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

METALS

PROJECT NAME : FORMER SCHLUMBERGER SITE PRINCETON NJ

JACOBS ENGINEERING GROUP, INC.

412 Mt. Kemble Ave

Downtown Building

Morristown, NJ - 07960

Phone No: 9732670555

ORDER ID : P3429

ATTENTION : Mary I. Murphy

Laboratory Certification ID # 20012

Alliance TECHNICAL GROUP

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Cover Page

Order ID : P3429

Project ID : Former Schlumberger Site Princeton NJ

Client : JACOBS Engineering Group, Inc.

Lab Sample Number	Client Sample Number
P3429-01	926-K1-WS-073124
P3429-02	931-K1-WS-073124
P3429-03	925-K1-WS-073124
P3429-04	TB-01-073124

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 : N. N. Pandya

APPROVED
Date: 8/16/2024
By Nimisha Pandya QA/QC Supervisor at 11:00 am, Aug 16, 2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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CASE NARRATIVE

JACOBS Engineering Group, Inc.
Project Name: Former Schlumberger Site Princeton NJ
Project # N/A
Chemtech Project # P3429
Test Name: Metals Group4,Mercury

A. Number of Samples and Date of Receipt:
4 Water samples were received on 07/31/2024.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Hexavalent Chromium, Mercury, Metals Group4, SVOC-SIMGroup1, SVOCMS Group3, SVOCMS Group6 and VOCMS Group6. This data package contains results for Metals Group4,Mercury.

C. Analytical Techniques:
The analysis of Metals Group4 was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of Mercury was based on method 7470A.

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 (923-K1-WS-080124MS) analysis met criteria for all samples except for Strontium due to Chemical interference during digestion process.
The Matrix Spike Duplicate (923-K1-WS-080124MSD) analysis met criteria for all samples except for Strontium due to Chemical interference during digestion process.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:

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

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:01 am, Aug 16, 2024

Alliance TECHNICAL GROUP
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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: P3429 MATRIX: Water

METHOD: 6010D,7470A

		NA	NO	YES
1.	Calibration Summary met criteria.			✓
2.	ICP Interference Check Sample Results Summary Submitted.			✓
3.	Serial Dilution Summary (if applicable) Submitted.			✓
4.	Laboratory Control Sample Summary (if applicable) Submitted.			✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
	The Matrix Spike (923-K1-WS-080124MS) analysis met criteria for all samples except for Strontium due to Chemical interference during digestion process. The Matrix Spike Duplicate (923-K1-WS-080124MSD) analysis met criteria for all samples except for Strontium due to Chemical interference during digestion process.			
7.	Sample Duplicate Analysis Met QC Criteria			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
8.	Digestion Holding Time Met			✓
	If not met, list number of days exceeded for each sample:			
9.	Analysis Holding Time Met			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

S. M. Jodhani
QA REVIEW

REVIEWED
By Sohil Jodhani, QA/QC Director at 10:07 am, Aug 16, 2024

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P3429

	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	✓

1st Level QA Review Signature: SOHIL JODHANI **Date:** 08/16/2024

2nd Level QA Review Signature: N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:01 am, Aug 16, 2024

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LAB CHRONICLE

OrderID:	P3429	**OrderDate:**	7/31/2024 4:38:00 PM
Client:	JACOBS Engineering Group, Inc.	**Project:**	Former Schlumberger Site Princeton NJ
Contact:	Mary I. Murphy	**Location:**	D31,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P3429-01	**926-K1-WS-073124**	**Water**			**07/31/24**			**07/31/24**
			Mercury	7470A		08/12/24	08/13/24	
			Metals Group4	6010D		08/05/24	08/07/24	
P3429-02	**931-K1-WS-073124**	**Water**			**07/31/24**			**07/31/24**
			Mercury	7470A		08/12/24	08/13/24	
			Metals Group4	6010D		08/05/24	08/07/24	
P3429-03	**925-K1-WS-073124**	**Water**			**07/31/24**			**07/31/24**
			Mercury	7470A		08/12/24	08/13/24	
			Metals Group4	6010D		08/05/24	08/07/24	

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Hit Summary Sheet
SW-846

SDG No.: P3429 **Order ID:** P3429

Client: JACOBS Engineering Group, Inc. **Project ID:** Former Schlumberger Site Princeton NJ

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : 926-K1-WS-073124								
P3429-01	926-K1-WS-073124	Water	Barium	201		6.28	50.0	ug/L
P3429-01	926-K1-WS-073124	Water	Boron	81.6		9.95	50.0	ug/L
P3429-01	926-K1-WS-073124	Water	Calcium	30100		33.0	1000	ug/L
P3429-01	926-K1-WS-073124	Water	Chromium	0.94	J	0.66	5.00	ug/L
P3429-01	926-K1-WS-073124	Water	Cobalt	0.88	J	0.50	15.0	ug/L
P3429-01	926-K1-WS-073124	Water	Iron	3340		18.5	50.0	ug/L
P3429-01	926-K1-WS-073124	Water	Lead	3.52	J	3.51	6.00	ug/L
P3429-01	926-K1-WS-073124	Water	Magnesium	10200		39.4	1000	ug/L
P3429-01	926-K1-WS-073124	Water	Manganese	6820		1.46	10.0	ug/L
P3429-01	926-K1-WS-073124	Water	Nickel	1.52	J	0.85	20.0	ug/L
P3429-01	926-K1-WS-073124	Water	Potassium	5120		685	1000	ug/L
P3429-01	926-K1-WS-073124	Water	Sodium	144000		237	1000	ug/L
P3429-01	926-K1-WS-073124	Water	Strontium	219		2.32	10.0	ug/L
P3429-01	926-K1-WS-073124	Water	Zinc	27.3		1.75	20.0	ug/L
Client ID : 931-K1-WS-073124								
P3429-02	931-K1-WS-073124	Water	Aluminum	186		28.3	50.0	ug/L
P3429-02	931-K1-WS-073124	Water	Arsenic	4.13	J	3.48	10.0	ug/L
P3429-02	931-K1-WS-073124	Water	Barium	99.7		6.28	50.0	ug/L
P3429-02	931-K1-WS-073124	Water	Boron	26.7	J	9.95	50.0	ug/L
P3429-02	931-K1-WS-073124	Water	Calcium	8810		33.0	1000	ug/L
P3429-02	931-K1-WS-073124	Water	Chromium	2.10	J	0.66	5.00	ug/L
P3429-02	931-K1-WS-073124	Water	Cobalt	5.47	J	0.50	15.0	ug/L
P3429-02	931-K1-WS-073124	Water	Iron	8650		18.5	50.0	ug/L
P3429-02	931-K1-WS-073124	Water	Magnesium	2980		39.4	1000	ug/L
P3429-02	931-K1-WS-073124	Water	Manganese	1280		1.46	10.0	ug/L
P3429-02	931-K1-WS-073124	Water	Nickel	9.30	J	0.85	20.0	ug/L
P3429-02	931-K1-WS-073124	Water	Potassium	2190		685	1000	ug/L
P3429-02	931-K1-WS-073124	Water	Sodium	42300		237	1000	ug/L
P3429-02	931-K1-WS-073124	Water	Strontium	48.6		2.32	10.0	ug/L
P3429-02	931-K1-WS-073124	Water	Titanium	2.97	J	2.35	20.0	ug/L
P3429-02	931-K1-WS-073124	Water	Zinc	17.7	J	1.75	20.0	ug/L
Client ID : 925-K1-WS-073124								
P3429-03	925-K1-WS-073124	Water	Aluminum	143		28.3	50.0	ug/L
P3429-03	925-K1-WS-073124	Water	Barium	242		6.28	50.0	ug/L
P3429-03	925-K1-WS-073124	Water	Boron	76.8		9.95	50.0	ug/L
P3429-03	925-K1-WS-073124	Water	Cadmium	0.24	J	0.094	3.00	ug/L

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Hit Summary Sheet
SW-846

SDG No.: P3429 **Order ID:** P3429

Client: JACOBS Engineering Group, Inc. **Project ID:** Former Schlumberger Site Princeton NJ

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
P3429-03	925-K1-WS-073124	Water	Calcium	30000		33.0	1000	ug/L
P3429-03	925-K1-WS-073124	Water	Chromium	1.38	J	0.66	5.00	ug/L
P3429-03	925-K1-WS-073124	Water	Cobalt	1.56	J	0.50	15.0	ug/L
P3429-03	925-K1-WS-073124	Water	Iron	19200		18.5	50.0	ug/L
P3429-03	925-K1-WS-073124	Water	Magnesium	10000		39.4	1000	ug/L
P3429-03	925-K1-WS-073124	Water	Manganese	6910		1.46	10.0	ug/L
P3429-03	925-K1-WS-073124	Water	Mercury	0.13	J	0.081	0.20	ug/L
P3429-03	925-K1-WS-073124	Water	Nickel	5.33	J	0.85	20.0	ug/L
P3429-03	925-K1-WS-073124	Water	Potassium	5180		685	1000	ug/L
P3429-03	925-K1-WS-073124	Water	Silver	1.88	J	0.58	5.00	ug/L
P3429-03	925-K1-WS-073124	Water	Sodium	140000		237	1000	ug/L
P3429-03	925-K1-WS-073124	Water	Strontium	215		2.32	10.0	ug/L
P3429-03	925-K1-WS-073124	Water	Titanium	3.42	J	2.35	20.0	ug/L
P3429-03	925-K1-WS-073124	Water	Vanadium	7.50	J	3.06	20.0	ug/L
P3429-03	925-K1-WS-073124	Water	Zinc	50.9		1.75	20.0	ug/L

SAMPLE DATA

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Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	07/31/24
Project:	Former Schlumberger Site Princeton NJ	Date Received:	07/31/24
Client Sample ID:	926-K1-WS-073124	SDG No.:	P3429
Lab Sample ID:	P3429-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	28.3	U	1	28.3	50.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-36-0	Antimony	2.06	U	1	2.06	25.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-38-2	Arsenic	3.48	U	1	3.48	10.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-39-3	Barium	201		1	6.28	50.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-41-7	Beryllium	0.13	U	1	0.13	3.00	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-42-8	Boron	81.6		1	9.95	50.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-43-9	Cadmium	0.094	U	1	0.094	3.00	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-70-2	Calcium	30100		1	33.0	1000	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-47-3	Chromium	0.94	J	1	0.66	5.00	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-48-4	Cobalt	0.88	J	1	0.50	15.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-50-8	Copper	7.07	U	1	7.07	10.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7439-89-6	Iron	3340		1	18.5	50.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7439-92-1	Lead	3.52	J	1	3.51	6.00	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7439-95-4	Magnesium	10200		1	39.4	1000	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7439-96-5	Manganese	6820		1	1.46	10.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7439-97-6	Mercury	0.081	U	1	0.081	0.20	ug/L	08/12/24 16:13	08/13/24 10:16	SW7470A	
7439-98-7	Molybdenum	3.67	U	1	3.67	100	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-02-0	Nickel	1.52	J	1	0.85	20.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-09-7	Potassium	5120		1	685	1000	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7782-49-2	Selenium	5.88	U	1	5.88	10.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-22-4	Silver	0.58	U	1	0.58	5.00	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-23-5	Sodium	144000		1	237	1000	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-24-6	Strontium	219	N	1	2.32	10.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-28-0	Thallium	2.32	U	1	2.32	20.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-31-5	Tin	1.89	U	1	1.89	20.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-32-6	Titanium	2.35	U	1	2.35	20.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-62-2	Vanadium	3.06	U	1	3.06	20.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010
7440-66-6	Zinc	27.3		1	1.75	20.0	ug/L	08/05/24 09:15	08/07/24 16:47	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Mercury				

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

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

Alliance TECHNICAL GROUP
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Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	07/31/24
Project:	Former Schlumberger Site Princeton NJ	Date Received:	07/31/24
Client Sample ID:	931-K1-WS-073124	SDG No.:	P3429
Lab Sample ID:	P3429-02	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	186		1	28.3	50.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-36-0	Antimony	2.06	U	1	2.06	25.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-38-2	Arsenic	4.13	J	1	3.48	10.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-39-3	Barium	99.7		1	6.28	50.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-41-7	Beryllium	0.13	U	1	0.13	3.00	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-42-8	Boron	26.7	J	1	9.95	50.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-43-9	Cadmium	0.094	U	1	0.094	3.00	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-70-2	Calcium	8810		1	33.0	1000	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-47-3	Chromium	2.10	J	1	0.66	5.00	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-48-4	Cobalt	5.47	J	1	0.50	15.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-50-8	Copper	7.07	U	1	7.07	10.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7439-89-6	Iron	8650		1	18.5	50.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7439-92-1	Lead	3.51	U	1	3.51	6.00	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7439-95-4	Magnesium	2980		1	39.4	1000	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7439-96-5	Manganese	1280		1	1.46	10.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7439-97-6	Mercury	0.081	U	1	0.081	0.20	ug/L	08/12/24 16:13	08/13/24 10:19	SW7470A	
7439-98-7	Molybdenum	3.67	U	1	3.67	100	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-02-0	Nickel	9.30	J	1	0.85	20.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-09-7	Potassium	2190		1	685	1000	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7782-49-2	Selenium	5.88	U	1	5.88	10.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-22-4	Silver	0.58	U	1	0.58	5.00	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-23-5	Sodium	42300		1	237	1000	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-24-6	Strontium	48.6	N	1	2.32	10.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-28-0	Thallium	2.32	U	1	2.32	20.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-31-5	Tin	1.89	U	1	1.89	20.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-32-6	Titanium	2.97	J	1	2.35	20.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-62-2	Vanadium	3.06	U	1	3.06	20.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010
7440-66-6	Zinc	17.7	J	1	1.75	20.0	ug/L	08/05/24 09:15	08/07/24 16:51	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Mercury				

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

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

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	07/31/24
Project:	Former Schlumberger Site Princeton NJ	Date Received:	07/31/24
Client Sample ID:	925-K1-WS-073124	SDG No.:	P3429
Lab Sample ID:	P3429-03	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	143		1	28.3	50.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-36-0	Antimony	2.06	U	1	2.06	25.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-38-2	Arsenic	3.48	U	1	3.48	10.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-39-3	Barium	242		1	6.28	50.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-41-7	Beryllium	0.13	U	1	0.13	3.00	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-42-8	Boron	76.8		1	9.95	50.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-43-9	Cadmium	0.24	J	1	0.094	3.00	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-70-2	Calcium	30000		1	33.0	1000	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-47-3	Chromium	1.38	J	1	0.66	5.00	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-48-4	Cobalt	1.56	J	1	0.50	15.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-50-8	Copper	7.07	U	1	7.07	10.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7439-89-6	Iron	19200		1	18.5	50.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7439-92-1	Lead	3.51	U	1	3.51	6.00	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7439-95-4	Magnesium	10000		1	39.4	1000	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7439-96-5	Manganese	6910		1	1.46	10.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7439-97-6	Mercury	0.13	J	1	0.081	0.20	ug/L	08/12/24 16:13	08/13/24 10:21	SW7470A	
7439-98-7	Molybdenum	3.67	U	1	3.67	100	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-02-0	Nickel	5.33	J	1	0.85	20.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-09-7	Potassium	5180		1	685	1000	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7782-49-2	Selenium	5.88	U	1	5.88	10.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-22-4	Silver	1.88	J	1	0.58	5.00	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-23-5	Sodium	140000		1	237	1000	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-24-6	Strontium	215	N	1	2.32	10.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-28-0	Thallium	2.32	U	1	2.32	20.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-31-5	Tin	1.89	U	1	1.89	20.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-32-6	Titanium	3.42	J	1	2.35	20.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-62-2	Vanadium	7.50	J	1	3.06	20.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010
7440-66-6	Zinc	50.9		1	1.75	20.0	ug/L	08/05/24 09:15	08/07/24 16:56	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Mercury				

U = Not Detected
LOQ = Limit of Quantitation
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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: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

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
ICV72	Mercury	4.01	4.0	100	90 - 110	CV	08/13/2024	08:53	LB131960

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

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
CCV35	Mercury	4.53	5.0	91	90 - 110	CV	08/13/2024	08:58	LB131960
CCV36	Mercury	4.77	5.0	95	90 - 110	CV	08/13/2024	09:33	LB131960
CCV37	Mercury	4.95	5.0	99	90 - 110	CV	08/13/2024	10:00	LB131960
CCV38	Mercury	4.86	5.0	97	90 - 110	CV	08/13/2024	10:30	LB131960
CCV39	Mercury	5.18	5.0	104	90 - 110	CV	08/13/2024	10:58	LB131960
CCV40	Mercury	5.09	5.0	102	90 - 110	CV	08/13/2024	11:24	LB131960

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Aluminum	2310	2500	92	90 - 110	P	08/07/2024	15:52	LB131900
	Antimony	937	1000	94	90 - 110	P	08/07/2024	15:52	LB131900
	Arsenic	903	1000	90	90 - 110	P	08/07/2024	15:52	LB131900
	Barium	489	520	94	90 - 110	P	08/07/2024	15:52	LB131900
	Beryllium	472	510	92	90 - 110	P	08/07/2024	15:52	LB131900
	Boron	2480	2500	99	90 - 110	P	08/07/2024	15:52	LB131900
	Cadmium	470	510	92	90 - 110	P	08/07/2024	15:52	LB131900
	Calcium	9780	10000	98	90 - 110	P	08/07/2024	15:52	LB131900
	Chromium	521	520	100	90 - 110	P	08/07/2024	15:52	LB131900
	Cobalt	487	520	94	90 - 110	P	08/07/2024	15:52	LB131900
	Copper	490	510	96	90 - 110	P	08/07/2024	15:52	LB131900
	Iron	10000	10000	100	90 - 110	P	08/07/2024	15:52	LB131900
	Lead	954	1000	95	90 - 110	P	08/07/2024	15:52	LB131900
	Magnesium	5520	6000	92	90 - 110	P	08/07/2024	15:52	LB131900
	Manganese	493	520	95	90 - 110	P	08/07/2024	15:52	LB131900
	Molybdenum	2710	2500	108	90 - 110	P	08/07/2024	15:52	LB131900
	Nickel	490	530	92	90 - 110	P	08/07/2024	15:52	LB131900
	Potassium	10300	9900	104	90 - 110	P	08/07/2024	15:52	LB131900
	Selenium	916	1000	92	90 - 110	P	08/07/2024	15:52	LB131900
	Silver	251	250	100	90 - 110	P	08/07/2024	15:52	LB131900
	Sodium	10500	10000	105	90 - 110	P	08/07/2024	15:52	LB131900
	Strontium	2500	2500	100	90 - 110	P	08/07/2024	15:52	LB131900
	Thallium	999	1000	100	90 - 110	P	08/07/2024	15:52	LB131900
	Tin	2630	2500	105	90 - 110	P	08/07/2024	15:52	LB131900
	Titanium	2640	2500	106	90 - 110	P	08/07/2024	15:52	LB131900
	Vanadium	475	500	95	90 - 110	P	08/07/2024	15:52	LB131900
	Zinc	1040	1000	104	90 - 110	P	08/07/2024	15:52	LB131900

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Fax : 908 789 8922

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Aluminum	102	100	102	80 - 120	P	08/07/2024	15:56	LB131900
	Antimony	51.2	50.0	102	80 - 120	P	08/07/2024	15:56	LB131900
	Arsenic	19.9	20.0	100	80 - 120	P	08/07/2024	15:56	LB131900
	Barium	101	100	101	80 - 120	P	08/07/2024	15:56	LB131900
	Beryllium	6.00	6.0	100	80 - 120	P	08/07/2024	15:56	LB131900
	Boron	102	100	102	80 - 120	P	08/07/2024	15:56	LB131900
	Cadmium	6.25	6.0	104	80 - 120	P	08/07/2024	15:56	LB131900
	Calcium	2040	2000	102	80 - 120	P	08/07/2024	15:56	LB131900
	Chromium	9.27	10.0	93	80 - 120	P	08/07/2024	15:56	LB131900
	Cobalt	29.6	30.0	99	80 - 120	P	08/07/2024	15:56	LB131900
	Copper	21.9	20.0	109	80 - 120	P	08/07/2024	15:56	LB131900
	Iron	99.5	100	100	80 - 120	P	08/07/2024	15:56	LB131900
	Lead	13.9	12.0	116	80 - 120	P	08/07/2024	15:56	LB131900
	Magnesium	2100	2000	105	80 - 120	P	08/07/2024	15:56	LB131900
	Manganese	20.6	20.0	103	80 - 120	P	08/07/2024	15:56	LB131900
	Molybdenum	201	200	101	80 - 120	P	08/07/2024	15:56	LB131900
	Nickel	40.0	40.0	100	80 - 120	P	08/07/2024	15:56	LB131900
	Potassium	1760	2000	88	80 - 120	P	08/07/2024	15:56	LB131900
	Selenium	18.3	20.0	91	80 - 120	P	08/07/2024	15:56	LB131900
	Silver	8.68	10.0	87	80 - 120	P	08/07/2024	15:56	LB131900
	Sodium	1730	2000	86	80 - 120	P	08/07/2024	15:56	LB131900
	Strontium	20.7	20.0	104	80 - 120	P	08/07/2024	15:56	LB131900
	Thallium	41.2	40.0	103	80 - 120	P	08/07/2024	15:56	LB131900
	Tin	36.0	40.0	90	80 - 120	P	08/07/2024	15:56	LB131900
	Titanium	40.8	40.0	102	80 - 120	P	08/07/2024	15:56	LB131900
	Vanadium	41.4	40.0	104	80 - 120	P	08/07/2024	15:56	LB131900
	Zinc	41.5	40.0	104	80 - 120	P	08/07/2024	15:56	LB131900

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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9700	10000	97	90 - 110	P	08/07/2024	16:20	LB131900
	Antimony	4930	5000	99	90 - 110	P	08/07/2024	16:20	LB131900
	Arsenic	4910	5000	98	90 - 110	P	08/07/2024	16:20	LB131900
	Barium	10000	10000	100	90 - 110	P	08/07/2024	16:20	LB131900
	Beryllium	249	250	100	90 - 110	P	08/07/2024	16:20	LB131900
	Boron	4900	5000	98	90 - 110	P	08/07/2024	16:20	LB131900
	Cadmium	2490	2500	100	90 - 110	P	08/07/2024	16:20	LB131900
	Calcium	25000	25000	100	90 - 110	P	08/07/2024	16:20	LB131900
	Chromium	1010	1000	100	90 - 110	P	08/07/2024	16:20	LB131900
	Cobalt	2470	2500	99	90 - 110	P	08/07/2024	16:20	LB131900
	Copper	1230	1250	98	90 - 110	P	08/07/2024	16:20	LB131900
	Iron	4990	5000	100	90 - 110	P	08/07/2024	16:20	LB131900
	Lead	5060	5000	101	90 - 110	P	08/07/2024	16:20	LB131900
	Magnesium	24600	25000	98	90 - 110	P	08/07/2024	16:20	LB131900
	Manganese	2480	2500	99	90 - 110	P	08/07/2024	16:20	LB131900
	Molybdenum	5040	5000	101	90 - 110	P	08/07/2024	16:20	LB131900
	Nickel	2490	2500	100	90 - 110	P	08/07/2024	16:20	LB131900
	Potassium	24300	25000	97	90 - 110	P	08/07/2024	16:20	LB131900
	Selenium	4880	5000	98	90 - 110	P	08/07/2024	16:20	LB131900
	Silver	1240	1250	100	90 - 110	P	08/07/2024	16:20	LB131900
	Sodium	24000	25000	96	90 - 110	P	08/07/2024	16:20	LB131900
	Strontium	5000	5000	100	90 - 110	P	08/07/2024	16:20	LB131900
	Thallium	5160	5000	103	90 - 110	P	08/07/2024	16:20	LB131900
	Tin	5000	5000	100	90 - 110	P	08/07/2024	16:20	LB131900
	Titanium	4950	5000	99	90 - 110	P	08/07/2024	16:20	LB131900
	Vanadium	2460	2500	98	90 - 110	P	08/07/2024	16:20	LB131900
	Zinc	2540	2500	102	90 - 110	P	08/07/2024	16:20	LB131900
CCV02	Aluminum	9760	10000	98	90 - 110	P	08/07/2024	17:14	LB131900
	Antimony	4910	5000	98	90 - 110	P	08/07/2024	17:14	LB131900
	Arsenic	4900	5000	98	90 - 110	P	08/07/2024	17:14	LB131900
	Barium	10200	10000	102	90 - 110	P	08/07/2024	17:14	LB131900
	Beryllium	250	250	100	90 - 110	P	08/07/2024	17:14	LB131900
	Boron	4890	5000	98	90 - 110	P	08/07/2024	17:14	LB131900
	Cadmium	2520	2500	101	90 - 110	P	08/07/2024	17:14	LB131900

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Fax : 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Calcium	25500	25000	102	90 - 110	P	08/07/2024	17:14	LB131900
	Chromium	1010	1000	101	90 - 110	P	08/07/2024	17:14	LB131900
	Cobalt	2490	2500	100	90 - 110	P	08/07/2024	17:14	LB131900
	Copper	1240	1250	99	90 - 110	P	08/07/2024	17:14	LB131900
	Iron	5090	5000	102	90 - 110	P	08/07/2024	17:14	LB131900
	Lead	5100	5000	102	90 - 110	P	08/07/2024	17:14	LB131900
	Magnesium	24800	25000	99	90 - 110	P	08/07/2024	17:14	LB131900
	Manganese	2530	2500	101	90 - 110	P	08/07/2024	17:14	LB131900
	Molybdenum	5050	5000	101	90 - 110	P	08/07/2024	17:14	LB131900
	Nickel	2510	2500	100	90 - 110	P	08/07/2024	17:14	LB131900
	Potassium	24500	25000	98	90 - 110	P	08/07/2024	17:14	LB131900
	Selenium	4850	5000	97	90 - 110	P	08/07/2024	17:14	LB131900
	Silver	1250	1250	100	90 - 110	P	08/07/2024	17:14	LB131900
	Sodium	24200	25000	97	90 - 110	P	08/07/2024	17:14	LB131900
	Strontium	5100	5000	102	90 - 110	P	08/07/2024	17:14	LB131900
	Thallium	5130	5000	103	90 - 110	P	08/07/2024	17:14	LB131900
	Tin	5030	5000	100	90 - 110	P	08/07/2024	17:14	LB131900
	Titanium	5060	5000	101	90 - 110	P	08/07/2024	17:14	LB131900
	Vanadium	2490	2500	100	90 - 110	P	08/07/2024	17:14	LB131900
	Zinc	2560	2500	102	90 - 110	P	08/07/2024	17:14	LB131900
CCV03	Aluminum	9390	10000	94	90 - 110	P	08/07/2024	18:51	LB131900
	Antimony	4780	5000	96	90 - 110	P	08/07/2024	18:51	LB131900
	Arsenic	4720	5000	94	90 - 110	P	08/07/2024	18:51	LB131900
	Barium	9840	10000	98	90 - 110	P	08/07/2024	18:51	LB131900
	Beryllium	252	250	101	90 - 110	P	08/07/2024	18:51	LB131900
	Boron	4910	5000	98	90 - 110	P	08/07/2024	18:51	LB131900
	Cadmium	2440	2500	98	90 - 110	P	08/07/2024	18:51	LB131900
	Calcium	24700	25000	99	90 - 110	P	08/07/2024	18:51	LB131900
	Chromium	996	1000	100	90 - 110	P	08/07/2024	18:51	LB131900
	Cobalt	2430	2500	97	90 - 110	P	08/07/2024	18:51	LB131900
	Copper	1200	1250	96	90 - 110	P	08/07/2024	18:51	LB131900
	Iron	4920	5000	98	90 - 110	P	08/07/2024	18:51	LB131900
	Lead	4950	5000	99	90 - 110	P	08/07/2024	18:51	LB131900
	Magnesium	24200	25000	97	90 - 110	P	08/07/2024	18:51	LB131900

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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

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
CCV03	Manganese	2460	2500	98	90 - 110	P	08/07/2024	18:51	LB131900
	Molybdenum	4970	5000	99	90 - 110	P	08/07/2024	18:51	LB131900
	Nickel	2440	2500	97	90 - 110	P	08/07/2024	18:51	LB131900
	Potassium	24200	25000	97	90 - 110	P	08/07/2024	18:51	LB131900
	Selenium	4670	5000	93	90 - 110	P	08/07/2024	18:51	LB131900
	Silver	1240	1250	99	90 - 110	P	08/07/2024	18:51	LB131900
	Sodium	23600	25000	94	90 - 110	P	08/07/2024	18:51	LB131900
	Strontium	4900	5000	98	90 - 110	P	08/07/2024	18:51	LB131900
	Thallium	4990	5000	100	90 - 110	P	08/07/2024	18:51	LB131900
	Tin	4860	5000	97	90 - 110	P	08/07/2024	18:51	LB131900
	Titanium	4890	5000	98	90 - 110	P	08/07/2024	18:51	LB131900
	Vanadium	2420	2500	97	90 - 110	P	08/07/2024	18:51	LB131900
	Zinc	2500	2500	100	90 - 110	P	08/07/2024	18:51	LB131900
CCV04	Aluminum	9190	10000	92	90 - 110	P	08/07/2024	19:48	LB131900
	Antimony	4780	5000	96	90 - 110	P	08/07/2024	19:48	LB131900
	Arsenic	4740	5000	95	90 - 110	P	08/07/2024	19:48	LB131900
	Barium	9880	10000	99	90 - 110	P	08/07/2024	19:48	LB131900
	Beryllium	242	250	97	90 - 110	P	08/07/2024	19:48	LB131900
	Boron	4700	5000	94	90 - 110	P	08/07/2024	19:48	LB131900
	Cadmium	2460	2500	98	90 - 110	P	08/07/2024	19:48	LB131900
	Calcium	24600	25000	98	90 - 110	P	08/07/2024	19:48	LB131900
	Chromium	995	1000	100	90 - 110	P	08/07/2024	19:48	LB131900
	Cobalt	2430	2500	97	90 - 110	P	08/07/2024	19:48	LB131900
	Copper	1200	1250	96	90 - 110	P	08/07/2024	19:48	LB131900
	Iron	5100	5000	102	90 - 110	P	08/07/2024	19:48	LB131900
	Lead	5000	5000	100	90 - 110	P	08/07/2024	19:48	LB131900
	Magnesium	23900	25000	96	90 - 110	P	08/07/2024	19:48	LB131900
	Manganese	2440	2500	98	90 - 110	P	08/07/2024	19:48	LB131900
	Molybdenum	4950	5000	99	90 - 110	P	08/07/2024	19:48	LB131900
	Nickel	2450	2500	98	90 - 110	P	08/07/2024	19:48	LB131900
	Potassium	24600	25000	98	90 - 110	P	08/07/2024	19:48	LB131900
	Selenium	4690	5000	94	90 - 110	P	08/07/2024	19:48	LB131900
	Silver	1240	1250	99	90 - 110	P	08/07/2024	19:48	LB131900
	Sodium	23900	25000	96	90 - 110	P	08/07/2024	19:48	LB131900

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV04	Strontium	4890	5000	98	90 - 110	P	08/07/2024	19:48	LB131900
	Thallium	5020	5000	100	90 - 110	P	08/07/2024	19:48	LB131900
	Tin	4900	5000	98	90 - 110	P	08/07/2024	19:48	LB131900
	Titanium	4860	5000	97	90 - 110	P	08/07/2024	19:48	LB131900
	Vanadium	2410	2500	96	90 - 110	P	08/07/2024	19:48	LB131900
	Zinc	2500	2500	100	90 - 110	P	08/07/2024	19:48	LB131900

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CRDL STANDARD FOR AA & ICP

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

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
CRI01	Aluminum	106	100	106	40 - 160	P	08/07/2024	16:07	LB131900
	Antimony	50.6	50.0	101	40 - 160	P	08/07/2024	16:07	LB131900
	Arsenic	19.7	20.0	99	40 - 160	P	08/07/2024	16:07	LB131900
	Barium	99.7	100	100	40 - 160	P	08/07/2024	16:07	LB131900
	Beryllium	6.22	6.0	104	40 - 160	P	08/07/2024	16:07	LB131900
	Boron	99.0	100	99	40 - 160	P	08/07/2024	16:07	LB131900
	Cadmium	6.22	6.0	104	40 - 160	P	08/07/2024	16:07	LB131900
	Calcium	2030	2000	102	40 - 160	P	08/07/2024	16:07	LB131900
	Chromium	9.85	10.0	98	40 - 160	P	08/07/2024	16:07	LB131900
	Cobalt	29.9	30.0	100	40 - 160	P	08/07/2024	16:07	LB131900
	Copper	22.3	20.0	111	40 - 160	P	08/07/2024	16:07	LB131900
	Iron	97.0	100	97	40 - 160	P	08/07/2024	16:07	LB131900
	Lead	14.5	12.0	121	40 - 160	P	08/07/2024	16:07	LB131900
	Magnesium	2110	2000	105	40 - 160	P	08/07/2024	16:07	LB131900
	Manganese	21.1	20.0	106	40 - 160	P	08/07/2024	16:07	LB131900
	Molybdenum	204	200	102	40 - 160	P	08/07/2024	16:07	LB131900
	Nickel	40.1	40.0	100	40 - 160	P	08/07/2024	16:07	LB131900
	Potassium	1760	2000	88	40 - 160	P	08/07/2024	16:07	LB131900
	Selenium	17.8	20.0	89	40 - 160	P	08/07/2024	16:07	LB131900
	Silver	8.55	10.0	86	40 - 160	P	08/07/2024	16:07	LB131900
	Sodium	1750	2000	88	40 - 160	P	08/07/2024	16:07	LB131900
	Strontium	20.5	20.0	103	40 - 160	P	08/07/2024	16:07	LB131900
	Thallium	39.2	40.0	98	40 - 160	P	08/07/2024	16:07	LB131900
	Tin	36.2	40.0	90	40 - 160	P	08/07/2024	16:07	LB131900
	Titanium	40.3	40.0	101	40 - 160	P	08/07/2024	16:07	LB131900
	Vanadium	39.9	40.0	100	40 - 160	P	08/07/2024	16:07	LB131900
	Zinc	42.1	40.0	105	40 - 160	P	08/07/2024	16:07	LB131900
CRA	Mercury	0.24	0.2	118	40 - 160	CV	08/13/2024	09:10	LB131960

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB72	Mercury	0.20	+/-0.20	U	0.20	CV	08/13/2024	08:55	LB131960

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB35	Mercury	0.20	+/-0.20	U	0.20	CV	08/13/2024	09:03	LB131960
CCB36	Mercury	0.20	+/-0.20	U	0.20	CV	08/13/2024	09:35	LB131960
CCB37	Mercury	0.20	+/-0.20	U	0.20	CV	08/13/2024	10:05	LB131960
CCB38	Mercury	0.20	+/-0.20	U	0.20	CV	08/13/2024	10:35	LB131960
CCB39	Mercury	0.20	+/-0.20	U	0.20	CV	08/13/2024	11:04	LB131960
CCB40	Mercury	0.20	+/-0.20	U	0.20	CV	08/13/2024	11:26	LB131960

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	100	+/-100	U	100	P	08/07/2024	16:03	LB131900
	Antimony	50.0	+/-50.0	U	50.0	P	08/07/2024	16:03	LB131900
	Arsenic	20.0	+/-20.0	U	20.0	P	08/07/2024	16:03	LB131900
	Barium	100	+/-100	U	100	P	08/07/2024	16:03	LB131900
	Beryllium	6.00	+/-6.00	U	6.00	P	08/07/2024	16:03	LB131900
	Boron	100	+/-100	U	100	P	08/07/2024	16:03	LB131900
	Cadmium	6.00	+/-6.00	U	6.00	P	08/07/2024	16:03	LB131900
	Calcium	2000	+/-2000	U	2000	P	08/07/2024	16:03	LB131900
	Chromium	10.0	+/-10.0	U	10.0	P	08/07/2024	16:03	LB131900
	Cobalt	30.0	+/-30.0	U	30.0	P	08/07/2024	16:03	LB131900
	Copper	20.0	+/-20.0	U	20.0	P	08/07/2024	16:03	LB131900
	Iron	100	+/-100	U	100	P	08/07/2024	16:03	LB131900
	Lead	12.0	+/-12.0	U	12.0	P	08/07/2024	16:03	LB131900
	Magnesium	2000	+/-2000	U	2000	P	08/07/2024	16:03	LB131900
	Manganese	20.0	+/-20.0	U	20.0	P	08/07/2024	16:03	LB131900
	Molybdenum	200	+/-200	U	200	P	08/07/2024	16:03	LB131900
	Nickel	40.0	+/-40.0	U	40.0	P	08/07/2024	16:03	LB131900
	Potassium	2000	+/-2000	U	2000	P	08/07/2024	16:03	LB131900
	Selenium	20.0	+/-20.0	U	20.0	P	08/07/2024	16:03	LB131900
	Silver	10.0	+/-10.0	U	10.0	P	08/07/2024	16:03	LB131900
	Sodium	2000	+/-2000	U	2000	P	08/07/2024	16:03	LB131900
	Strontium	20.0	+/-20.0	U	20.0	P	08/07/2024	16:03	LB131900
	Thallium	40.0	+/-40.0	U	40.0	P	08/07/2024	16:03	LB131900
	Tin	40.0	+/-40.0	U	40.0	P	08/07/2024	16:03	LB131900
	Titanium	40.0	+/-40.0	U	40.0	P	08/07/2024	16:03	LB131900
	Vanadium	40.0	+/-40.0	U	40.0	P	08/07/2024	16:03	LB131900
	Zinc	40.0	+/-40.0	U	40.0	P	08/07/2024	16:03	LB131900

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	100	+/-100	U	100	P	08/07/2024	16:25	LB131900
	Antimony	50.0	+/-50.0	U	50.0	P	08/07/2024	16:25	LB131900
	Arsenic	20.0	+/-20.0	U	20.0	P	08/07/2024	16:25	LB131900
	Barium	100	+/-100	U	100	P	08/07/2024	16:25	LB131900
	Beryllium	6.00	+/-6.00	U	6.00	P	08/07/2024	16:25	LB131900
	Boron	100	+/-100	U	100	P	08/07/2024	16:25	LB131900
	Cadmium	6.00	+/-6.00	U	6.00	P	08/07/2024	16:25	LB131900
	Calcium	2000	+/-2000	U	2000	P	08/07/2024	16:25	LB131900
	Chromium	10.0	+/-10.0	U	10.0	P	08/07/2024	16:25	LB131900
	Cobalt	30.0	+/-30.0	U	30.0	P	08/07/2024	16:25	LB131900
	Copper	20.0	+/-20.0	U	20.0	P	08/07/2024	16:25	LB131900
	Iron	100	+/-100	U	100	P	08/07/2024	16:25	LB131900
	Lead	12.0	+/-12.0	U	12.0	P	08/07/2024	16:25	LB131900
	Magnesium	2000	+/-2000	U	2000	P	08/07/2024	16:25	LB131900
	Manganese	20.0	+/-20.0	U	20.0	P	08/07/2024	16:25	LB131900
	Molybdenum	200	+/-200	U	200	P	08/07/2024	16:25	LB131900
	Nickel	40.0	+/-40.0	U	40.0	P	08/07/2024	16:25	LB131900
	Potassium	2000	+/-2000	U	2000	P	08/07/2024	16:25	LB131900
	Selenium	20.0	+/-20.0	U	20.0	P	08/07/2024	16:25	LB131900
	Silver	10.0	+/-10.0	U	10.0	P	08/07/2024	16:25	LB131900
	Sodium	2000	+/-2000	U	2000	P	08/07/2024	16:25	LB131900
	Strontium	20.0	+/-20.0	U	20.0	P	08/07/2024	16:25	LB131900
	Thallium	40.0	+/-40.0	U	40.0	P	08/07/2024	16:25	LB131900
	Tin	40.0	+/-40.0	U	40.0	P	08/07/2024	16:25	LB131900
	Titanium	40.0	+/-40.0	U	40.0	P	08/07/2024	16:25	LB131900
	Vanadium	40.0	+/-40.0	U	40.0	P	08/07/2024	16:25	LB131900
	Zinc	40.0	+/-40.0	U	40.0	P	08/07/2024	16:25	LB131900
CCB02	Aluminum	100	+/-100	U	100	P	08/07/2024	17:18	LB131900
	Antimony	50.0	+/-50.0	U	50.0	P	08/07/2024	17:18	LB131900
	Arsenic	20.0	+/-20.0	U	20.0	P	08/07/2024	17:18	LB131900
	Barium	100	+/-100	U	100	P	08/07/2024	17:18	LB131900
	Beryllium	6.00	+/-6.00	U	6.00	P	08/07/2024	17:18	LB131900
	Boron	100	+/-100	U	100	P	08/07/2024	17:18	LB131900
	Cadmium	6.00	+/-6.00	U	6.00	P	08/07/2024	17:18	LB131900
	Calcium	2000	+/-2000	U	2000	P	08/07/2024	17:18	LB131900
	Chromium	10.0	+/-10.0	U	10.0	P	08/07/2024	17:18	LB131900
	Cobalt	30.0	+/-30.0	U	30.0	P	08/07/2024	17:18	LB131900
	Copper	20.0	+/-20.0	U	20.0	P	08/07/2024	17:18	LB131900
	Iron	100	+/-100	U	100	P	08/07/2024	17:18	LB131900

