uncertainty ($\pm$) = $U_{CRM/RM} = k\,(u^2_{Char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{Char} = [\Sigma((w_i)^2\,(u_{Char\ i})^2)]^{½}$ where $u_{Char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)\,(u_{Char\ a})$$

X_a = mean of Assay Method A with $u_{Char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty ($\pm$) = $U_{CRM/RM} = k\,(u^2_{Char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{Char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 for months in 1% 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2SO7 - 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=Zr, Mo, (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

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

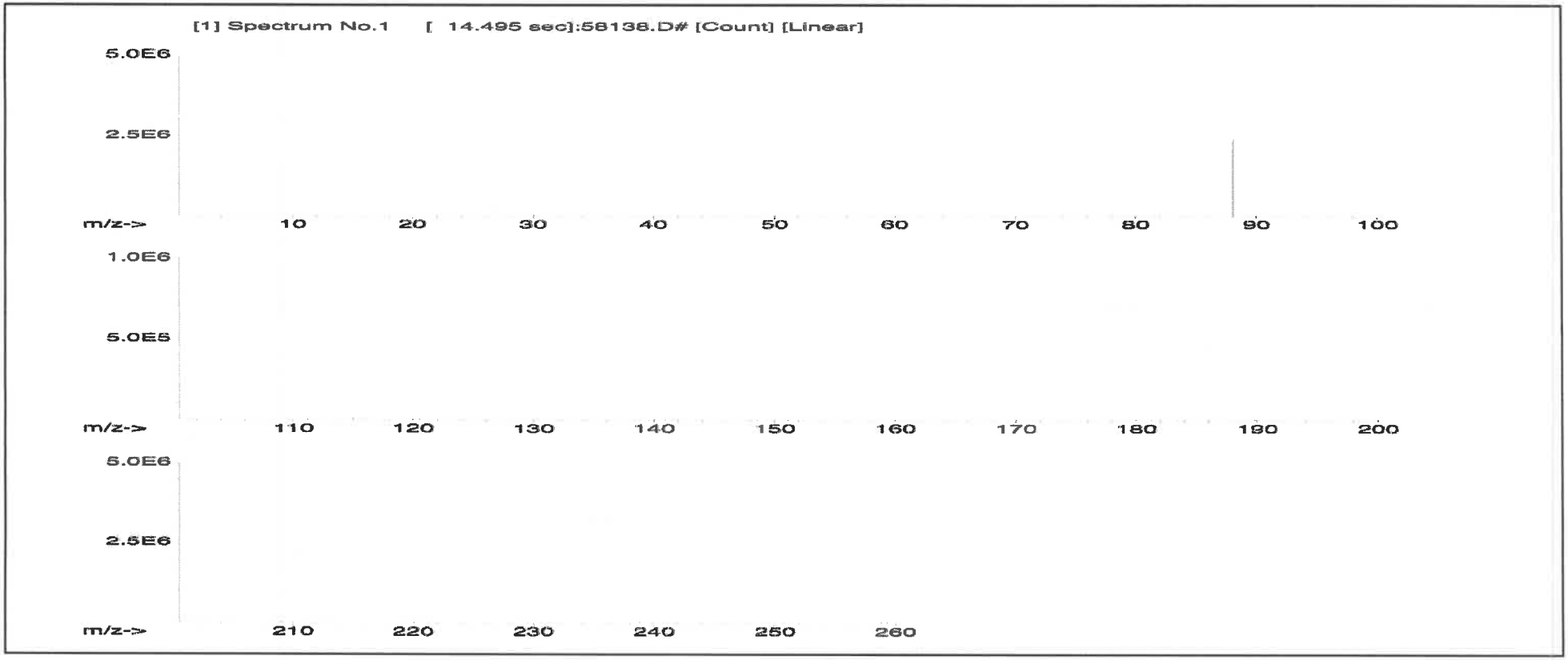
45982 R: 6/11/24

CERTIFIED WEIGHT REPORT:

Part Number:	**57038**			**Lot #**	
Lot Number:	**031524**		**Solvent:**	24002546	Nitric Acid
Description:	**Strontium (Sr)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	031527				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