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Lead	12.0	+/-12.0	U	12.0	P	08/07/2024	17:18	LB131900
	Magnesium	2000	+/-2000	U	2000	P	08/07/2024	17:18	LB131900
	Manganese	20.0	+/-20.0	U	20.0	P	08/07/2024	17:18	LB131900
	Molybdenum	200	+/-200	U	200	P	08/07/2024	17:18	LB131900
	Nickel	40.0	+/-40.0	U	40.0	P	08/07/2024	17:18	LB131900
	Potassium	2000	+/-2000	U	2000	P	08/07/2024	17:18	LB131900
	Selenium	20.0	+/-20.0	U	20.0	P	08/07/2024	17:18	LB131900
	Silver	10.0	+/-10.0	U	10.0	P	08/07/2024	17:18	LB131900
	Sodium	2000	+/-2000	U	2000	P	08/07/2024	17:18	LB131900
	Strontium	20.0	+/-20.0	U	20.0	P	08/07/2024	17:18	LB131900
	Thallium	40.0	+/-40.0	U	40.0	P	08/07/2024	17:18	LB131900
	Tin	40.0	+/-40.0	U	40.0	P	08/07/2024	17:18	LB131900
	Titanium	40.0	+/-40.0	U	40.0	P	08/07/2024	17:18	LB131900
	Vanadium	40.0	+/-40.0	U	40.0	P	08/07/2024	17:18	LB131900
	Zinc	40.0	+/-40.0	U	40.0	P	08/07/2024	17:18	LB131900
CCB03	Aluminum	100	+/-100	U	100	P	08/07/2024	18:55	LB131900
	Antimony	50.0	+/-50.0	U	50.0	P	08/07/2024	18:55	LB131900
	Arsenic	20.0	+/-20.0	U	20.0	P	08/07/2024	18:55	LB131900
	Barium	100	+/-100	U	100	P	08/07/2024	18:55	LB131900
	Beryllium	6.00	+/-6.00	U	6.00	P	08/07/2024	18:55	LB131900
	Boron	100	+/-100	U	100	P	08/07/2024	18:55	LB131900
	Cadmium	6.00	+/-6.00	U	6.00	P	08/07/2024	18:55	LB131900
	Calcium	2000	+/-2000	U	2000	P	08/07/2024	18:55	LB131900
	Chromium	10.0	+/-10.0	U	10.0	P	08/07/2024	18:55	LB131900
	Cobalt	30.0	+/-30.0	U	30.0	P	08/07/2024	18:55	LB131900
	Copper	20.0	+/-20.0	U	20.0	P	08/07/2024	18:55	LB131900
	Iron	100	+/-100	U	100	P	08/07/2024	18:55	LB131900
	Lead	12.0	+/-12.0	U	12.0	P	08/07/2024	18:55	LB131900
	Magnesium	2000	+/-2000	U	2000	P	08/07/2024	18:55	LB131900
	Manganese	20.0	+/-20.0	U	20.0	P	08/07/2024	18:55	LB131900
	Molybdenum	200	+/-200	U	200	P	08/07/2024	18:55	LB131900
	Nickel	40.0	+/-40.0	U	40.0	P	08/07/2024	18:55	LB131900
	Potassium	2000	+/-2000	U	2000	P	08/07/2024	18:55	LB131900
	Selenium	20.0	+/-20.0	U	20.0	P	08/07/2024	18:55	LB131900
	Silver	10.0	+/-10.0	U	10.0	P	08/07/2024	18:55	LB131900
	Sodium	509	+/-2000	J	2000	P	08/07/2024	18:55	LB131900
	Strontium	20.0	+/-20.0	U	20.0	P	08/07/2024	18:55	LB131900
	Thallium	40.0	+/-40.0	U	40.0	P	08/07/2024	18:55	LB131900
	Tin	40.0	+/-40.0	U	40.0	P	08/07/2024	18:55	LB131900

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB03	Titanium	40.0	+/-40.0	U	40.0	P	08/07/2024	18:55	LB131900
	Vanadium	40.0	+/-40.0	U	40.0	P	08/07/2024	18:55	LB131900
	Zinc	40.0	+/-40.0	U	40.0	P	08/07/2024	18:55	LB131900
CCB04	Aluminum	100	+/-100	U	100	P	08/07/2024	19:52	LB131900
	Antimony	50.0	+/-50.0	U	50.0	P	08/07/2024	19:52	LB131900
	Arsenic	20.0	+/-20.0	U	20.0	P	08/07/2024	19:52	LB131900
	Barium	100	+/-100	U	100	P	08/07/2024	19:52	LB131900
	Beryllium	6.00	+/-6.00	U	6.00	P	08/07/2024	19:52	LB131900
	Boron	100	+/-100	U	100	P	08/07/2024	19:52	LB131900
	Cadmium	6.00	+/-6.00	U	6.00	P	08/07/2024	19:52	LB131900
	Calcium	2000	+/-2000	U	2000	P	08/07/2024	19:52	LB131900
	Chromium	10.0	+/-10.0	U	10.0	P	08/07/2024	19:52	LB131900
	Cobalt	30.0	+/-30.0	U	30.0	P	08/07/2024	19:52	LB131900
	Copper	20.0	+/-20.0	U	20.0	P	08/07/2024	19:52	LB131900
	Iron	100	+/-100	U	100	P	08/07/2024	19:52	LB131900
	Lead	12.0	+/-12.0	U	12.0	P	08/07/2024	19:52	LB131900
	Magnesium	2000	+/-2000	U	2000	P	08/07/2024	19:52	LB131900
	Manganese	20.0	+/-20.0	U	20.0	P	08/07/2024	19:52	LB131900
	Molybdenum	200	+/-200	U	200	P	08/07/2024	19:52	LB131900
	Nickel	40.0	+/-40.0	U	40.0	P	08/07/2024	19:52	LB131900
	Potassium	2000	+/-2000	U	2000	P	08/07/2024	19:52	LB131900
	Selenium	20.0	+/-20.0	U	20.0	P	08/07/2024	19:52	LB131900
	Silver	10.0	+/-10.0	U	10.0	P	08/07/2024	19:52	LB131900
	Sodium	2000	+/-2000	U	2000	P	08/07/2024	19:52	LB131900
	Strontium	20.0	+/-20.0	U	20.0	P	08/07/2024	19:52	LB131900
	Thallium	40.0	+/-40.0	U	40.0	P	08/07/2024	19:52	LB131900
	Tin	40.0	+/-40.0	U	40.0	P	08/07/2024	19:52	LB131900
	Titanium	40.0	+/-40.0	U	40.0	P	08/07/2024	19:52	LB131900
	Vanadium	40.0	+/-40.0	U	40.0	P	08/07/2024	19:52	LB131900
	Zinc	40.0	+/-40.0	U	40.0	P	08/07/2024	19:52	LB131900

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Metals
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PREPARATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB162680BL		**WATER**		**Batch Number:**	**PB162680**		**Prep Date:**	**08/12/2024**	
	Mercury	0.20	<0.20	U	0.20	CV	08/13/2024	10:07	LB131960

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Metals
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PREPARATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB162493BL		**WATER**		**Batch Number:**	**PB162493**		**Prep Date:**	**08/05/2024**	
	Aluminum	50.0	<50.0	U	50.0	P	08/07/2024	16:29	LB131900
	Antimony	25.0	<25.0	U	25.0	P	08/07/2024	16:29	LB131900
	Arsenic	10.0	<10.0	U	10.0	P	08/07/2024	16:29	LB131900
	Barium	50.0	<50.0	U	50.0	P	08/07/2024	16:29	LB131900
	Beryllium	3.00	<3.00	U	3.00	P	08/07/2024	16:29	LB131900
	Boron	50.0	<50.0	U	50.0	P	08/07/2024	16:29	LB131900
	Cadmium	3.00	<3.00	U	3.00	P	08/07/2024	16:29	LB131900
	Calcium	1000	<1000	U	1000	P	08/07/2024	16:29	LB131900
	Chromium	5.00	<5.00	U	5.00	P	08/07/2024	16:29	LB131900
	Cobalt	15.0	<15.0	U	15.0	P	08/07/2024	16:29	LB131900
	Copper	10.0	<10.0	U	10.0	P	08/07/2024	16:29	LB131900
	Iron	50.0	<50.0	U	50.0	P	08/07/2024	16:29	LB131900
	Lead	6.00	<6.00	U	6.00	P	08/07/2024	16:29	LB131900
	Magnesium	1000	<1000	U	1000	P	08/07/2024	16:29	LB131900
	Manganese	10.0	<10.0	U	10.0	P	08/07/2024	16:29	LB131900
	Molybdenum	100	<100	U	100	P	08/07/2024	16:29	LB131900
	Nickel	20.0	<20.0	U	20.0	P	08/07/2024	16:29	LB131900
	Potassium	1000	<1000	U	1000	P	08/07/2024	16:29	LB131900
	Selenium	10.0	<10.0	U	10.0	P	08/07/2024	16:29	LB131900
	Silver	5.00	<5.00	U	5.00	P	08/07/2024	16:29	LB131900
	Sodium	1000	<1000	U	1000	P	08/07/2024	16:29	LB131900
	Strontium	10.0	<10.0	U	10.0	P	08/07/2024	16:29	LB131900
	Thallium	20.0	<20.0	U	20.0	P	08/07/2024	16:29	LB131900
	Tin	20.0	<20.0	U	20.0	P	08/07/2024	16:29	LB131900
	Titanium	20.0	<20.0	U	20.0	P	08/07/2024	16:29	LB131900
	Vanadium	20.0	<20.0	U	20.0	P	08/07/2024	16:29	LB131900
	Zinc	20.0	<20.0	U	20.0	P	08/07/2024	16:29	LB131900

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Metals
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INTERFERENCE CHECK SAMPLE

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

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

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Aluminum	266000	255000	104	216000	294000	08/07/2024	16:12	LB131900
	Antimony	-1.84			-50	50	08/07/2024	16:12	LB131900
	Arsenic	4.35			-20	20	08/07/2024	16:12	LB131900
	Barium	6.14	6.0	102	-94	106	08/07/2024	16:12	LB131900
	Beryllium	0.93			-6	6	08/07/2024	16:12	LB131900
	Boron	12.4	1000	1	-100	100	08/07/2024	16:12	LB131900
	Cadmium	3.70	1.0	370	-5	7	08/07/2024	16:12	LB131900
	Calcium	253000	245000	103	208000	282000	08/07/2024	16:12	LB131900
	Chromium	56.8	52.0	109	42	62	08/07/2024	16:12	LB131900
	Cobalt	2.84			-30	30	08/07/2024	16:12	LB131900
	Copper	9.27	2.0	464	-18	22	08/07/2024	16:12	LB131900
	Iron	102000	101000	101	85600	116500	08/07/2024	16:12	LB131900
	Lead	5.55			-12	12	08/07/2024	16:12	LB131900
	Magnesium	272000	255000	107	216000	294000	08/07/2024	16:12	LB131900
	Manganese	16.2	7.0	231	-13	27	08/07/2024	16:12	LB131900
	Molybdenum	0.026	1000		-200	200	08/07/2024	16:12	LB131900
	Nickel	3.43	2.0	172	-38	42	08/07/2024	16:12	LB131900
	Potassium	-48.6			0	0	08/07/2024	16:12	LB131900
	Selenium	-7.63			-20	20	08/07/2024	16:12	LB131900
	Silver	2.04			-10	10	08/07/2024	16:12	LB131900
	Sodium	17.5			0	0	08/07/2024	16:12	LB131900
	Strontium	3.47			0	0	08/07/2024	16:12	LB131900
	Thallium	2.30			-40	40	08/07/2024	16:12	LB131900
	Tin	-2.89	1000		-40	40	08/07/2024	16:12	LB131900
	Titanium	-3.00			0	0	08/07/2024	16:12	LB131900
	Vanadium	5.23			-40	40	08/07/2024	16:12	LB131900
	Zinc	2.26			-40	40	08/07/2024	16:12	LB131900
ICSAB01	Aluminum	250000	247000	101	209000	285000	08/07/2024	16:16	LB131900
	Antimony	605	618	98	525	711	08/07/2024	16:16	LB131900
	Arsenic	103	104	99	88.4	120	08/07/2024	16:16	LB131900
	Barium	516	537	96	437	637	08/07/2024	16:16	LB131900
	Beryllium	494	495	100	420	570	08/07/2024	16:16	LB131900
	Boron	1010	1000	101	850	1150	08/07/2024	16:16	LB131900
	Cadmium	968	972	100	826	1120	08/07/2024	16:16	LB131900
	Calcium	237000	235000	101	199000	271000	08/07/2024	16:16	LB131900
	Chromium	565	542	104	460	624	08/07/2024	16:16	LB131900
	Cobalt	501	476	105	404	548	08/07/2024	16:16	LB131900
	Copper	488	511	96	434	588	08/07/2024	16:16	LB131900
	Iron	101000	99300	102	84400	114500	08/07/2024	16:16	LB131900
	Lead	55.1	49.0	112	37	61	08/07/2024	16:16	LB131900
	Magnesium	253000	248000	102	210000	286000	08/07/2024	16:16	LB131900
	Manganese	510	507	101	430	584	08/07/2024	16:16	LB131900

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Metals
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INTERFERENCE CHECK SAMPLE

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

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

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSAB01	Molybdenum	1070	1000	107	850	1150	08/07/2024	16:16	LB131900
	Nickel	992	954	104	810	1100	08/07/2024	16:16	LB131900
	Potassium	-74.2			0	0	08/07/2024	16:16	LB131900
	Selenium	34.4	46.0	75	26	66	08/07/2024	16:16	LB131900
	Silver	221	201	110	170	232	08/07/2024	16:16	LB131900
	Sodium	3.05			0	0	08/07/2024	16:16	LB131900
	Strontium	863			0	0	08/07/2024	16:16	LB131900
	Thallium	103	108	95	68	148	08/07/2024	16:16	LB131900
	Tin	1070	1000	107	850	1150	08/07/2024	16:16	LB131900
	Titanium	1050			0	0	08/07/2024	16:16	LB131900
	Vanadium	487	491	99	417	565	08/07/2024	16:16	LB131900
	Zinc	1090	952	114	809	1095	08/07/2024	16:16	LB131900

METAL QC DATA

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MATRIX SPIKE SUMMARY

client: JACOBS Engineering Group, Inc. **level:** low **sdg no.:** P3429

contract: JACO05 **lab code:** CHEM **case no.:** P3429 **sas no.:** P3429

matrix: Water **sample id:** P3440-01 **client id:** 923-K1-WS-080124MS

Percent Solids for Sample: NA **Spiked ID:** P3440-02 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	86 - 115	1000		50.9		1000	95		P
Antimony	ug/L	88 - 113	378		25.0	U	400	94		P
Arsenic	ug/L	87 - 113	359		10.0	U	400	90		P
Barium	ug/L	88 - 113	155		58.9		100	96		P
Beryllium	ug/L	89 - 112	95.3		3.00	U	100	95		P
Boron	ug/L	85 - 113	178		47.6	J	150	87		P
Cadmium	ug/L	88 - 113	89.7		3.00	U	100	90		P
Calcium	ug/L	87 - 113	20200		19400		500	152		P
Chromium	ug/L	90 - 113	196		0.76	J	200	98		P
Cobalt	ug/L	89 - 114	93.6		15.0	U	100	94		P
Copper	ug/L	86 - 114	140		10.0	U	150	93		P
Iron	ug/L	87 - 115	4020		2490		1500	103		P
Lead	ug/L	86 - 113	453		6.00	U	500	91		P
Magnesium	ug/L	85 - 113	4590		3680		1000	92		P
Manganese	ug/L	90 - 114	887		777		100	111		P
Mercury	ug/L	75 - 125	3.28		0.20	U	4.0	82		CV
Molybdenum	ug/L	89 - 113	205		100	U	200	102		P
Nickel	ug/L	88 - 113	236		1.18	J	250	94		P
Potassium	ug/L	86 - 114	8060		3290		5000	95		P
Selenium	ug/L	83 - 114	851		10.0	U	1000	85		P
Silver	ug/L	84 - 115	34.0		5.00	U	37.5	91		P
Sodium	ug/L	87 - 115	80100		79700		1500	24		P
Strontium	ug/L	90 - 113	229		129		500	20	N	P
Thallium	ug/L	85 - 114	884		20.0	U	1000	88		P
Tin	ug/L	88 - 115	331		20.0	U	350	95		P
Titanium	ug/L	91 - 111	100		20.0	U	100	100		P
Vanadium	ug/L	90 - 111	146		20.0	U	150	97		P
Zinc	ug/L	87 - 115	114		10.1	J	100	104		P

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metals
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MATRIX SPIKE DUPLICATE SUMMARY

client: JACOBS Engineering Group, Inc. **level:** low **sdg no.:** P3429

contract: JACO05 **lab code:** CHEM **case no.:** P3429 **sas no.:** P3429

matrix: Water **sample id:** P3440-01 **client id:** 923-K1-WS-080124MSD

Percent Solids for Sample: NA **Spiked ID:** P3440-03 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	86 - 115	1050		50.9		1000	100		P
Antimony	ug/L	88 - 113	391		25.0	U	400	98		P
Arsenic	ug/L	87 - 113	377		10.0	U	400	94		P
Barium	ug/L	88 - 113	161		58.9		100	102		P
Beryllium	ug/L	89 - 112	102		3.00	U	100	102		P
Boron	ug/L	85 - 113	188		47.6	J	150	93		P
Cadmium	ug/L	88 - 113	94.8		3.00	U	100	95		P
Calcium	ug/L	87 - 113	20600		19400		500	244		P
Chromium	ug/L	90 - 113	205		0.76	J	200	102		P
Cobalt	ug/L	89 - 114	99.1		15.0	U	100	99		P
Copper	ug/L	86 - 114	146		10.0	U	150	97		P
Iron	ug/L	87 - 115	4110		2490		1500	108		P
Lead	ug/L	86 - 113	477		6.00	U	500	95		P
Magnesium	ug/L	85 - 113	4730		3680		1000	105		P
Manganese	ug/L	90 - 114	906		777		100	129		P
Mercury	ug/L	75 - 125	3.17		0.20	U	4.0	79		CV
Molybdenum	ug/L	89 - 113	213		100	U	200	106		P
Nickel	ug/L	88 - 113	249		1.18	J	250	99		P
Potassium	ug/L	86 - 114	8290		3290		5000	100		P
Selenium	ug/L	83 - 114	889		10.0	U	1000	89		P
Silver	ug/L	84 - 115	35.5		5.00	U	37.5	95		P
Sodium	ug/L	87 - 115	80100		79700		1500	27		P
Strontium	ug/L	90 - 113	236		129		500	21	N	P
Thallium	ug/L	85 - 114	940		20.0	U	1000	94		P
Tin	ug/L	88 - 115	344		20.0	U	350	98		P
Titanium	ug/L	91 - 111	103		20.0	U	100	103		P
Vanadium	ug/L	90 - 111	155		20.0	U	150	103		P
Zinc	ug/L	87 - 115	119		10.1	J	100	109		P

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Metals
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POST DIGEST SPIKE SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Matrix: Water **Level:** LOW **Client ID:** 923-K1-WS-080124A

Sample ID: P3440-01 **Spiked ID:** P3440-01A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Strontium	ug/L	90 - 113	210		129		500	16		P

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: JACOBS Engineering Group, Inc. **Level:** LOW **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Matrix: Water **Sample ID:** P3440-01 **Client ID:** 923-K1-WS-080124DUP

Percent Solids for Sample: NA **Duplicate ID** P3440-01DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	50.9		56.2		10		P
Antimony	ug/L	20	25.0	U	25.0	U			P
Arsenic	ug/L	20	10.0	U	10.0	U			P
Barium	ug/L	20	58.9		57.4		3		P
Beryllium	ug/L	20	3.00	U	3.00	U			P
Boron	ug/L	20	47.6	J	46.4	J	3		P
Cadmium	ug/L	20	3.00	U	3.00	U			P
Calcium	ug/L	20	19400		18900		3		P
Chromium	ug/L	20	0.76	J	0.84	J	10		P
Cobalt	ug/L	20	15.0	U	15.0	U			P
Copper	ug/L	20	10.0	U	10.0	U			P
Iron	ug/L	20	2490		2400		4		P
Lead	ug/L	20	6.00	U	6.00	U			P
Magnesium	ug/L	20	3680		3600		2		P
Manganese	ug/L	20	777		758		2		P
Mercury	ug/L	20	0.20	U	0.20	U			CV
Molybdenum	ug/L	20	100	U	100	U			P
Nickel	ug/L	20	1.18	J	1.15	J	3		P
Potassium	ug/L	20	3290		3190		3		P
Selenium	ug/L	20	10.0	U	10.0	U			P
Silver	ug/L	20	5.00	U	5.00	U			P
Sodium	ug/L	20	79700		76900		4		P
Strontium	ug/L	20	129		126		2		P
Thallium	ug/L	20	20.0	U	20.0	U			P
Tin	ug/L	20	20.0	U	20.0	U			P
Titanium	ug/L	20	20.0	U	20.0	U			P
Vanadium	ug/L	20	20.0	U	20.0	U			P
Zinc	ug/L	20	10.1	J	9.57	J	5		P

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

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: JACOBS Engineering Group, Inc. **Level:** LOW **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Matrix: Water **Sample ID:** P3440-02 **Client ID:** 923-K1-WS-080124MSD

Percent Solids for Sample: NA **Duplicate ID** P3440-03 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	1000		1050		5		P
Antimony	ug/L	20	378		391		3		P
Arsenic	ug/L	20	359		377		5		P
Barium	ug/L	20	155		161		4		P
Beryllium	ug/L	20	95.3		102		7		P
Boron	ug/L	20	178		188		5		P
Cadmium	ug/L	20	89.7		94.8		6		P
Calcium	ug/L	20	20200		20600		2		P
Chromium	ug/L	20	196		205		4		P
Cobalt	ug/L	20	93.6		99.1		6		P
Copper	ug/L	20	140		146		4		P
Iron	ug/L	20	4020		4110		2		P
Lead	ug/L	20	453		477		5		P
Magnesium	ug/L	20	4590		4730		3		P
Manganese	ug/L	20	887		906		2		P
Mercury	ug/L	20	3.28		3.17		3		CV
Molybdenum	ug/L	20	205		213		4		P
Nickel	ug/L	20	236		249		5		P
Potassium	ug/L	20	8060		8290		3		P
Selenium	ug/L	20	851		889		4		P
Silver	ug/L	20	34.0		35.5		4		P
Sodium	ug/L	20	80100		80100		0		P
Strontium	ug/L	20	229		236		3		P
Thallium	ug/L	20	884		940		6		P
Tin	ug/L	20	331		344		4		P
Titanium	ug/L	20	100		103		3		P
Vanadium	ug/L	20	146		155		6		P
Zinc	ug/L	20	114		119		4		P

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

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LABORATORY CONTROL SAMPLE SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB162493BS							
Aluminum	ug/L	1000	1020		102	86 - 115	P
Antimony	ug/L	400	403		101	88 - 113	P
Arsenic	ug/L	400	390		98	87 - 113	P
Barium	ug/L	100	100		100	88 - 113	P
Beryllium	ug/L	100	108		108	89 - 112	P
Boron	ug/L	150	157		105	85 - 113	P
Cadmium	ug/L	100	98.7		99	88 - 113	P
Calcium	ug/L	500	539	J	108	87 - 113	P
Chromium	ug/L	200	205		102	90 - 113	P
Cobalt	ug/L	100	100		100	89 - 114	P
Copper	ug/L	150	155		103	86 - 114	P
Iron	ug/L	1500	1440		96	87 - 115	P
Lead	ug/L	500	499		100	86 - 113	P
Magnesium	ug/L	1000	1000		100	85 - 113	P
Manganese	ug/L	100	104		104	90 - 114	P
Molybdenum	ug/L	200	204		102	89 - 113	P
Nickel	ug/L	250	256		102	88 - 113	P
Potassium	ug/L	5000	4540		91	86 - 114	P
Selenium	ug/L	1000	977		98	83 - 114	P
Silver	ug/L	37.5	37.1		99	84 - 115	P
Sodium	ug/L	1500	1340		89	87 - 115	P
Strontium	ug/L	100	99.7		100	90 - 113	P
Thallium	ug/L	1000	1000		100	85 - 114	P
Tin	ug/L	350	356		102	88 - 115	P
Titanium	ug/L	100	102		102	91 - 111	P
Vanadium	ug/L	150	152		101	90 - 111	P
Zinc	ug/L	100	106		106	87 - 115	P

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LABORATORY CONTROL SAMPLE SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB162680BS							
Mercury	ug/L	4.0	3.62		90	80 - 120	CV

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Metals

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ICP SERIAL DILUTIONS

SAMPLE NO.

923-K1-WS-080124L

Lab Name: Chemtech Consulting Group **Contract:** JACO05

Lab Code: CHEM **Lb No.:** lb131900 **Lab Sample ID :** P3440-01L **SDG No.:** P3429

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

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	50.9		250	U	100.0		P
Antimony	25.0	U	125	U			P
Arsenic	10.0	U	50.0	U			P
Barium	58.9		59.1	J	0		P
Beryllium	3.00	U	15.0	U			P
Boron	47.6	J	50.3	J	6		P
Cadmium	3.00	U	15.0	U			P
Calcium	19400		19700		2		P
Chromium	0.76	J	25.0	U	100.0		P
Cobalt	15.0	U	75.0	U			P
Copper	10.0	U	50.0	U			P
Iron	2490		2550		2		P
Lead	6.00	U	30.0	U			P
Magnesium	3680		3600	J	2		P
Manganese	777		782		1		P
Mercury	0.20	U	1.00	U			CV
Molybdenum	100	U	500	U			P
Nickel	1.18	J	100	U	100.0		P
Potassium	3290		5000	U	100.0		P
Selenium	10.0	U	50.0	U			P
Silver	5.00	U	25.0	U			P
Sodium	79700		78800		1		P
Strontium	129		131		1		P
Thallium	20.0	U	100	U			P
Tin	20.0	U	100	U			P
Titanium	20.0	U	100	U			P
Vanadium	20.0	U	100	U			P
Zinc	10.1	J	9.90	J	2		P

METAL PREPARATION & INSTRUMENT DATA

Alliance TECHNICAL GROUP
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ICP INTERELEMENT CORRECTION FACTORS

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Case No.:** P3429 **SAS No.:** P3429

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

METAL PREPARATION & ANALYICAL SUMMARY

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SAMPLE PREPARATION SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Method:**

Case No.: P3429 **SAS No.:** P3429

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB162493**						
P3429-01	926-K1-WS-073124	SAM	WATER	08/05/2024	50.0	25.0	
P3429-02	931-K1-WS-073124	SAM	WATER	08/05/2024	50.0	25.0	
P3429-03	925-K1-WS-073124	SAM	WATER	08/05/2024	50.0	25.0	
P3440-01DUP	923-K1-WS-080124DUP	DUP	WATER	08/05/2024	50.0	25.0	
P3440-02	923-K1-WS-080124MS	MS	WATER	08/05/2024	50.0	25.0	
P3440-03	923-K1-WS-080124MSD	MSD	WATER	08/05/2024	50.0	25.0	
PB162493BL	PB162493BL	MB	WATER	08/05/2024	50.0	25.0	
PB162493BS	PB162493BS	LCS	WATER	08/05/2024	50.0	25.0	

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SAMPLE PREPARATION SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3429

Contract: JACO05 **Lab Code:** CHEM **Method:**

Case No.: P3429 **SAS No.:** P3429

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB162680**						
P3429-01	926-K1-WS-073124	SAM	WATER	08/12/2024	30.0	30.0	
P3429-02	931-K1-WS-073124	SAM	WATER	08/12/2024	30.0	30.0	
P3429-03	925-K1-WS-073124	SAM	WATER	08/12/2024	30.0	30.0	
P3440-01DUP	923-K1-WS-080124DUP	DUP	WATER	08/12/2024	30.0	30.0	
P3440-02	923-K1-WS-080124MS	MS	WATER	08/12/2024	30.0	30.0	
P3440-03	923-K1-WS-080124MSD	MSD	WATER	08/12/2024	30.0	30.0	
PB162680BL	PB162680BL	MB	WATER	08/12/2024	30.0	30.0	
PB162680BS	PB162680BS	LCS	WATER	08/12/2024	30.0	30.0	

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ANALYSIS RUN LOG

Client: JACOBS Engineering Group, Inc. **Contract:** JACO05

Lab code: CHEM **Case no.:** P3429 **Sas no.:** P3429 **Sdg no.:** P3429

Instrument id number: **Method:** **Run number:** LB131900

Start date: 08/07/2024 **End date:** 08/07/2024

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1416	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
S1	S1	1	1421	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
S2	S2	1	1425	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
S3	S3	1	1429	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
S4	S4	1	1433	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
S5	S5	1	1438	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
ICV01	ICV01	1	1552	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
LLICV01	LLICV01	1	1556	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
ICB01	ICB01	1	1603	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CRI01	CRI01	1	1607	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
ICSA01	ICSA01	1	1612	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
ICSAB01	ICSAB01	1	1616	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CCV01	CCV01	1	1620	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CCB01	CCB01	1	1625	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
PB162493BL	PB162493BL	1	1629	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
PB162493BS	PB162493BS	1	1634	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3429-01	926-K1-WS-073124	1	1647	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3429-02	931-K1-WS-073124	1	1651	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3429-03	925-K1-WS-073124	1	1656	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3440-01DUP	923-K1-WS-080124DUP	1	1705	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3440-01L	923-K1-WS-080124L	5	1709	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CCV02	CCV02	1	1714	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CCB02	CCB02	1	1718	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3440-02	923-K1-WS-080124MS	1	1820	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3440-03	923-K1-WS-080124MSD	1	1824	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
P3440-01A	923-K1-WS-080124A	1	1833	Sr
CCV03	CCV03	1	1851	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CCB03	CCB03	1	1855	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CCV04	CCV04	1	1948	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn
CCB04	CCB04	1	1952	Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn

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

metals
- 14 -
ANALYSIS RUN LOG

Client: JACOBS Engineering Group, Inc. **Contract:** JACO05

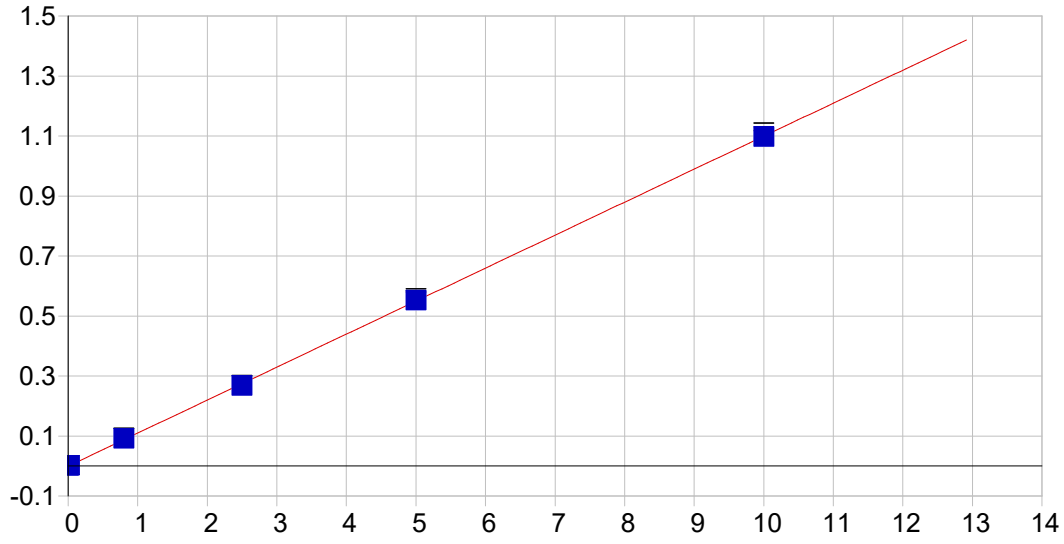
Lab code: CHEM **Case no.:** P3429 **Sas no.:** P3429 **Sdg no.:** P3429

Instrument id number: **Method:** **Run number:** LB131960

Start date: 08/13/2024 **End date:** 08/13/2024

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	0836	HG
S0.2	S0.2	1	0839	HG
S2.5	S2.5	1	0841	HG
S5	S5	1	0843	HG
S7.5	S7.5	1	0845	HG
S10	S10	1	0850	HG
ICV72	ICV72	1	0853	HG
ICB72	ICB72	1	0855	HG
CCV35	CCV35	1	0858	HG
CCB35	CCB35	1	0903	HG
CRA	CRA	1	0910	HG
CCV36	CCV36	1	0933	HG
CCB36	CCB36	1	0935	HG
CCV37	CCV37	1	1000	HG
CCB37	CCB37	1	1005	HG
PB162680BL	PB162680BL	1	1007	HG
PB162680BS	PB162680BS	1	1009	HG
P3429-01	926-K1-WS-073124	1	1016	HG
P3429-02	931-K1-WS-073124	1	1019	HG
P3429-03	925-K1-WS-073124	1	1021	HG
P3440-01DUP	923-K1-WS-080124DUP	1	1025	HG
P3440-02	923-K1-WS-080124MS	1	1028	HG
CCV38	CCV38	1	1030	HG
CCB38	CCB38	1	1035	HG
P3440-03	923-K1-WS-080124MSD	1	1037	HG
CCV39	CCV39	1	1058	HG
CCB39	CCB39	1	1104	HG
P3440-01L	923-K1-WS-080124L	5	1119	HG
CCV40	CCV40	1	1124	HG
CCB40	CCB40	1	1126	HG

METAL
RAW DATA

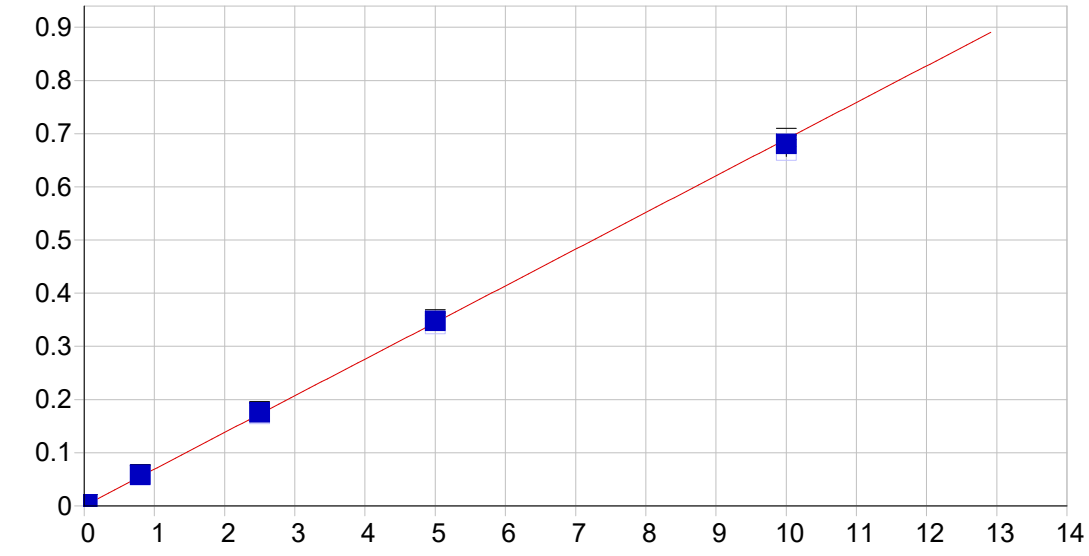


As 189.042 {479}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000235	Re-Slope:	1.000000
A1 (Gain):	0.109962	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999906	Status:	OK.
Std Error of Est:	0.000035		
Predicted MDL:	0.001621		
Predicted MQL:	0.005402		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00024	.000	1
S1	.02000	.01945	-.001	-2.76	.00189	.000	1
S3	2.5000	2.4436	-.056	-2.25	.26818	.001	1
S4	5.0000	5.0271	.027	.543	.55197	.005	1
S5	10.000	9.9898	-.010	-.102	1.0971	.013	1
S2	.80000	.83999	.040	5.00	.09204	.001	1

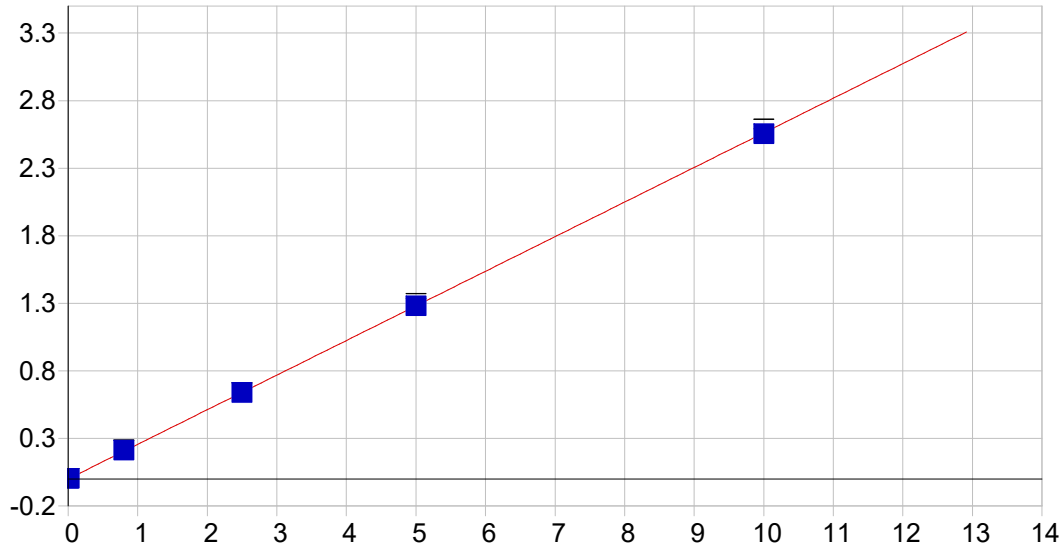


Tl 190.856 {477}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000182	Re-Slope:	1.000000
A1 (Gain):	0.068946	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999847	Status:	OK.
Std Error of Est:	0.000039		
Predicted MDL:	0.001453		
Predicted MQL:	0.004845		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00018	.000	1
S1	.04000	.03848	-.002	-3.81	.00266	.000	1
S3	2.5000	2.5463	.046	1.85	.17256	.002	1
S4	5.0000	5.0456	.046	.912	.34170	.002	1
S5	10.000	9.8667	-.133	-1.33	.66775	.011	1
S2	.80000	.84287	.043	5.36	.05728	.001	1

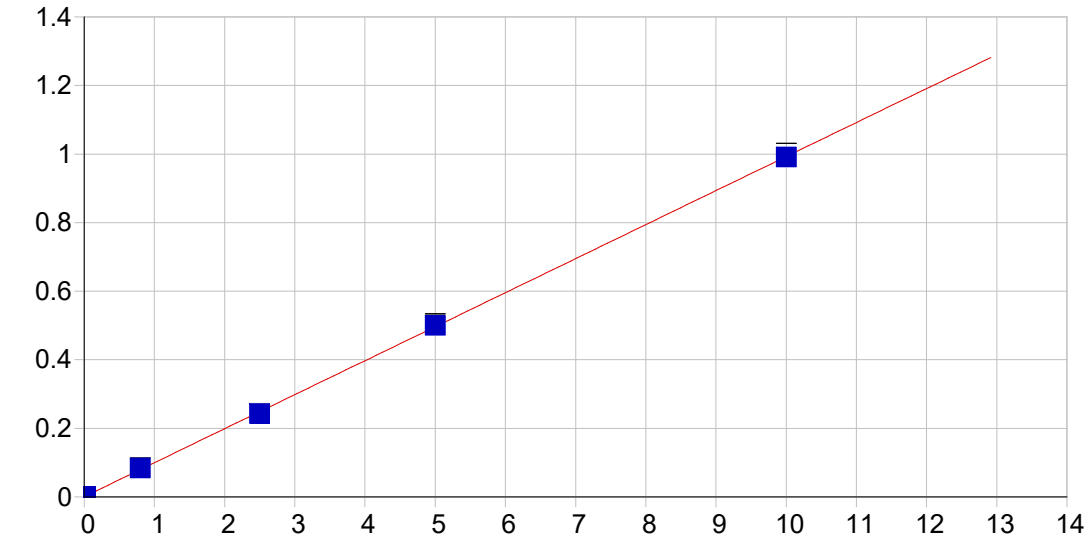


Pb 220.353 {453}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000280	Re-Slope:	1.000000
A1 (Gain):	0.256173	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999956	Status:	OK.
Std Error of Est:	0.000044		
Predicted MDL:	0.001041		
Predicted MQL:	0.003468		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00028	.000	1
S1	.01200	.01311	.001	9.25	.00302	.000	1
S3	2.5000	2.4911	-.009	-.357	.63719	.001	1
S4	5.0000	5.0012	.001	.023	1.2795	.018	1
S5	10.000	9.9730	-.027	-.270	2.5519	.036	1
S2	.80000	.83368	.034	4.21	.21307	.001	1

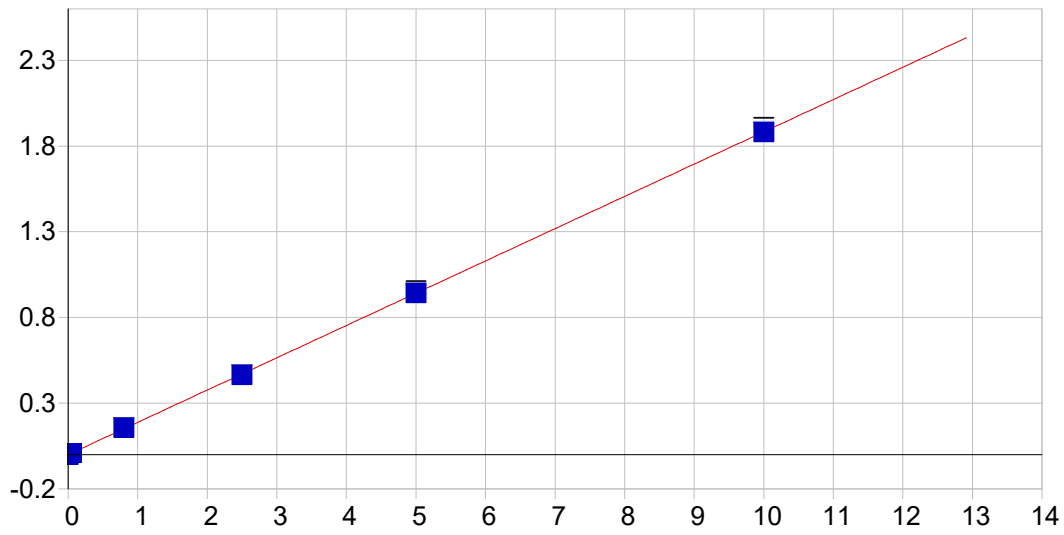


Se 196.090 {472}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000490	Re-Slope:	1.000000
A1 (Gain):	0.099208	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999879	Status:	OK.
Std Error of Est:	0.000036		
Predicted MDL:	0.002026		
Predicted MQL:	0.006752		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00049	.000	1
S1	.02000	.01810	-.002	-9.48	.00229	.000	1
S3	2.5000	2.4402	-.060	-2.39	.24251	.001	1
S4	5.0000	5.0339	.034	.678	.49976	.005	1
S5	10.000	9.9827	-.017	-.173	.99060	.012	1
S2	.80000	.84513	.045	5.64	.08431	.001	1

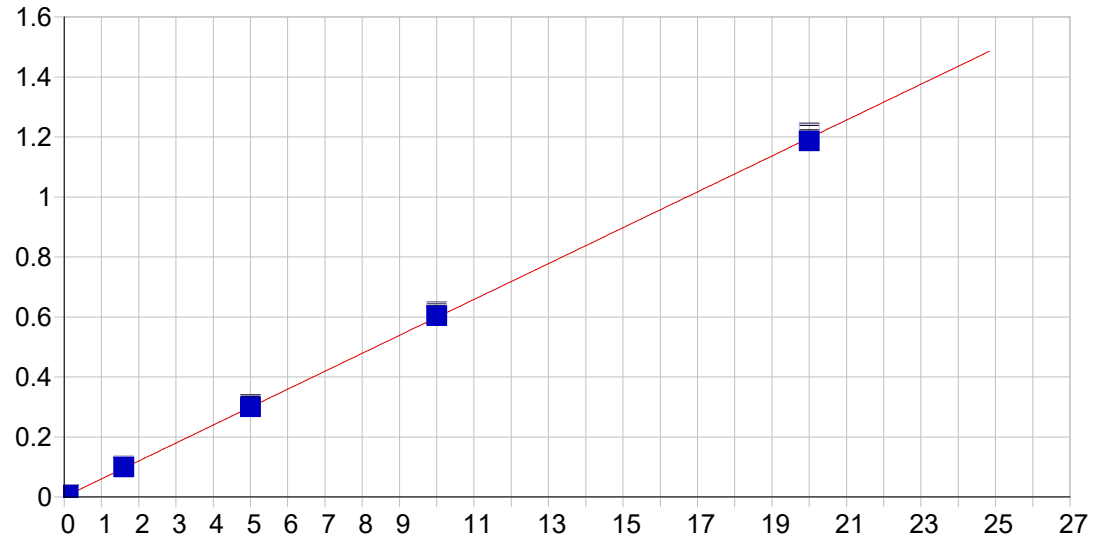


Sb 206.833 {463}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000094	Re-Slope:	1.000000
A1 (Gain):	0.188285	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999957	Status:	OK.
Std Error of Est:	0.000065		
Predicted MDL:	0.001304		
Predicted MQL:	0.004345		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00009	.000	1
S1	.05000	.04866	-.001	-2.68	.00928	.000	1
S3	2.5000	2.4683	-.032	-1.27	.46612	.001	1
S4	5.0000	5.0082	.008	.164	.94562	.010	1
S5	10.000	9.9945	-.005	-.055	1.8870	.023	1
S2	.80000	.83028	.030	3.79	.15683	.000	1

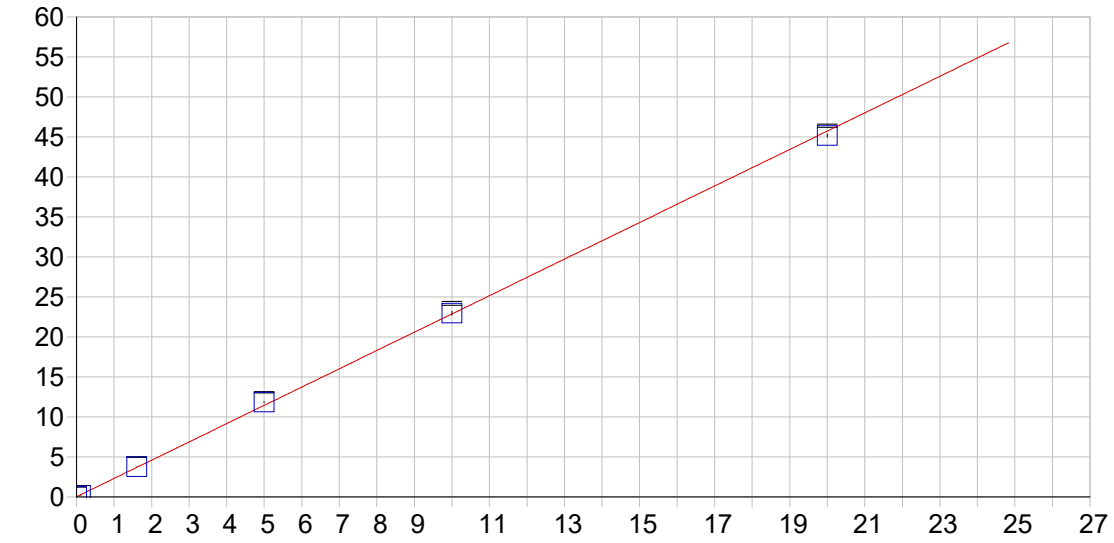


Al 396.152 { 85}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000288	Re-Slope:	1.000000
A1 (Gain):	0.059801	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999936	Status:	OK.
Std Error of Est:	0.000051		
Predicted MDL:	0.008904		
Predicted MQL:	0.029679		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00029	.000	1
S1	.10000	.10912	.009	9.12	.00728	.000	1
S3	5.0000	5.0146	.015	.292	.30596	.002	1
S4	10.000	10.090	.090	.898	.61527	.002	1
S5	20.000	19.833	-.167	-.836	1.2095	.004	1
S2	1.6000	1.6532	.053	3.32	.10101	.001	1

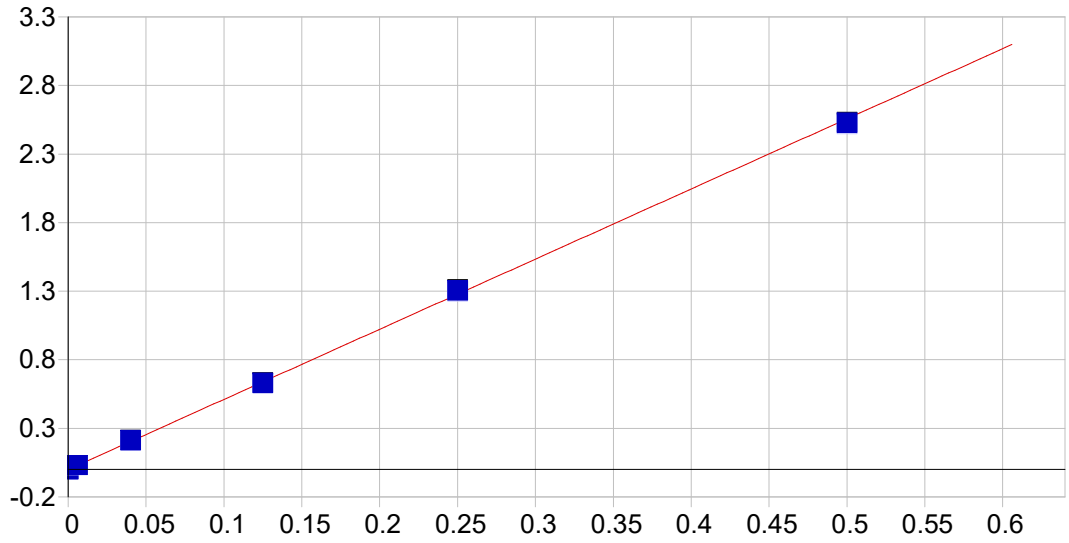


Ba 493.409 { 68}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.021546	Re-Slope:	1.000000
A1 (Gain):	2.285023	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999869	Status:	OK.
Std Error of Est:	0.002740		
Predicted MDL:	0.000765		
Predicted MQL:	0.002549		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.02153	.003	1
S1	.10000	.10133	.001	1.33	.25308	.004	1
S3	5.0000	5.1702	.170	3.40	11.835	.079	1
S4	10.000	10.037	.037	.366	22.955	.253	1
S5	20.000	19.758	-.242	-1.21	45.169	.197	1
S2	1.6000	1.6340	.034	2.13	3.7553	.021	1

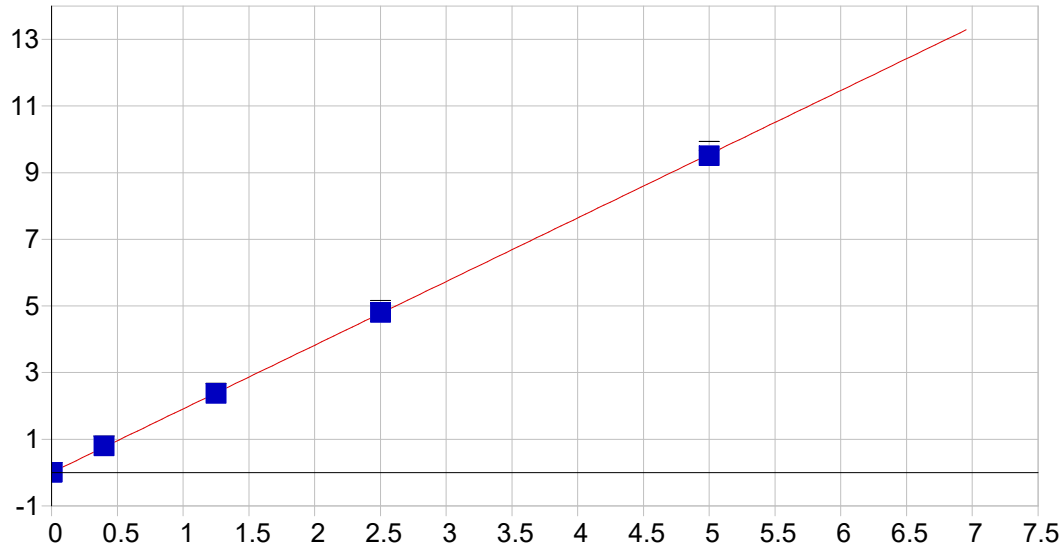


Be 234.861 {144}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000476	Re-Slope:	1.000000
A1 (Gain):	5.114586	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999845	Status:	OK.
Std Error of Est:	0.000258		
Predicted MDL:	0.000044		
Predicted MQL:	0.000148		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00048	.000	1
S1	.00600	.00639	.000	6.53	.03199	.000	1
S3	.12500	.12328	-.002	-1.37	.62720	.003	1
S4	.25000	.25517	.005	2.07	1.2989	.006	1
S5	.50000	.49452	-.005	-1.10	2.5173	.003	1
S2	.04000	.04164	.002	4.10	.21158	.001	1

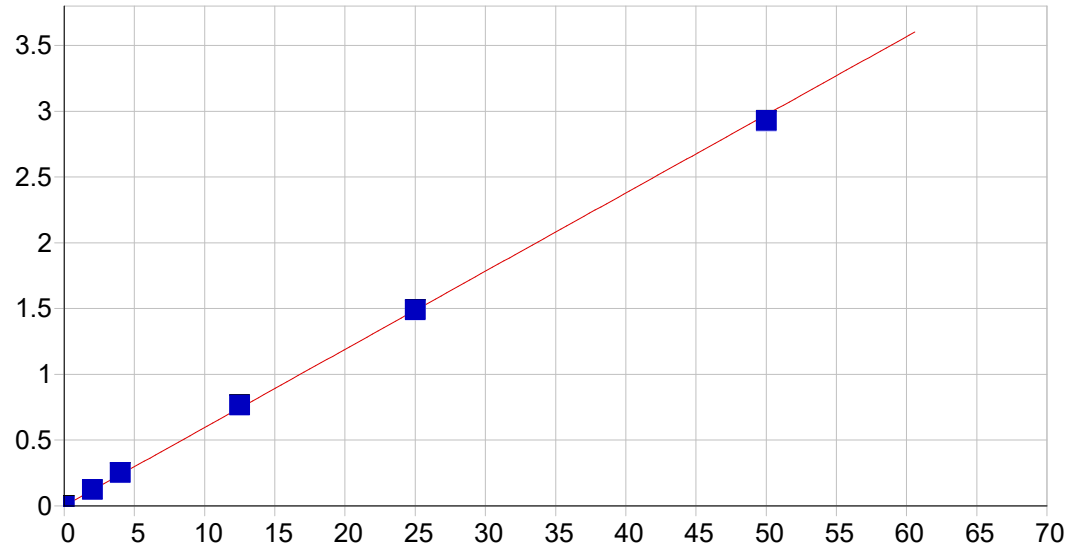


Cd 226.502 {449}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000006	Re-Slope:	1.000000
A1 (Gain):	1.910879	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999937	Status:	OK.
Std Error of Est:	0.000195		
Predicted MDL:	0.000091		
Predicted MQL:	0.000305		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00001	.000	1
S1	.00600	.00613	.000	2.14	.01176	.000	1
S3	1.2500	1.2429	-.007	-.568	2.3767	.002	1
S4	2.5000	2.5144	.014	.578	4.8081	.060	1
S5	5.0000	4.9737	-.026	-.527	9.5106	.133	1
S2	.40000	.41887	.019	4.72	.80094	.001	1

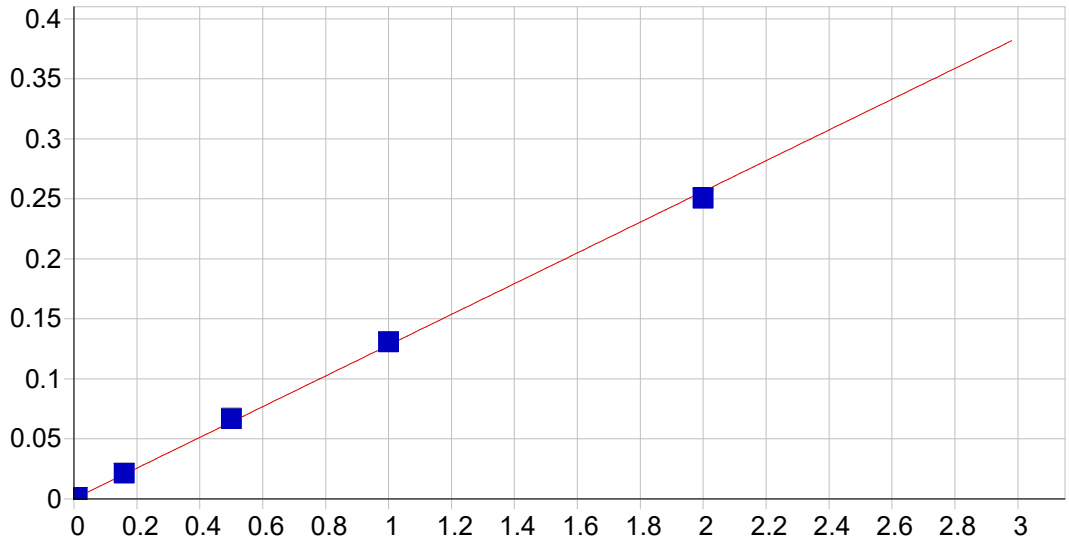


Ca 373.690 { 90}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001052	Re-Slope:	1.000000
A1 (Gain):	0.059443	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999805	Status:	OK.
Std Error of Est:	0.000619		
Predicted MDL:	0.008221		
Predicted MQL:	0.027404		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00021	-.000	.000	.00104	.000	1
S2	4.0000	4.2187	.219	5.47	.25115	.001	1
S3	12.500	12.876	.376	3.01	.76433	.003	1
S4	25.000	25.078	.078	.311	1.4876	.003	1
S5	50.000	49.266	-.734	-1.47	2.9212	.001	1
S1	2.0000	2.0616	.062	3.08	.12351	.001	1

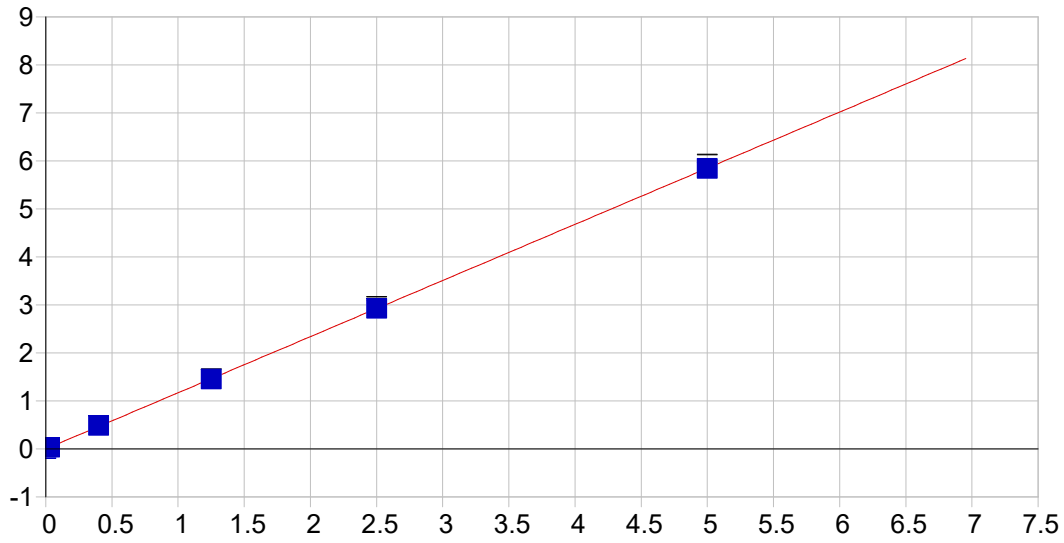


Cr 267.716 {126}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000023	Re-Slope:	1.000000
A1 (Gain):	0.128062	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999675	Status:	OK.
Std Error of Est:	0.000024		
Predicted MDL:	0.000317		
Predicted MQL:	0.001057		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00002	.000	1
S1	.01000	.00996	-.000	-.395	.00130	.000	1
S3	.50000	.51927	.019	3.85	.06654	.001	1
S4	1.0000	1.0201	.020	2.01	.13070	.000	1
S5	2.0000	1.9547	-.045	-2.26	.25043	.001	1
S2	.16000	.16588	.006	3.68	.02127	.000	1

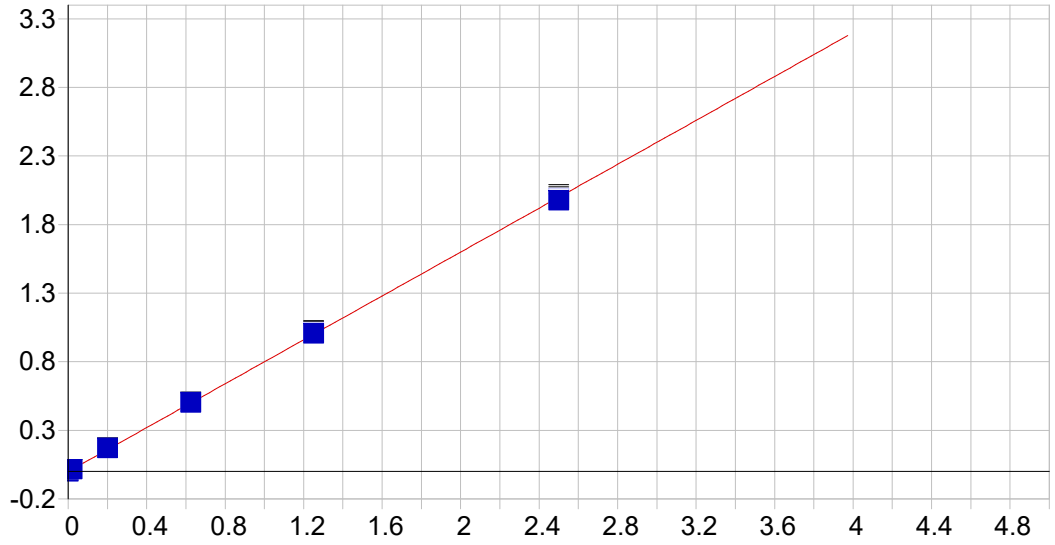


Co 228.616 {448}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000029	Re-Slope:	1.000000
A1 (Gain):	1.169571	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999962	Status:	OK.
Std Error of Est:	0.000207		
Predicted MDL:	0.000166		
Predicted MQL:	0.000554		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00003	.000	1
S1	.03000	.02971	-.000	-.959	.03457	.000	1
S3	1.2500	1.2433	-.007	-.535	1.4566	.001	1
S4	2.5000	2.4996	-.000	-.016	2.9284	.038	1
S5	5.0000	4.9913	-.009	-.173	5.8476	.084	1
S2	.40000	.41605	.016	4.01	.48737	.001	1

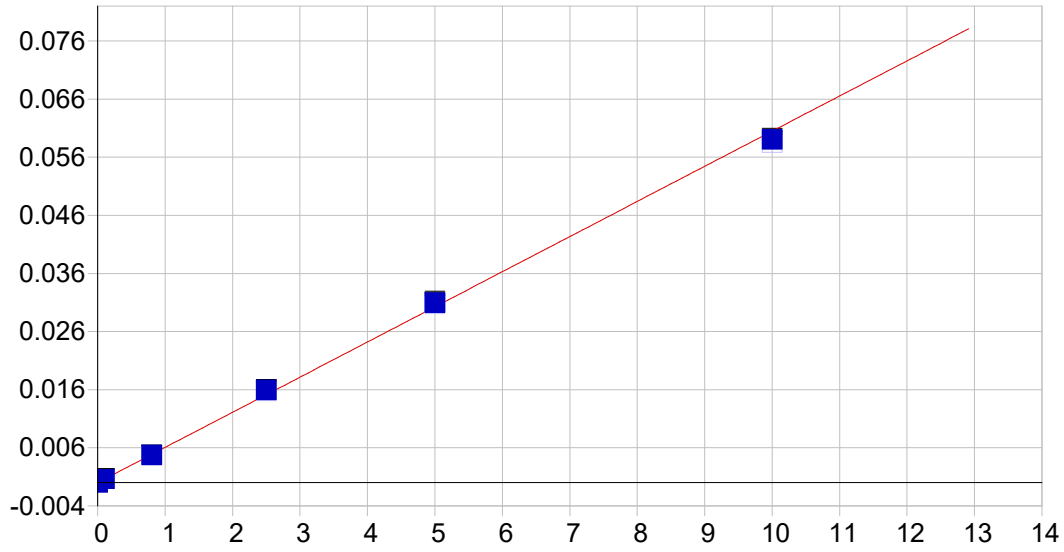


Cu 224.700 {450}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000311	Re-Slope:	1.000000
A1 (Gain):	0.799965	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999834	Status:	OK.
Std Error of Est:	0.000173		
Predicted MDL:	0.000395		
Predicted MQL:	0.001315		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00031	.000	1
S1	.02000	.02192	.002	9.60	.01741	.000	1
S3	.62500	.62834	.003	.535	.50670	.001	1
S4	1.2500	1.2595	.010	.761	1.0160	.012	1
S5	2.5000	2.4714	-.029	-1.14	1.9942	.025	1
S2	.20000	.21382	.014	6.91	.17213	.001	1

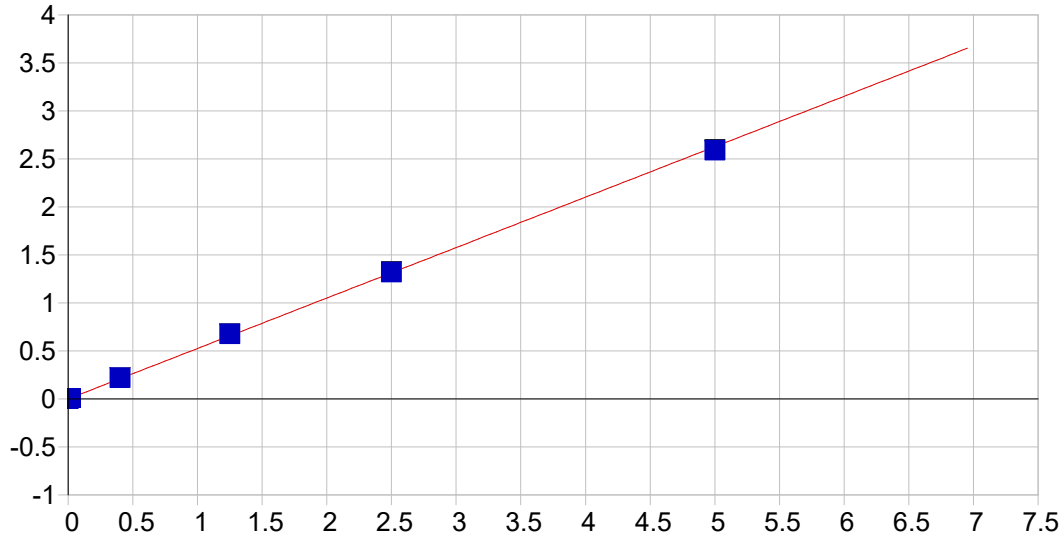


Fe 240.488 {140}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000009	Re-Slope:	1.000000
A1 (Gain):	0.006048	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999555	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	0.003607		
Predicted MQL:	0.012024		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00001	.000	1
S1	.10000	.10442	.004	4.42	.00063	.000	1
S3	2.5000	2.6304	.130	5.21	.01579	.000	1
S4	5.0000	5.1222	.122	2.44	.03073	.000	1
S5	10.000	9.7597	-.240	-2.40	.05852	.000	1
S2	.80000	.78332	-.017	-2.08	.00471	.000	1

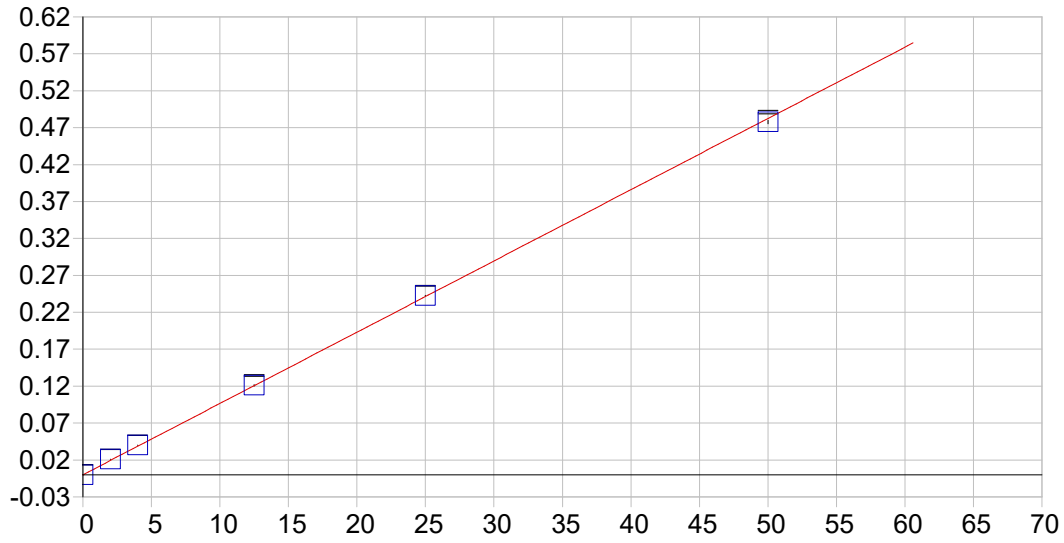


Mn 257.610 {131}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000073	Re-Slope:	1.000000
A1 (Gain):	0.525349	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999814	Status:	OK.
Std Error of Est:	0.000168		
Predicted MDL:	0.000320		
Predicted MQL:	0.001065		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00007	.000	1
S1	.02000	.02123	.001	6.14	.01123	.000	1
S3	1.2500	1.2852	.035	2.82	.67532	.005	1
S4	2.5000	2.5149	.015	.598	1.3214	.005	1
S5	5.0000	4.9269	-.073	-1.46	2.5887	.007	1
S2	.40000	.42174	.022	5.44	.22166	.001	1

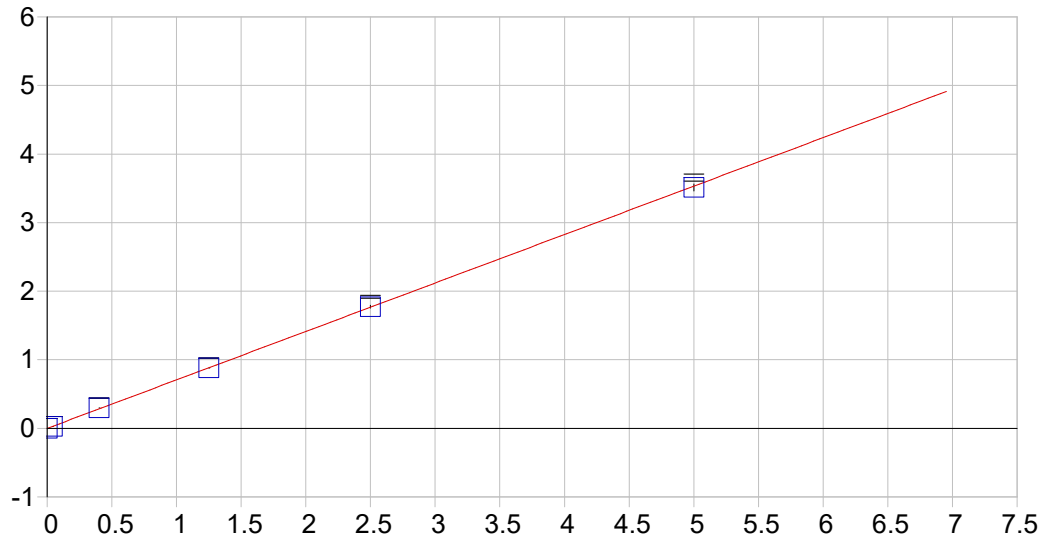


Mg 279.079 {121}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000006	Re-Slope:	1.000000
A1 (Gain):	0.009650	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999859	Status:	OK.
Std Error of Est:	0.000086		
Predicted MDL:	0.019038		
Predicted MQL:	0.063459		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00024	-.000	.000	.00000	.000	1
S2	4.0000	4.1430	.143	3.58	.03999	.000	1
S3	12.500	12.545	.045	.361	.12107	.001	1
S4	25.000	25.140	.140	.559	.24260	.000	1
S5	50.000	49.497	-.503	-1.01	.47765	.002	1
S1	2.0000	2.1749	.175	8.74	.02099	.000	1

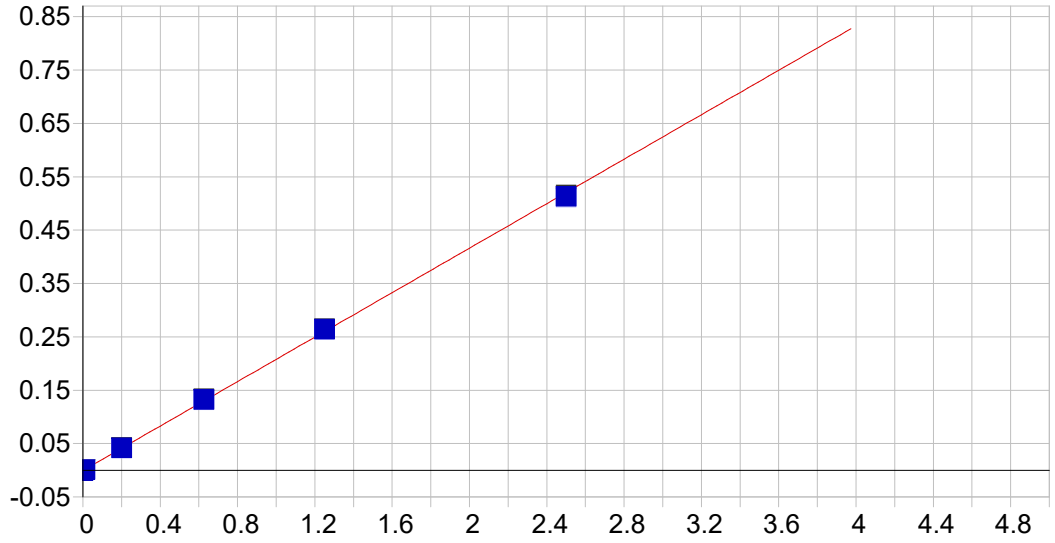


Ni 231.604 {446}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000075	Re-Slope:	1.000000
A1 (Gain):	0.706465	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999920	Status:	OK.
Std Error of Est:	0.000210		
Predicted MDL:	0.000270		
Predicted MQL:	0.000901		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00007	.000	1
S1	.04000	.03951	-.000	-1.23	.02799	.000	1
S3	1.2500	1.2459	-.004	-.332	.88023	.002	1
S4	2.5000	2.5103	.010	.412	1.7735	.023	1
S5	5.0000	4.9719	-.028	-.562	3.5126	.051	1
S2	.40000	.42240	.022	5.60	.29849	.000	1

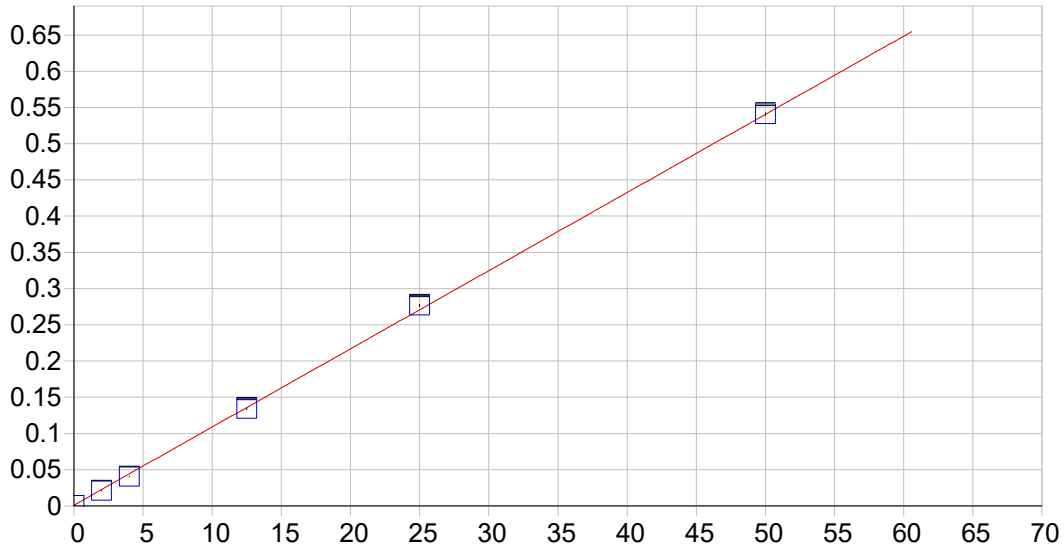


Ag 328.068 {103}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000623	Re-Slope:	1.000000
A1 (Gain):	0.208404	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999854	Status:	OK.
Std Error of Est:	0.000029		
Predicted MDL:	0.000331		
Predicted MQL:	0.001105		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00062	.000	1
S1	.01000	.00855	-.001	-14.5	.00115	.000	1
S3	.62500	.63775	.013	2.04	.13179	.001	1
S4	1.2500	1.2710	.021	1.68	.26327	.001	1
S5	2.5000	2.4653	-.035	-1.39	.51115	.002	1
S2	.20000	.20234	.002	1.17	.04138	.000	1

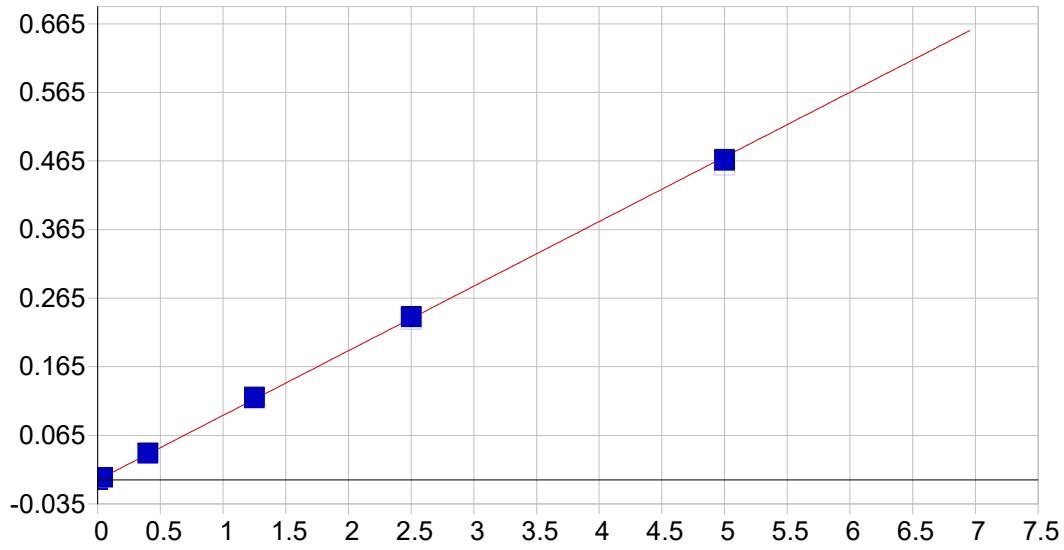


Na 589.592 { 57}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001095	Re-Slope:	1.000000
A1 (Gain):	0.010788	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999737	Status:	OK.
Std Error of Est:	0.000131		
Predicted MDL:	0.011354		
Predicted MQL:	0.037847		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00027	.000	.000	.00110	.000	1
S2	4.0000	3.6754	-.325	-8.11	.04075	.000	1
S3	12.500	12.358	-.142	-1.14	.13441	.002	1
S4	25.000	25.554	.554	2.22	.27677	.002	1
S5	50.000	50.046	.046	.093	.54100	.002	1
S1	2.0000	1.8667	-.133	-6.66	.02123	.000	1

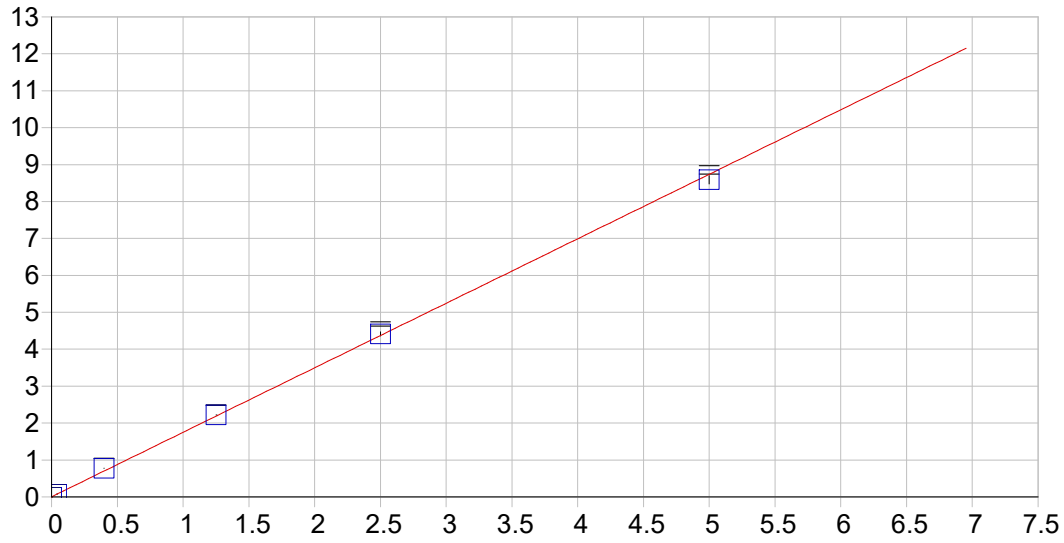


V 292.402 {115}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000140	Re-Slope:	1.000000
A1 (Gain):	0.094213	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999900	Status:	OK.
Std Error of Est:	0.000031		
Predicted MDL:	0.002265		
Predicted MQL:	0.007550		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00014	.000	1
S1	.04000	.04176	.002	4.39	.00365	.000	1
S3	1.2500	1.2738	.024	1.91	.11815	.001	1
S4	2.5000	2.5204	.020	.816	.23388	.001	1
S5	5.0000	4.9414	-.059	-1.17	.45854	.002	1
S2	.40000	.41264	.013	3.16	.03819	.000	1

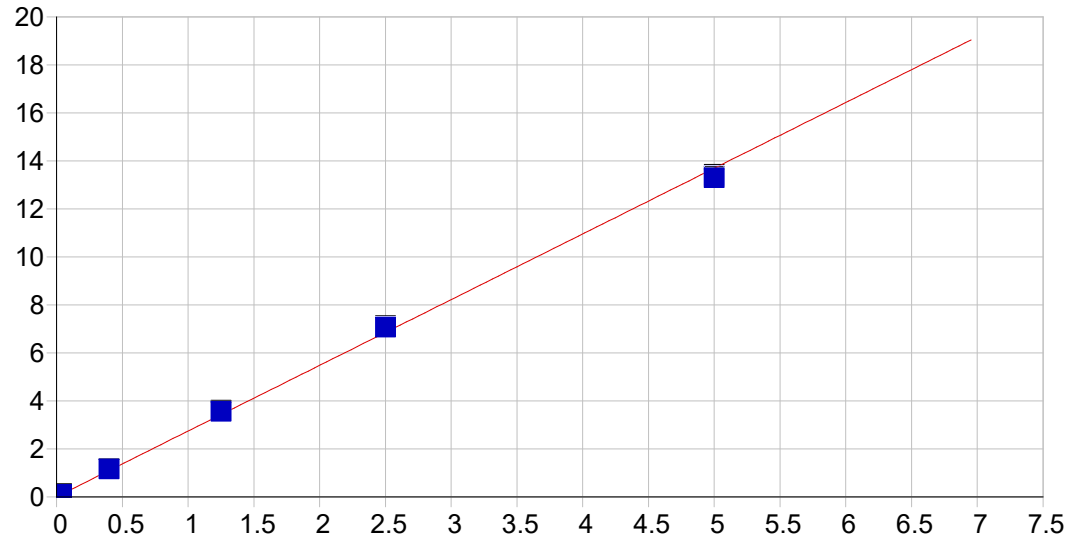


Zn 206.200 {464}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003079	Re-Slope:	1.000000
A1 (Gain):	1.746973	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999651	Status:	OK.
Std Error of Est:	0.001083		
Predicted MDL:	0.000138		
Predicted MQL:	0.000461		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00307	.000	1
S1	.04000	.04225	.002	5.63	.07690	.001	1
S3	1.2500	1.2674	.017	1.39	2.2172	.001	1
S4	2.5000	2.5253	.025	1.01	4.4147	.057	1
S5	5.0000	4.9136	-.086	-1.73	8.5870	.111	1
S2	.40000	.44143	.041	10.4	.77424	.002	1