Formulated By:	Benson Chan	031524
Reviewed By:	Pedro L. Rentas	031524

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Strontium nitrate (Sr)	IN017	SRZ022018A1	1000	99.997	0.10	41.2	4.85470	4.85502	**1000.1**	**2.0**	10042-76-9	NA	orl-rat >2000mg/kg	3153a



PSU-17-METALS

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	T	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 01/03/24 M6033

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

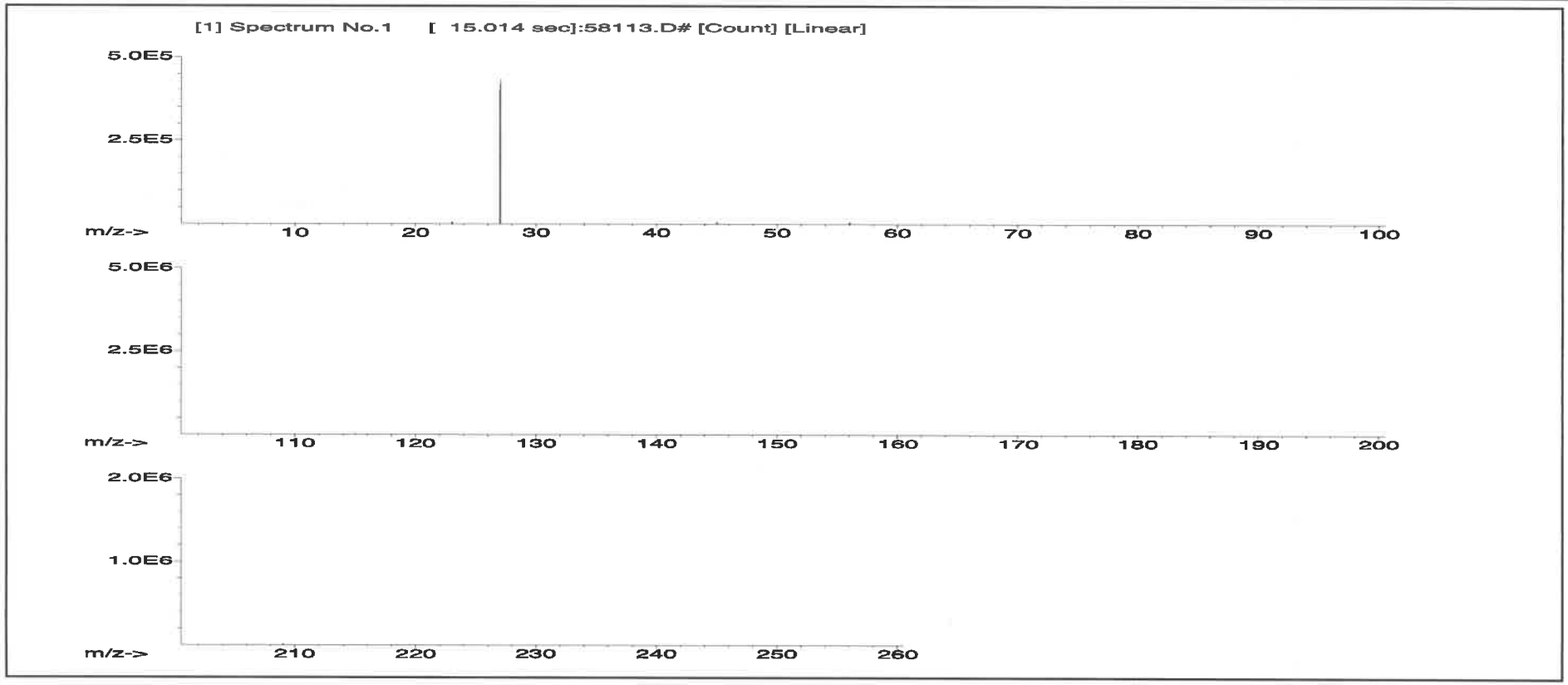
CERTIFIED WEIGHT REPORT:

Part Number:	**58113**		**Solvent:**	20510011	Nitric Acid
Lot Number:	**011623**				
Description:	**Aluminum (Al)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	011626				
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):	2000.02	0.058	Flask Uncertainty		

Lot #

Formulated By:	Giovanni Esposito	011623
Reviewed By:	Pedro L. Rentas	011623

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. Aluminum nitrate nonahydrate (Al)	IN022	ALM112021A1	10000	99.999	0.10	7.30	273.9779	274.0078	**10001.1**	**20.0**	7784-27-2	2 mg/m3	orl-rat 3671 mg/kg	3101a



Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

M6109
M6110
M6111

Received date 9/29/24 Met dig.