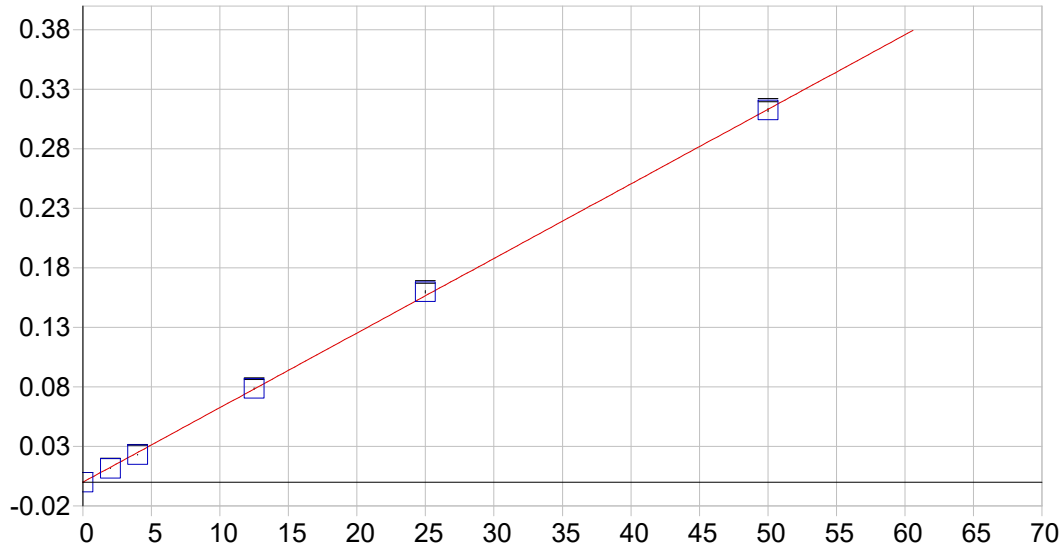


Zn 213.856 {158}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005707	Re-Slope:	1.000000
A1 (Gain):	2.738041	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999483	Status:	OK.
Std Error of Est:	0.002081		
Predicted MDL:	0.000193		
Predicted MQL:	0.000645		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00569	.000	1
S1	.04000	.04327	.003	8.17	.12494	.002	1
S3	1.2500	1.2967	.047	3.73	3.5798	.031	1
S4	2.5000	2.5770	.077	3.08	7.1092	.019	1
S5	5.0000	4.8535	-.147	-2.93	13.390	.048	1
S2	.40000	.41962	.020	4.91	1.1623	.001	1

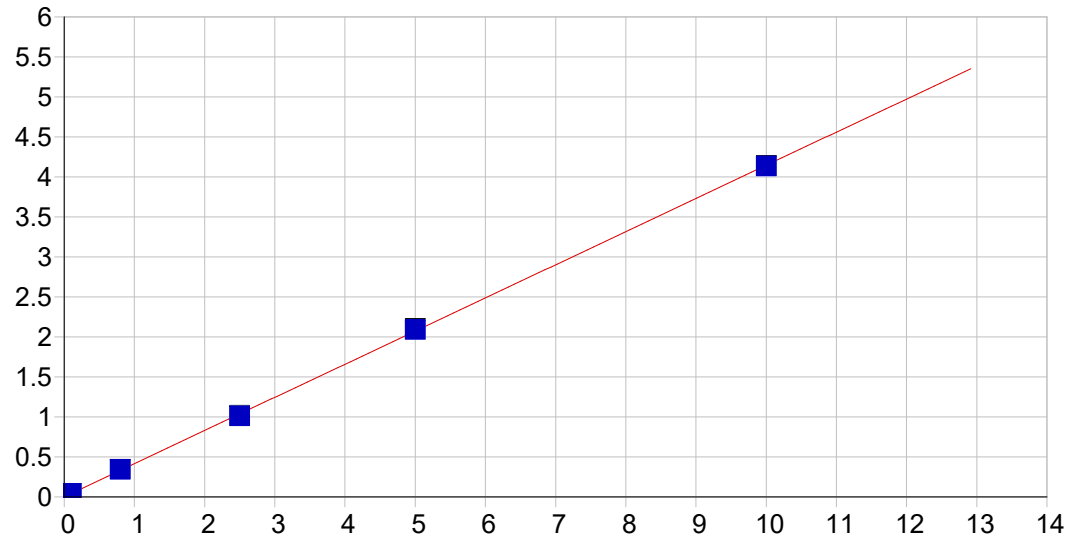


K 766.490 { 44}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000072	Re-Slope:	1.000000
A1 (Gain):	0.006266	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999754	Status:	OK.
Std Error of Est:	0.000074		
Predicted MDL:	0.026526		
Predicted MQL:	0.088419		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00025	.000	.000	-.00007	.000	1
S2	4.0000	3.6821	-.318	-7.95	.02300	.000	1
S3	12.500	12.550	.050	.400	.07857	.001	1
S4	25.000	25.514	.514	2.06	.15980	.001	1
S5	50.000	49.893	-.107	-.214	.31256	.001	1
S1	2.0000	1.8607	-.139	-6.96	.01159	.000	1

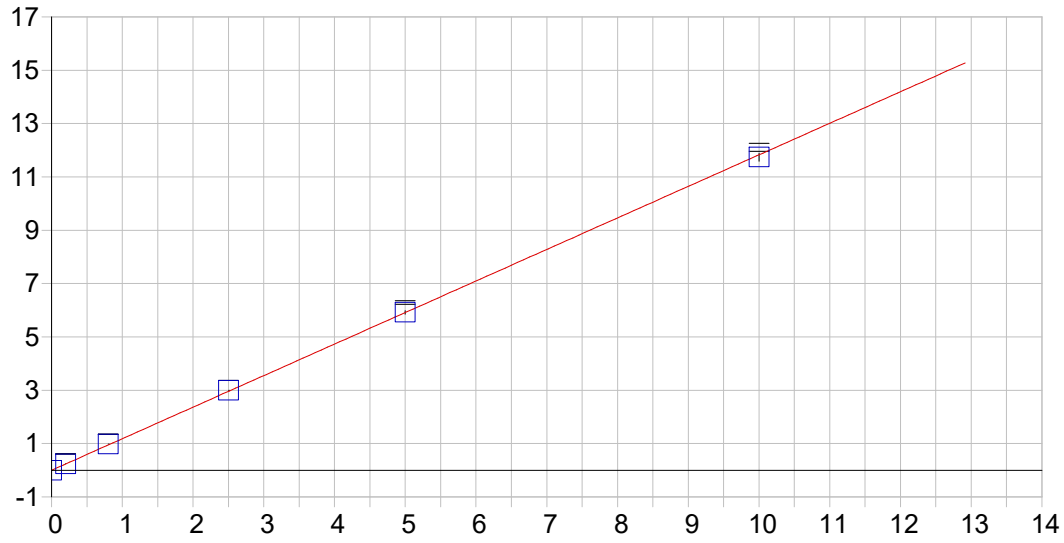


B 249.678 {135}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001044	Re-Slope:	1.000000
A1 (Gain):	0.414366	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999927	Status:	OK.
Std Error of Est:	0.000262		
Predicted MDL:	0.000640		
Predicted MQL:	0.002135		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00104	.000	1
S1	.10000	.10285	.003	2.85	.04349	.000	1
S3	2.5000	2.4416	-.058	-2.34	1.0107	.006	1
S4	5.0000	5.0490	.049	.980	2.0891	.012	1
S5	10.000	9.9827	-.017	-.173	4.1294	.002	1
S2	.80000	.82385	.024	2.98	.34177	.001	1

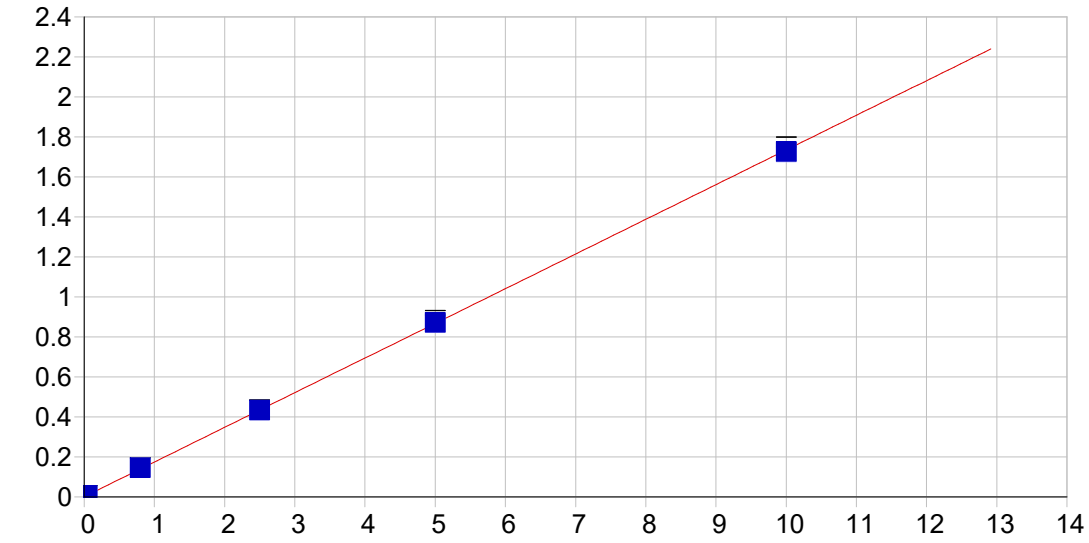


Mo 202.030 {467}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000221	Re-Slope:	1.000000
A1 (Gain):	1.182801	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999938	Status:	OK.
Std Error of Est:	0.000979		
Predicted MDL:	0.000209		
Predicted MQL:	0.000698		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	-.00024	.000	1
S1	.20000	.20355	.004	1.78	.24054	.004	1
S3	2.5000	2.5334	.033	1.34	2.9963	.004	1
S4	5.0000	5.0064	.006	.128	5.9213	.064	1
S5	10.000	9.9255	-.075	-.745	11.740	.147	1
S2	.80000	.83116	.031	3.90	.98288	.003	1

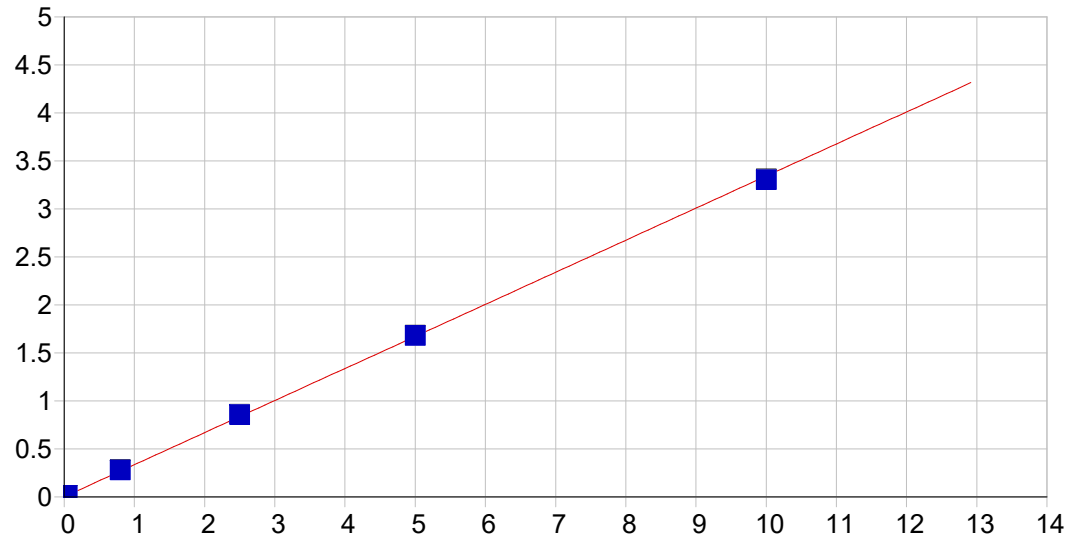


Sn 189.989 {478}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000883	Re-Slope:	1.000000
A1 (Gain):	0.173370	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999936	Status:	OK.
Std Error of Est:	0.000065		
Predicted MDL:	0.000576		
Predicted MQL:	0.001921		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00088	.000	1
S1	.04000	.03578	-.004	-10.6	.00708	.000	1
S3	2.5000	2.4977	-.002	-.092	.43346	.001	1
S4	5.0000	5.0224	.022	.447	.87072	.011	1
S5	10.000	9.9492	-.051	-.508	1.7240	.025	1
S2	.80000	.83496	.035	4.37	.14550	.000	1

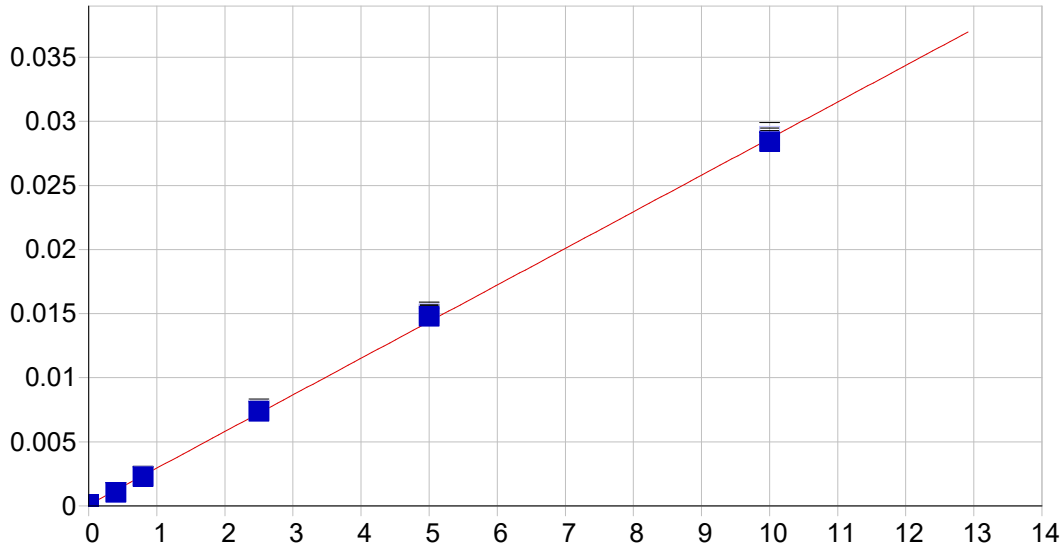


Ti 336.121 {100}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001400	Re-Slope:	1.000000
A1 (Gain):	0.334056	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999896	Status:	OK.
Std Error of Est:	0.000160		
Predicted MDL:	0.000950		
Predicted MQL:	0.003167		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00140	.000	1
S1	.04000	.04142	.001	3.56	.01523	.000	1
S3	2.5000	2.5573	.057	2.29	.85539	.005	1
S4	5.0000	5.0240	.024	.480	1.6791	.003	1
S5	10.000	9.8880	-.112	-1.12	3.3033	.005	1
S2	.80000	.82928	.029	3.66	.27833	.001	1

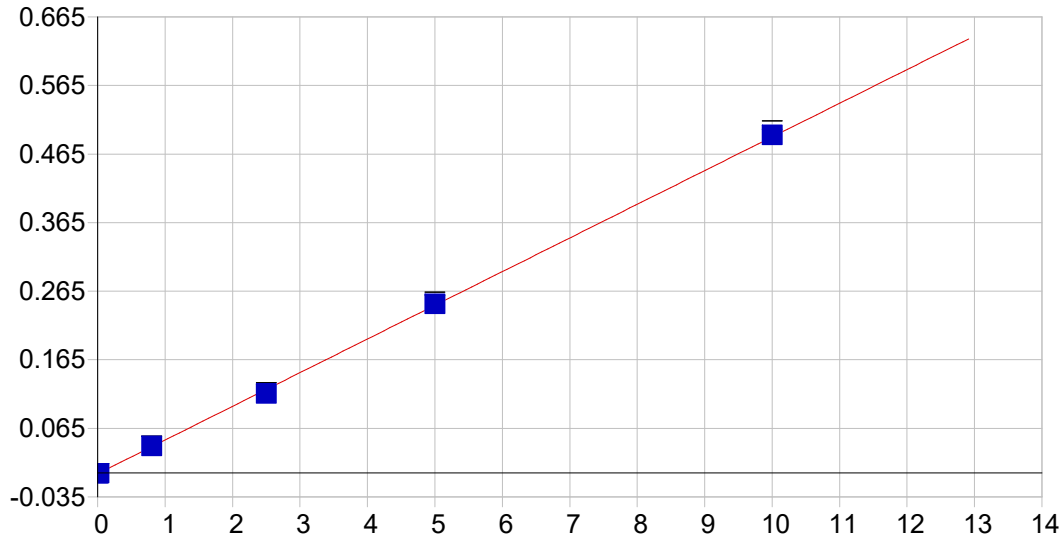


Si 288.158 {117}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000091	Re-Slope:	1.000000
A1 (Gain):	0.002857	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999513	Status:	OK.
Std Error of Est:	0.000010		
Predicted MDL:	0.009703		
Predicted MQL:	0.032342		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00007	.000	.000	.00009	.000	1
S1	.40000	.33261	-.067	-16.8	.00104	.000	1
S3	2.5000	2.5453	.045	1.81	.00747	.000	1
S4	5.0000	5.1454	.145	2.91	.01500	.000	1
S5	10.000	9.9109	-.089	-.891	.02883	.000	1
S2	.80000	.76490	-.035	-4.39	.00231	.000	1

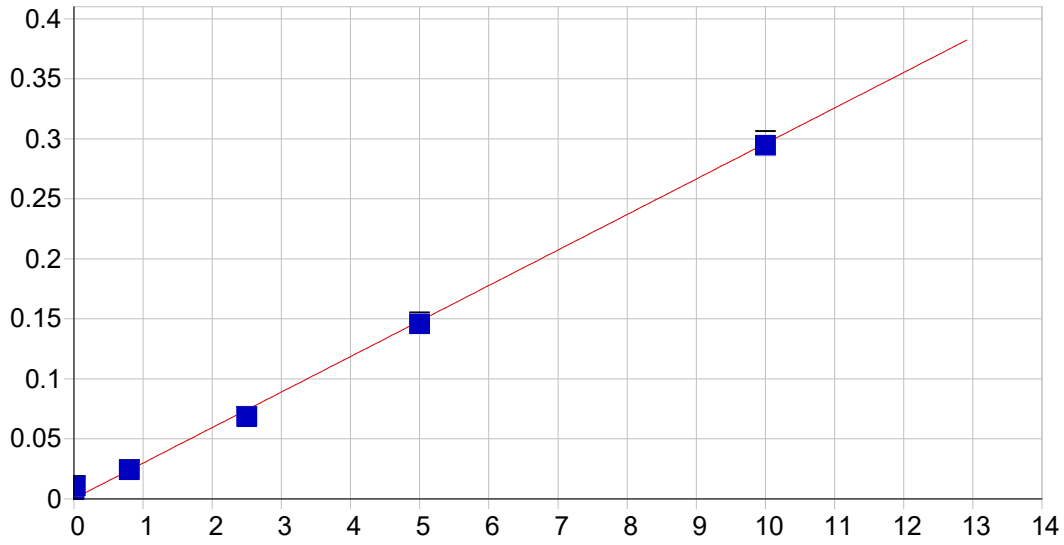


P 177.495 {490}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001137	Re-Slope:	1.000000
A1 (Gain):	0.049110	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999794	Status:	OK.
Std Error of Est:	0.000023		
Predicted MDL:	0.001837		
Predicted MQL:	0.006125		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00114	.000	1
S1	.02000	.01756	-.002	-12.2	-.00027	.000	1
S3	2.5000	2.3780	-.122	-4.88	.11563	.001	1
S4	5.0000	5.0449	.045	.898	.24658	.003	1
S5	10.000	10.059	.059	.588	.49277	.006	1
S2	.80000	.82078	.021	2.60	.03917	.000	1

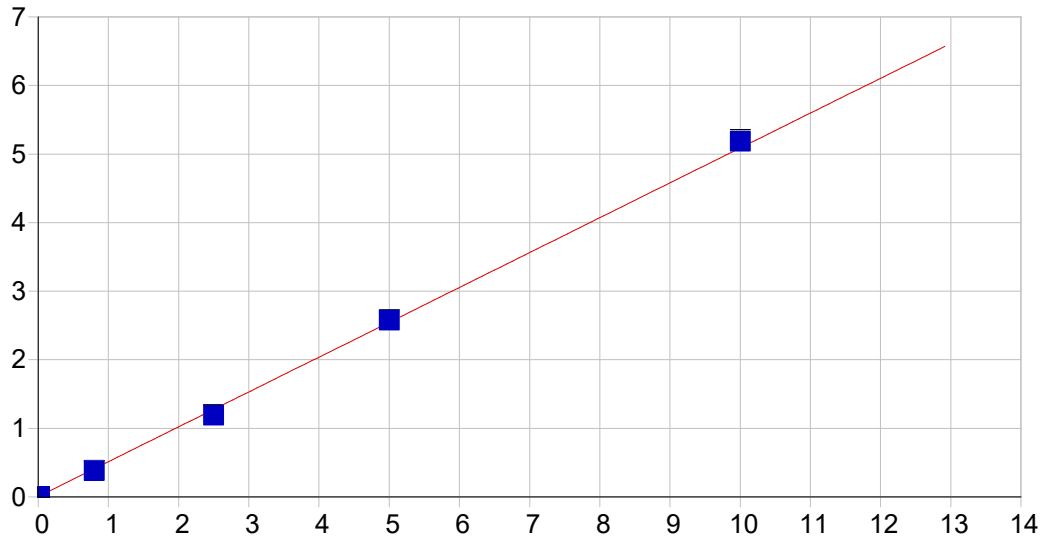


S 182.034 {485}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000276	Re-Slope:	1.000000
A1 (Gain):	0.029579	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.877490	Status:	OK.
Std Error of Est:	0.000378		
Predicted MDL:	0.002773		
Predicted MQL:	0.009245		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00033	-.000	.000	.00027	.000	1
S1	.02000	.34930	.329	1650.	.01058	.000	1
S3	2.5000	2.3079	-.192	-7.68	.06835	.000	1
S4	5.0000	4.9221	-.078	-1.56	.14548	.002	1
S5	10.000	9.9460	-.054	-.540	.29370	.004	1
S2	.80000	.80789	.008	.986	.02411	.000	1

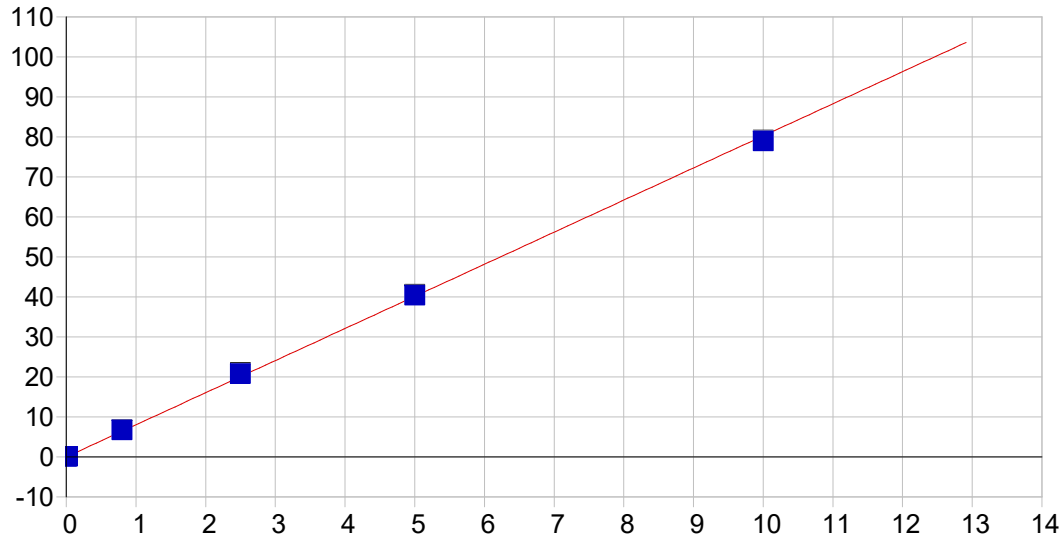


Li 670.784 { 50}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004729	Re-Slope:	1.000000
A1 (Gain):	0.508339	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999041	Status:	OK.
Std Error of Est:	0.000522		
Predicted MDL:	0.002257		
Predicted MQL:	0.007522		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00002	.000	.000	.00474	.001	1
S5	10.000	10.189	.189	1.89	5.1886	.023	1
S4	5.0000	5.0546	.055	1.09	2.5765	.007	1
S3	2.5000	2.3302	-.170	-6.79	1.1904	.010	1
S1	.02000	.00228	-.018	-88.6	.00607	.001	1
S2	.80000	.74460	-.055	-6.93	.38360	.002	1

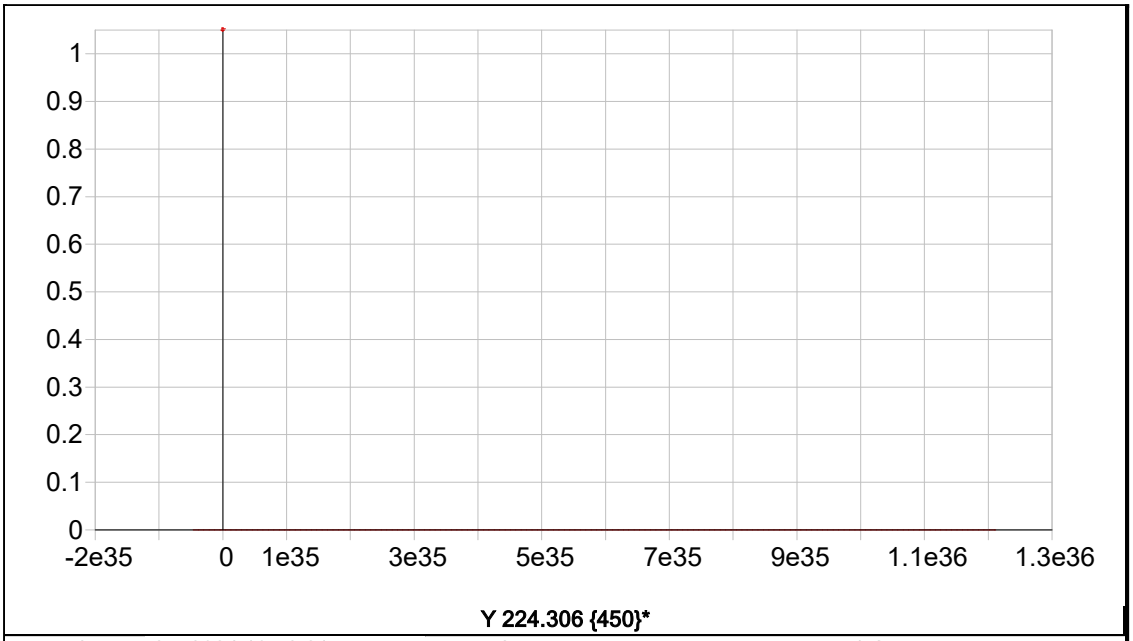


Sr 407.771 { 83}

Date of Fit:	8/7/2024 19:58:21	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000025	Re-Slope:	1.000000
A1 (Gain):	8.025497	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999788	Status:	OK.
Std Error of Est:	0.003879		
Predicted MDL:	0.000066		
Predicted MQL:	0.000221		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00004	.000	1
S1	.02000	.02071	.001	3.55	.16698	.003	1
S3	2.5000	2.5902	.090	3.61	20.807	.195	1
S4	5.0000	5.0383	.038	.766	40.475	.185	1
S5	10.000	9.8358	-.164	-1.64	79.018	.147	1
S2	.80000	.83499	.035	4.37	6.7076	.030	1

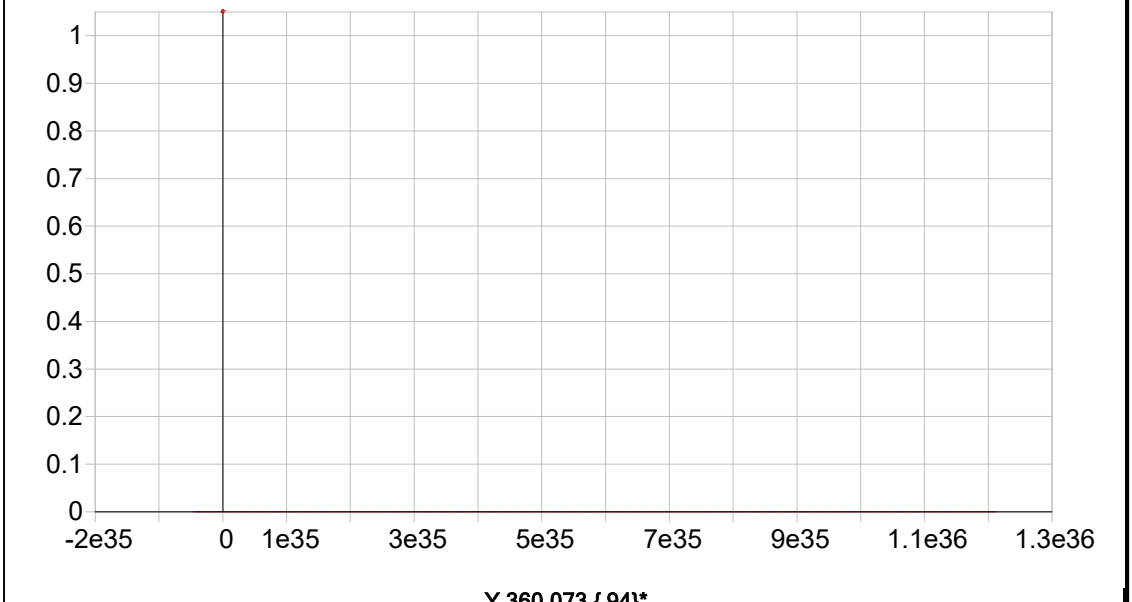


Y 224.306 {450}*

Date of Fit:	8/7/2024 19:58:21	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



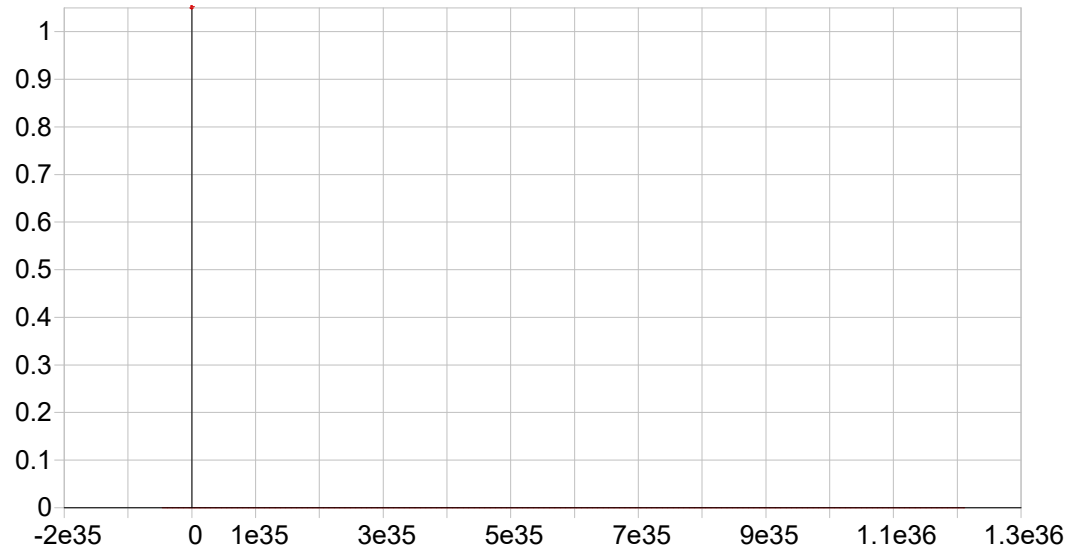
Y 360.073 { 94}*

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					

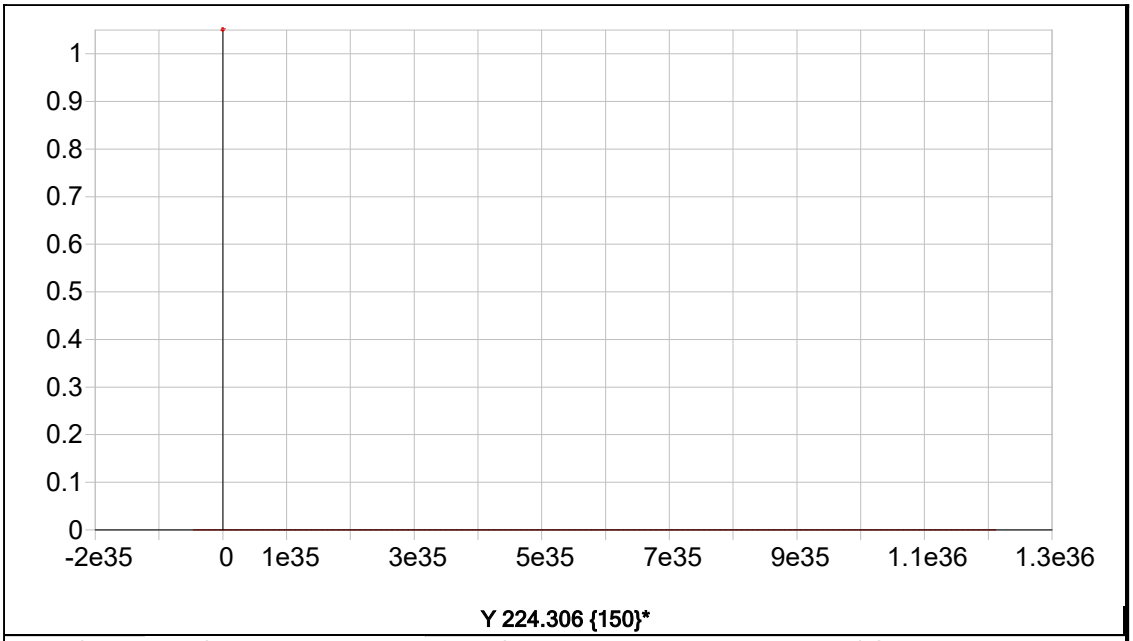
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



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

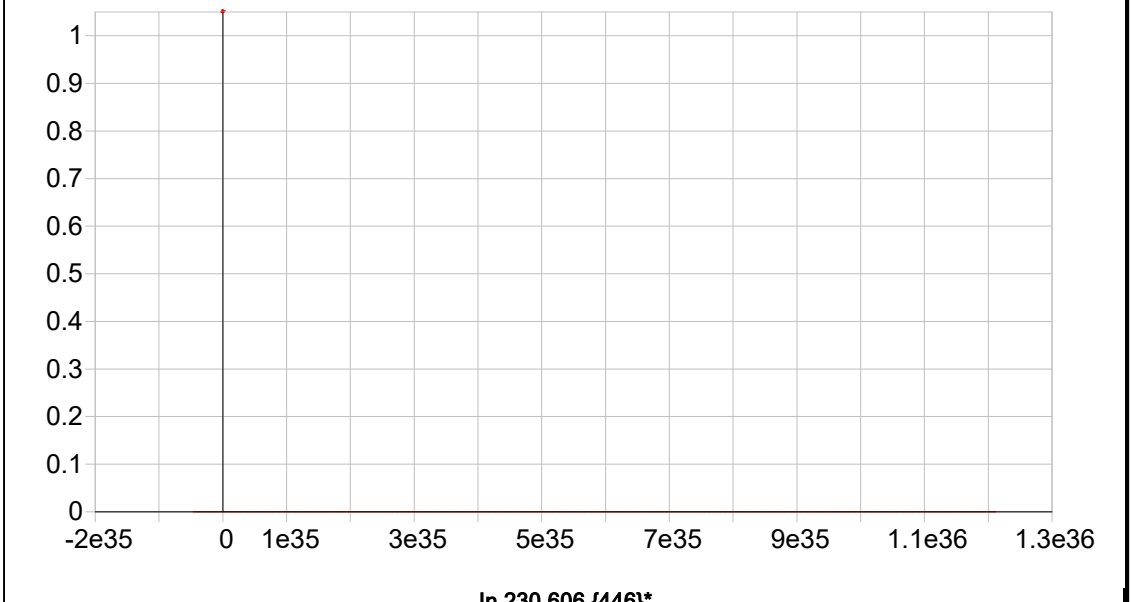


Y 224.306 {150}*

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:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S0 Acquired: 8/7/2024 14:16:38 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	-.00024	.00018	-.00028	.00049	.00009	.00029	.02153	-.00048
Stddev	.00017	.00003	.00003	.00014	.00020	.00027	.00254	.00003
%RSD	70.186	16.372	11.389	27.670	209.55	93.074	11.783	5.7793
#1	-.00039	.00015	-.00029	.00064	.00011	.00003	.01941	-.00049
#2	-.00025	.00021	-.00030	.00044	-.00011	.00056	.02434	-.00050
#3	-.00006	.00018	-.00024	.00039	.00029	.00027	.02084	-.00045

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00001	.00104	.00002	-.00003	-.00031	.00001	.00007	.00000
Stddev	.00012	.00036	.00002	.00009	.00020	.00002	.00008	.00014
%RSD	2006.1	34.705	68.059	297.62	63.110	213.20	118.76	4528.9
#1	.00011	.00078	.00004	.00001	-.00026	.00001	-.00003	-.00015
#2	-.00012	.00145	.00001	.00003	-.00015	-.00001	.00011	.00004
#3	.00002	.00089	.00001	-.00013	-.00053	.00003	.00013	.00013

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	.00007	-.00062	.00110	-.00014	.00569	-.00007	.00104	-.00024
Stddev	.00012	.00001	.00008	.00021	.00049	.00013	.00022	.00023
%RSD	162.04	1.8839	7.5315	152.46	8.6799	181.34	20.914	95.775
#1	.00016	-.00064	.00106	-.00005	.00570	-.00020	.00082	-.00037
#2	.00013	-.00062	.00104	-.00038	.00519	-.00007	.00105	.00003
#3	-.00006	-.00061	.00119	.00001	.00617	.00006	.00125	-.00037

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	.00088	.00140	.00009	-.00114	.00027	.00474	-.00004
Stddev	.00007	.00033	.00001	.00003	.00005	.00062	.00034
%RSD	7.6213	23.447	15.561	2.3182	20.499	13.090	796.31
#1	.00085	.00151	.00008	-.00111	.00028	.00526	.00034
#2	.00084	.00166	.00011	-.00116	.00021	.00405	-.00020
#3	.00096	.00103	.00008	-.00114	.00031	.00490	-.00027

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S0 Acquired: 8/7/2024 14:16:38 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	2842.8	100060.	13228.	3855.0	5340.4
Stddev	29.5	379.	84.	13.0	56.4
%RSD	1.0395	.37909	.63181	.33607	1.0555
#1	2813.5	100340.	13138.	3850.7	5281.6
#2	2872.6	99627.	13303.	3844.7	5394.0
#3	2842.3	100210.	13243.	3869.5	5345.4

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S1 Acquired: 8/7/2024 14:21:03 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	.00189	.00266	.00302	.00229	.00928	.00728	.25308	.03199
Stddev	.00006	.00010	.00031	.00022	.00020	.00015	.00350	.00007
%RSD	2.9668	3.8485	10.308	9.7553	2.1393	2.0089	1.3843	.22865
#1	.00193	.00256	.00335	.00209	.00907	.00723	.24923	.03202
#2	.00192	.00277	.00273	.00225	.00928	.00716	.25392	.03204
#3	.00183	.00264	.00297	.00253	.00947	.00744	.25609	.03190

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	.01176	.12351	.00130	.03457	.01741	.00063	.01123	.02099
Stddev	.00017	.00141	.00002	.00049	.00040	.00003	.00012	.00016
%RSD	1.4542	1.1423	1.2652	1.4038	2.3071	4.3395	1.0793	.76376
#1	.01160	.12293	.00132	.03407	.01698	.00060	.01109	.02086
#2	.01194	.12249	.00130	.03504	.01777	.00064	.01131	.02117
#3	.01174	.12512	.00128	.03462	.01749	.00066	.01128	.02094

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	.02799	.00115	.02123	.00365	.12494	.01159	.04349	.24054
Stddev	.00045	.00007	.00038	.00001	.00204	.00025	.00030	.00401
%RSD	1.6039	6.0627	1.8118	.29812	1.6366	2.1344	.69635	1.6654
#1	.02748	.00118	.02100	.00366	.12478	.01143	.04331	.23667
#2	.02834	.00119	.02168	.00366	.12706	.01187	.04331	.24467
#3	.02814	.00107	.02103	.00364	.12298	.01146	.04384	.24029

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	.00708	.01523	.00104	-.00027	.01058	.00607	.16698
Stddev	.00012	.00028	.00002	.00006	.00025	.00138	.00297
%RSD	1.6640	1.8664	1.5914	23.166	2.3836	22.662	1.7780
#1	.00697	.01500	.00105	-.00033	.01033	.00457	.16487
#2	.00720	.01514	.00106	-.00021	.01084	.00638	.16570
#3	.00706	.01555	.00102	-.00028	.01057	.00727	.17038

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S1 Acquired: 8/7/2024 14:21:03 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	2820.7	97260.	13217.	3767.6	5270.4
Stddev	34.6	1428.	125.	51.0	64.6
%RSD	1.2280	1.4681	.94605	1.3539	1.2251
#1	2844.7	97408.	13292.	3769.1	5318.5
#2	2781.0	95764.	13286.	3715.9	5197.0
#3	2836.5	98609.	13073.	3817.9	5295.7

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S2 Acquired: 8/7/2024 14:25:29 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	.09204	.05728	.21307	.08431	.15683	.10101	3.7553	.21158
Stddev	.00052	.00063	.00067	.00060	.00029	.00106	.0207	.00109
%RSD	.56191	1.1084	.31275	.71184	.18615	1.0462	.55127	.51621
#1	.09145	.05656	.21374	.08363	.15651	.10215	3.7640	.21061
#2	.09225	.05752	.21241	.08455	.15690	.10080	3.7702	.21135
#3	.09242	.05776	.21307	.08476	.15709	.10007	3.7316	.21276

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	.80094	.25115	.02127	.48737	.17213	.00471	.22166	.03999
Stddev	.00133	.00146	.00014	.00070	.00074	.00002	.00057	.00019
%RSD	.16620	.58306	.67520	.14447	.43278	.41287	.25893	.46466
#1	.80170	.25273	.02134	.48718	.17171	.00472	.22220	.04020
#2	.79941	.25089	.02111	.48678	.17169	.00471	.22106	.03987
#3	.80172	.24984	.02137	.48815	.17299	.00468	.22171	.03989

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	.29849	.04138	.04075	.03819	1.1623	.02300	.34177	.98288
Stddev	.00031	.00019	.00034	.00044	.0014	.00016	.00106	.00289
%RSD	.10494	.46409	.84541	1.1647	.11975	.68889	.31078	.29435
#1	.29816	.04136	.04101	.03865	1.1627	.02317	.34091	.98069
#2	.29852	.04121	.04087	.03815	1.1607	.02296	.34145	.98179
#3	.29878	.04159	.04036	.03776	1.1634	.02287	.34296	.98616