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22F0762009
Manufactured Date: 2022-05-10
Retest Date: 2027-05-09
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.6 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.190
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	0.8 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	14.9 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	< 0.4 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	0.2 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.: 22F0762009

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	0.8 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	< 0.2 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	1.0 ppb
Trace Impurities - Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities - Sodium (Na)	≤ 100.0 ppb	0.7 ppb
Trace Impurities - Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Tantalum (Ta)	≤ 1.0 ppb	< 0.9 ppb
Trace Impurities - Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities - Titanium (Ti)	≤ 1.0 ppb	0.2 ppb
Trace Impurities - Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities - Zirconium (Zr)	≤ 1.0 ppb	< 0.1 ppb

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22F0762009

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®

M6119

Recieve -> 10/9/24
Met dig

Material No.: 9606-03
Batch No.: 24B1362001
Manufactured Date: 2024-01-25
Retest Date: 2029-01-23
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.6 %
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	< 0.2 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	< 50 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.: 24B1362001

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 10 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	3 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	1 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24B1362001

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein
Sr. Manager, Quality Assurance

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

R → 10/13/24
Met dig

M 6121

Material No.: 9530-33
Batch No.: 0000275677
Manufactured Date: 2020/12/16
Retest Date: 2025/12/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.6
ACS – Color (APHA)	<= 10	5
ACS – Residue after Ignition	<= 3 ppm	1
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.190
ACS – Bromide (Br)	<= 0.005 %	< 0.005
ACS – Extractable Organic Substances	<= 5 ppm	1
ACS – Free Chlorine (as Cl_2)	<= 0.5 ppm	< 0.5
Phosphate (PO_4)	<= 0.05 ppm	< 0.03
Sulfate (SO_4)	<= 0.5 ppm	< 0.3
Sulfite (SO_3)	<= 0.8 ppm	0.3
Ammonium (NH_4)	<= 3 ppm	< 1
Trace Impurities – Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities – Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities – Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities – Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities – Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities – Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities – Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities – Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities – Gallium (Ga)	<= 1.0 ppb	< 0.2

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

Material No.: 9530-33
Batch No.: 0000275677

Test	Specification	Result
Trace Impurities - Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 15.0 ppb	<1
Trace Impurities - Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 1.0 ppb	0.2
Trace Impurities - Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities - Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities - Selenium (Se), For Information Only	ppb	1.0
Trace Impurities - Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Titanium (Ti)	<= 1.0 ppb	0.2
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

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

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R -> 11/12/24

M6126

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

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 01/03/24 M5806, M5807

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58111
Lot Number: 122223
Description: Sodium (Na)

Expiration Date: 122226
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

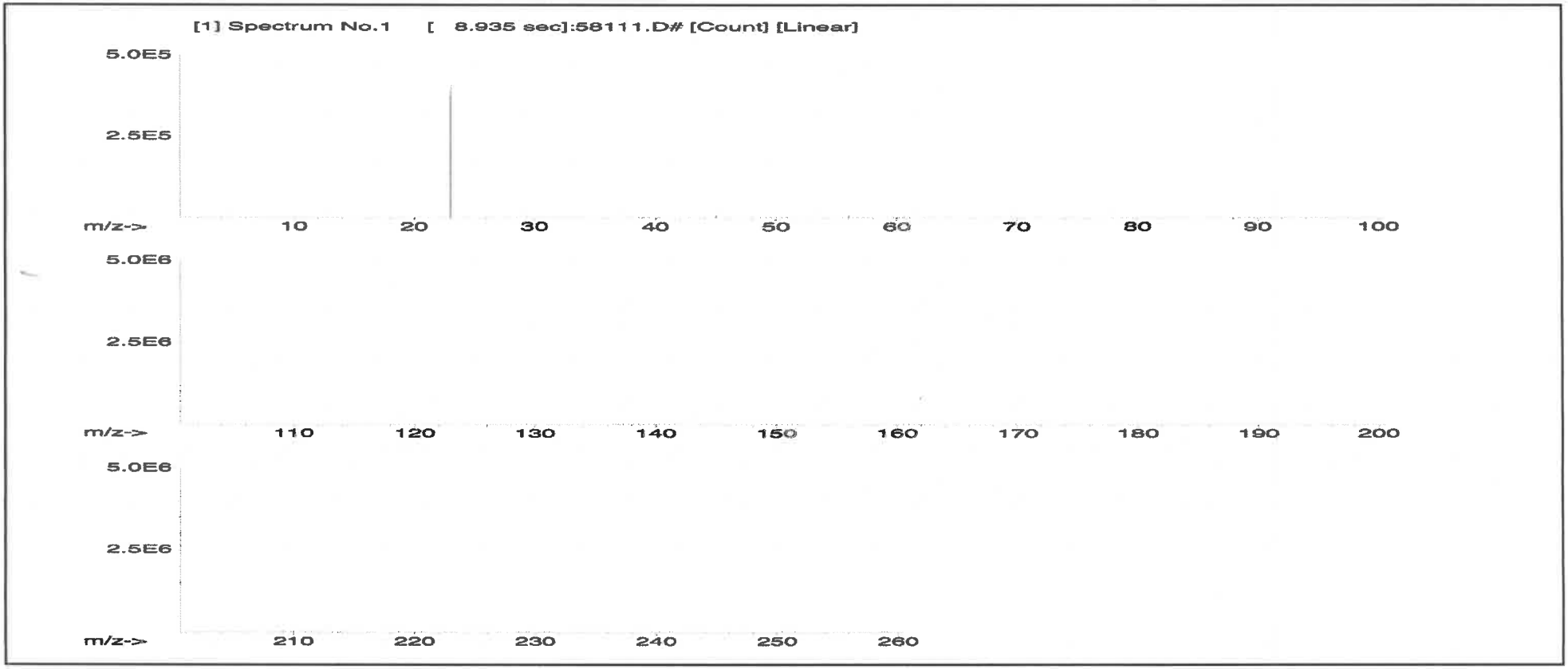
Weight shown below was diluted to (mL): 3000.4 | 0.06 Flask Uncertainty

	Lot #	
Solvent:	24002546	Nitric Acid
2%	60.0 (mL)	Nitric Acid
	5E-05	Balance Uncertainty

Aleah O'Brady
Formulated By: Aleah O'Brady 122223

Reviewed By: Pedro L. Rentas 122223

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV012015I1	10000	99.999	0.10	26.9	111.5406	111.5479	**10000.7**	**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	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	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:

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: 01/03/24 M5802, M5803

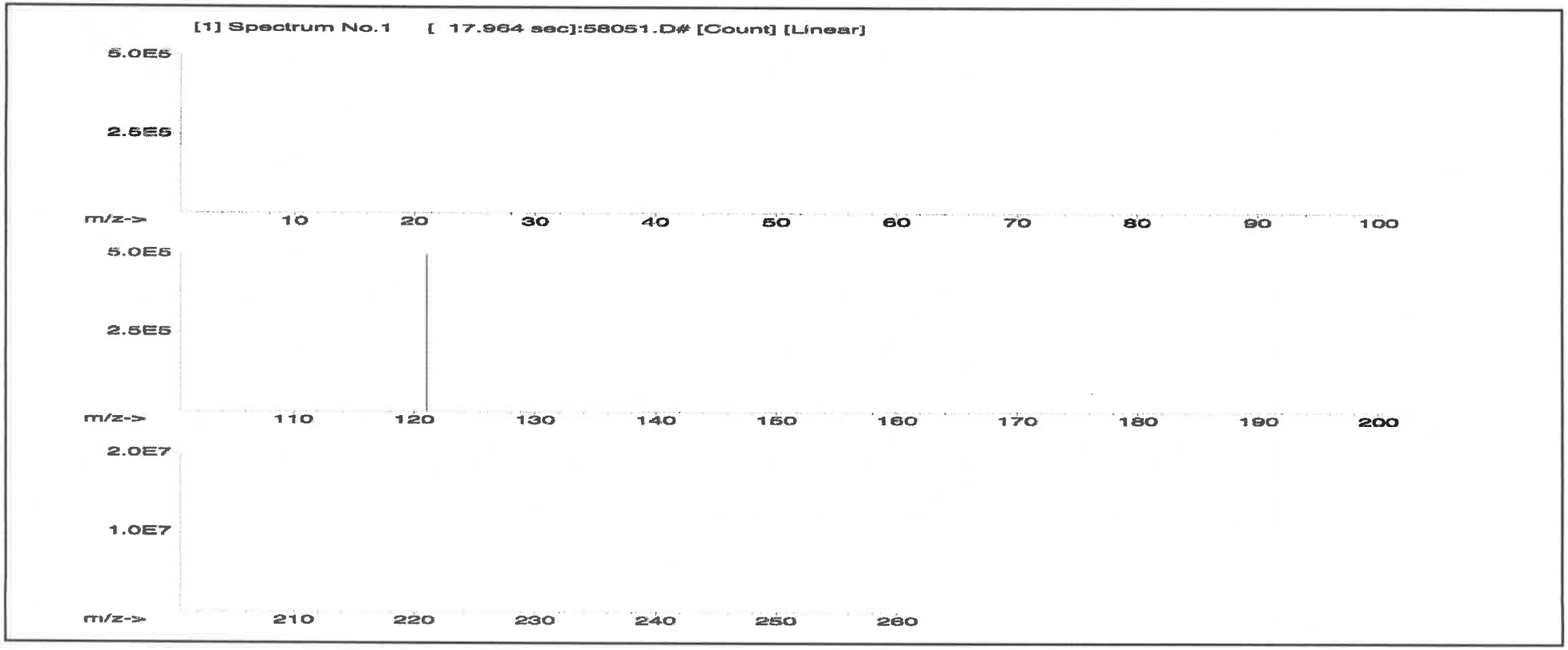
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57051**	24002546	Nitric Acid		
Lot Number:	**120523**				
Description:	**Antimony (Sb)**	2.0%	60.0 (mL)	Nitric Acid	
Expiration Date:	120526				
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):	3000.41	0.058	Flask Uncertainty		

Formulated By:	Lawrence Barry	120523
Reviewed By:	Pedro L. Rentas	120523

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	100923	0.1000	300.0	0.084	1000	10001.4	**1000.0**	2.1	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:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6030

R: 8/5/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57047
Lot Number: 122823
Description: Silver (Ag)