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	.14550	.27833	.00231	.03917	.02411	.38360	6.7076
Stddev	.00030	.00066	.00002	.00012	.00024	.00198	.0304
%RSD	.20823	.23573	.82764	.31714	.98483	.51709	.45267
#1	.14550	.27866	.00229	.03930	.02384	.38384	6.7272
#2	.14520	.27875	.00231	.03914	.02429	.38545	6.7231
#3	.14580	.27757	.00233	.03905	.02419	.38151	6.6726

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S2 Acquired: 8/7/2024 14:25:29 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	2638.4	101090.	13414.	3860.6	4825.4
Stddev	10.9	217.	6.	10.1	13.0
%RSD	.41406	.21484	.04511	.26207	.26992
#1	2648.9	100870.	13409.	3856.9	4836.1
#2	2639.2	101310.	13421.	3852.9	4829.2
#3	2627.1	101100.	13413.	3872.1	4810.9

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S3 Acquired: 8/7/2024 14:29:39 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	.26818	.17256	.63719	.24251	.46612	.30596	11.835	.62720
Stddev	.00083	.00191	.00076	.00077	.00080	.00178	.079	.00342
%RSD	.31132	1.1066	.11892	.31673	.17242	.58309	.66543	.54554
#1	.26802	.17343	.63660	.24329	.46685	.30721	11.898	.62913
#2	.26908	.17388	.63693	.24248	.46625	.30676	11.861	.62921
#3	.26743	.17037	.63805	.24176	.46526	.30392	11.747	.62325

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	2.3767	.76433	.06654	1.4566	.50670	.01579	.67532	.12107
Stddev	.0024	.00342	.00064	.0012	.00079	.00013	.00507	.00120
%RSD	.09955	.44768	.95727	.08193	.15580	.79476	.75052	.99407
#1	2.3739	.76491	.06727	1.4576	.50714	.01593	.67713	.12118
#2	2.3781	.76742	.06610	1.4568	.50718	.01574	.67924	.12221
#3	2.3779	.76065	.06624	1.4553	.50579	.01570	.66960	.11981

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	.88023	.13179	.13441	.11815	3.5798	.07857	1.0107	2.9963
Stddev	.00151	.00140	.00158	.00098	.0308	.00063	.0064	.0043
%RSD	.17166	1.0633	1.1751	.83043	.86064	.80457	.63732	.14190
#1	.87863	.13339	.13623	.11879	3.6147	.07928	1.0155	2.9976
#2	.88163	.13114	.13359	.11865	3.5562	.07809	1.0134	2.9998
#3	.88042	.13083	.13340	.11702	3.5685	.07832	1.0034	2.9916

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	.43346	.85539	.00747	.11563	.06835	1.1904	20.807
Stddev	.00107	.00500	.00009	.00141	.00012	.0104	.195
%RSD	.24725	.58464	1.1954	1.2185	.17077	.87018	.93842
#1	.43356	.85941	.00757	.11449	.06848	1.1957	21.033
#2	.43449	.85696	.00743	.11518	.06826	1.1970	20.696
#3	.43235	.84979	.00741	.11720	.06830	1.1784	20.694

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S3 Acquired: 8/7/2024 14:29:39 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	2798.9	95865.	13985.	3717.9	5157.5
Stddev	4.0	869.	91.	35.7	3.7
%RSD	.14267	.90640	.64732	.96046	.07087
#1	2794.3	94864.	13951.	3676.7	5153.3
#2	2801.2	96302.	13917.	3737.9	5159.6
#3	2801.2	96428.	14088.	3739.2	5159.6

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S4 Acquired: 8/7/2024 14:33:54 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	.55197	.34170	1.2795	.49976	.94562	.61527	22.955	1.2989
Stddev	.00527	.00221	.0176	.00481	.00997	.00172	.253	.0063
%RSD	.95538	.64748	1.3774	.96162	1.0542	.27887	1.1006	.48636
#1	.54667	.33921	1.2629	.49543	.93694	.61723	22.923	1.3058
#2	.55722	.34342	1.2980	.50493	.95651	.61403	22.720	1.2933
#3	.55201	.34248	1.2776	.49893	.94342	.61455	23.222	1.2976

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4.8081	1.4876	.13070	2.9284	1.0160	.03073	1.3214	.24260
Stddev	.0597	.0032	.00022	.0376	.0118	.00023	.0046	.00043
%RSD	1.2417	.21418	.16832	1.2824	1.1628	.74301	.34599	.17525
#1	4.7513	1.4912	.13095	2.8934	1.0056	.03047	1.3262	.24295
#2	4.8703	1.4853	.13062	2.9680	1.0288	.03085	1.3172	.24213
#3	4.8026	1.4862	.13053	2.9237	1.0135	.03088	1.3209	.24273

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	1.7735	.26327	.27677	.23388	7.1092	.15980	2.0891	5.9213
Stddev	.0225	.00056	.00164	.00096	.0193	.00106	.0125	.0635
%RSD	1.2691	.21352	.59348	.41152	.27187	.66131	.59697	1.0731
#1	1.7531	.26269	.27487	.23488	7.0923	.15859	2.1035	5.8671
#2	1.7977	.26329	.27766	.23296	7.1303	.16050	2.0808	5.9913
#3	1.7698	.26381	.27777	.23380	7.1049	.16032	2.0831	5.9056

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	.87072	1.6791	.01500	.24658	.14548	2.5765	40.475
Stddev	.01079	.0027	.00014	.00263	.00161	.0075	.185
%RSD	1.2397	.16326	.91050	1.0685	1.1039	.28981	.45654
#1	.86107	1.6822	.01485	.24392	.14395	2.5843	40.560
#2	.88238	1.6778	.01508	.24919	.14715	2.5695	40.263
#3	.86872	1.6773	.01509	.24662	.14535	2.5756	40.602

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S4 Acquired: 8/7/2024 14:33:54 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	2623.8	91190.	13156.	3567.6	4743.0
Stddev	21.8	410.	65.	19.8	41.4
%RSD	.83260	.44975	.49735	.55568	.87213
#1	2638.3	91656.	13083.	3589.2	4775.3
#2	2598.7	91028.	13210.	3563.4	4696.4
#3	2634.4	90885.	13175.	3550.2	4757.3

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S5 Acquired: 8/7/2024 14:38:15 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	1.0971	.66775	2.5519	.99060	1.8870	1.2095	45.169	2.5173
Stddev	.0129	.01083	.0356	.01177	.0231	.0038	.197	.0028
%RSD	1.1732	1.6219	1.3949	1.1879	1.2222	.31190	.43566	.10992
#1	1.0865	.65754	2.5220	.98130	1.8689	1.2096	45.293	2.5173
#2	1.0934	.66661	2.5423	.98667	1.8793	1.2057	44.942	2.5146
#3	1.1114	.67911	2.5913	1.0038	1.9130	1.2132	45.272	2.5201

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	9.5106	2.9212	.25043	5.8476	1.9942	.05852	2.5887	.47765
Stddev	.1327	.0009	.00052	.0844	.0248	.00024	.0074	.00241
%RSD	1.3950	.03096	.20797	1.4429	1.2454	.41792	.28517	.50508
#1	9.3945	2.9202	.24989	5.7777	1.9770	.05828	2.5912	.47797
#2	9.4820	2.9214	.25093	5.8239	1.9829	.05853	2.5804	.47510
#3	9.6552	2.9220	.25046	5.9413	2.0227	.05877	2.5945	.47989

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	3.5126	.51115	.54100	.45854	13.390	.31256	4.1294	11.740
Stddev	.0511	.00230	.00193	.00225	.048	.00127	.0019	.147
%RSD	1.4551	.45076	.35619	.49133	.36098	.40538	.04602	1.2534
#1	3.4695	.50850	.53891	.46027	13.382	.31117	4.1297	11.625
#2	3.4991	.51272	.54136	.45599	13.346	.31287	4.1274	11.688
#3	3.5691	.51223	.54271	.45935	13.442	.31364	4.1311	11.906

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	1.7240	3.3033	.02883	.49277	.29370	5.1886	79.018
Stddev	.0247	.0052	.00031	.00608	.00413	.0230	.147
%RSD	1.4334	.15601	1.0889	1.2337	1.4062	.44401	.18562
#1	1.7033	3.3052	.02849	.48834	.29052	5.1993	79.087
#2	1.7174	3.2975	.02890	.49026	.29220	5.1622	79.117
#3	1.7513	3.3072	.02911	.49970	.29836	5.2043	78.849

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S5 Acquired: 8/7/2024 14:38:15 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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	2575.7	93628.	13075.	3550.9	4608.3
Stddev	24.8	355.	29.	9.4	51.3
%RSD	.96163	.37916	.22008	.26475	1.1142
#1	2590.8	93917.	13044.	3559.2	4646.2
#2	2589.2	93232.	13082.	3552.8	4628.9
#3	2547.1	93736.	13100.	3540.7	4549.9

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICV01 Acquired: 8/7/2024 15:52:34 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.9030789	.9994193	.9541418	.9164869	.9371919	2.312478
Stddev	.0123032	.0090212	.0123932	.0100951	.0133883	.012006
%RSD	1.362364	.9026447	1.298883	1.101497	1.428552	.5191695
#1	.8963378	.9945968	.9476451	.9109319	.9304948	2.307183
#2	.8956195	.9938343	.9463478	.9103892	.9284737	2.326221
#3	.9172794	1.009827	.9684326	.9281394	.9526073	2.304030

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4890079	.4718164	.4702097	9.778822	.5207177	.4874401
Stddev	.0011548	.0020018	.0069672	.032023	.0036412	.0073087
%RSD	.2361566	.4242748	1.481729	.3274771	.6992599	1.499396
#1	.4886452	.4741117	.4667800	9.742408	.5248638	.4839852
#2	.4880779	.4709049	.4656222	9.802599	.5192492	.4824994
#3	.4903005	.4704325	.4782270	9.791458	.5180401	.4958357

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4898263	10.04721	.4933306	5.522499	.4904687	.2513103
Stddev	.0068740	.00889	.0010841	.008112	.0068870	.0009252
%RSD	1.403365	.0885265	.2197407	.1468893	1.404175	.3681299
#1	.4862795	10.04352	.4942812	5.529776	.4874334	.2520870
#2	.4854501	10.04076	.4935606	5.523968	.4856207	.2502867
#3	.4977493	10.05736	.4921500	5.513753	.4983520	.2515571

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.46409	.4752209	1.041797	10.33834	2.484759	2.713180
Stddev	.02191	.0014087	.006502	.03813	.007065	.036882
%RSD	.2093649	.2964270	.6240729	.3688311	.2843230	1.359351
#1	10.47969	.4765357	1.049299	10.37732	2.492405	2.697512
#2	10.43905	.4737341	1.038286	10.30112	2.478473	2.686719
#3	10.47355	.4753929	1.037805	10.33657	2.483398	2.755309

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICV01 Acquired: 8/7/2024 15:52:34 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	2.627209	2.644031	2.290586	F -.001106	F -.003787	F .0007870
Stddev	.033581	.009546	.010957	.002240	.001686	.0014464
%RSD	1.278210	.3610518	.4783402	202.4823	44.50727	183.7840
#1	2.612156	2.635647	2.303214	.001046	-.005584	.0021798
#2	2.603788	2.642024	2.284942	-.003426	-.002240	-.000708
#3	2.665683	2.654421	2.283602	-.000939	-.003538	.000889

Elem	Sr4077
Units	ppm
Avg	2.503018
Stddev	.013131
%RSD	.5246181
#1	2.493502
#2	2.497552
#3	2.517999

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2848.217	94766.41	14260.01	3635.562	5333.102
Stddev	33.619	166.47	16.95	1.236	66.504
%RSD	1.180361	.1756679	.1188417	.0339848	1.246995
#1	2856.413	94651.36	14279.55	3636.338	5349.415
#2	2876.981	94957.30	14251.13	3634.138	5389.931
#3	2811.258	94690.58	14249.35	3636.211	5259.959

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LLICV01 Acquired: 8/7/2024 15:56:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0199173	.0412116	.0139037	.0182834	.0512344	.1016224
Stddev	.0011979	.0010298	.0001295	.0021866	.0006702	.0081829
%RSD	6.014410	2.498839	.9314088	11.95966	1.308083	8.052297
#1	.0194106	.0402623	.0138325	.0179837	.0518077	.1048524
#2	.0212852	.0410660	.0140531	.0206044	.0504976	.1076974
#3	.0190559	.0423064	.0138254	.0162621	.0513980	.0923175

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1011584	.0060026	.0062540	2.042189	.0092735	.0295957
Stddev	.0010129	.0000466	.0000506	.000983	.0001180	.0001163
%RSD	1.001298	.7765579	.8088921	.0481107	1.272923	.3929419
#1	.1011654	.0060084	.0063007	2.041175	.0093211	.0294894
#2	.1021679	.0060461	.0062611	2.043137	.0093603	.0297199
#3	.1001421	.0059534	.0062003	2.042254	.0091391	.0295777

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0218889	.0994735	.0206221	2.103021	.0400081	.0086832
Stddev	.0003883	.0020440	.0005404	.026003	.0003345	.0001580
%RSD	1.774137	2.054825	2.620510	1.236477	.8360794	1.819494
#1	.0216275	.0972982	.0207239	2.111325	.0398290	.0085016
#2	.0223352	.0997679	.0211044	2.123858	.0403941	.0087584
#3	.0217041	.1013543	.0200381	2.073879	.0398014	.0087896

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.728466	.0414265	.0414877	1.761238	.1020511	.2014149
Stddev	.008672	.0020017	.0004565	.011874	.0016055	.0004656
%RSD	.5016959	4.831926	1.100360	.6741853	1.573199	.2311675
#1	1.726288	.0402529	.0419986	1.753776	.1019918	.2009535
#2	1.738019	.0402889	.0411198	1.774930	.1036855	.2014065
#3	1.721091	.0437377	.0413445	1.755007	.1004762	.2018846

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LLICV01 Acquired: 8/7/2024 15:56:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0360339	.0407602	F .3107209	.0167503	F .3618586	F -.000386
Stddev	.0004319	.0004408	.0075832	.0008820	.0007694	.003084
%RSD	1.198511	1.081510	2.440520	5.265722	.2126119	799.7534
#1	.0364601	.0402513	.3185578	.0176212	.3617138	-.003905
#2	.0355966	.0410254	.3034198	.0158576	.3626901	.000902
#3	.0360450	.0410039	.3101851	.0167722	.3611719	.001846

Elem	Sr4077
Units	ppm
Avg	.0207007
Stddev	.0002214
%RSD	1.069670
#1	.0207790
#2	.0208723
#3	.0204507

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2727.532	102753.1	14016.35	3883.264	5023.178
Stddev	5.186	425.8	121.35	25.129	3.450
%RSD	.1901477	.4143512	.8657586	.6471116	.0686726
#1	2724.520	102356.3	13978.36	3860.156	5023.704
#2	2724.556	103202.8	13918.55	3910.016	5019.496
#3	2733.521	102700.1	14152.15	3879.619	5026.334

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICB01 Acquired: 8/7/2024 16:03:10 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0010981	-.001049	.0000753	-.001993	.0011316	.0052669	.0000791
Stddev	.0004839	.001993	.0006541	.000707	.0014817	.0034728	.0003025
%RSD	44.06613	189.9114	868.9640	35.47145	130.9326	65.93627	382.2929
#1	.0010102	.000522	-.000243	-.002810	.0010281	.0039577	-.000207
#2	.0006642	-.003290	-.000359	-.001588	-.000296	.0026390	.000396
#3	.0016200	-.000379	.000828	-.001582	.002662	.0092041	.000048

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000590	-.000040	.0027290	-.000032	.0000633	-.000551	-.002134
Stddev	.0000288	.000046	.0024173	.000068	.0000783	.000113	.002527
%RSD	48.84351	113.9391	88.57926	214.3455	123.7559	20.56950	118.4359
#1	.0000483	.000011	.0035296	.000005	-.000026	-.000593	-.001927
#2	.0000917	-.000056	.0046445	.000010	.000094	-.000637	-.004758
#3	.0000371	-.000077	.0000129	-.000111	.000122	-.000423	.000284

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000130	-.017036	-.000104	.0000246	-.028978	.0020362	-.000181
Stddev	.000085	.013959	.000189	.0000967	.006203	.0010825	.000092
%RSD	64.81593	81.94168	181.4278	392.1975	21.40477	53.16080	50.85734
#1	-.000119	-.029011	-.000113	.0000945	-.036128	.0032571	-.000228
#2	-.000052	-.001704	.000089	.0000651	-.025762	.0011936	-.000075
#3	-.000220	-.020392	-.000290	-.000086	-.025043	.0016579	-.000240

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.065261	.0009737	.0000083	-.000317	.0001638	-.005381	-.001896
Stddev	.010151	.0004389	.0001184	.000174	.0005730	.004719	.001899
%RSD	15.55480	45.08112	1429.061	55.00632	349.7663	87.68834	100.1663
#1	-.068400	.0011567	-.000003	-.000192	.0007575	-.007648	.000265
#2	-.073472	.0004728	.000132	-.000242	.0001197	-.008539	-.003300
#3	-.053911	.0012915	-.000104	-.000516	-.000386	.000043	-.002653

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICB01 Acquired: 8/7/2024 16:03:10 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002756	.0016815	-.000047
Stddev	.001513	.0004151	.000018
%RSD	54.91331	24.68957	37.92174
#1	-.001020	.0020797	-.000044
#2	-.003796	.0017134	-.000030
#3	-.003452	.0012513	-.000065

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2770.575	101690.7	13622.01	3885.005	5185.570
Stddev	33.500	202.5	48.28	10.580	63.580
%RSD	1.209149	.1991171	.3544283	.2723239	1.226089
#1	2797.377	101718.7	13572.64	3886.054	5239.271
#2	2733.018	101877.6	13624.28	3895.022	5115.366
#3	2781.329	101475.6	13669.12	3873.940	5202.074

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CRI01 Acquired: 8/7/2024 16:07:38 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0197108	.0392327	.0145395	.0178106	.0505561	.1061444
Stddev	.0005312	.0008550	.0004863	.0002455	.0009011	.0001508
%RSD	2.695182	2.179221	3.345038	1.378506	1.782314	.1420294
#1	.0203120	.0382910	.0150414	.0180700	.0499658	.1062098
#2	.0195156	.0399602	.0140703	.0177798	.0501093	.1062513
#3	.0193047	.0394470	.0145067	.0175819	.0515933	.1059719

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0997214	.0062227	.0062181	2.030023	.0098461	.0298811
Stddev	.0008877	.0000528	.0000511	.013646	.0004388	.0005899
%RSD	.8902161	.8483983	.8223018	.6722039	4.456016	1.974180
#1	.0998203	.0062603	.0062769	2.034432	.0100499	.0293902
#2	.1005555	.0062454	.0061931	2.040918	.0101459	.0297175
#3	.0987883	.0061623	.0061843	2.014717	.0093426	.0305355

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0222730	.0970248	.0211187	2.108968	.0401303	.0085538
Stddev	.0003279	.0023739	.0001077	.023442	.0005754	.0000745
%RSD	1.472313	2.446735	.5099842	1.111562	1.433735	.8706673
#1	.0219037	.0971182	.0212093	2.123142	.0395503	.0085024
#2	.0223849	.0993506	.0211472	2.121853	.0401396	.0085198
#3	.0225303	.0946055	.0209996	2.081909	.0407009	.0086392

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.753115	.0399209	.0421126	1.758269	.0990384	.2039760
Stddev	.005364	.0012803	.0001862	.029117	.0006126	.0012965
%RSD	.3059540	3.207110	.4421007	1.656020	.6185423	.6356319
#1	1.749773	.0408380	.0419959	1.781060	.0996144	.2029726
#2	1.759302	.0404666	.0420145	1.725467	.0991058	.2035156
#3	1.750270	.0384582	.0423273	1.768281	.0983948	.2054400

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CRI01 Acquired: 8/7/2024 16:07:38 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0362068	.0403067	.3195116	.0152129	F .3600683	F .0006077
Stddev	.0001876	.0008255	.0053009	.0016957	.0037945	.0008295
%RSD	.5182120	2.048029	1.659057	11.14637	1.053832	136.5026
#1	.0359996	.0397378	.3135527	.0134853	.3574387	-.000172
#2	.0362557	.0399289	.3212792	.0168748	.3583480	.001480
#3	.0363652	.0412535	.3237028	.0152787	.3644183	.000515

Elem	Sr4077
Units	ppm
Avg	.0205154
Stddev	.0000772
%RSD	.3763512
#1	.0205948
#2	.0204406
#3	.0205108

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2740.623	100828.1	13660.37	3862.786	5074.082
Stddev	15.277	154.9	59.54	19.678	26.078
%RSD	.5574109	.1536632	.4358488	.5094314	.5139419
#1	2747.865	100679.6	13607.84	3875.150	5084.206
#2	2750.932	100988.8	13648.21	3873.115	5093.579
#3	2723.073	100816.0	13725.05	3840.094	5044.460

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICSA01 Acquired: 8/7/2024 16:12:03 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0043502	.0022998	.0055536	-.007634	-.001839	265.7290
Stddev	.0005076	.0008634	.0013983	.001385	.000797	2.0180
%RSD	11.66898	37.54104	25.17834	18.14548	43.32996	.7594091
#1	.0041309	.0032921	.0052466	-.008419	-.001782	265.1290
#2	.0039891	.0017203	.0070799	-.008447	-.002663	267.9790
#3	.0049306	.0018870	.0043343	-.006034	-.001073	264.0791

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061369	.0009273	.0036998	253.1989	.0567516	.0028376
Stddev	.0010812	.0000364	.0001636	.8927	.0009792	.0001835
%RSD	17.61799	3.926106	4.423177	.3525785	1.725319	6.465408
#1	.0048896	.0008883	.0038390	252.3262	.0564804	.0029684
#2	.0067129	.0009332	.0037409	254.1103	.0559366	.0029165
#3	.0068081	.0009604	.0035195	253.1603	.0578377	.0026279

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0092688	101.8314	.0161522	271.7230	.0034326	.0020449
Stddev	.0020000	1.4458	.0002444	.7594	.0000414	.0001476
%RSD	21.57790	1.419784	1.513095	.2794590	1.206179	7.216110
#1	.0102252	101.2356	.0159527	270.9491	.0034804	.0022132
#2	.0106111	100.7787	.0160791	272.4669	.0034063	.0019377
#3	.0069702	103.4799	.0164248	271.7530	.0034113	.0019838

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0175097	.0052267	.0022627	-.048565	.0124168	.0000263
Stddev	.0065281	.0015288	.0002201	.022301	.0022016	.0003323
%RSD	37.28284	29.24881	9.726136	45.92063	17.73108	1261.996
#1	.0125327	.0034615	.0020800	-.026962	.0113498	-.000179
#2	.0249010	.0061081	.0025070	-.071505	.0109519	-.000151
#3	.0150952	.0061106	.0022011	-.047228	.0149486	.000410

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICSA01 Acquired: 8/7/2024 16:12:03 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002889	-.002997	.0164923	.0014513	F -.023256	F .0309686
Stddev	.000639	.000311	.0112694	.0020443	.001148	.0005772
%RSD	22.13369	10.36208	68.33136	140.8658	4.934275	1.863766
#1	-.002282	-.003330	.0204948	-.000231	-.023284	.0314555
#2	-.002829	-.002716	.0037680	.003727	-.022095	.0311192
#3	-.003557	-.002945	.0252143	.000858	-.024390	.0303310

Elem	Sr4077
Units	ppm
Avg	.0034657
Stddev	.0016210
%RSD	46.77307
#1	.0040063
#2	.0047472
#3	.0016434

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2438.168	87220.38	12754.86	3338.220	4257.823
Stddev	11.303	1079.16	30.48	36.659	19.259
%RSD	.4635935	1.237275	.2389350	1.098172	.4523245
#1	2433.545	87225.41	12727.18	3322.941	4250.897
#2	2429.909	88297.01	12749.88	3380.048	4242.984
#3	2451.050	86138.72	12787.52	3311.672	4279.587

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICSAB01 Acquired: 8/7/2024 16:16:41 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1034045	.1033269	.0550785	.0343896	.6052752	249.9884
Stddev	.0022474	.0019889	.0025807	.0023067	.0006830	2.2370
%RSD	2.173386	1.924886	4.685533	6.707589	.1128485	.8948453
#1	.1036191	.1047659	.0536326	.0317522	.6054322	252.2433
#2	.1055368	.1041575	.0580580	.0353859	.6058661	249.9522
#3	.1010575	.1010573	.0535448	.0360307	.6045274	247.7697

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5156567	.4943890	.9677298	237.1691	.5646960	.5005156
Stddev	.0042262	.0015689	.0002088	1.6405	.0010681	.0004370
%RSD	.8195691	.3173432	.0215720	.6916913	.1891459	.0873022
#1	.5198691	.4951649	.9674905	238.6323	.5645275	.5006763
#2	.5156841	.4954189	.9678745	237.4795	.5637221	.5008495
#3	.5114169	.4925834	.9678243	235.3956	.5658383	.5000211

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4882216	101.1827	.5103977	252.7847	.9922725	.2207981
Stddev	.0009073	.3931	.0041154	1.7991	.0005913	.0001128
%RSD	.1858330	.3885327	.8063058	.7117154	.0595948	.0510831
#1	.4874016	101.5563	.5139903	254.5422	.9916993	.2206761
#2	.4880670	100.7726	.5112952	252.8653	.9928805	.2208196
#3	.4891963	101.2192	.5059077	250.9467	.9922379	.2208986

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030522	.4868824	1.091999	-.074180	1.010766	1.069326
Stddev	.0063302	.0023686	.002685	.012783	.005245	.000522
%RSD	207.4021	.4864938	.2458510	17.23184	.5189265	.0488089
#1	-.004232	.4843264	1.095080	-.060301	1.015411	1.069810
#2	.006165	.4890033	1.090165	-.085469	1.011810	1.069395
#3	.007224	.4873175	1.090751	-.076772	1.005077	1.068773

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICSAB01 Acquired: 8/7/2024 16:16:41 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.070895	1.052947	.9607425	F .0024513	F -.021590	F .0277107
Stddev	.003193	.010117	.0074789	.0003750	.002548	.0012621
%RSD	.2981148	.9608262	.7784471	15.29965	11.79944	4.554639
#1	1.074557	1.061018	.9610614	.0028699	-.021321	.0262552
#2	1.068698	1.056227	.9531093	.0021459	-.024262	.0283733
#3	1.069431	1.041598	.9680568	.0023380	-.019188	.0285034

Elem	Sr4077
Units	ppm
Avg	.8630054
Stddev	.0071309
%RSD	.8262888
#1	.8695092
#2	.8641267
#3	.8553802

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2472.824	84142.59	13110.23	3234.073	4344.851
Stddev	1.317	246.41	108.36	13.622	2.014
%RSD	.0532596	.2928424	.8265595	.4211994	.0463561
#1	2474.111	83858.39	13027.85	3218.695	4343.170
#2	2472.883	84272.84	13069.85	3238.901	4347.084
#3	2471.479	84296.53	13232.98	3244.624	4344.300

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV01 Acquired: 8/7/2024 16:20:52 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.912658	5.164469	5.059280	4.880384	4.930195	9.702629	10.02679
Stddev	.027108	.038689	.029713	.016113	.025467	.084490	.06689
%RSD	.5517945	.7491391	.5872990	.3301665	.5165517	.8707994	.6670916
#1	4.892408	5.189896	5.059863	4.875250	4.922522	9.788042	10.04036
#2	4.902111	5.119944	5.029279	4.867463	4.909446	9.700751	10.08585
#3	4.943454	5.183567	5.088696	4.898439	4.958616	9.619093	9.95416

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2491685	2.493714	24.95708	1.005494	2.473895	1.231177	4.994595
Stddev	.0019457	.011200	.09761	.003612	.011197	.004537	.065992
%RSD	.7808728	.4491391	.3911053	.3592646	.4526101	.3684904	1.321278
#1	.2494164	2.495821	25.05965	1.005445	2.475192	1.229685	4.985088
#2	.2509784	2.481610	24.94628	1.001907	2.462106	1.227573	4.933872
#3	.2471108	2.503711	24.86533	1.009131	2.484387	1.236271	5.064825

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.481258	24.57995	2.489347	1.244845	24.00242	2.460757	2.540427
Stddev	.011603	.09917	.011257	.006522	.29339	.017630	.018328
%RSD	.4676294	.4034419	.4522070	.5239176	1.222354	.7164442	.7214523
#1	2.493941	24.69446	2.489246	1.241743	24.04846	2.480989	2.542601
#2	2.478657	24.52377	2.478141	1.240454	23.68872	2.452591	2.521109
#3	2.471177	24.52164	2.500655	1.252339	24.27007	2.448690	2.557571

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.31878	4.900675	5.043403	5.004263	4.952676	4.854809	5.029217
Stddev	.28646	.042481	.023999	.024840	.027025	.071191	.014775
%RSD	1.177934	.8668494	.4758526	.4963719	.5456679	1.466402	.2937864
#1	24.32445	4.908890	5.038566	5.008246	4.980192	4.879031	5.028853
#2	24.02952	4.938449	5.022191	4.977672	4.951665	4.774667	5.014627
#3	24.60236	4.854686	5.069453	5.026871	4.926170	4.910728	5.044170

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV01 Acquired: 8/7/2024 16:20:52 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.678984	4.702781	5.000227
Stddev	.027234	.034403	.032942
%RSD	.5820476	.7315387	.6588133
#1	4.668624	4.739715	4.998141
#2	4.658451	4.696980	5.034163
#3	4.709878	4.671647	4.968378

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2707.043	94979.20	13456.56	3633.897	4904.021
Stddev	13.628	636.71	111.18	29.392	25.695
%RSD	.5034337	.6703665	.8261790	.8088395	.5239613
#1	2711.271	95147.28	13425.90	3635.693	4905.877
#2	2718.056	95515.00	13363.93	3662.350	4928.739
#3	2691.802	94275.31	13579.85	3603.648	4877.449

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB01 Acquired: 8/7/2024 16:25:11 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000546	-.000461	.0000196	.0007940	.0011534	.0037589	.0001135
Stddev	.001727	.001063	.0008075	.0009433	.0015998	.0014490	.0010932
%RSD	316.3872	230.3910	4129.056	118.8056	138.7045	38.54926	963.6036
#1	.000196	.000546	.0006945	-.000146	.0012712	.0023405	.0013202
#2	-.002520	-.000358	-.000875	.000788	-.000502	.0052368	-.000169
#3	.000686	-.001572	.000239	.001740	.002691	.0036994	-.000811

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000152	-.000037	-.000882	-.000035	.0000293	-.000218	.0002195
Stddev	.0000543	.000052	.006435	.000026	.0000909	.000233	.0018567
%RSD	356.5653	142.7768	729.1854	73.04194	310.7050	107.1247	845.7352
#1	-.000022	-.000026	-.007367	-.000015	-.000009	.000047	.0021840
#2	-.000010	-.000093	-.000782	-.000064	-.000036	-.000395	-.001506
#3	.000078	.000010	.005501	-.000026	.000133	-.000305	-.000019

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000100	-.008604	-.000115	.0002679	-.042584	-.000218	-.000029
Stddev	.000271	.003804	.000087	.0000408	.004393	.002667	.000083
%RSD	272.0284	44.20872	75.55469	15.21585	10.31701	1221.148	281.1681
#1	-.000214	-.011571	-.000088	.0002893	-.045734	.002816	-.000068
#2	.000210	-.009923	-.000045	.0002209	-.037565	-.002191	-.000087
#3	-.000295	-.004316	-.000212	.0002934	-.044455	-.001280	.000066

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.087886	.0101936	.0003458	-.000356	.0001129	.0019828	-.004295
Stddev	.022681	.0005726	.0001345	.000085	.0004878	.0057886	.001988
%RSD	25.80772	5.616949	38.90373	23.99084	432.0142	291.9465	46.28682
#1	-.082357	.0098175	.0003175	-.000453	.0005568	-.001513	-.006590
#2	-.068480	.0108526	.0002277	-.000320	-.000409	.008665	-.003119
#3	-.112820	.0099109	.0004923	-.000293	.000191	-.001204	-.003175

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB01 Acquired: 8/7/2024 16:25:11 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002144	-.000985	-.000002
Stddev	.000401	.001136	.000029
%RSD	18.69129	115.3111	1557.269
#1	-.002047	.000279	-.000034
#2	-.002585	-.001920	.000023
#3	-.001801	-.001314	.000005

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2692.644	99302.72	13935.52	3798.022	4983.160
Stddev	11.142	351.10	167.90	4.435	12.223
%RSD	.4137781	.3535688	1.204846	.1167699	.2452919
#1	2703.457	99072.58	13755.12	3793.196	4991.609
#2	2693.275	99706.84	13964.22	3798.950	4988.726
#3	2681.200	99128.75	14087.22	3801.919	4969.144

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BL Acquired: 8/7/2024 16:29:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000448	-.000641	-.000538	.0009980	.0002932	.0069561	.0006022
Stddev	.001231	.000506	.000394	.0016452	.0012463	.0066711	.0006090
%RSD	274.8502	79.05617	73.21376	164.8533	425.0530	95.90250	101.1350
#1	.000974	-.000405	-.000600	.0004446	.0016211	.0092985	.0003464
#2	-.001147	-.001222	-.000116	.0028485	-.000851	.0121401	.0012974
#3	-.001171	-.000295	-.000896	-.000299	.000110	-.000570	.0001628

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000136	.0000194	-.000962	-.000285	.0001713	-.000421	-.002589
Stddev	.0000490	.0001002	.002537	.000185	.0001261	.000200	.002895
%RSD	360.2685	517.4567	263.7881	64.83224	73.63253	47.48296	111.8476
#1	-.000029	.0000514	.001966	-.000489	.0001468	-.000190	.000358
#2	.000067	-.000093	-.002517	-.000131	.0000592	-.000530	-.002695
#3	.000003	.000100	-.002334	-.000234	.0003078	-.000543	-.005430

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000149	-.005720	-.000103	.0001669	-.041288	-.000180	-.000125
Stddev	.000044	.001989	.000010	.0000964	.008143	.001384	.000056
%RSD	29.46831	34.76293	9.408037	57.75904	19.72307	768.1075	44.31408
#1	-.000110	-.006025	-.000114	.0000558	-.047031	.001365	-.000179
#2	-.000140	-.003597	-.000095	.0002161	-.044863	-.000599	-.000068
#3	-.000196	-.007539	-.000100	.0002289	-.031968	-.001306	-.000130

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.086089	.0035532	-.000010	-.003393	.0000661	-.009504	-.003128
Stddev	.025392	.0000986	.000036	.000123	.0006103	.006857	.000489
%RSD	29.49547	2.775010	354.4600	3.614317	923.1028	72.14688	15.63573
#1	-.062363	.0036491	.000022	-.003400	-.000311	-.002775	-.002945
#2	-.112871	.0034521	-.000004	-.003511	.000770	-.016481	-.002756
#3	-.083034	.0035585	-.000048	-.003266	-.000261	-.009256	-.003682

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BL Acquired: 8/7/2024 16:29:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002425	.0000643	-.000055
Stddev	.001883	.0006262	.000021
%RSD	77.65365	973.8152	37.57750
#1	-.004566	.0007793	-.000076
#2	-.001680	-.000386	-.000034
#3	-.001028	-.000200	-.000054

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2725.605	103022.5	13430.38	3874.155	5078.942
Stddev	13.986	297.1	32.97	6.308	23.158
%RSD	.5131251	.2884312	.2454885	.1628261	.4559612
#1	2741.719	102855.0	13419.58	3873.541	5105.509
#2	2718.481	102846.9	13467.39	3868.176	5063.024
#3	2716.617	103365.6	13404.16	3880.748	5068.294

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BS Acquired: 8/7/2024 16:34:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.7808905	2.001473	.9981728	1.953020	.8053177	2.046667
Stddev	.0072820	.022193	.0097117	.020293	.0087633	.007235
%RSD	.9325207	1.108825	.9729494	1.039074	1.088179	.3535122
#1	.7851177	2.015521	1.004008	1.963541	.8096550	2.052267
#2	.7724821	1.975888	.986962	1.929626	.7952315	2.049236
#3	.7850718	2.013010	1.003549	1.965892	.8110664	2.038498

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2001124	.2166001	.1974336	1.077592	.4093574	.2005799
Stddev	.0002638	.0002711	.0019637	.004525	.0010359	.0016302
%RSD	.1318210	.1251635	.9946284	.4199426	.2530491	.8127212
#1	.2003700	.2167267	.1986189	1.073015	.4081740	.2013653
#2	.1998428	.2167848	.1951669	1.082064	.4097987	.1987057
#3	.2001245	.2162889	.1985151	1.077697	.4100996	.2016687

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3090651	2.870622	.2088188	2.009026	.5118825	.0742360
Stddev	.0022256	.017105	.0003764	.010307	.0052592	.0003266
%RSD	.7201015	.5958624	.1802649	.5130392	1.027418	.4399261
#1	.3098912	2.857621	.2084364	1.997426	.5155433	.0744584
#2	.3065446	2.864246	.2088310	2.017132	.5058559	.0743885
#3	.3107596	2.890000	.2091890	2.012520	.5142483	.0738611

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.670684	.3037496	.2118791	9.076245	.3147306	.4084700
Stddev	.011959	.0036181	.0004818	.037459	.0013773	.0036871
%RSD	.4477782	1.191151	.2274062	.4127145	.4375990	.9026538
#1	2.662258	.3078387	.2113388	9.043200	.3162293	.4107537
#2	2.665424	.3009633	.2120341	9.068598	.3135206	.4042164
#3	2.684372	.3024468	.2122643	9.116938	.3144418	.4104398

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BS Acquired: 8/7/2024 16:34:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.7127224	.2040740	F .7285804	6.097537	F -.009579	.1878850
Stddev	.0066863	.0015594	.0064506	.059453	.002145	.0007188
%RSD	.9381409	.7641207	.8853636	.9750310	22.39004	.3825769
#1	.7165983	.2037543	.7242202	6.127320	-.007107	.1873319
#2	.7050017	.2057684	.7359904	6.029079	-.010687	.1876255
#3	.7165673	.2026992	.7255307	6.136212	-.010943	.1886975

Elem	Sr4077
Units	ppm
Avg	.1994314
Stddev	.0001396
%RSD	.0700203
#1	.1995776
#2	.1994172
#3	.1992994

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2614.879	94859.32	12405.14	3687.233	4811.891
Stddev	23.943	436.43	8.49	21.962	43.558
%RSD	.9156405	.4600852	.0684521	.5956119	.9052086
#1	2598.087	95265.25	12408.03	3711.790	4779.962
#2	2642.296	94914.99	12395.59	3669.474	4861.511
#3	2604.255	94397.72	12411.82	3680.436	4794.200

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-01 Acquired: 8/7/2024 16:38:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000212	-.005462	-.001207	-.001205	.0010930	.0371886	.3523920
Stddev	.001091	.000999	.002045	.001455	.0004277	.0041502	.0011550
%RSD	515.6621	18.29751	169.3579	120.7773	39.13242	11.15996	.3277609
#1	-.000944	-.006378	-.001177	-.001819	.0007301	.0324663	.3511132
#2	-.000733	-.005612	-.003266	.000457	.0009843	.0388428	.3533592
#3	.001042	-.004396	.000822	-.002253	.0015646	.0402566	.3527037

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000511	.0001165	53.21883	.0021488	.0023391	-.001401	6.263706
Stddev	.000036	.0001099	.05924	.0005035	.0000594	.000343	.036998
%RSD	7.031416	94.34884	.1113123	23.43211	2.537969	24.51669	.5906688
#1	-.000546	.0001762	53.15047	.0026379	.0023655	-.001018	6.226261
#2	-.000513	.0001836	53.25102	.0021765	.0022712	-.001681	6.300240
#3	-.000474	-.000010	53.25501	.0016320	.0023807	-.001504	6.264618

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.59163	18.02123	.0040720	.0005117	258.2646	-.000018	.0438305
Stddev	.02696	.04751	.0003236	.0001152	2.6068	.000280	.0001472
%RSD	.2545666	.2636495	7.946919	22.50447	1.009360	1525.014	.3359001
#1	10.56131	17.96694	.0039718	.0003850	256.2937	-.000327	.0437788
#2	10.61289	18.04157	.0038104	.0006100	261.2204	.000219	.0439966
#3	10.60070	18.05519	.0044339	.0005402	257.2798	.000053	.0437161

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.650645	.1599309	.0005663	-.005598	-.001298	6.152677	.0976824
Stddev	.003463	.0008598	.0001062	.000183	.000514	.023754	.0013345
%RSD	.0358881	.5375796	18.74552	3.265316	39.59063	.3860819	1.366135
#1	9.646691	.1608867	.0005309	-.005696	-.001275	6.129730	.0971603
#2	9.653141	.1592207	.0004823	-.005711	-.000796	6.177164	.0966880
#3	9.652102	.1596852	.0006856	-.005387	-.001823	6.151137	.0991990

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-01 Acquired: 8/7/2024 16:38:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.9636732	.0081722	.3822318
Stddev	.0028355	.0012342	.0002243
%RSD	.2942363	15.10184	.0586869
#1	.9613071	.0083871	.3820093
#2	.9628965	.0092848	.3822285
#3	.9668161	.0068447	.3824578

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2674.809	93248.87	13266.65	3509.283	4829.631
Stddev	4.989	95.77	29.48	19.402	9.798
%RSD	.1865272	.1027034	.2221857	.5528757	.2028759
#1	2673.175	93343.91	13247.60	3530.988	4829.963
#2	2680.411	93152.39	13300.60	3493.623	4839.259
#3	2670.842	93250.30	13251.75	3503.239	4819.671

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-02 Acquired: 8/7/2024 16:42:53 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000490	-.006103	-.002108	-.000703	.0000561	.0257911	.3580549
Stddev	.002360	.001160	.000246	.000705	.0004275	.0094509	.0003589
%RSD	481.6664	19.00409	11.66966	100.2905	762.4141	36.64410	.1002265
#1	-.003215	-.007441	-.002094	-.000735	.0004969	.0347257	.3584225
#2	.000904	-.005490	-.001870	-.001392	-.000357	.0158971	.3577055
#3	.000841	-.005379	-.002361	.000017	.000028	.0267504	.3580368

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000586	-.000005	54.78151	.0020533	.0023294	-.001733	6.291298
Stddev	.000031	.000024	.26397	.0000972	.0000913	.000521	.063112
%RSD	5.243525	485.6166	.4818682	4.733700	3.921339	30.07481	1.003165
#1	-.000593	.000011	54.48160	.0021608	.0023662	-.002334	6.356543
#2	-.000613	-.000033	54.97863	.0020274	.0023966	-.001412	6.230561
#3	-.000552	.000007	54.88429	.0019716	.0022254	-.001453	6.286790

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.87705	18.57561	.0030825	.0003625	268.3776	.0011017	.0210206
Stddev	.02528	.04462	.0000139	.0003509	1.3300	.0011570	.0005557
%RSD	.2324064	.2402094	.4517601	96.82103	.4955695	105.0215	2.643654
#1	10.84819	18.52427	.0030961	.0007677	269.6088	.0020728	.0216481
#2	10.89525	18.60496	.0030682	.0001590	266.9670	.0014106	.0205904
#3	10.88772	18.59761	.0030833	.0001607	268.5570	-.000178	.0208234

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.924574	.1663703	.0007133	-.005946	-.001276	6.305781	.1006222
Stddev	.124233	.0001332	.0001707	.000076	.000540	.093741	.0022556
%RSD	1.251774	.0800750	23.92390	1.282885	42.33808	1.486582	2.241669
#1	10.06268	.1663979	.0007755	-.005970	-.000853	6.410302	.0980943
#2	9.82193	.1664875	.0005203	-.005860	-.001885	6.229153	.1013429
#3	9.88911	.1662254	.0008442	-.006007	-.001091	6.277888	.1024294

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-02 Acquired: 8/7/2024 16:42:53 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.9555456	.0078294	.3906363
Stddev	.0044152	.0017045	.0007920
%RSD	.4620586	21.77009	.2027335
#1	.9511205	.0065017	.3903996
#2	.9555657	.0097515	.3899897
#3	.9599508	.0072351	.3915197

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2610.191	90466.85	12800.29	3422.962	4716.864
Stddev	25.973	998.25	39.20	23.524	44.489
%RSD	.9950639	1.103439	.3062505	.6872397	.9431831
#1	2639.470	89331.33	12834.05	3397.526	4766.093
#2	2601.183	91206.18	12757.30	3443.935	4704.961
#3	2589.922	90863.05	12809.53	3427.424	4679.537

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-01 Acquired: 8/7/2024 16:47:26 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000750	-.006773	.0070430	.0005133	.0010306	.0177449	.4019297
Stddev	.000522	.001386	.0011814	.0011905	.0009558	.0079030	.0001082
%RSD	69.52572	20.46137	16.77477	231.9163	92.74687	44.53704	.0269294
#1	-.001095	-.007267	.0060414	.0013346	-.000072	.0121433	.4018885
#2	-.000150	-.005208	.0067416	-.000852	.001534	.0267846	.4020524
#3	-.001005	-.007845	.0083459	.001057	.001630	.0143067	.4018481

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000771	.0000690	60.14683	.0018806	.0017505	-.002437	6.673150
Stddev	.000053	.0000536	.21325	.0002134	.0001533	.000162	.039621
%RSD	6.902121	77.65524	.3545420	11.34527	8.755619	6.650231	.5937349
#1	-.000817	.0000801	60.24988	.0019469	.0016123	-.002256	6.699079
#2	-.000784	.0000107	59.90164	.0020529	.0017240	-.002486	6.627542
#3	-.000713	.0001161	60.28898	.0016419	.0019153	-.002569	6.692828

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.64142	20.43264	.0030307	.0003374	287.6184	.0010351	.0545054
Stddev	.03793	.11343	.0000615	.0003622	.0432	.0008206	.0001368
%RSD	.2780488	.5551179	2.029905	107.3634	.0150298	79.27637	.2510230
#1	13.65007	20.43969	.0030838	-.000027	287.6652	.0006216	.0543820
#2	13.59991	20.31586	.0029633	.000697	287.5800	.0005035	.0544818
#3	13.67428	20.54238	.0030450	.000342	287.6099	.0019802	.0546526

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.24239	.1631266	.0005821	-.005434	-.000982	6.005074	.0722973
Stddev	.03577	.0002438	.0002823	.000188	.000705	.017495	.0025379
%RSD	.3492089	.1494550	48.50341	3.452675	71.80582	.2913348	3.510397
#1	10.28102	.1629533	.0005098	-.005300	-.001389	6.023149	.0748491
#2	10.23572	.1630212	.0003429	-.005648	-.001390	5.988223	.0722694
#3	10.21042	.1634054	.0008935	-.005353	-.000168	6.003851	.0697735

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-01 Acquired: 8/7/2024 16:47:26 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	1.112802	.0093898	.4379797
Stddev	.003730	.0020191	.0005533
%RSD	.3352349	21.50344	.1263417
#1	1.115033	.0087351	.4384928
#2	1.114879	.0116551	.4373934
#3	1.108496	.0077793	.4380529

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2599.467	92466.81	13102.85	3466.613	4688.954
Stddev	2.972	309.21	12.50	10.512	3.162
%RSD	.1143479	.3344027	.0954062	.3032442	.0674405
#1	2596.733	92190.87	13090.01	3454.739	4689.921
#2	2602.631	92801.01	13114.98	3470.372	4691.519
#3	2599.037	92408.56	13103.57	3474.730	4685.421

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-02 Acquired: 8/7/2024 16:51:56 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0082656	-.003927	.0040157	-.001074	.0009317	.3728868	.1994166
Stddev	.0009349	.001135	.0003620	.000360	.0011083	.0009077	.0009232
%RSD	11.31119	28.90945	9.014479	33.51546	118.9620	.2434164	.4629664
#1	.0093058	-.003966	.0036001	-.001400	-.000250	.3721281	.1991080
#2	.0074954	-.002773	.0042620	-.000688	.001949	.3726399	.1986872
#3	.0079956	-.005043	.0041851	-.001134	.001096	.3738924	.2004546

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000003	.0001250	17.61960	.0042093	.0109372	.0090503	17.29884
Stddev	.000031	.0000783	.05736	.0001724	.0000994	.0003145	.02742
%RSD	930.7606	62.62651	.3255226	4.095405	.9086101	3.474573	.1585088
#1	.000012	.0002152	17.57024	.0044041	.0108246	.0093240	17.27979
#2	.000018	.0000740	17.60605	.0040766	.0109742	.0087068	17.33027
#3	-.000039	.0000858	17.68252	.0041471	.0110127	.0091200	17.28646

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.554199	5.963367	.0185962	.0005930	84.61980	.0049921	.0353836
Stddev	.011083	.023734	.0002516	.0000931	.17217	.0021315	.0004033
%RSD	.4339322	.3979940	1.353035	15.69704	.2034598	42.69838	1.139765
#1	2.549796	5.961277	.0185999	.0006797	84.76965	.0069160	.0351134
#2	2.545993	5.940747	.0188459	.0006047	84.65802	.0053596	.0358472
#3	2.566807	5.988077	.0183428	.0004947	84.43173	.0027007	.0351903

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.374969	.0534888	.0007948	-.004582	.0059420	6.362613	.3869256
Stddev	.011332	.0002927	.0001241	.000478	.0005087	.026129	.0008229
%RSD	.2590223	.5472598	15.61489	10.42404	8.561977	.4106652	.2126677
#1	4.363555	.0531540	.0006567	-.004725	.0062076	6.376644	.3860395
#2	4.386217	.0536161	.0008308	-.004049	.0062629	6.378729	.3876657
#3	4.375135	.0536963	.0008969	-.004971	.0053554	6.332466	.3870716

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-02 Acquired: 8/7/2024 16:51:56 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	1.799009	.0014037	.0971995
Stddev	.012474	.0015953	.0005500
%RSD	.6933959	113.6537	.5658863
#1	1.787638	.0021781	.0973222
#2	1.797037	-.000431	.0965985
#3	1.812352	.002464	.0976778

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2658.866	95254.32	13276.32	3579.822	4922.456
Stddev	8.496	103.65	50.99	7.949	16.696
%RSD	.3195164	.1088190	.3840322	.2220408	.3391855
#1	2652.887	95291.91	13317.32	3588.934	4926.323
#2	2668.591	95137.12	13292.41	3576.214	4936.879
#3	2655.120	95333.94	13219.23	3574.316	4904.165

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-03 Acquired: 8/7/2024 16:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0035015	-.006290	.0016930	-.004169	.0016748	.2850601	.4843593
Stddev	.0004677	.000866	.0005504	.001694	.0019255	.0052953	.0010686
%RSD	13.35759	13.76447	32.50663	40.62917	114.9640	1.857603	.2206267
#1	.0039187	-.005290	.0013318	-.002937	-.000426	.2893896	.4843338
#2	.0035898	-.006795	.0023264	-.003469	.003355	.2866345	.4854405
#3	.0029959	-.006784	.0014209	-.006100	.002096	.2791561	.4833037

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000417	.0004729	60.03829	.0027674	.0031132	.0037211	38.40279
Stddev	.000021	.0000613	.19444	.0003001	.0001321	.0003527	.11513
%RSD	4.942519	12.95891	.3238566	10.84517	4.241854	9.479076	.2997892
#1	-.000394	.0005001	59.88892	.0026609	.0029796	.0033654	38.36042
#2	-.000423	.0005159	60.25814	.0031062	.0031164	.0037271	38.53310
#3	-.000433	.0004028	59.96781	.0025350	.0032436	.0040707	38.31485

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.81421	20.07680	.0106638	.0037669	280.5210	.0149991	.1017343
Stddev	.03526	.03526	.0002032	.0004568	1.4971	.0022367	.0003394
%RSD	.2552797	.1756081	1.905346	12.12749	.5336902	14.91251	.3336009
#1	13.82162	20.05289	.0104344	.0032396	280.5113	.0124647	.1018578
#2	13.84518	20.11729	.0108211	.0040201	282.0229	.0166973	.1019947
#3	13.77583	20.06023	.0107358	.0040412	279.0288	.0158354	.1013505

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.35596	.1536551	.0008065	-.002419	.0068411	7.355204	.2677020
Stddev	.05507	.0007144	.0002843	.000583	.0008349	.028485	.0024112
%RSD	.5317501	.4649480	35.25381	24.11416	12.20397	.3872774	.9006864
#1	10.36308	.1536904	.0005965	-.001932	.0077393	7.362512	.2654494
#2	10.40712	.1543512	.0006930	-.002260	.0066952	7.379323	.2674111
#3	10.29768	.1529237	.0011300	-.003066	.0060887	7.323777	.2702454

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-03 Acquired: 8/7/2024 16:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.9988808	.0059557	.4292358
Stddev	.0100256	.0003119	.0019472
%RSD	1.003687	5.236537	.4536480
#1	.9876860	.0062915	.4303412
#2	1.007032	.0056752	.4303789
#3	1.001925	.0059005	.4269875

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2570.799	89259.54	12951.64	3400.080	4635.107
Stddev	16.443	189.68	26.96	2.125	27.761
%RSD	.6396218	.2124999	.2081477	.0624956	.5989381
#1	2588.870	89265.96	12944.54	3397.955	4665.300
#2	2566.807	89066.74	12928.94	3402.205	4629.335
#3	2556.719	89445.93	12981.44	3400.080	4610.685

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01 Acquired: 8/7/2024 17:00:48 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.001741	-.004326	.0008645	.0010573	.0014085	.1017045	.1178899
Stddev	.001023	.000423	.0010675	.0000576	.0002733	.0033275	.0010116
%RSD	58.74943	9.768777	123.4758	5.452394	19.40076	3.271735	.8580985
#1	-.002114	-.003849	.0017094	.0010628	.0011036	.0996973	.1185993
#2	-.002525	-.004653	.0012194	.0009971	.0014906	.0998708	.1183391
#3	-.000584	-.004478	-.000335	.0011121	.0016313	.1055455	.1167315

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000196	-.000118	38.85129	.0015287	.0008873	.0021716	4.970221
Stddev	.000064	.000065	.13061	.0000575	.0001385	.0003715	.015769
%RSD	32.77928	55.47811	.3361862	3.759972	15.61390	17.10727	.3172754
#1	-.000232	-.000102	38.95228	.0014623	.0009413	.0024652	4.967217
#2	-.000236	-.000061	38.89780	.0015603	.0007299	.0017540	4.956169
#3	-.000122	-.000189	38.70378	.0015634	.0009907	.0022957	4.987276

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.553252	7.352373	.0023697	.0003788	159.4088	.0031138	.0201273
Stddev	.007626	.058728	.0001078	.0001999	.4456	.0012802	.0000223
%RSD	.4909446	.7987557	4.548734	52.76774	.2795388	41.11492	.1110080
#1	1.561635	7.410140	.0022456	.0005697	158.8943	.0016577	.0201191
#2	1.551397	7.292730	.0024227	.0001710	159.6579	.0040629	.0201102
#3	1.546726	7.354249	.0024406	.0003958	159.6741	.0036209	.0201526

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.578974	.0951990	.0004923	-.005588	.0011915	4.989642	.2590633
Stddev	.012436	.0011208	.0002205	.000405	.0002284	.009497	.0023527
%RSD	.1890257	1.177294	44.78915	7.251472	19.16702	.1903434	.9081704
#1	6.579135	.0964235	.0004963	-.005180	.0010056	4.999903	.2573133
#2	6.591329	.0942239	.0007108	-.005594	.0014464	4.987864	.2581387
#3	6.566459	.0949498	.0002698	-.005990	.0011225	4.981159	.2617379

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01 Acquired: 8/7/2024 17:00:48 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	2.544444	.0061032	.2582790
Stddev	.005663	.0004811	.0017159
%RSD	.2225510	7.882911	.6643471
#1	2.544779	.0055951	.2597742
#2	2.549932	.0061627	.2586573
#3	2.538621	.0065518	.2564056

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2660.485	91173.31	12741.43	3451.429	4885.127
Stddev	8.532	103.91	56.14	6.938	15.979
%RSD	.3206759	.1139720	.4406275	.2010279	.3271005
#1	2661.832	91282.00	12677.76	3454.320	4883.011
#2	2651.360	91162.98	12762.69	3456.455	4870.312
#3	2668.262	91074.94	12783.83	3443.513	4902.059

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01DUP Acquired: 8/7/2024 17:05:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002841	-.004134	.0012861	.0008077	.0004123	.1123474	.1147345
Stddev	.001026	.001077	.0000910	.0012323	.0010088	.0085077	.0043609
%RSD	36.12193	26.05864	7.076414	152.5701	244.7070	7.572680	3.800908
#1	-.001921	-.004986	.0012295	-.000123	-.000619	.1219091	.1167540
#2	-.003948	-.004492	.0012377	.000341	.000460	.1056143	.1097298
#3	-.002656	-.002923	.0013911	.002205	.001396	.1095189	.1177195

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000142	-.000115	37.81808	.0016869	.0009571	.0020290	4.795094
Stddev	.000018	.000095	1.16882	.0001084	.0001285	.0003687	.008078
%RSD	12.98579	82.78452	3.090628	6.425778	13.42658	18.17149	.1684681
#1	-.000151	-.000152	38.37867	.0015802	.0010265	.0018634	4.785910
#2	-.000154	-.000187	36.47456	.0016836	.0010360	.0017722	4.801100
#3	-.000121	-.000007	38.60100	.0017969	.0008088	.0024515	4.798271

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.515903	7.209701	.0022925	.0002670	153.7418	.0010134	.0191371
Stddev	.048585	.257622	.0001614	.0002338	.5761	.0021907	.0001877
%RSD	3.204998	3.573272	7.041261	87.57936	.3747516	216.1861	.9806153
#1	1.540056	7.324084	.0021076	.0004745	154.3339	-.000562	.0192337
#2	1.459975	6.914694	.0023651	.0000137	153.7083	.000087	.0192569
#3	1.547677	7.390326	.0024049	.0003127	153.1831	.003515	.0189209

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.375125	.0927807	.0005697	-.005645	.0018934	4.839634	.2564539
Stddev	.036312	.0030283	.0001643	.000816	.0002906	.006337	.0037095
%RSD	.5695915	3.263966	28.83352	14.45456	15.34814	.1309343	1.446438
#1	6.389916	.0946032	.0004909	-.004765	.0021684	4.838197	.2528534
#2	6.401706	.0892849	.0007585	-.005792	.0019225	4.834140	.2602635
#3	6.333751	.0944538	.0004597	-.006377	.0015894	4.846566	.2562449

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01DUP Acquired: 8/7/2024 17:05:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	2.507551	.0043386	.2515202
Stddev	.006595	.0009503	.0081214
%RSD	.2629944	21.90391	3.228922
#1	2.508879	.0032487	.2560799
#2	2.513381	.0049941	.2421436
#3	2.500393	.0047731	.2563370

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2686.259	93679.37	12921.74	3509.797	4939.715
Stddev	12.267	243.50	414.52	2.112	26.764
%RSD	.4566569	.2599239	3.207904	.0601826	.5418046
#1	2682.802	93485.28	12661.55	3507.392	4934.633
#2	2676.091	93600.24	13399.75	3510.646	4915.856
#3	2699.883	93952.59	12703.91	3511.353	4968.655

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01LX5 Acquired: 8/7/2024 17:09:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000766	-.001183	.0000658	-.001609	-.000107	.0285907	.0236303
Stddev	.000748	.001180	.0007514	.001128	.001033	.0056302	.0005924
%RSD	97.57923	99.76994	1142.135	70.09722	962.0513	19.69259	2.506938
#1	-.001273	-.001075	.0006011	-.002149	.000116	.0254236	.0242832
#2	.000092	-.000060	-.000793	-.000313	-.001234	.0252573	.0234805
#3	-.001118	-.002413	.000389	-.002364	.000796	.0350913	.0231272

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000031	-.000022	7.890441	-.000046	.0002145	.0001997	1.018793
Stddev	.000041	.000071	.033909	.000237	.0000648	.0001422	.012188
%RSD	133.1773	323.5588	.4297525	510.6763	30.19810	71.20708	1.196328
#1	-.000035	.000011	7.883366	.000227	.0002021	.0003636	1.005867
#2	-.000069	.000027	7.860628	-.000174	.0002846	.0001243	1.020436
#3	.000012	-.000104	7.927330	-.000192	.0001568	.0001110	1.030076

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3129266	1.440602	.0004998	.0001185	31.52275	.0018325	.0039581
Stddev	.0010121	.014594	.0000881	.0003054	.00896	.0005945	.0002708
%RSD	.3234149	1.013069	17.62260	257.5923	.0284187	32.44024	6.841178
#1	.3140526	1.423981	.0005977	-.000212	31.51310	.0024548	.0039073
#2	.3120929	1.446506	.0004748	.000391	31.53081	.0017722	.0042506
#3	.3126343	1.451320	.0004269	.000177	31.52433	.0012704	.0037163

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.314162	.0201184	-.000006	-.003922	.0008271	.9966508	.0503632
Stddev	.023773	.0003882	.000115	.000318	.0005404	.0099276	.0024006
%RSD	1.808979	1.929617	1930.698	8.116596	65.34145	.9960986	4.766576
#1	1.327560	.0205322	-.000118	-.004023	.0012545	.9943135	.0491576
#2	1.328212	.0197623	.000113	-.003565	.0010072	1.007539	.0531276
#3	1.286714	.0200606	-.000012	-.004177	.0002196	.988100	.0488043

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01LX5 Acquired: 8/7/2024 17:09:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.5167801	.0052266	.0522196
Stddev	.0032987	.0009596	.0003210
%RSD	.6383168	18.35938	.6146364
#1	.5205514	.0058779	.0523003
#2	.5144312	.0056773	.0518660
#3	.5153579	.0041247	.0524925

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2806.031	96151.81	13698.11	3660.661	5255.148
Stddev	13.985	81.86	73.62	11.550	28.920
%RSD	.4983869	.0851361	.5374236	.3155255	.5503163
#1	2791.426	96228.13	13635.69	3673.910	5226.328
#2	2807.367	96161.93	13779.29	3655.360	5254.950
#3	2819.299	96065.35	13679.35	3652.713	5284.167

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV02 Acquired: 8/7/2024 17:14:14 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	4.895758	5.133879	5.104507	4.852883	4.914654	9.762684	10.19056
Stddev	.015471	.024402	.021040	.012113	.015613	.030922	.02318
%RSD	.3160125	.4753109	.4121775	.2496119	.3176758	.3167390	.2274636
#1	4.907200	5.141001	5.106410	4.851159	4.909735	9.743157	10.16401
#2	4.878156	5.153927	5.082580	4.841724	4.902094	9.746559	10.20090
#3	4.901918	5.106708	5.124530	4.865766	4.932134	9.798336	10.20676

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2498357	2.515324	25.54699	1.007856	2.487538	1.235717	5.086609
Stddev	.0010817	.009324	.08476	.018439	.013338	.005065	.085941
%RSD	.4329802	.3706837	.3317727	1.829521	.5362040	.4098965	1.689551
#1	.2486914	2.519076	25.51549	1.014902	2.492928	1.235876	5.136649
#2	.2499743	2.504708	25.48250	1.021734	2.472348	1.230574	5.135805
#3	.2508415	2.522186	25.64299	.986933	2.497337	1.240701	4.987375

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.526300	24.76349	2.509085	1.247635	24.15815	2.493825	2.561423
Stddev	.015777	.15933	.011885	.020188	.41753	.021329	.044253
%RSD	.6245074	.6433874	.4736930	1.618114	1.728337	.8552658	1.727658
#1	2.523104	24.78061	2.513258	1.257521	24.41311	2.490852	2.580504
#2	2.512366	24.59630	2.495676	1.260974	24.38505	2.474138	2.592934
#3	2.543431	24.91357	2.518321	1.224409	23.67630	2.516484	2.510831

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.54410	4.885660	5.047881	5.025715	5.058047	4.902919	5.119357
Stddev	.41217	.024953	.020198	.020549	.021107	.072362	.025597
%RSD	1.679323	.5107458	.4001321	.4088743	.4173046	1.475899	.4999962
#1	24.73782	4.864871	5.043976	5.029064	5.056869	4.926206	5.135089
#2	24.82373	4.878777	5.029921	5.003697	5.037553	4.960770	5.089821
#3	24.07075	4.913332	5.069747	5.044384	5.079719	4.821780	5.133160

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV02 Acquired: 8/7/2024 17:14:14 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	4.681528	4.661492	5.096903
Stddev	.022243	.018895	.037801
%RSD	.4751237	.4053394	.7416399
#1	4.701021	4.654861	5.070759
#2	4.657298	4.646807	5.079704
#3	4.686267	4.682809	5.140244

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2705.459	94768.41	13405.29	3608.988	4885.182
Stddev	7.397	1801.94	34.35	64.636	16.547
%RSD	.2734165	1.901415	.2562092	1.790965	.3387267
#1	2705.729	94027.15	13441.45	3588.082	4879.582
#2	2712.718	93455.34	13401.32	3557.393	4903.802
#3	2697.931	96822.76	13373.10	3681.490	4872.161

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB02 Acquired: 8/7/2024 17:18:33 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0009152	-.000820	.0003238	-.001479	.0006691	.0053632	.0004554
Stddev	.0004497	.000801	.0007685	.000749	.0009901	.0048436	.0009116
%RSD	49.13601	97.63833	237.3627	50.60586	147.9877	90.31050	200.1846
#1	.0006481	-.001442	.0009452	-.000787	.0013944	.0006565	-.000166
#2	.0014344	-.001102	.0005616	-.002274	.0010717	.0051003	.000030
#3	.0006631	.000083	-.000536	-.001376	-.000459	.0103328	.001502

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000342	-.000021	.0013224	.0000732	.0001261	-.000335	-.002244
Stddev	.0000499	.000016	.0072472	.0000451	.0000961	.000419	.003591
%RSD	146.0391	77.75330	548.0403	61.67157	76.21075	125.1121	160.0084
#1	.0000117	-.000012	-.006253	.0000834	.0002367	-.000815	.000811
#2	-.000001	-.000011	.008189	.0001123	.0000643	-.000142	-.006200
#3	.000091	-.000040	.002032	.0000238	.0000771	-.000047	-.001345

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001903	-.002279	-.000066	.0001764	.0191985	.0005743	.0000274
Stddev	.0001957	.016368	.000129	.0001096	.0059285	.0016971	.0000530
%RSD	102.8155	718.2582	194.9548	62.09811	30.87991	295.5152	193.7560
#1	.0004049	-.015355	-.000037	.0002704	.0135399	.0025014	.0000083
#2	.0001444	.016078	-.000208	.0002027	.0253642	-.000697	-.000013
#3	.0000217	-.007560	.000046	.0000561	.0186913	-.000081	.000087

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002729	.0100291	.0002247	-.003396	.0004704	.0029321	-.002554
Stddev	.017690	.0002953	.0001875	.000279	.0002810	.0041684	.002122
%RSD	648.1359	2.944852	83.41783	8.202740	59.74426	142.1641	83.07130
#1	-.023153	.0103321	.0004388	-.003691	.0007912	.0047761	-.000115
#2	.007771	.0097420	.0000899	-.003360	.0003521	-.001840	-.003571
#3	.007195	.0100133	.0001455	-.003137	.0002679	.005860	-.003977

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB02 Acquired: 8/7/2024 17:18:33 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002767	.0008179	-.000000
Stddev	.002344	.0022315	.000010
%RSD	84.71296	272.8296	10214.70
#1	-.005149	.0015181	.000011
#2	-.000464	-.001680	-.000005
#3	-.002687	.002615	-.000007

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2833.833	97074.23	13163.51	3747.365	5364.182
Stddev	13.944	345.60	93.02	11.402	25.696
%RSD	.4920675	.3560159	.7066779	.3042563	.4790219
#1	2846.040	96931.95	13064.02	3748.031	5383.277
#2	2836.821	96822.47	13248.33	3735.646	5374.301
#3	2818.636	97468.25	13178.19	3758.420	5334.967

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR2 Acquired: 8/7/2024 18:15:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0135203	-.010643	229.7273	.0036942	-.002398	.1009736
Stddev	.0013773	.001307	.3143	.0005160	.001034	.0076063
%RSD	10.18715	12.28202	.1368295	13.96702	43.13007	7.532924
#1	.0141091	-.011596	229.3649	.0041646	-.003158	.1004644
#2	.0119464	-.009153	229.8907	.0031424	-.001220	.0936348
#3	.0145054	-.011179	229.9262	.0037758	-.002817	.1088217

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 89.73364	-.001909	-.006052	.2292111	.0253384	-.027666
Stddev	.92852	.000014	.000040	.0059909	.0004721	.000156
%RSD	1.034755	.7163412	.6578382	2.613720	1.862970	.5641833
#1	89.80057	-.001925	-.006046	.2319691	.0248511	-.027530
#2	90.62688	-.001898	-.006015	.2223379	.0257935	-.027836
#3	88.77346	-.001905	-.006094	.2333264	.0253706	-.027631

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	258.5760	.1162616	43.49239	-.022769	F 44.84289	.0022675
Stddev	.7960	.0027682	.07405	.006518	.04191	.0001427
%RSD	.3078464	2.380972	.1702535	28.62735	.0934662	6.295108
#1	259.4838	.1166611	43.42220	-.021994	44.79786	.0024178
#2	258.2470	.1188082	43.56977	-.029641	44.85005	.0021337
#3	257.9972	.1133153	43.48519	-.016673	44.88076	.0022511

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.059606	-.003307	F 23.82602	1.345481	.0019992	.0031503
Stddev	.041365	.001100	.11035	.049528	.0007097	.0002588
%RSD	3.903802	33.27036	.4631683	3.681089	35.50076	8.216322
#1	1.084902	-.002885	23.93764	1.392910	.0012247	.0028516
#2	1.082045	-.002480	23.71697	1.349442	.0021544	.0032912
#3	1.011870	-.004555	23.82346	1.294091	.0026184	.0033081

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR2 Acquired: 8/7/2024 18:15:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0137399	-.047029	-.008529	-.291510	-.046009	.0008491
Stddev	.0007189	.000632	.002282	.005612	.002375	.0007609
%RSD	5.232403	1.344809	26.75498	1.925203	5.163114	89.61034
#1	.0136212	-.046657	-.011128	-.285065	-.043361	.0001282
#2	.0145108	-.046670	-.006856	-.294140	-.046712	.0016445
#3	.0130877	-.047759	-.007602	-.295323	-.047954	.0007746

Elem	Sr4077
Units	ppm
Avg	.0019125
Stddev	.0000477
%RSD	2.494950
#1	.0019651
#2	.0019006
#3	.0018719

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2511.165	97429.41	13168.97	3571.994	5143.108
Stddev	3.553	369.37	81.66	6.584	13.330
%RSD	.1414820	.3791131	.6200591	.1843306	.2591862
#1	2514.861	97349.02	13099.21	3567.900	5158.334
#2	2510.859	97106.86	13148.93	3568.493	5133.537
#3	2507.776	97832.35	13258.78	3579.589	5137.455

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-02 Acquired: 8/7/2024 18:20:27 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.7176244	1.767243	.9057799	1.701784	.7562700	2.008577	.3100484
Stddev	.0036564	.014009	.0047496	.012246	.0040371	.005591	.0007431
%RSD	.5095199	.7927236	.5243671	.7195693	.5338119	.2783444	.2396743
#1	.7136037	1.752708	.9005039	1.687876	.7519579	2.012064	.3097017
#2	.7185189	1.768359	.9071210	1.706528	.7568925	2.011539	.3109016
#3	.7207505	1.780660	.9097147	1.710947	.7599597	2.002129	.3095421

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1905821	.1794821	40.36838	.3919728	.1872921	.2796960	8.045790
Stddev	.0008848	.0015602	.02514	.0034048	.0019499	.0022012	.074368
%RSD	.4642508	.8692901	.0622668	.8686256	1.041083	.7870101	.9243119
#1	.1914234	.1777942	40.38410	.3881552	.1850533	.2771641	7.965743
#2	.1896595	.1797805	40.38164	.3946951	.1882041	.2811562	8.112740
#3	.1906633	.1808716	40.33939	.3930681	.1886188	.2807676	8.058887

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.774675	9.186820	.4726336	.0679693	160.1264	.2929637	.2280801
Stddev	.003475	.038953	.0038843	.0007007	.7649	.0032953	.0012999
%RSD	.1958110	.4240139	.8218380	1.030882	.4776764	1.124798	.5699414
#1	1.778452	9.229885	.4686302	.0671788	159.6417	.2921113	.2266773
#2	1.773958	9.154045	.4728842	.0685137	161.0082	.2966013	.2292441
#3	1.771614	9.176530	.4763866	.0682154	159.7294	.2901783	.2283188

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.11828	.3563257	.4097895	.6618321	.2000486	5.892113	5.906122
Stddev	.13376	.0018585	.0026421	.0068105	.0007594	.051311	.062600
%RSD	.8298593	.5215671	.6447443	1.029034	.3796035	.8708474	1.059915
#1	15.99074	.3583303	.4068938	.6539689	.1993109	5.834200	5.834755
#2	16.25749	.3546599	.4104054	.6656623	.2008280	5.931907	5.931870
#3	16.10660	.3559871	.4120692	.6658651	.2000068	5.910231	5.951743

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-02 Acquired: 8/7/2024 18:20:27 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	2.695853	.1706456	.4573908
Stddev	.032210	.0003255	.0013353
%RSD	1.194782	.1907220	.2919376
#1	2.659529	.1703296	.4588505
#2	2.707095	.1709798	.4570909
#3	2.720935	.1706274	.4562309

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2628.807	92297.34	13049.23	3459.284	4812.667
Stddev	11.275	377.63	78.92	6.535	25.859
%RSD	.4288884	.4091454	.6048064	.1889106	.5373147
#1	2641.359	92627.57	12958.28	3457.400	4842.510
#2	2619.537	91885.62	13089.80	3453.898	4796.871
#3	2625.526	92378.84	13099.62	3466.554	4798.622

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-03 Acquired: 8/7/2024 18:24:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.7530533	1.879668	.9540541	1.777888	.7828631	2.098021	.3223955
Stddev	.0042591	.014096	.0014944	.007168	.0031845	.014779	.0016113
%RSD	.5655807	.7499149	.1566383	.4031531	.4067737	.7044408	.4998065
#1	.7547348	1.881325	.9526325	1.775285	.7802011	2.087579	.3223940
#2	.7482101	1.892862	.9539179	1.772385	.7819972	2.114932	.3240076
#3	.7562150	1.864817	.9556120	1.785993	.7863910	2.091553	.3207849

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2038357	.1896487	41.29357	.4100529	.1981496	.2927984	8.218837
Stddev	.0005015	.0005927	.14668	.0026842	.0005144	.0015000	.048979
%RSD	.2460355	.3125028	.3552118	.6545912	.2596015	.5123018	.5959405
#1	.2042269	.1897874	41.30818	.4116164	.1980745	.2923800	8.210300
#2	.2040097	.1889990	41.43239	.4115888	.1976768	.2915520	8.271523
#3	.2032703	.1901597	41.14013	.4069535	.1986973	.2944632	8.174687

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.811924	9.456084	.4975020	.0710136	160.2292	.3090486	.2375753
Stddev	.009425	.081781	.0006725	.0004878	1.1104	.0017960	.0016010
%RSD	.5201908	.8648478	.1351688	.6869469	.6930189	.5811489	.6738932
#1	1.811044	9.439424	.4977999	.0708289	160.2111	.3086631	.2380433
#2	1.821759	9.544911	.4967321	.0715669	161.3486	.3110060	.2388901
#3	1.802969	9.383915	.4979742	.0706452	159.1280	.3074766	.2357924

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.58503	.3753553	.4253774	.6880172	.2067583	5.929796	6.154587
Stddev	.14253	.0013018	.0006162	.0025341	.0022188	.044967	.017484
%RSD	.8594070	.3468188	.1448596	.3683145	1.073138	.7583159	.2840818
#1	16.61809	.3768321	.4247479	.6858471	.2070454	5.900103	6.166204
#2	16.70814	.3743741	.4254047	.6874024	.2088195	5.981531	6.134479
#3	16.42888	.3748598	.4259794	.6908021	.2044099	5.907754	6.163078

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-03 Acquired: 8/7/2024 18:24:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	2.653894	.1762400	.4724996
Stddev	.003656	.0013959	.0024762
%RSD	.1377451	.7920235	.5240585
#1	2.657972	.1751149	.4720007
#2	2.650911	.1778021	.4751872
#3	2.652798	.1758030	.4703108

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2676.862	93043.25	13031.26	3498.275	4903.956
Stddev	11.993	424.81	20.73	11.766	15.913
%RSD	.4480245	.4565746	.1591137	.3363411	.3244995
#1	2689.680	92987.28	13020.63	3502.430	4919.880
#2	2674.992	92649.20	13018.00	3484.995	4903.935
#3	2665.913	93493.27	13055.15	3507.400	4888.053

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01A Acquired: 8/7/2024 18:33:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.7023645	1.732868	.8869900	1.654630	.7440037	1.913258	.2862744
Stddev	.0052726	.014162	.0109879	.012869	.0065868	.142578	.0217107
%RSD	.7506952	.8172669	1.238779	.7777637	.8853129	7.452113	7.583884
#1	.6964088	1.716633	.8747858	1.639872	.7367273	1.999360	.2995962
#2	.7064370	1.739289	.8960965	1.663515	.7495592	1.748682	.2612218
#3	.7042476	1.742683	.8900876	1.660502	.7457247	1.991732	.2980051

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1831402	.1777687	36.75425	.3879442	.1870162	.2748460	7.682022
Stddev	.0117744	.0020409	2.68981	.0011818	.0021719	.0018567	.085815
%RSD	6.429148	1.148053	7.318355	.3046402	1.161329	.6755570	1.117086
#1	.1897782	.1754199	38.30390	.3872118	.1846231	.2727092	7.755537
#2	.1695456	.1791090	33.64833	.3893077	.1888623	.2760663	7.587724
#3	.1900969	.1787772	38.31050	.3873133	.1875631	.2757624	7.702803

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.609142	8.399464	.4677947	.0671498	149.3443	.2750053	.2248427
Stddev	.118323	.605229	.0058349	.0003789	.3323	.0216432	.0013325
%RSD	7.353196	7.205567	1.247328	.5642877	.2225232	7.870090	.5926429
#1	1.677758	8.784073	.4611828	.0675859	148.9701	.2890085	.2237551
#2	1.472514	7.701829	.4722224	.0669016	149.6052	.2500772	.2263291
#3	1.677154	8.712492	.4699789	.0669617	149.4575	.2859302	.2244439

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.52364	.3345079	.4117046	.6489941	.1891654	5.527527	5.676680
Stddev	.15746	.0208438	.0042558	.0081766	.0141442	.063181	.068435
%RSD	1.014331	6.231190	1.033711	1.259889	7.477137	1.143024	1.205553
#1	15.66395	.3462597	.4068025	.6396145	.1975319	5.578558	5.597764
#2	15.35334	.3104417	.4144552	.6546192	.1728348	5.456859	5.712579
#3	15.55363	.3468223	.4138559	.6527485	.1971295	5.547164	5.719696

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01A Acquired: 8/7/2024 18:33:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	2.404723	.1559343	.4200114
Stddev	.028613	.0123243	.0318411
%RSD	1.189855	7.903534	7.581004
#1	2.372104	.1645212	.4384133
#2	2.425581	.1418130	.3832445
#3	2.416485	.1614688	.4383764

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2696.245	92816.43	13670.19	3469.518	4984.383
Stddev	19.003	351.79	946.28	10.727	47.266
%RSD	.7047996	.3790116	6.922201	.3091694	.9482759
#1	2718.023	92410.40	13101.79	3458.428	5037.575
#2	2683.030	93029.72	14762.56	3470.286	4947.202
#3	2687.682	93009.18	13146.22	3479.840	4968.374

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-04 Acquired: 8/7/2024 18:38:12 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002295	-.004012	-.000011	.0015831	.0030966	.0913062
Stddev	.000882	.001155	.000412	.0000757	.0009259	.0079925
%RSD	38.41285	28.79282	3663.753	4.780614	29.90217	8.753510
#1	-.002265	-.004155	-.000442	.0016529	.0036359	.0851683
#2	-.001429	-.005090	.000379	.0015937	.0020274	.1003438
#3	-.003191	-.002792	.000029	.0015027	.0036264	.0884066

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1644325	-.000099	.0000166	70.25034	.0011287	.0094538
Stddev	.0014504	.000057	.0000281	.39439	.0001646	.0001741
%RSD	.8820444	57.70064	169.0270	.5614087	14.58758	1.841597
#1	.1632957	-.000077	.0000294	70.15631	.0013117	.0092708
#2	.1639360	-.000056	.0000360	69.91146	.0009925	.0096174
#3	.1660660	-.000163	-.000016	70.68325	.0010818	.0094733

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005635	8.167336	2.048104	16.13867	.0018971	.0001761
Stddev	.0003848	.022965	.011950	.10703	.0000411	.0002899
%RSD	68.29097	.2811830	.5834763	.6632108	2.168232	164.6041
#1	.0002250	8.155097	2.043374	16.09720	.0019351	.0001119
#2	.0004835	8.193828	2.039242	16.05857	.0019026	-.000076
#3	.0009820	8.153083	2.061695	16.26023	.0018534	.000493

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	373.3099	.0021295	.0454913	12.65069	.1164012	.0001009
Stddev	2.7325	.0012323	.0000787	.04147	.0010589	.0000717
%RSD	.7319746	57.86884	.1730636	.3278167	.9097309	71.00249
#1	373.9609	.0010516	.0454139	12.65943	.1154789	.0001218
#2	370.3106	.0034730	.0455713	12.60555	.1161670	.0001598
#3	375.6581	.0018640	.0454887	12.68710	.1175576	.0000211

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-04 Acquired: 8/7/2024 18:38:12 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.006266	-.000743	4.437786	.4790917	F 16.48325	.0069215
Stddev	.000318	.000677	.007954	.0027004	.02104	.0017833
%RSD	5.081406	91.19001	.1792254	.5636446	.1276574	25.76504
#1	-.006234	-.000006	4.445163	.4808882	16.49556	.0048829
#2	-.006599	-.000883	4.438834	.4759863	16.45896	.0081924
#3	-.005965	-.001339	4.429360	.4804006	16.49524	.0076892

Elem	Sr4077
Units	ppm
Avg	.4856174
Stddev	.0028538
%RSD	.5876705
#1	.4857304
#2	.4827088
#3	.4884131

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2553.751	92582.51	12755.99	3454.153	4533.046
Stddev	1.276	43.35	72.82	5.233	.581
%RSD	.0499486	.0468188	.5708377	.1514997	.0128077
#1	2553.851	92544.59	12750.17	3459.138	4533.713
#2	2554.974	92629.76	12831.53	3448.703	4532.770
#3	2552.429	92573.17	12686.25	3454.619	4532.655

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3443-01 Acquired: 8/7/2024 18:42:43 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.003083	-.002628	.0028164	.0007365	.0027036	12.06319
Stddev	.001467	.000638	.0004199	.0023011	.0008954	.05412
%RSD	47.57112	24.28310	14.90826	312.4452	33.12060	.4486343
#1	-.001476	-.003364	.0025507	.0016671	.0021202	12.12561
#2	-.003424	-.002276	.0033005	-.001884	.0037345	12.02941
#3	-.004349	-.002242	.0025981	.002427	.0022559	12.03456

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0290957	-.000079	-.000003	40.91678	.0854025	.0026894
Stddev	.0004178	.000057	.000053	.01446	.0004455	.0001649
%RSD	1.436129	71.95493	1548.037	.0353301	.5216452	6.130274
#1	.0286626	-.000117	-.000012	40.92656	.0854167	.0025709
#2	.0291282	-.000108	.000053	40.90017	.0858407	.0026197
#3	.0294964	-.000014	-.000051	40.92360	.0849500	.0028777

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3568542	2.067872	.0385686	12.66479	.0638173	.0002448
Stddev	.0007386	.017351	.0005711	.04998	.0002702	.0000335
%RSD	.2069834	.8390920	1.480700	.3946488	.4234225	13.67313
#1	.3560978	2.048901	.0381242	12.63194	.0636282	.0002081
#2	.3568909	2.071775	.0383690	12.64013	.0636968	.0002524
#3	.3575737	2.082939	.0392127	12.72231	.0641268	.0002737

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	359.4202	.0020157	1.643699	46.98219	1.006890	.0091419
Stddev	1.9063	.0013356	.007443	.19561	.003424	.0000347
%RSD	.5303777	66.25950	.4528280	.4163582	.3400830	.3796816
#1	361.3041	.0025380	1.640540	47.17686	1.005565	.0091669
#2	357.4923	.0004979	1.638357	46.98405	1.004327	.0091566
#3	359.4642	.0030112	1.652201	46.78565	1.010779	.0091023