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

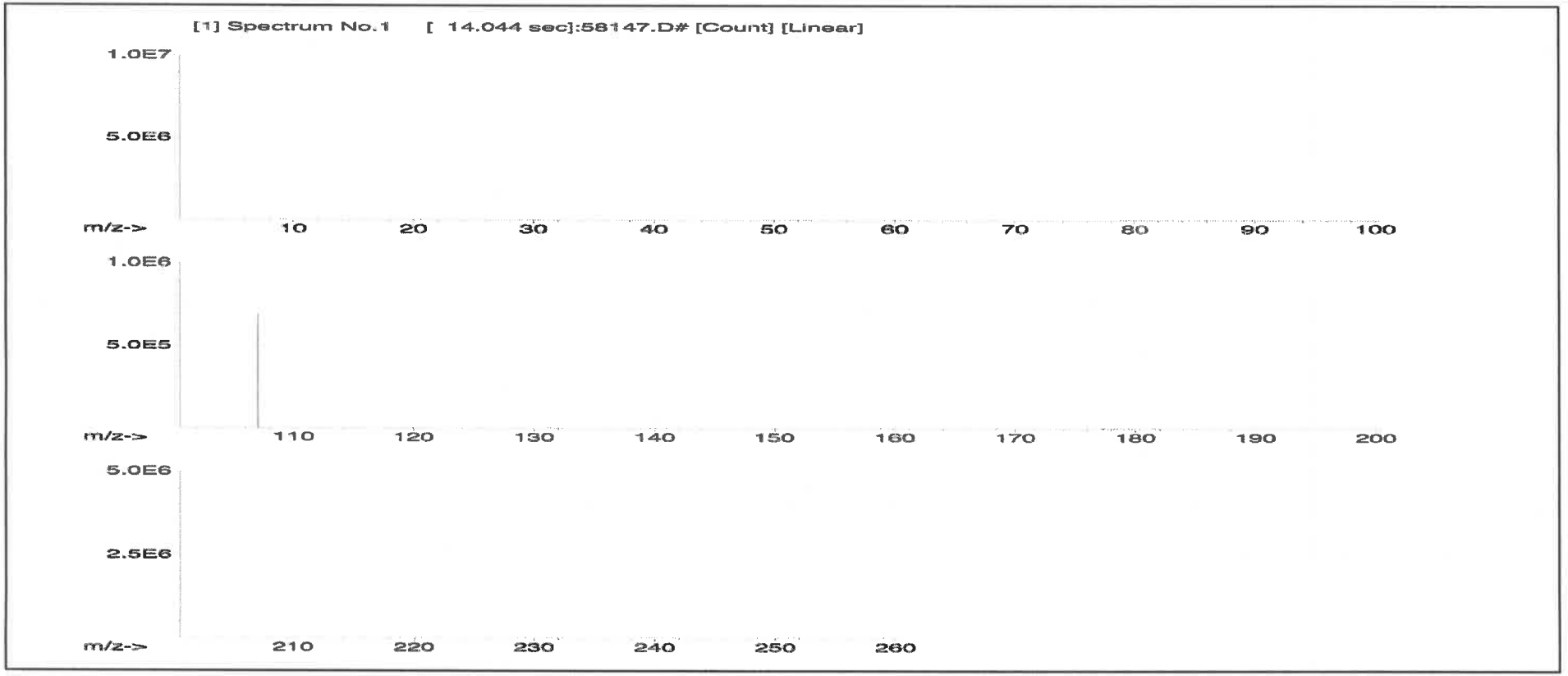
Weight shown below was diluted to (mL): 4000.30 0.058 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	80.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Formulated By:	Benson Chan	122823
Reviewed By:	Pedro L. Rentas	122823