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3443-01 Acquired: 8/7/2024 18:42:43 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0289670	-.000914	3.523942	F 11.64807	F 153.4612	.0096917
Stddev	.0001989	.000536	.002726	.02189	.3179	.0012893
%RSD	.6867144	58.62878	.0773620	.1879534	.2071630	13.30342
#1	.0288599	-.001444	3.525625	11.65304	153.8208	.0103222
#2	.0288446	-.000372	3.525404	11.66705	153.3452	.0105444
#3	.0291965	-.000926	3.520797	11.62412	153.2175	.0082084

Elem	Sr4077
Units	ppm
Avg	.1866675
Stddev	.0007263
%RSD	.3890855
#1	.1874488
#2	.1860129
#3	.1865407

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2601.353	91795.84	13362.67	3453.115	4649.369
Stddev	12.657	264.90	44.13	6.880	7.724
%RSD	.4865528	.2885758	.3302111	.1992379	.1661357
#1	2614.346	91611.00	13318.40	3453.664	4656.669
#2	2600.652	91677.19	13406.64	3459.704	4650.159
#3	2589.061	92099.32	13362.96	3445.977	4641.281

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3451-01 Acquired: 8/7/2024 18:47:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0006023	-.003505	.0059157	.0014224	.0012686	.3222773	.0952579
Stddev	.0006469	.000578	.0007543	.0012286	.0008430	.0159260	.0019014
%RSD	107.4158	16.50283	12.75034	86.37413	66.45219	4.941698	1.996034
#1	.0002177	-.004160	.0056639	.0004166	.0020428	.3039442	.0954102
#2	.0013492	-.003065	.0067636	.0027917	.0013925	.3301949	.0932850
#3	.0002399	-.003290	.0053195	.0010589	.0003705	.3326928	.0970786

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000108	-.000121	28.36200	.0018079	.0009044	.0053841	5.846488
Stddev	.000062	.000110	.52958	.0003138	.0000480	.0001531	.026736
%RSD	57.44055	90.92679	1.867225	17.35880	5.311668	2.844073	.4573001
#1	-.000153	-.000134	28.29889	.0021131	.0008989	.0052080	5.835738
#2	-.000037	-.000005	27.86679	.0014861	.0008594	.0054584	5.826799
#3	-.000133	-.000225	28.92030	.0018245	.0009550	.0054860	5.876925

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6720243	4.605694	.0020960	.0004288	92.59170	.0057109	.0252302
Stddev	.0141485	.087826	.0003129	.0001489	.13648	.0007491	.0002328
%RSD	2.105357	1.906898	14.92792	34.71645	.1473948	13.11684	.9228658
#1	.6694004	4.567336	.0017531	.0002605	92.63577	.0064790	.0254852
#2	.6593714	4.543571	.0021688	.0004829	92.43864	.0056714	.0250288
#3	.6873011	4.706174	.0023661	.0005431	92.70070	.0049824	.0251768

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.584466	.0952135	.0010688	-.004939	.0055260	3.335363	.2121433
Stddev	.032930	.0014731	.0000987	.000142	.0003958	.026907	.0014979
%RSD	.7182886	1.547193	9.238340	2.877871	7.163214	.8067186	.7060782
#1	4.622473	.0952971	.0009942	-.004801	.0058626	3.305224	.2111210
#2	4.564497	.0937003	.0011808	-.005085	.0056255	3.343896	.2114462
#3	4.566427	.0966430	.0010314	-.004933	.0050899	3.356968	.2138627

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3451-01 Acquired: 8/7/2024 18:47:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	4.206540	.0023358	.1913931
Stddev	.006981	.0012237	.0031308
%RSD	.1659484	52.38669	1.635791
#1	4.204876	.0018297	.1916704
#2	4.214202	.0014464	.1881329
#3	4.200541	.0037314	.1943760

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2713.020	93314.21	13613.43	3509.915	5028.052
Stddev	9.384	296.79	243.11	20.363	19.280
%RSD	.3458883	.3180590	1.785780	.5801475	.3834475
#1	2704.181	93040.35	13550.75	3488.019	5010.356
#2	2712.010	93629.57	13881.74	3528.283	5025.200
#3	2722.868	93272.71	13407.80	3513.443	5048.599

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV03 Acquired: 8/7/2024 18:51:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.716102	4.988259	4.950342	4.666678	4.776040	9.392072
Stddev	.031280	.006447	.032507	.029365	.033850	.014605
%RSD	.6632638	.1292351	.6566612	.6292460	.7087459	.1555034
#1	4.687075	4.983148	4.925730	4.637479	4.746340	9.405751
#2	4.712002	4.995502	4.938104	4.666351	4.768883	9.393774
#3	4.749231	4.986128	4.987192	4.696206	4.812896	9.376690

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.844111	.2518247	2.438146	24.71112	.9959542	2.426973
Stddev	.080295	.0005956	.015644	.04125	.0053665	.016381
%RSD	.8156626	.2365245	.6416406	.1669445	.5388264	.6749609
#1	9.932265	.2521886	2.426821	24.73516	.9973099	2.415134
#2	9.775157	.2511373	2.431620	24.66349	1.000513	2.420117
#3	9.824912	.2521482	2.455996	24.73472	.990040	2.445669

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.199036	4.922774	2.455917	24.18515	2.436072	1.238580
Stddev	.011676	.006828	.002425	.06593	.015597	.001316
%RSD	.9738005	.1386991	.0987271	.2726235	.6402403	.1062705
#1	1.188543	4.930285	2.456765	24.16893	2.424922	1.239572
#2	1.196951	4.921094	2.453182	24.12884	2.429400	1.239081
#3	1.211614	4.916943	2.457804	24.25768	2.453896	1.237087

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.63713	2.418437	2.501466	24.23197	4.905832	4.967234
Stddev	.04239	.002036	.011504	.02577	.008893	.029499
%RSD	.1793390	.0841839	.4598717	.1063579	.1812744	.5938724
#1	23.67727	2.418071	2.508591	24.25573	4.915921	4.939168
#2	23.64133	2.416610	2.507611	24.23562	4.899127	4.964552
#3	23.59280	2.420632	2.488195	24.20457	4.902450	4.997983

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV03 Acquired: 8/7/2024 18:51:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.861240	4.894870	4.733723	4.884098	F 4.439280	F 4.322959
Stddev	.026609	.011567	.025703	.030845	.037183	.008950
%RSD	.5473780	.2363016	.5429727	.6315443	.8375949	.2070296
#1	4.842780	4.902315	4.708590	4.853008	4.414902	4.333195
#2	4.849198	4.881545	4.732618	4.884595	4.420861	4.319072
#3	4.891741	4.900752	4.759961	4.914692	4.482077	4.316610

Elem	Sr4077
Units	ppm
Avg	4.896201
Stddev	.017178
%RSD	.3508453
#1	4.893584
#2	4.880481
#3	4.914537

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2789.040	94570.96	13297.07	3619.921	5078.113
Stddev	21.278	56.31	31.47	4.934	39.595
%RSD	.7629193	.0595441	.2366867	.1363008	.7797143
#1	2808.174	94514.18	13260.79	3614.925	5110.441
#2	2792.821	94571.89	13317.07	3620.048	5089.949
#3	2766.125	94626.79	13313.35	3624.791	5033.951

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB03 Acquired: 8/7/2024 18:55:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000100	.0008465	-.000327	-.000182	.0005633	.0070506	-.001617
Stddev	.000657	.0002679	.000917	.001762	.0006536	.0034893	.001313
%RSD	660.0981	31.65151	280.6403	966.3903	116.0322	49.48933	81.19174
#1	-.000001	.0008749	.000090	-.002170	.0001422	.0110597	-.001905
#2	-.000801	.0005655	.000308	.000434	.0002315	.0053930	-.000184
#3	.000503	.0010990	-.001379	.001189	.0013163	.0046990	-.002763

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000352	-.000009	-.005233	.0000832	.0001984	.0001804	-.000790
Stddev	.0000412	.000075	.003201	.0001407	.0001228	.0001688	.001467
%RSD	117.0090	797.9349	61.16341	169.0720	61.89744	93.55058	185.6436
#1	.0000090	-.000001	-.004958	-.000067	.0002245	.0001301	.000902
#2	.0000139	.000061	-.008562	.000211	.0003061	.0000425	-.001701
#3	.0000828	-.000089	-.002179	.000106	.0000647	.0003687	-.001571

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000229	-.006234	-.000080	-.000015	.5090810	.0006119	-.000204
Stddev	.000204	.014552	.000118	.000153	.0228407	.0010545	.000122
%RSD	88.99752	233.4268	146.5993	989.2887	4.486643	172.3411	59.64150
#1	-.000021	-.008518	-.000128	-.000058	.4831905	.0017935	-.000079
#2	-.000429	-.019509	.000054	.000154	.5176726	-.000233	-.000321
#3	-.000237	.009324	-.000167	-.000142	.5263800	.000275	-.000212

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8344575	.0040639	.0002669	-.003414	-.000225	-.007415	-.004557
Stddev	.0311816	.0004957	.0001939	.000515	.000782	.002555	.000367
%RSD	3.736752	12.19795	72.64187	15.08702	347.1210	34.46495	8.051713
#1	.8061688	.0046191	.0004905	-.004004	-.000755	-.007565	-.004324
#2	.8293119	.0039066	.0001630	-.003057	.000672	-.009891	-.004367
#3	.8678919	.0036659	.0001471	-.003181	-.000593	-.004787	-.004980

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB03 Acquired: 8/7/2024 18:55:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.001850	.0029548	-.000066
Stddev	.000447	.0002331	.000010
%RSD	24.18780	7.888046	15.03376
#1	-.002242	.0027656	-.000063
#2	-.001945	.0028836	-.000057
#3	-.001362	.0032151	-.000077

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2717.416	103644.1	13797.95	3904.276	5032.866
Stddev	24.415	323.8	62.83	8.994	54.577
%RSD	.8984513	.3123970	.4553314	.2303705	1.084404
#1	2745.078	103719.0	13857.56	3894.134	5093.364
#2	2708.296	103289.4	13732.34	3907.407	5017.903
#3	2698.874	103923.8	13803.97	3911.286	4987.332

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR1 Acquired: 8/7/2024 19:07:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0419043	-.012289	.0492429	-.115214	-.002260	1988.991	.0157141
Stddev	.0079528	.003413	.0038997	.005546	.005091	14.391	.0005246
%RSD	18.97847	27.77458	7.919374	4.813397	225.2593	.7235155	3.338527
#1	.0328227	-.016052	.0533994	-.116634	-.006593	2005.376	.0151821
#2	.0476241	-.011423	.0486647	-.119911	.003347	1983.197	.0157291
#3	.0452660	-.009392	.0456645	-.109096	-.003533	1978.401	.0162310

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0069283	.0696885	1646.331	.0243813	.0397801	-.019714	907.7457
Stddev	.0000923	.0021672	16.180	.0001140	.0004876	.009507	3.9674
%RSD	1.332333	3.109853	.9827863	.4677797	1.225744	48.22263	.4370588
#1	.0070041	.0714574	1662.362	.0242802	.0403151	-.012490	903.6156
#2	.0068255	.0672711	1646.623	.0243588	.0396645	-.030484	911.5274
#3	.0069553	.0703372	1630.007	.0245049	.0393607	-.016169	908.0941

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0108810	1734.212	.0410891	.0114347	1806.618	.0139198	.0478760
Stddev	.0007811	23.490	.0003866	.0004829	3.001	.0008998	.0008252
%RSD	7.178866	1.354519	.9410017	4.222983	.1661310	6.464049	1.723672
#1	.0117563	1760.554	.0415132	.0119506	1803.615	.0131780	.0482926
#2	.0102549	1715.440	.0409978	.0109935	1809.618	.0149207	.0484099
#3	.0106317	1726.641	.0407562	.0113600	1806.622	.0136606	.0469256

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1407.191	.0371593	-.000003	-.000205	-.053455	.1333908	.0601927
Stddev	1.388	.0164595	.001806	.000989	.001969	.0083745	.0031629
%RSD	.0986470	44.29455	70206.63	482.3052	3.684049	6.278145	5.254648
#1	1408.319	.0223238	-.001872	.000451	-.054154	.1400213	.0626941
#2	1405.641	.0548653	.001731	-.001342	-.051232	.1239797	.0612466
#3	1407.615	.0342887	.000133	.000276	-.054980	.1361714	.0566374

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR1 Acquired: 8/7/2024 19:07:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.199870	.3125616	-.895953
Stddev	.007291	.0013233	.003936
%RSD	3.647731	.4233703	.4393241
#1	-.198976	.3111114	-.891844
#2	-.193068	.3137037	-.899690
#3	-.207566	.3128698	-.896325

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1840.516	69187.81	11116.11	2492.633	2952.148
Stddev	15.525	373.55	74.16	22.427	25.511
%RSD	.8435366	.5399099	.6671112	.8997355	.8641598
#1	1829.153	69598.54	11040.70	2504.374	2934.795
#2	1858.206	68868.37	11188.95	2466.773	2981.440
#3	1834.189	69096.52	11118.67	2506.752	2940.210

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-01 Acquired: 8/7/2024 19:12:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.003215	-.003699	.0019290	-.001494	.0007554	.0821130	.0032424
Stddev	.002605	.000875	.0003370	.001561	.0008593	.0022862	.0006438
%RSD	81.00304	23.65892	17.46955	104.5227	113.7627	2.784205	19.85463
#1	-.001838	-.004534	.0022096	.000302	.0001184	.0845739	.0028179
#2	-.006219	-.003775	.0020222	-.002529	.0017327	.0817099	.0039831
#3	-.001589	-.002789	.0015552	-.002254	.0004149	.0800551	.0029262

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000868	.0000756	6.683393	.0010197	.0103924	.0041586	14.56159
Stddev	.0000304	.0001330	.035837	.0002170	.0000970	.0001691	.13764
%RSD	34.99713	175.8786	.5362113	21.28227	.9337824	4.066786	.9452357
#1	.0000831	.0001286	6.666737	.0007777	.0102804	.0042153	14.41445
#2	.0000585	-.000076	6.724527	.0011970	.0104483	.0042921	14.68720
#3	.0001189	.000174	6.658915	.0010845	.0104486	.0039684	14.58311

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6120579	2.982767	.0106335	.0005162	13.66353	.0026377	.0388074
Stddev	.0031069	.017366	.0002251	.0002467	.08861	.0014998	.0003110
%RSD	.5076197	.5822130	2.116980	47.79612	.6485091	56.85921	.8014379
#1	.6118929	3.002819	.0108443	.0002355	13.56797	.0043483	.0390752
#2	.6152440	2.972575	.0103964	.0006147	13.74299	.0015484	.0384663
#3	.6090367	2.972908	.0106598	.0006985	13.67961	.0020164	.0388809

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.274603	.0078482	.0001449	-.004686	.0016824	4.641398	.0037430
Stddev	.038003	.0001002	.0000871	.000226	.0005183	.029369	.0009064
%RSD	2.981563	1.277141	60.07372	4.813480	30.80520	.6327540	24.21524
#1	1.231021	.0079313	.0000449	-.004574	.0020940	4.611270	.0046155
#2	1.300828	.0077369	.0001859	-.004539	.0011004	4.669943	.0028062
#3	1.291961	.0078764	.0002040	-.004946	.0018529	4.642980	.0038072

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-01 Acquired: 8/7/2024 19:12:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.7568199	.0001410	.0287921
Stddev	.0038593	.0004675	.0003412
%RSD	.5099308	331.4931	1.185138
#1	.7534976	-.000074	.0291324
#2	.7559089	-.000180	.0287939
#3	.7610531	.000677	.0284499

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2690.173	98403.24	12992.79	3726.910	5024.333
Stddev	14.035	499.81	54.58	22.597	24.014
%RSD	.5217098	.5079173	.4201063	.6063283	.4779518
#1	2702.776	98979.38	12929.81	3752.279	5045.330
#2	2692.696	98144.40	13022.00	3719.513	5029.520
#3	2675.048	98085.94	13026.55	3708.939	4998.150

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-03 Acquired: 8/7/2024 19:17:20 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002381	-.003243	.0015723	-.000503	.0013219	-.034611
Stddev	.001680	.000975	.0012457	.001356	.0005540	.011532
%RSD	70.56097	30.06719	79.22518	269.6462	41.90955	33.31964
#1	-.004251	-.002496	.0028038	-.001848	.0012031	-.037445
#2	-.000998	-.004346	.0003129	-.000523	.0019257	-.044462
#3	-.001894	-.002886	.0016002	.000863	.0008370	-.021926

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2423551	-.000134	-.000079	140.7153	.0009246	.0040123
Stddev	.0197857	.000037	.000054	10.8961	.0001017	.0001501
%RSD	8.163935	27.58252	68.15512	7.743363	10.99705	3.741168
#1	.2567284	-.000173	-.000135	148.7539	.0008950	.0040740
#2	.2197889	-.000098	-.000073	128.3138	.0010377	.0038412
#3	.2505479	-.000132	-.000028	145.0782	.0008409	.0041218

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0256240	.0234739	.0761782	18.01932	.0062477	.0001984
Stddev	.0001330	.0032649	.0058455	1.41482	.0001525	.0001155
%RSD	.5191689	13.90863	7.673503	7.851701	2.440905	58.20276
#1	.0256818	.0209009	.0802525	19.08737	.0061681	.0001174
#2	.0254719	.0223740	.0694805	16.41470	.0061515	.0003306
#3	.0257184	.0271466	.0788016	18.55590	.0064236	.0001472

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.23418	.0012802	.0347847	12.60891	1.700724	.0039758
Stddev	.39541	.0004565	.0011066	.31290	.116157	.0001103
%RSD	2.168516	35.66095	3.181181	2.481558	6.829874	2.773587
#1	17.83668	.0013164	.0335169	12.27313	1.787234	.0040862
#2	18.23839	.0008067	.0352811	12.66130	1.568702	.0038657
#3	18.62747	.0017176	.0355562	12.89231	1.746236	.0039754

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-03 Acquired: 8/7/2024 19:17:20 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.006423	-.004706	5.000674	.1088872	F 14.09720	.0147304
Stddev	.001157	.000987	.120721	.0003348	.04048	.0008432
%RSD	18.01856	20.97017	2.414087	.3075198	.2871232	5.723997
#1	-.006176	-.005807	4.879449	.1088995	14.13905	.0157036
#2	-.005408	-.003901	5.001687	.1092158	14.09429	.0142679
#3	-.007683	-.004409	5.120884	.1085464	14.05826	.0142197

Elem	Sr4077
Units	ppm
Avg	1.833959
Stddev	.123501
%RSD	6.734137
#1	1.938686
#2	1.697770
#3	1.865421

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2697.631	93358.48	13736.90	3496.218	5065.154
Stddev	15.934	2292.54	1010.98	64.105	26.028
%RSD	.5906504	2.455628	7.359587	1.833556	.5138729
#1	2679.528	96003.42	12988.88	3568.892	5035.126
#2	2709.529	92130.44	14887.07	3472.056	5081.270
#3	2703.835	91941.57	13334.74	3447.705	5079.066

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-04 Acquired: 8/7/2024 19:21:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.001594	-.003735	.0010098	.0016207	.0018945	-.026623
Stddev	.001117	.000942	.0001060	.0010979	.0010699	.010148
%RSD	70.08349	25.21329	10.49735	67.74107	56.47180	38.11814
#1	-.002842	-.004598	.0009252	.0018500	.0022021	-.016765
#2	-.001255	-.002731	.0009755	.0004263	.0027769	-.026067
#3	-.000686	-.003877	.0011288	.0025858	.0007045	-.037038

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2302924	-.000171	-.000211	134.2441	.0005349	.0036445
Stddev	.0013561	.000046	.000067	.8379	.0001707	.0000296
%RSD	.5888457	27.20323	31.97706	.6241446	31.90294	.8114971
#1	.2288792	-.000139	-.000157	133.2810	.0003847	.0036359
#2	.2304152	-.000149	-.000287	134.6456	.0007205	.0036202
#3	.2315830	-.000224	-.000189	134.8056	.0004996	.0036774

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009329	.0293989	.0710370	17.54178	.0023871	-.000156
Stddev	.0004284	.0012794	.0000687	.17252	.0000549	.000372
%RSD	45.92315	4.351882	.0966672	.9834570	2.300216	239.3069
#1	.0011570	.0289618	.0710056	17.34891	.0024175	.000002
#2	.0004389	.0283954	.0711158	17.68136	.0023237	.000112
#3	.0012027	.0308396	.0709897	17.59508	.0024201	-.000581

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.49458	.0023841	.0091719	11.69560	1.680360	.0038273
Stddev	.04822	.0007614	.0000599	.04581	.003224	.0003507
%RSD	.2923527	31.93438	.6531737	.3917251	.1918548	9.162425
#1	16.43927	.0031626	.0091270	11.64382	1.678630	.0042274
#2	16.52780	.0016412	.0092399	11.73089	1.684080	.0036812
#3	16.51667	.0023486	.0091488	11.71208	1.678371	.0035733

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-04 Acquired: 8/7/2024 19:21:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.005768	-.004081	4.628938	.0967713	F 14.17086	.0151909
Stddev	.000462	.000944	.027390	.0003887	.01206	.0027447
%RSD	8.010285	23.14475	.5917046	.4016955	.0850961	18.06794
#1	-.005430	-.003071	4.599253	.0963757	14.15694	.0152200
#2	-.005580	-.004227	4.653230	.0967853	14.17753	.0124318
#3	-.006295	-.004943	4.634330	.0971528	14.17811	.0179210

Elem	Sr4077
Units	ppm
Avg	1.740057
Stddev	.008807
%RSD	.5061221
#1	1.730169
#2	1.742945
#3	1.747057

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2679.230	94290.64	12706.49	3538.417	5028.489
Stddev	1.007	54.67	5.64	7.190	4.025
%RSD	.0375733	.0579803	.0443965	.2032019	.0800476
#1	2680.005	94251.70	12710.90	3545.892	5026.079
#2	2679.593	94267.07	12700.14	3531.550	5026.253
#3	2678.092	94353.14	12708.44	3537.809	5033.136

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-05 Acquired: 8/7/2024 19:26:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002754	-.003626	.0129906	.0010572	.0002699	.0457534	.0025134
Stddev	.001430	.001296	.0002772	.0009915	.0014121	.0042113	.0007670
%RSD	51.92241	35.75458	2.133831	93.78843	523.1767	9.204401	30.51779
#1	-.003526	-.002129	.0132019	.0020986	-.001354	.0457323	.0016974
#2	-.003631	-.004367	.0126768	.0001245	.000953	.0415526	.0026230
#3	-.001104	-.004381	.0130932	.0009485	.001211	.0499752	.0032197

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000088	-.000053	5.862373	.0039729	.0115713	.0066634	3.113201
Stddev	.000027	.000058	.036406	.0001498	.0000117	.0003032	.033118
%RSD	30.32938	108.5038	.6210109	3.769379	.1013157	4.549616	1.063795
#1	-.000117	.000004	5.824943	.0040135	.0115618	.0066390	3.076477
#2	-.000082	-.000111	5.897660	.0038071	.0115844	.0063732	3.122328
#3	-.000065	-.000052	5.864516	.0040983	.0115678	.0069781	3.140799

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1105253	2.637795	.0152368	.0001041	11.95466	.0027467	.0550598
Stddev	.0002174	.009430	.0000909	.0001481	.14156	.0004253	.0012476
%RSD	.1966573	.3575144	.5968758	142.2808	1.184129	15.48528	2.265941
#1	.1106917	2.634508	.0151789	.0001981	11.81551	.0024418	.0536610
#2	.1106048	2.630449	.0153417	-.000067	11.94996	.0032326	.0554608
#3	.1102793	2.648430	.0151900	.000181	12.09851	.0025657	.0560576

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.016307	.0091379	.0001814	.0627456	.0005181	4.898596	.0029891
Stddev	.016324	.0004684	.0001385	.0005259	.0005445	.033264	.0005085
%RSD	1.606185	5.125962	76.35137	.8382316	105.1049	.6790509	17.01302
#1	.999951	.0096541	.0000788	.0623384	.0002555	4.860416	.0024104
#2	1.016370	.0087400	.0001265	.0625589	.0011442	4.914056	.0031920
#3	1.032599	.0090196	.0003390	.0633394	.0001546	4.921317	.0033649

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-05 Acquired: 8/7/2024 19:26:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.6822536	.0009194	.0355439
Stddev	.0026087	.0007612	.0000557
%RSD	.3823594	82.79264	.1566959
#1	.6802116	.0011552	.0355738
#2	.6813569	.0000682	.0355783
#3	.6851924	.0015349	.0354796

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2826.700	98105.47	13120.79	3733.432	5442.881
Stddev	2.840	1048.76	15.11	38.237	7.238
%RSD	.1004793	1.069013	.1151978	1.024174	.1329792
#1	2829.715	99192.94	13116.30	3769.553	5447.877
#2	2824.075	98023.22	13108.43	3737.360	5446.186
#3	2826.311	97100.26	13137.65	3693.383	5434.581

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-07 Acquired: 8/7/2024 19:30:44 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.002000	-.002639	.0016905	.0003409	.0004399	-.009706	.1712434
Stddev	.001516	.000515	.0008810	.0028231	.0005828	.006533	.0007706
%RSD	75.78485	19.51560	52.11293	828.1963	132.5011	67.31283	.4500144
#1	-.002951	-.002955	.0018467	.0015762	.0008597	-.017250	.1711311
#2	-.002797	-.002045	.0007418	.0023358	.0006855	-.005885	.1720640
#3	-.000252	-.002918	.0024829	-.002889	-.000226	-.005983	.1705351

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000146	-.000082	88.84222	.0008073	.0025619	.0036497	.0352899
Stddev	.000039	.000032	.32308	.0001653	.0001112	.0004794	.0015788
%RSD	26.92566	38.62756	.3636565	20.47338	4.338604	13.13411	4.473838
#1	-.000104	-.000108	88.65679	.0007179	.0026804	.0031230	.0341903
#2	-.000182	-.000047	89.21528	.0007060	.0025454	.0040604	.0345803
#3	-.000152	-.000091	88.65459	.0009981	.0024599	.0037658	.0370990

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0482889	11.82936	.0020575	.0000917	13.65362	.0001345	.0184012
Stddev	.0001236	.09633	.0002316	.0002804	.03372	.0023163	.0006050
%RSD	.2558965	.8143198	11.25513	305.7134	.2469569	1721.900	3.288126
#1	.0483028	11.83575	.0020423	.0000656	13.62663	.0028086	.0178765
#2	.0484048	11.92233	.0022963	.0003843	13.64280	-.001158	.0182640
#3	.0481589	11.72999	.0018339	-.000175	13.69141	-.001247	.0190631

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.047953	1.186847	.0026643	-.006171	-.003012	3.243778	.1157209
Stddev	.009699	.004730	.0000518	.000005	.000857	.015922	.0009726
%RSD	.1603713	.3985471	1.943896	.0831323	28.46122	.4908421	.8404701
#1	6.037132	1.181922	.0026052	-.006165	-.003408	3.251373	.1163683
#2	6.055864	1.191354	.0027014	-.006171	-.002028	3.225481	.1161919
#3	6.050864	1.187264	.0026865	-.006176	-.003598	3.254480	.1146024

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-07 Acquired: 8/7/2024 19:30:44 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	4.599890	.0091027	1.118246
Stddev	.021987	.0023405	.006958
%RSD	.4779859	25.71158	.6222325
#1	4.620528	.0064633	1.111760
#2	4.602377	.0099194	1.125595
#3	4.576766	.0109254	1.117381

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2655.952	93338.26	12972.96	3528.294	4938.611
Stddev	15.670	204.26	64.65	11.814	30.504
%RSD	.5899891	.2188399	.4983496	.3348393	.6176688
#1	2642.186	93445.05	13028.77	3541.579	4910.897
#2	2652.667	93466.98	12902.12	3518.966	4933.640
#3	2673.004	93102.74	12987.99	3524.338	4971.295

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-08 Acquired: 8/7/2024 19:35:06 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.000841	-.001736	-.000186	.0010090	.0016470	-.025251	.1900451
Stddev	.001244	.000700	.001443	.0005934	.0003910	.009700	.0008982
%RSD	147.8480	40.28530	776.3100	58.80967	23.73850	38.41397	.4726111
#1	-.001973	-.000934	-.001168	.0003630	.0020981	-.019265	.1910780
#2	-.001042	-.002059	-.000861	.0015298	.0014046	-.020045	.1896093
#3	.000491	-.002217	.001471	.0011343	.0014385	-.036442	.1894479

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000110	-.000020	102.3292	.0016678	.0028079	.0004341	.0400955
Stddev	.000026	.000049	.7023	.0001099	.0001578	.0005747	.0027957
%RSD	23.52276	239.8680	.6862956	6.589186	5.619110	132.3742	6.972570
#1	-.000123	.000034	102.8368	.0016752	.0029790	-.000229	.0399764
#2	-.000126	-.000059	102.6231	.0015544	.0027766	.000762	.0373612
#3	-.000080	-.000036	101.5277	.0017738	.0026681	.000770	.0429488

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0619860	13.24583	.0031163	.0001491	14.99395	.0018330	.0098234
Stddev	.0001907	.11284	.0001121	.0001994	.17486	.0001707	.0001430
%RSD	.3076849	.8518780	3.597952	133.7058	1.166225	9.313842	1.455264
#1	.0621892	13.37403	.0031926	.0002817	14.87492	.0017254	.0097707
#2	.0618108	13.20186	.0029876	.0002459	14.91222	.0017438	.0099853
#3	.0619579	13.16159	.0031688	-.000080	15.19471	.0020298	.0097144

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.788004	1.280686	.0028551	-.007059	-.003640	3.549347	.1155134
Stddev	.085785	.006437	.0001423	.000331	.000229	.048044	.0013040
%RSD	1.101504	.5026077	4.984268	4.683537	6.299543	1.353603	1.128874
#1	7.705997	1.287869	.0029085	-.006738	-.003556	3.505136	.1168565
#2	7.780892	1.275441	.0029629	-.007040	-.003900	3.542430	.1154312
#3	7.877124	1.278748	.0026938	-.007398	-.003465	3.600474	.1142524

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-08 Acquired: 8/7/2024 19:35:06 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	6.450552	.0114434	1.305318
Stddev	.036568	.0006370	.008224
%RSD	.5668948	5.566623	.6300419
#1	6.425974	.0112886	1.314812
#2	6.492576	.0108980	1.300404
#3	6.433107	.0121435	1.300738

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2714.428	93689.02	13723.23	3559.310	5083.811
Stddev	5.359	821.84	66.47	37.745	16.012
%RSD	.1974372	.8771966	.4843884	1.060453	.3149564
#1	2720.614	94563.84	13652.95	3600.350	5097.913
#2	2711.183	93570.10	13731.64	3551.497	5066.405
#3	2711.486	92933.12	13785.10	3526.083	5087.114

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-01 Acquired: 8/7/2024 19:39:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.001885	-.003736	-.000129	.0012231	.0002179	.0928999	.3652654
Stddev	.002159	.001127	.000676	.0013073	.0002018	.0130595	.0011354
%RSD	114.5505	30.15320	524.4237	106.8852	92.61031	14.05759	.3108277
#1	.000260	-.004310	.000034	.0019098	.0002360	.0891365	.3642767
#2	-.001856	-.002438	.000451	.0020440	.0000077	.1074279	.3665053
#3	-.004059	-.004461	-.000871	-.000284	.0004101	.0821354	.3650141

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000152	-.000020	67.23367	.0017188	.0044633	.0012044	7.307816
Stddev	.000029	.000064	.24183	.0002585	.0001015	.0001501	.044523
%RSD	19.40455	318.2060	.3596888	15.03990	2.274775	12.46622	.6092529
#1	-.000154	.000039	66.99457	.0014289	.0043909	.0011374	7.285138
#2	-.000180	-.000087	67.47815	.0019252	.0044196	.0010993	7.359113
#3	-.000121	-.000011	67.22828	.0018023	.0045793	.0013763	7.279198

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.863904	17.76596	.0034561	.0015470	308.8348	.0023215	.0205021
Stddev	.014869	.09835	.0001076	.0001144	2.0926	.0030983	.0001936
%RSD	.3848233	.5536127	3.114388	7.394262	.6775790	133.4629	.9441939
#1	3.850361	17.67727	.0035514	.0014492	311.2184	.0056239	.0202786
#2	3.879815	17.87174	.0034775	.0016728	307.9863	-.000521	.0206166
#3	3.861536	17.74888	.0033394	.0015190	307.2997	.001862	.0206111

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.466872	.1538675	.0002768	-.006579	-.000671	4.861045	.0817294
Stddev	.046074	.0002696	.0000885	.000801	.001014	.033948	.0005019
%RSD	.4866840	.1751879	31.95896	12.18084	151.1585	.6983746	.6140807
#1	9.449671	.1541474	.0003524	-.006166	.000497	4.858801	.0811883
#2	9.519072	.1538453	.0002985	-.007503	-.001187	4.896059	.0821795
#3	9.431873	.1536097	.0001795	-.006069	-.001323	4.828274	.0818205

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-01 Acquired: 8/7/2024 19:39:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.9850976	.0093004	.4619843
Stddev	.0045010	.0003063	.0012947
%RSD	.4569043	3.293829	.2802456
#1	.9898929	.0089469	.4613729
#2	.9809644	.0094656	.4634714
#3	.9844355	.0094887	.4611085

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2646.214	91900.90	12806.18	3444.174	4718.392
Stddev	11.875	461.02	23.56	22.104	20.363
%RSD	.4487530	.5016533	.1839364	.6417848	.4315649
#1	2632.835	91701.39	12806.16	3450.768	4697.862
#2	2650.307	91573.22	12782.64	3419.523	4718.732
#3	2655.502	92428.07	12829.75	3462.231	4738.583

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-02 Acquired: 8/7/2024 19:44:04 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	-.001796	-.004255	.0001751	.0012284	.0019234	.0428085	.3927475
Stddev	.000731	.001722	.0001818	.0013286	.0017897	.0120608	.0047670
%RSD	40.72952	40.46866	103.8218	108.1495	93.04638	28.17379	1.213752
#1	-.000985	-.002957	-.000034	.0025862	.0036210	.0566289	.3935679
#2	-.002406	-.003600	.000263	.0011679	.0000540	.0344118	.3970510
#3	-.001997	-.006209	.000296	-.000069	.0020953	.0373847	.3876236

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000212	.0000501	73.28622	.0027100	.0044849	.0005648	9.297937
Stddev	.000013	.0001158	.69971	.0001169	.0000505	.0002425	.045837
%RSD	6.264989	231.2258	.9547691	4.312844	1.125526	42.93822	.4929787
#1	-.000203	-.000036	73.42188	.0026700	.0044269	.0005825	9.247316
#2	-.000227	.000004	73.90817	.0028416	.0045190	.0007981	9.309860
#3	-.000205	.000182	72.52861	.0026184	.0045088	.0003140	9.336633

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.687144	19.32544	.0056360	.0010362	321.3888	.0013746	.0122922
Stddev	.042304	.30239	.0004600	.0004252	4.4655	.0029395	.0002339
%RSD	1.147343	1.564730	8.162182	41.03567	1.389429	213.8530	1.902579
#1	3.680063	19.27744	.0054110	.0005684	316.2495	.0037048	.0120667
#2	3.732542	19.64897	.0053317	.0011408	324.3201	-.001928	.0125336
#3	3.648828	19.04993	.0061652	.0013993	323.5969	.002347	.0122764

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.874995	.1656774	.0006066	-.006152	-.000493	4.951905	.0970737
Stddev	.086594	.0004411	.0001043	.000195	.000542	.016735	.0016956
%RSD	.8768991	.2662137	17.18906	3.167653	109.9132	.3379601	1.746707
#1	9.775068	.1658987	.0006238	-.005954	-.000008	4.932617	.0985333
#2	9.928028	.1659640	.0007012	-.006344	-.001077	4.962569	.0952138
#3	9.921890	.1651695	.0004948	-.006157	-.000393	4.960530	.0974741

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-02 Acquired: 8/7/2024 19:44:04 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	1.292977	.0090260	.5024761
Stddev	.025468	.0011237	.0065851
%RSD	1.969730	12.44981	1.310526
#1	1.283294	.0099394	.5024066
#2	1.273770	.0077711	.5090957
#3	1.321866	.0093674	.4959261

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2532.613	94757.10	12852.25	3536.202	4469.007
Stddev	43.811	502.85	179.38	21.135	83.766
%RSD	1.729882	.5306737	1.395688	.5976812	1.874373
#1	2540.485	95293.08	12841.71	3560.266	4490.691
#2	2571.954	94295.71	12678.37	3520.650	4539.798
#3	2485.399	94682.50	13036.66	3527.689	4376.531

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV04 Acquired: 8/7/2024 19:48:36 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.736491	5.024569	5.004903	4.690939	4.784970	9.192762
Stddev	.021043	.035369	.014654	.024592	.016697	.145143
%RSD	.4442827	.7039291	.2927996	.5242442	.3489389	1.578885
#1	4.741221	5.057320	5.003281	4.678111	4.780425	9.360190
#2	4.713485	4.987062	4.991128	4.675413	4.771017	9.115548
#3	4.754767	5.029323	5.020302	4.719292	4.803469	9.102546

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.878383	.2415191	2.456213	24.62556	.9954956	2.434848
Stddev	.325416	.0037722	.007967	.45062	.0140971	.008522
%RSD	3.294219	1.561860	.3243572	1.829894	1.416085	.3499990
#1	10.21720	.2456329	2.458279	25.13483	.9896252	2.438007
#2	9.84967	.2407021	2.447416	24.46338	.9852824	2.425197
#3	9.56827	.2382224	2.462943	24.27848	1.011579	2.441339

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.198248	5.104744	2.436786	23.86816	2.450410	1.239063
Stddev	.003429	.102991	.043904	.41363	.007224	.019292
%RSD	.2861935	2.017554	1.801705	1.732994	.2948191	1.556956
#1	1.197990	5.069037	2.486987	24.34514	2.452790	1.224338
#2	1.194955	5.024358	2.417801	23.65111	2.442296	1.231949
#3	1.201799	5.220836	2.405570	23.60822	2.456144	1.260901

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.88950	2.407907	2.501987	24.56625	4.698525	4.945224
Stddev	.39871	.045722	.030263	.42324	.068847	.011869
%RSD	1.668966	1.898845	1.209571	1.722832	1.465282	.2400110
#1	23.75682	2.460330	2.485869	24.38990	4.768051	4.948298
#2	23.57404	2.387125	2.483194	24.25970	4.697145	4.932120
#3	24.33763	2.376267	2.536898	25.04914	4.630378	4.955254

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV04 Acquired: 8/7/2024 19:48:36 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.895710	4.857913	4.842371	4.976170	F 4.482540	F 4.112950
Stddev	.020112	.091792	.107743	.022306	.007990	.065735
%RSD	.4108174	1.889529	2.225002	.4482507	.1782573	1.598249
#1	4.904248	4.963640	4.784729	4.981082	4.480856	4.188840
#2	4.872737	4.811544	4.775710	4.951817	4.475526	4.076308
#3	4.910144	4.798556	4.966672	4.995610	4.491238	4.073703

Elem	Sr4077
Units	ppm
Avg	4.892043
Stddev	.111196
%RSD	2.272988
#1	5.010885
#2	4.874714
#3	4.790529

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2802.938	95658.43	14078.15	3677.440	5077.238
Stddev	12.018	1559.03	205.00	59.586	22.749
%RSD	.4287468	1.629785	1.456147	1.620307	.4480508
#1	2807.087	96728.95	13856.55	3721.938	5082.384
#2	2812.332	96376.59	14116.87	3700.638	5096.973
#3	2789.396	93869.75	14261.03	3609.744	5052.357

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB04 Acquired: 8/7/2024 19:52:54 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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	.0001600	.0008296	.0001849	.0005847	.0006339	.0046916	.0003226
Stddev	.0015345	.0018666	.0004140	.0010539	.0001400	.0012964	.0012587
%RSD	959.3519	225.0075	223.9355	180.2588	22.08573	27.63214	390.1187
#1	-.000083	.0029835	-.000274	.0017946	.0007582	.0031993	.0005905
#2	-.001239	-.000315	.000529	.0000930	.0004823	.0053354	.0014258
#3	.001801	-.000180	.000300	-.000134	.0006613	.0055401	-.001048

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000223	-.000007	-.003734	-.000154	.0001094	-.000442	-.001195
Stddev	.0000273	.000051	.006525	.000100	.0000829	.000224	.001997
%RSD	122.2383	686.3183	174.7529	64.69779	75.74007	50.56743	167.0549
#1	.0000275	-.000061	-.000128	-.000041	.0001816	-.000252	-.002208
#2	.0000466	.000040	.000192	-.000228	.0001276	-.000386	.001105
#3	-.000007	-.000001	-.011265	-.000194	.0000190	-.000688	-.002483

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000670	-.005525	-.000003	.0002285	.4627515	.0004945	-.000112
Stddev	.0000415	.014072	.000263	.0000793	.0188412	.0007342	.000050
%RSD	61.93378	254.6936	8100.544	34.72466	4.071558	148.4592	44.91425
#1	.0000669	.005469	.000239	.0002954	.4433168	-.000153	-.000087
#2	.0000256	-.000659	.000035	.0002491	.4640005	.000344	-.000170
#3	.0001086	-.021385	-.000284	.0001409	.4809371	.001292	-.000079

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7190283	.0047351	.0002933	-.003640	-.000060	-.000549	-.004990
Stddev	.0596489	.0006138	.0001011	.000123	.000407	.008090	.000854
%RSD	8.295767	12.96371	34.46221	3.382236	674.8013	1473.707	17.10591
#1	.6542358	.0049124	.0003220	-.003779	.000327	.001139	-.005569
#2	.7311897	.0052408	.0003769	-.003543	-.000023	-.009350	-.005393
#3	.7716593	.0040521	.0001810	-.003599	-.000484	.006564	-.004010

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB04 Acquired: 8/7/2024 19:52:54 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