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9999	0.10	63.7	6.27992	6.27998	**1000.0**	**2.0**	7761-88-8	10 ug/m3	NA	3151



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	T	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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

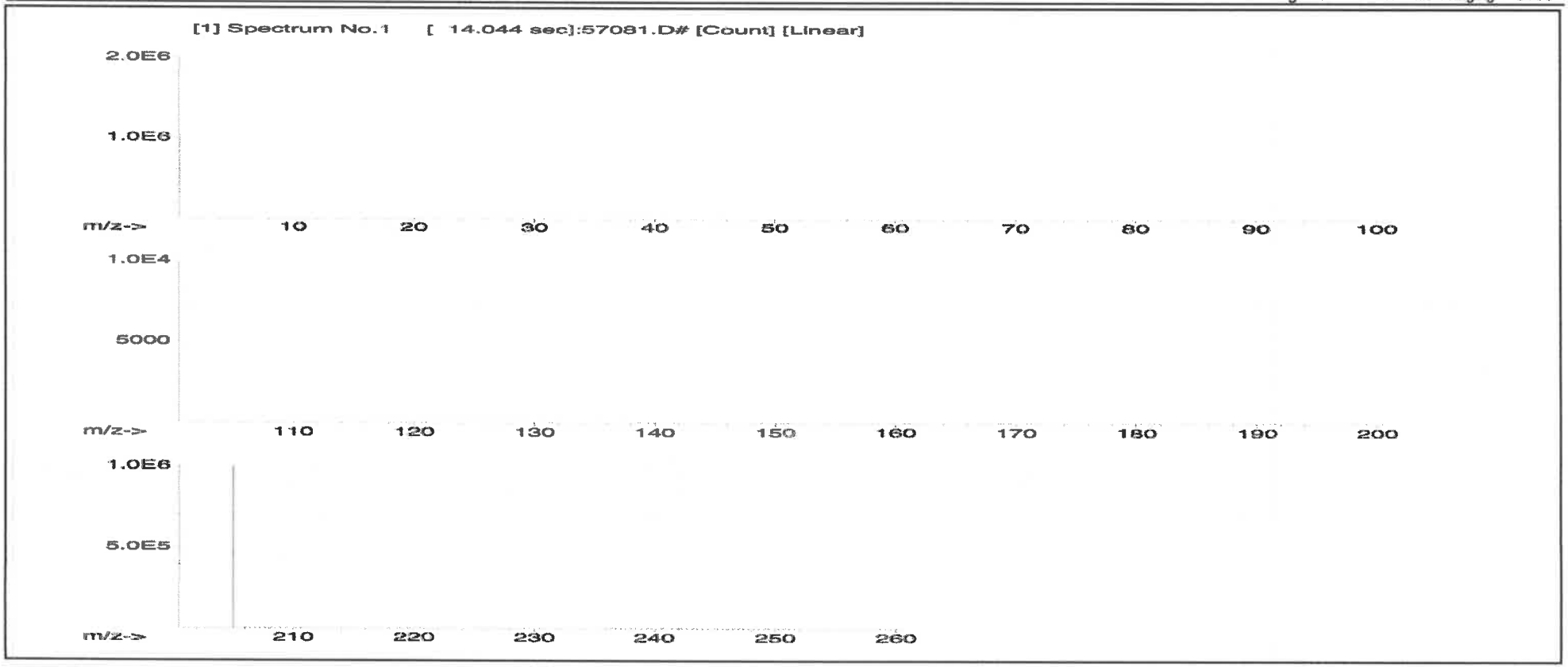
CERTIFIED WEIGHT REPORT:

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
Reviewed By:	Pedro L. Rentas	062724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Thallium nitrate (Tl)	IN037	BCCF4399	1000	99.999	0.10	77.0	2.5975	2.5977	**1000.1**	**2.0**	10102-45-1	0.1 mg/m3	orl-mus 15mg/kg	3158



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	T	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:



* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6021

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Rc. 8/5/24

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	57023			
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	

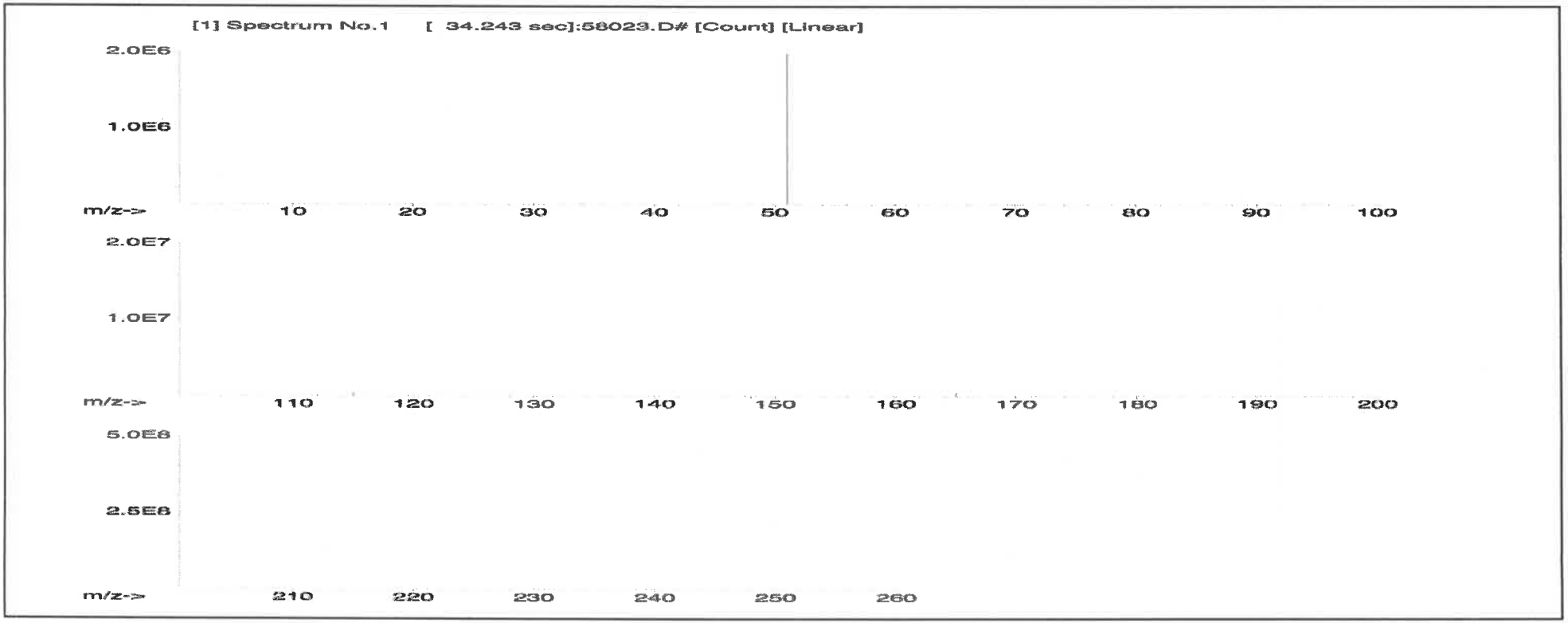
Aleah O'Brady

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

P5117

Weston COC ID
Weston_20241204

Chain of Custody Record/Lab Work Request

Page 1 of 1

Client:	Weston Solutions, Inc.		
Project Manager:	David Sembrot		
Street Address:	1400 Weston Way	City:	West Chester
Phone:	610-314-5456	ST, ZIP:	PA, 19038
e-mail:	david.sembrot@westonsolutions.com		
Sampled By:	Cheyenne Harrington		

Project Name:	Fort Meade RI	Project POC:	Nathan Fretz
PO Number	0111169	Phone:	484-524-5665
W.O. #:		POC e-mail:	nathan.fretz@westonsolutions.com
Lab:	CHEMTECH	Lab POC:	Jordan Hedvat
TAT (days):	21	Lab Phone:	908-728-3144
Lab Address:	284 Sheffield Street Mountainside, NJ 07092		

Lab Use Only		
Temperature of cooler when received (°C)		
COC Tape was present and unbroken on outer package?	Y	N
Samples received in good condition?	Y	N
Labels indicate properly preserved?	Y	N
Received within holding times?	Y	N
Discrepancies between sample labels and COC record?	Y	N

Matrix Codes
SB- Soil
SE - Sediment
SO - Solid
SL - Sludge
GW - Groundwater
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

#	Sample ID	G/C	Matrix	# Cont	MS/MSD	Date Collected	Time Collected	pH by EPA 9045D	TAL Metals by EPA 6020B/7471B	TOC by 9060A	TCLP VOCs by EPA 8260D (1311)	TCLP SVOCs by EPA 8270E (1311)	TCLP Metals by EPA 6010D/7470A	TCLP Pesticides by EPA 8081B	TCLP Herbicides by EPA 8151A	Total Sulfide by EPA 9034	Total Cyanide by EPA 9012B	PCB by EPA 8082A	Ignitability by EPA 1030	Special Instructions/Comments
Container Type:								Glass	Glass	Glass	Encore	Glass	Glass	Glass	Glass	Glass	Glass	Glass	Glass	
Container Size:								8 oz	8 oz	8 oz	25g	8 oz	8 oz	8 oz	8 oz	8 oz	8 oz	8 oz	8 oz	
Preservative:								Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6	
1	TAPIAL3-SB04I-10-120324-00-T1	g	SB	12	no	12/3/2024	14:00	X	X	X										
2	TAPIAL2-IDW-Soil-120424-00-T2	g	DS	7	no	12/4/2024	13:00	X			X	X	X	X	X	X	X	X	X	Make expedited 7 day TAT
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Shipping Airbill Number(s): 7704 9457 4944 / 7704 9457 4955

2.3 C

Cooler Number: 1 of 2

	Relinquished By	Date	Time	Received By	Date	Time	Additional Comments
1.)	Sir Lhd f Wrk	12/4/24	1600		12-5-24	1010	QSM 6.0 Compliant Deliverable Requirements: DoD Level IV report, EnviroData EDD, and ERIS-compatible EDD
2.)							
3.)							

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