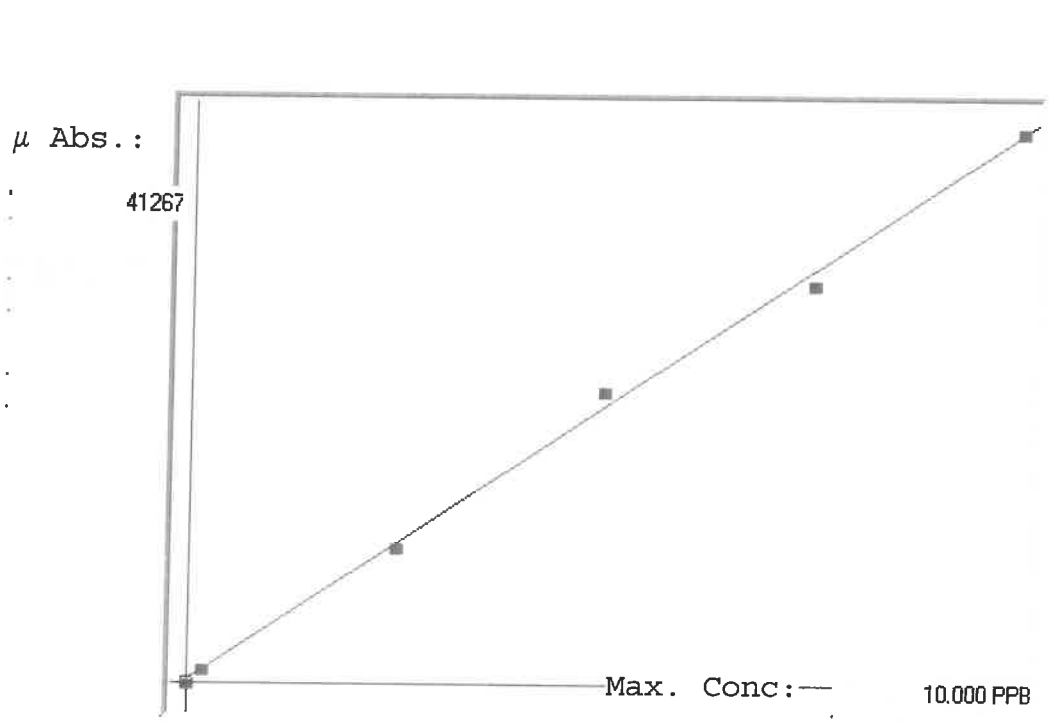
Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002020	-.000980	.0000256
Stddev	.003082	.000835	.0000052
%RSD	152.5666	85.20761	20.16908
#1	-.000041	-.001878	.0000261
#2	-.005570	-.000835	.0000202
#3	-.000448	-.000227	.0000305

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2914.028	99014.07	13846.38	3825.398	5495.786
Stddev	27.822	421.32	100.77	14.533	39.608
%RSD	.9547638	.4255188	.7277464	.3798970	.7206989
#1	2882.201	99253.12	13906.24	3828.262	5451.257
#2	2933.730	98527.59	13902.85	3809.646	5527.089
#3	2926.154	99261.49	13730.04	3838.285	5509.010

Reviewed By:mohan
On:8/13/2024 10:47:32 PM
Inst Id :CV1
LB :LB131960

LB131960

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	-0.028	-0.028	123	0.000	123	0				1
0.2	0.200	0.194	-0.006	1032	0.0 %	1032					3
2.5	2.500	2.456	-0.044	10275	0.0 %	10275					2
5.0	5.000	5.292	0.292	21867	0.0 %	21867					6
7.5	7.500	7.247	-0.253	29857	0.0 %	29857					3
10.0	10.000	10.039	0.039	41267	0.0 %	41267					0

Reviewed By:mohan
On:8/13/2024 10:47:32 PM
Inst Id :CV1
LB :LB131960

LB131960 INSTRUMKENT ID : CV1

Method: 7470A Operator: Admin Date of Analysis: 13 Aug 2024 08:29:57

Sample ID	Extended ID	µ Abs.	Conc.	Stnd Conc	Method	Units	Date	Type	Type
0.0 - 1	50	123	-	0.0000	7470A	PPB	13 Aug 2024 08:36:49	S	Std
0.2 - 1	50.2	1032	-	0.2000	7470A	PPB	13 Aug 2024 08:39:05	S	Std
2.5 - 1	52.5	10275	-	2.5000	7470A	PPB	13 Aug 2024 08:41:23	S	Std
5.0 - 1	55	21867	-	5.0000	7470A	PPB	13 Aug 2024 08:43:40	S	Std
7.5 - 1	57.5	29857	-	7.5000	7470A	PPB	13 Aug 2024 08:45:57	S	Std
10.0 - 1	510	41267	-	10.0000	7470A	PPB	13 Aug 2024 08:50:50	S	Std
ICV72 - 1	ICV72	16618	4.0078		-7470A	PPB	13 Aug 2024 08:53:41	U	SMPL
ICB72 - 1	ICB72	-81	-0.0784		-7470A	PPB	13 Aug 2024 08:55:55	U	SMPL
CCV35 - 1	CCV35	18763	4.5327		-7470A	PPB	13 Aug 2024 08:58:12	U	SMPL
CCB35 - 1	CCB35	-64	-0.0742		-7470A	PPB	13 Aug 2024 09:03:02	U	SMPL
CRA - 1	CRA	1203	0.2358		-7470A	PPB	13 Aug 2024 09:10:24	U	SMPL
HighStd - 1	HighStd	41121	10.0035		-7470A	PPB	13 Aug 2024 09:12:39	U	SMPL
ChkStd - 1	ChkStd	27661	6.7100		-7470A	PPB	13 Aug 2024 09:14:54	U	SMPL
PB162665BL - 1	PBW	-169	-0.0999		-7470A	PPB	13 Aug 2024 09:17:12	U	SMPL
PB162665BS - 1	LCSW	16637	4.0124		-7470A	PPB	13 Aug 2024 09:19:29	U	SMPL
P3526-02 - 1	SP-1-COMP	-178	-0.1021		-7470A	PPB	13 Aug 2024 09:21:45	U	SMPL
P3534-01 - 1	PIPE-BLAST-GRIT	6	-0.0571		-7470A	PPB	13 Aug 2024 09:24:03	U	SMPL
P3534-03 - 1	HP-IP	24	-0.0527		-7470A	PPB	13 Aug 2024 09:26:20	U	SMPL
P3534-03DUP - 1	HP-IPDUP	31	-0.0510		-7470A	PPB	13 Aug 2024 09:28:37	U	SMPL
P3534-03MS - 1	HP-IPMS	19735	4.7705		-7470A	PPB	13 Aug 2024 09:30:53	U	SMPL
CCV36 - 1	CCV36	19728	4.7688		-7470A	PPB	13 Aug 2024 09:33:08	U	SMPL
CCB36 - 1	CCB36	-104	-0.0840		-7470A	PPB	13 Aug 2024 09:35:25	U	SMPL
P3534-03MSD - 1	HP-IPMSD	15594	3.7572		-7470A	PPB	13 Aug 2024 09:37:42	U	SMPL
PB162681BL - 1	PBW	-62	-0.0737		-7470A	PPB	13 Aug 2024 09:39:57	U	SMPL
PB162681BS - 1	LCSW	16751	4.0403		-7470A	PPB	13 Aug 2024 09:42:14	U	SMPL
P3530-02 - 1	WC-A-04-202408	-188	-0.1045		-7470A	PPB	13 Aug 2024 09:44:29	U	SMPL
P3530-02DUP - 1	WC-A-04-202408DUP	-28	-0.0654		-7470A	PPB	13 Aug 2024 09:46:47	U	SMPL
P3530-02MS - 1	WC-A-04-202408MS	14987	3.6087		-7470A	PPB	13 Aug 2024 09:49:03	U	SMPL
P3530-02MSD - 1	WC-A-04-202408MSD	13826	3.3246		-7470A	PPB	13 Aug 2024 09:51:19	U	SMPL
P3530-03 - 1	WC-A-05-202408	-95	-0.0818		-7470A	PPB	13 Aug 2024 09:53:38	U	SMPL
P3534-05 - 1	PIPE-BLAST-GRIT(FB)	11	-0.0558		-7470A	PPB	13 Aug 2024 09:55:57	U	SMPL
P3534-06 - 1	HP-IP(FB)	32	-0.0507		-7470A	PPB	13 Aug 2024 09:58:13	U	SMPL
CCV37 - 1	CCV37	20451	4.9457		-7470A	PPB	13 Aug 2024 10:00:28	U	SMPL
CCB37 - 1	CCB37	14	-0.0551		-7470A	PPB	13 Aug 2024 10:05:27	U	SMPL
PB162680BL - 1	PBW	120	-0.0292		-7470A	PPB	13 Aug 2024 10:07:43	U	SMPL
PB162680BS - 1	LCSW	15043	3.6224		-7470A	PPB	13 Aug 2024 10:09:58	U	SMPL
P3426-01 - 1	927-K1-WS-073124	-94	-0.0815		-7470A	PPB	13 Aug 2024 10:12:13	U	SMPL
P3426-02 - 1	927-K1-WS-073124-FD	31	-0.0510		-7470A	PPB	13 Aug 2024 10:14:30	U	SMPL
P3429-01 - 1	926-K1-WS-073124	6	-0.0571		-7470A	PPB	13 Aug 2024 10:16:46	U	SMPL
P3429-02 - 1	931-K1-WS-073124	309	0.0171		-7470A	PPB	13 Aug 2024 10:19:02	U	SMPL
P3429-03 - 1	925-K1-WS-073124	778	0.1318		-7470A	PPB	13 Aug 2024 10:21:19	U	SMPL
P3440-01 - 1	923-K1-WS-080124	-109	-0.0852		-7470A	PPB	13 Aug 2024 10:23:35	U	SMPL
P3440-01DUP - 1	923-K1-WS-080124DUP	17	-0.0544		-7470A	PPB	13 Aug 2024 10:25:53	U	SMPL
P3440-02 - 1	P3440-01MS	13643	3.2798		-7470A	PPB	13 Aug 2024 10:28:09	U	SMPL
CCV38 - 1	CCV38	20089	4.8571		-7470A	PPB	13 Aug 2024 10:30:24	U	SMPL
CCB38 - 1	CCB38	14	-0.0551		-7470A	PPB	13 Aug 2024 10:35:27	U	SMPL
P3440-03 - 1	P3440-01MSD	13205	3.1727		-7470A	PPB	13 Aug 2024 10:37:42	U	SMPL
P3440-04 - 1	922-K1-WS-080124	-73	-0.0764		-7470A	PPB	13 Aug 2024 10:39:57	U	SMPL
P3451-01 - 1	921-J-WS-080124	37	-0.0495		-7470A	PPB	13 Aug 2024 10:42:15	U	SMPL
P3457-01 - 1	924-K1-WS-080224	100	-0.0341		-7470A	PPB	13 Aug 2024 10:44:30	U	SMPL
P3457-02 - 1	932-K1-WS-080224	141	-0.0240		-7470A	PPB	13 Aug 2024 10:46:46	U	SMPL
P3467-01 - 1	919-J-WS-080224	1257	0.2490		-7470A	PPB	13 Aug 2024 10:49:02	U	SMPL
P3497-02 - 1	COMP	33	-0.0505		-7470A	PPB	13 Aug 2024 10:51:19	U	SMPL
P3532-01 - 1	806-C	950	0.1739		-7470A	PPB	13 Aug 2024 10:53:36	U	SMPL
P3545-01 - 1	BUR-1295	914	0.1651		-7470A	PPB	13 Aug 2024 10:55:52	U	SMPL
CCV39 - 1	CCV39	21395	5.1767		-7470A	PPB	13 Aug 2024 10:58:08	U	SMPL
CCB39 - 1	CCB39	221	-0.0045		-7470A	PPB	13 Aug 2024 11:04:09	U	SMPL
PB162588TB - 1	PB162588TB	-23	-0.0642		-7470A	PPB	13 Aug 2024 11:06:24	U	SMPL
PB162590TB - 1	PB162590TB	-2	-0.0590		-7470A	PPB	13 Aug 2024 11:08:39	U	SMPL
P3534-03LX5 - 1		-32	-0.0664		-7470A	PPB	13 Aug 2024 11:10:54	U	SMPL
P3534-03A - 1		15658	3.7729		-7470A	PPB	13 Aug 2024 11:13:10	U	SMPL
P3530-02LX5 - 1		-459	-0.1709		-7470A	PPB	13 Aug 2024 11:15:25	U	SMPL
P3530-02A - 1		16246	3.9168		-7470A	PPB	13 Aug 2024 11:17:42	U	SMPL
P3440-01LX5 - 1		-388	-0.1535		-7470A	PPB	13 Aug 2024 11:19:58	U	SMPL
P3440-01A - 1		16290	3.9275		-7470A	PPB	13 Aug 2024 11:22:17	U	SMPL
CCV40 - 1	CCV40	21055	5.0935		-7470A	PPB	13 Aug 2024 11:24:33	U	SMPL
CCB40 - 1	CCB40	-469	-0.1733		-7470A	PPB	13 Aug 2024 11:26:51	U	SMPL

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB162493

SOP ID : M3010A-Digestion-17

SDG No : N/A

Matrix : WATER

Pippete ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M4909

Hood ID : #3

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

Start Digest Date: 08/05/2024 **Time :** 09:15 **Temp :** 94 °C

End Digest Date: ~~08/06/2024~~ 08/05/2024 **Time :** 11:30 **Temp :** 95 °C

Digestion tube ID: M5586

Block thermometer ID: N/A

Dig Technician Signature: TO

Supervisor Signature: MA

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M5643
LFS-2	0.25	M5649
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	M5904
1:1 HCL	5.00	MP81559
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:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
08/05/24 12:10	TO	KW (Mettler Bay)
	Preparation Group	Analysis Group LAB

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
P3426-01	927-K1-WS-073124	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	21
P3426-02	927-K1-WS-073124-FD	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	22
P3429-01	926-K1-WS-073124	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	23
P3429-02	931-K1-WS-073124	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	24
P3429-03	925-K1-WS-073124	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	25
P3440-01	923-K1-WS-080124	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	26
P3440-01DUP	923-K1-WS-080124DUP	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	20
P3440-02	P3440-01MS	<2	50	25	Colorless	Colorless	Clear	Clear	M5643,M5649	27
P3440-03	P3440-01MSD	<2	50	25	Colorless	Colorless	Clear	Clear	M5643,M5649	28
P3440-04	922-K1-WS-080124	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	29
P3443-01	WATER TREATMENT DISCHARGE	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	30
P3451-01	921-J-WS-080124	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	31
P3455-01	RW7-SP100-50-20240801	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	32
P3455-03	RW7-S301A-50-20240801	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	33
P3455-04	RW7-SP303-50-20240801	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	34
P3455-05	RW7-SP100-90-20240801	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	35
P3455-07	RW7-SP301A-90-20240801	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	36
P3455-08	RW7-SP303-90-20240801	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	37
P3457-01	924-KI-WS-080224	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	38
P3457-02	932-KI-WS-080224	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	39
P3467-01	919-J-WS-080224	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	40
PB162493BL	PBW493	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	41
PB162493BS	LCS493	<2	50	25	Colorless	Colorless	Clear	Clear	M5643,M5649	42

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB162493 **WorkList ID :** 182358 **Department :** Digestion **Date :** 08-05-2024 08:44:50

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P3426-01	927-K1-WS-073124	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	E21	07/31/2024	6010D
P3426-02	927-K1-WS-073124-FD	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	E21	07/31/2024	6010D
P3429-01	926-K1-WS-073124	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	07/31/2024	6010D
P3429-02	931-K1-WS-073124	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	07/31/2024	6010D
P3429-03	925-K1-WS-073124	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	07/31/2024	6010D
P3440-01	923-K1-WS-080124	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	07/31/2024	6010D
P3440-02	P3440-01MS	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	6010D
P3440-03	P3440-01MSD	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	6010D
P3440-04	922-K1-WS-080124	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	6010D
P3443-01	Water Treatment Discharge	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	6010D
P3451-01	921-J-WS-080124	Water	Metals Group4	1:1 HNO3 to pH < 2	VERI01	K11	08/01/2024	6010D
P3455-01	RW7-SP100-50-20240801	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	6010D
P3455-03	RW7-S301A-50-20240801	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	TETR06	D31	08/01/2024	6010D
P3455-04	RW7-SP303-50-20240801	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	TETR06	D31	08/01/2024	6010D
P3455-05	RW7-SP100-90-20240801	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	TETR06	D31	08/01/2024	6010D
P3455-07	RW7-SP301A-90-20240801	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	TETR06	D31	08/01/2024	6010D
P3455-08	RW7-SP303-90-20240801	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	TETR06	D31	08/01/2024	6010D
P3457-01	924-KI-WS-080224	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	J21	08/02/2024	6010D
P3457-02	932-KI-WS-080224	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	J21	08/02/2024	6010D
P3467-01	919-J-WS-080224	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	D21	08/02/2024	6010D

Date/Time 08/05/24 08:50

Raw Sample Received by: [illegible]

Raw Sample Relinquished by: JT (SM)

Date/Time 08/05/24 13:00

Raw Sample Received by: JT (SM)

Raw Sample Relinquished by: [illegible]

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB162680

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: 08/12/2024 **Time :** 16:13 **Temp :** 94 °C

End Digest Date: 08/12/2024 **Time :** 18:13 **Temp :** 95 °C

Digestion tube ID: M5586

Block thermometer ID: HG-DIG#3

Dig Technician Signature: pB

Supervisor Signature: [illegible]

Temp : 1. 94°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP81786
CCV	30mL	MP81788
CRA	30mL	MP81790
Blank Spike	0.48mL	MP81779
Matrix Spike	0.48mL	MP81779

Chemical Used	ML/SAMPLE USED	Lot Number
HNO3/H2SO4(1:2)	2.5mL	MP81818
KMnO4	4.5mL	MP81819
K2S2O8	2.5mL	MP81820
Hydroxylamine HCL	2.0mL	MP81821
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	MP81780
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP81781
2.5 ppb	S2.5	30mL	MP81782
5.0 ppb	S5.0	30mL	MP81783
7.5 ppb	S7.5	30mL	MP81784
10.0 ppb	S10.0	30mL	MP81785
ICV	ICV	30mL	MP81786
ICB	ICB	30mL	MP81787
CCV	CCV	30mL	MP81788
CCB	CCB	30mL	MP81789
CRI	CRI	30mL	MP81790
CHK STD	CHK STD	30mL	MP81791

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
8/13/24 @ 7:40	pB Dig. Lab	PRO - Metals Lab
	Preparation Group	**Analysis Group**

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB162680

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Comment	Prep Pos
P3426-01	927-K1-WS-073124	30	30	<2	N/A	3-20
P3426-02	927-K1-WS-073124-FD	30	30	<2	N/A	21
P3429-01	926-K1-WS-073124	30	30	<2	N/A	22
P3429-02	931-K1-WS-073124	30	30	<2	N/A	23
P3429-03	925-K1-WS-073124	30	30	<2	N/A	24
P3440-01	923-K1-WS-080124	30	30	<2	N/A	25
P3440-01DUP	923-K1-WS-080124DUP	30	30	<2	N/A	26
P3440-02	P3440-01MS	30	30	<2	MP81779	27
P3440-03	P3440-01MSD	30	30	<2	MP81779	28
P3440-04	922-K1-WS-080124	30	30	<2	N/A	29
P3451-01	921-J-WS-080124	30	30	<2	N/A	30
P3457-01	924-K1-WS-080224	30	30	<2	N/A	31
P3457-02	932-K1-WS-080224	30	30	<2	N/A	32
P3467-01	919-J-WS-080224	30	30	<2	N/A	33
P3497-02	COMP	30	30	<2	N/A	34
P3532-01	806-C	30	30	<2	N/A	35
P3545-01	BUR-1295	30	30	<2	N/A	36
PB162680BL	PBW680	30	30	<2	N/A	37
PB162680BS	LCS680	30	30	<2	MP81779	38

WORKLIST(Hardcopy Internal Chain)

WorkList Name : 081224_7470 **WorkList ID :** 182542 **Department :** Digestion **Date :** 08-12-2024 07:28:42

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P3497-02	COMP	Water	Mercury	1:1 HNO3 to pH < 2	ARAM01	K11	08/07/2024	7470A
P3426-01	927-K1-WS-073124	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	E21	07/31/2024	7470A
P3426-02	927-K1-WS-073124-FD	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	E21	07/31/2024	7470A
P3429-01	926-K1-WS-073124	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	07/31/2024	7470A
P3429-02	931-K1-WS-073124	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	07/31/2024	7470A
P3429-03	925-K1-WS-073124	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	07/31/2024	7470A
P3440-01	923-K1-WS-080124	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	7470A
P3467-01	919-J-WS-080224	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D21	08/02/2024	7470A
P3440-02	P3440-01MS	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	7470A
P3440-03	P3440-01MSD	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	7470A
P3440-04	922-K1-WS-080124	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	7470A
P3451-01	921-J-WS-080124	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	D31	08/01/2024	7470A
P3457-01	924-K1-WS-080224	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	J21	08/02/2024	7470A
P3457-02	932-K1-WS-080224	Water	Mercury	1:1 HNO3 to pH < 2	JACO05	J21	08/02/2024	7470A
P3532-01	806-C	Water	Mercury	1:1 HNO3 to pH < 2	PSEG03	D21	08/08/2024	7470A
P3545-01	BUR-1295	Water	Mercury	1:1 HNO3 to pH < 2	PSEG03	D21	08/09/2024	7470A

Date/Time 8/12/24 @ 15:40

Raw Sample Received by: [illegible]

Raw Sample Relinquished by: [illegible]

Date/Time 8/12/24 @ 16:20

Raw Sample Received by: [illegible]

Raw Sample Relinquished by: [illegible]

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 # LB131900

Review By	Jaswal	Review On	8/8/2024 5:19:27 AM
Supervise By	Mohan	Supervise On	8/8/2024 5:24:08 AM

STD. NAME	STD REF.#
ICAL Standard	MP81528,MP81645,MP81646,MP81647,MP81648,MP81650
ICV Standard	MP81651
CCV Standard	MP81654
ICSA Standard	MP81652,MP81653
CRI Standard	MP81650
LCS Standard	
Chk Standard	MP81661,MP81662

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/07/24 14:16		Kareem	OK
2	S1	S1	CAL2	08/07/24 14:21		Kareem	OK
3	S2	S2	CAL3	08/07/24 14:25		Kareem	OK
4	S3	S3	CAL4	08/07/24 14:29		Kareem	OK
5	S4	S4	CAL5	08/07/24 14:33		Kareem	OK
6	S5	S5	CAL6	08/07/24 14:38		Kareem	OK
7	ICV01	ICV01	ICV	08/07/24 15:52		Kareem	OK
8	LLICV01	LLICV01	LLICV	08/07/24 15:56		Kareem	OK
9	ICB01	ICB01	ICB	08/07/24 16:03		Kareem	OK
10	CRI01	CRI01	CRDL	08/07/24 16:07		Kareem	OK
11	ICSA01	ICSA01	ICSA	08/07/24 16:12		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	08/07/24 16:16		Kareem	OK
13	CCV01	CCV01	CCV	08/07/24 16:20		Kareem	OK
14	CCB01	CCB01	CCB	08/07/24 16:25		Kareem	OK
15	PB162493BL	PB162493BL	MB	08/07/24 16:29		Kareem	OK
16	PB162493BS	PB162493BS	LCS	08/07/24 16:34	0.1ML OF M5921 AND M5922 WERE ADDED TO 10ML OF THE SAMPLE	Kareem	OK
17	P3426-01	927-K1-WS-073124	SAM	08/07/24 16:38		Kareem	OK
18	P3426-02	927-K1-WS-073124-F	SAM	08/07/24 16:42		Kareem	OK

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Fax : 908 789 8922

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB131900

Review By	Jaswal	Review On	8/8/2024 5:19:27 AM
Supervise By	Mohan	Supervise On	8/8/2024 5:24:08 AM

STD. NAME	STD REF.#
ICAL Standard	MP81528,MP81645,MP81646,MP81647,MP81648,MP81650
ICV Standard	MP81651
CCV Standard	MP81654
ICSA Standard	MP81652,MP81653
CRI Standard	MP81650
LCS Standard	
Chk Standard	MP81661,MP81662

19	P3429-01	926-K1-WS-073124	SAM	08/07/24 16:47		Kareem	OK
20	P3429-02	931-K1-WS-073124	SAM	08/07/24 16:51		Kareem	OK
21	P3429-03	925-K1-WS-073124	SAM	08/07/24 16:56		Kareem	OK
22	P3440-01	923-K1-WS-080124	SAM	08/07/24 17:00		Kareem	OK
23	P3440-01DUP	923-K1-WS-080124DU	DUP	08/07/24 17:05		Kareem	OK
24	P3440-01L	923-K1-WS-080124L	SD	08/07/24 17:09		Kareem	OK
25	CCV02	CCV02	CCV	08/07/24 17:14		Kareem	OK
26	CCB02	CCB02	CCB	08/07/24 17:18		Kareem	OK
27	LR2	LR2	HIGH STD	08/07/24 18:15		Kareem	OK
28	P3440-02	923-K1-WS-080124M	MS	08/07/24 18:20		Kareem	OK
29	P3440-03	923-K1-WS-080124M	MSD	08/07/24 18:24		Kareem	OK
30	P3440-01A	923-K1-WS-080124A	PS	08/07/24 18:33	0.1ML OF M5921 AND M5922 WERE ADDED TO 10ML OF THE SAMPLE	Kareem	OK
31	P3440-04	922-K1-WS-080124	SAM	08/07/24 18:38		Kareem	OK
32	P3443-01	Water Treatment Disc	SAM	08/07/24 18:42		Kareem	OK
33	P3451-01	921-J-WS-080124	SAM	08/07/24 18:47		Kareem	OK
34	CCV03	CCV03	CCV	08/07/24 18:51		Kareem	OK
35	CCB03	CCB03	CCB	08/07/24 18:55		Kareem	OK
36	LR1	LR1	HIGH STD	08/07/24 19:07		Kareem	OK
37	P3455-01	RW7-SP100-50-2024(	SAM	08/07/24 19:12		Kareem	OK

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB131900

Review By	Jaswal	Review On	8/8/2024 5:19:27 AM
Supervise By	Mohan	Supervise On	8/8/2024 5:24:08 AM

STD. NAME	STD REF.#
ICAL Standard	MP81528,MP81645,MP81646,MP81647,MP81648,MP81650
ICV Standard	MP81651
CCV Standard	MP81654
ICSA Standard	MP81652,MP81653
CRI Standard	MP81650
LCS Standard	
Chk Standard	MP81661,MP81662

38	P3455-03	RW7-SP301A-50-202	SAM	08/07/24 19:17		Kareem	OK
39	P3455-04	RW7-SP303-50-2024(	SAM	08/07/24 19:21		Kareem	OK
40	P3455-05	RW7-SP100-90-2024(	SAM	08/07/24 19:26		Kareem	OK
41	P3455-07	RW7-SP301A-90-202	SAM	08/07/24 19:30		Kareem	OK
42	P3455-08	RW7-SP303-90-2024(	SAM	08/07/24 19:35		Kareem	OK
43	P3457-01	924-K1-WS-080224	SAM	08/07/24 19:39		Kareem	OK
44	P3457-02	932-K1-WS-080224	SAM	08/07/24 19:44		Kareem	OK
45	CCV04	CCV04	CCV	08/07/24 19:48		Kareem	OK
46	CCB04	CCB04	CCB	08/07/24 19:52		Kareem	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 # LB131960

Review By	jaswal	Review On	8/13/2024 10:45:46 PM
Supervise By	mohan	Supervise On	8/13/2024 10:47:32 PM

STD. NAME	STD REF.#
ICAL Standard	MP81780,MP81781,MP81782,MP81783,MP81784,MP81785
ICV Standard	MP81786
CCV Standard	MP81788
ICSA Standard	
CRI Standard	MP81790
LCS Standard	
Chk Standard	MP81787,MP81789,MP81791,MP81804

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/13/24 08:36		mohan	OK
2	S0.2	S0.2	CAL2	08/13/24 08:39		mohan	OK
3	S2.5	S2.5	CAL3	08/13/24 08:41		mohan	OK
4	S5	S5	CAL4	08/13/24 08:43		mohan	OK
5	S7.5	S7.5	CAL5	08/13/24 08:45		mohan	OK
6	S10	S10	CAL6	08/13/24 08:50		mohan	OK
7	ICV72	ICV72	ICV	08/13/24 08:53		mohan	OK
8	ICB72	ICB72	ICB	08/13/24 08:55		mohan	OK
9	CCV35	CCV35	CCV	08/13/24 08:58		mohan	OK
10	CCB35	CCB35	CCB	08/13/24 09:03		mohan	OK
11	CRA	CRA	CRDL	08/13/24 09:10		mohan	OK
12	HighStd	HighStd	HIGH STD	08/13/24 09:12		mohan	OK
13	ChkStd	ChkStd	SAM	08/13/24 09:14		mohan	OK
14	PB162665BL	PB162665BL	MB	08/13/24 09:17		mohan	OK
15	PB162665BS	PB162665BS	LCS	08/13/24 09:19		mohan	OK
16	P3526-02	SP-1-COMP	SAM	08/13/24 09:21		mohan	OK
17	P3534-01	PIPE-BLAST-GRIT	SAM	08/13/24 09:24		mohan	OK
18	P3534-03	HP-IP	SAM	08/13/24 09:26		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 # LB131960

Review By	jaswal	Review On	8/13/2024 10:45:46 PM
Supervise By	mohan	Supervise On	8/13/2024 10:47:32 PM

STD. NAME	STD REF.#
ICAL Standard	MP81780,MP81781,MP81782,MP81783,MP81784,MP81785
ICV Standard	MP81786
CCV Standard	MP81788
ICSA Standard	
CRI Standard	MP81790
LCS Standard	
Chk Standard	MP81787,MP81789,MP81791,MP81804

19	P3534-03DUP	HP-IPDUP	DUP	08/13/24 09:28		mohan	OK
20	P3534-03MS	HP-IPMS	MS	08/13/24 09:30		mohan	OK
21	CCV36	CCV36	CCV	08/13/24 09:33		mohan	OK
22	CCB36	CCB36	CCB	08/13/24 09:35		mohan	OK
23	P3534-03MSD	HP-IPMSD	MSD	08/13/24 09:37		mohan	OK
24	PB162681BL	PB162681BL	MB	08/13/24 09:39		mohan	OK
25	PB162681BS	PB162681BS	LCS	08/13/24 09:42		mohan	OK
26	P3530-02	WC-A-04-202408	SAM	08/13/24 09:44		mohan	OK
27	P3530-02DUP	WC-A-04-202408DUP	DUP	08/13/24 09:46		mohan	OK
28	P3530-02MS	WC-A-04-202408MS	MS	08/13/24 09:49		mohan	OK
29	P3530-02MSD	WC-A-04-202408MSD	MSD	08/13/24 09:51		mohan	OK
30	P3530-03	WC-A-05-202408	SAM	08/13/24 09:53		mohan	OK
31	P3534-05	PIPE-BLAST-GRIT(FB	SAM	08/13/24 09:55		mohan	OK
32	P3534-06	HP-IP(FB)	SAM	08/13/24 09:58		mohan	OK
33	CCV37	CCV37	CCV	08/13/24 10:00		mohan	OK
34	CCB37	CCB37	CCB	08/13/24 10:05		mohan	OK
35	PB162680BL	PB162680BL	MB	08/13/24 10:07		mohan	OK
36	PB162680BS	PB162680BS	LCS	08/13/24 10:09		mohan	OK
37	P3426-01	927-K1-WS-073124	SAM	08/13/24 10:12		mohan	OK
38	P3426-02	927-K1-WS-073124-F	SAM	08/13/24 10:14		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 # LB131960

Review By	jaswal	Review On	8/13/2024 10:45:46 PM
Supervise By	mohan	Supervise On	8/13/2024 10:47:32 PM

STD. NAME	STD REF.#
ICAL Standard	MP81780,MP81781,MP81782,MP81783,MP81784,MP81785
ICV Standard	MP81786
CCV Standard	MP81788
ICSA Standard	
CRI Standard	MP81790
LCS Standard	
Chk Standard	MP81787,MP81789,MP81791,MP81804

39	P3429-01	926-K1-WS-073124	SAM	08/13/24 10:16		mohan	OK
40	P3429-02	931-K1-WS-073124	SAM	08/13/24 10:19		mohan	OK
41	P3429-03	925-K1-WS-073124	SAM	08/13/24 10:21		mohan	OK
42	P3440-01	923-K1-WS-080124	SAM	08/13/24 10:23		mohan	OK
43	P3440-01DUP	923-K1-WS-080124DU	DUP	08/13/24 10:25		mohan	OK
44	P3440-02	923-K1-WS-080124M	MS	08/13/24 10:28		mohan	OK
45	CCV38	CCV38	CCV	08/13/24 10:30		mohan	OK
46	CCB38	CCB38	CCB	08/13/24 10:35		mohan	OK
47	P3440-03	923-K1-WS-080124M	MSD	08/13/24 10:37		mohan	OK
48	P3440-04	922-K1-WS-080124	SAM	08/13/24 10:39		mohan	OK
49	P3451-01	921-J-WS-080124	SAM	08/13/24 10:42		mohan	OK
50	P3457-01	924-K1-WS-080224	SAM	08/13/24 10:44		mohan	OK
51	P3457-02	932-K1-WS-080224	SAM	08/13/24 10:46		mohan	OK
52	P3467-01	919-J-WS-080224	SAM	08/13/24 10:49		mohan	OK
53	P3497-02	COMP	SAM	08/13/24 10:51		mohan	OK
54	P3532-01	806-C	SAM	08/13/24 10:53		mohan	OK
55	P3545-01	BUR-1295	SAM	08/13/24 10:55		mohan	OK
56	CCV39	CCV39	CCV	08/13/24 10:58		mohan	OK
57	CCB39	CCB39	CCB	08/13/24 11:04		mohan	OK
58	PB162588TB	PB162588TB	MB	08/13/24 11:06		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 # LB131960

Review By	jaswal	Review On	8/13/2024 10:45:46 PM
Supervise By	mohan	Supervise On	8/13/2024 10:47:32 PM

STD. NAME	STD REF.#
ICAL Standard	MP81780,MP81781,MP81782,MP81783,MP81784,MP81785
ICV Standard	MP81786
CCV Standard	MP81788
ICSA Standard	
CRI Standard	MP81790
LCS Standard	
Chk Standard	MP81787,MP81789,MP81791,MP81804

59	PB162590TB	PB162590TB	MB	08/13/24 11:08		mohan	OK
60	P3534-03L	HP-IPL	SD	08/13/24 11:10		mohan	OK
61	P3534-03A	HP-IPA	PS	08/13/24 11:13		mohan	OK
62	P3530-02L	WC-A-04-202408L	SD	08/13/24 11:15		mohan	OK
63	P3530-02A	WC-A-04-202408A	PS	08/13/24 11:17		mohan	OK
64	P3440-01L	923-K1-WS-080124L	SD	08/13/24 11:19		mohan	OK
65	P3440-01A	923-K1-WS-080124A	PS	08/13/24 11:22		mohan	OK
66	CCV40	CCV40	CCV	08/13/24 11:24		mohan	OK
67	CCB40	CCB40	CCB	08/13/24 11:26		mohan	OK

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

Prep Standard - Chemical Standard Summary

Order ID : P3429

Test : Mercury,Metals Group4

Prepbatch ID : PB162493,PB162680,

Sequence ID/Qc Batch ID: LB131900,LB131900,LB131960,

Standard ID :
MP81528,MP81559,MP81645,MP81646,MP81647,MP81648,MP81649,MP81650,MP81651,MP81652,MP81653,MP81654,
MP81661,MP81662,MP81779,MP81780,MP81781,MP81782,MP81783,MP81784,MP81785,MP81786,MP81787,MP81788,
MP81789,MP81790,MP81791,MP81804,

Chemical ID :
M4877,M4885,M4889,M4960,M5062,M5130,M5184,M5192,M5200,M5223,M5224,M5227,M5288,M5294,M5296,M5298,M5387,M5393,M5466,M5497,M5643,M5649,M5658,M5697,M5747,M5748,M5768,M5776,M5798,M5799,M5800,M5801,M5809,M5814,M5816,M5818,M5819,M5820,M5875,M5904,M5929,M5942,M5951,M5953,M5959,M5962,M5963,M5965,M5970,M5982,W3112,

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
902	ICP AES CAL BLK (SO/ICB/CCB)	MP81528	07/22/2024	08/21/2024	Sarabjit Jaswal	None	None	Mohan Bera 07/23/2024

FROM 125.00000ml of M5929 + 2350.00000ml of W3112 + 25.00000ml of M5963 = Final Quantity: 2500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
170	1:1HCL	MP81559	07/23/2024	12/08/2024	Rubina Mughal	None	None	Mohan Bera 07/23/2024

FROM 1250.00000ml of M5929 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
907	ICP AES STD S (S5)	MP81645	07/22/2024	08/21/2024	Sarabjit Jaswal	None	None	Mohan Bera 07/31/2024

FROM 5.00000ml of M5224 + 5.00000ml of M5296 + 5.00000ml of M5393 + 5.00000ml of M5466 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M5982 + 455.00000ml of MP81528 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
910	ICP AES STD S4	MP81646	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 50.00000ml of MP81528 + 50.00000ml of MP81645 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP81647	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 25.00000ml of MP81645 + 75.00000ml of MP81528 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3913	ICP AES STD S2	MP81648	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 16.00000ml of MP81645 + 184.00000ml of MP81528 = Final Quantity: 200.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2950	ICP AES S1/CRI STOCK STD	MP81649	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 0.03000ml of M4877 + 0.03000ml of M5798 + 0.05000ml of M4885 + 0.05000ml of M5298 + 0.05000ml of M5658 + 0.05000ml of M5809 + 0.06000ml of M5747 + 0.10000ml of M5184 + 0.10000ml of M5697 + 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 M4889 + 0.20000ml of M5224 + 0.20000ml of M5227 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5819 + 0.25000ml of M5466 + 0.50000ml of M5387 + 0.50000ml of M5814 + 1.00000ml of M5192 + 1.00000ml of M5200 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M5768 + 1.00000ml of M5942 + 2.00000ml of M5816 + 2.00000ml of M5818 + 86.38000ml of MP81528 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2951	ICP AES S1/CRI WORK STD	MP81650	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 2.00000ml of MP81649 + 98.00000ml of MP81528 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
912	ICP AES ICV SOLN	MP81651	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 10.00000ml of M5294 + 90.00000ml of MP81528 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP81652	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 10.00000ml of M5130 + 90.00000ml of MP81528 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
905	ICP AES ICSAB SOLN	MP81653	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 10.00000ml of M5130 + 10.00000ml of M5223 + 80.00000ml of MP81528 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
911	ICP AES CCV SOLN	MP81654	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 125.00000ml of MP81528 + 125.00000ml of MP81645 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP81661	07/22/2024	08/21/2024	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Mohan Bera 07/31/2024

FROM 1.00000ml of M5959 + 10.00000ml of M4960 + 1969.00000ml of W3112 + 20.00000ml of M5963 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
903	ICP AES RINSE SOLN	MP81662	07/22/2024	08/21/2024	Sarabjit Jaswal	None	None	Mohan Bera 07/31/2024

FROM 200.00000ml of M5963 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP81779	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 1.00000ml of M5965 + 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	MP81780	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1341	Hg 0.2 PPB STD	MP81781	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 247.30000ml of W3112 + 0.20000ml of MP81779 = 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	MP81782	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 245.00000ml of W3112 + 2.50000ml of MP81779 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1343	Hg 5.0 PPB STD	MP81783	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 242.50000ml of W3112 + 5.00000ml of MP81779 = 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	MP81784	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 240.00000ml of W3112 + 7.50000ml of MP81779 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1345	Hg 10.0 PPB STD	MP81785	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 237.50000ml of W3112 + 10.00000ml of MP81779 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1346	Hg ICV SOLUTION	MP81786	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5953 + 2.50000ml of M5965 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP81787	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 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)	MP81788	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 485.00000ml of W3112 + 5.00000ml of M5965 + 10.00000ml of MP81779 = Final Quantity: 500.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP81789	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 495.00000ml of W3112 + 5.00000ml of M5965 = 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)	MP81790	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 247.30000ml of W3112 + 0.20000ml of MP81779 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP81791	08/12/2024	08/13/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 08/13/2024

FROM 2.50000ml of M5965 + 240.50000ml of W3112 + 7.00000ml of MP81779 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
68	STANNOUS CHLORIDE SOLUTION	MP81804	08/13/2024	08/14/2024	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 08/13/2024

FROM 450.00000ml of W3112 + 50.00000gram of M5776 + 50.00000ml of M5951 = Final Quantity: 500.000 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57048 / Cd, 1000 PPM, 125 ml	072821	08/28/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4877

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	072921	08/29/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4885

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	073021	08/30/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4889

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	100721	10/07/2024	10/09/2021 / jaswal	10/08/2021 / jaswal	M4960

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	11/19/2024	05/20/2024 /Jaswal	04/20/2021 / bin	M5130

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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	060122	06/01/2025	07/01/2022 / bin	06/02/2022 / jaswal	M5184

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

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	092121	09/21/2024	06/23/2022 / bin	10/05/2021 / bin	M5200

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	11/19/2024	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.	57051 / Sb, 1000 PPM, 125 ml	101521	10/15/2024	06/29/2022 / bin	10/18/2021 / bin	M5224

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	100121	10/01/2024	07/01/2022 / bin	10/18/2021 / bin	M5227

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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	01/01/2025	12/13/2023 / bin	02/20/2020 / bin	M5294

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.	58126 / Fe, 10000 PPM, 500 ml	020422	02/04/2025	05/02/2023 / jaswal	06/15/2022 / jaswal	M5298

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	11/01/2022 / jaswal	09/18/2022 / jaswal	M5387

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

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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.	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 #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	T2-MEB723367	08/17/2024	08/18/2023 / bin	04/16/2023 / bin	M5643

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	T2-MEB715594	02/17/2027	12/11/2023 / bin	04/16/2023 / bin	M5649

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58024 / Chromium, Cr, 500 ml, 1000 PPM	060523	06/05/2026	08/28/2023 / jaswal	08/25/2023 / jaswal	M5658

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	102523	10/25/2026	04/03/2024 / jaswal	10/27/2023 / jaswal	M5697

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	100923	10/09/2026	05/20/2024 / Jaswal	12/20/2023 / jaswal	M5747

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Nickel (Ni) 1000PPM	091223	09/12/2026	01/02/2024 / bin	12/20/2023 / jaswal	M5748

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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 #
Seidler Chemical	BA-3980-01 / Stannous Chloride (cs/4x500g)	0000281938	07/06/2026	06/26/2023 / mohan	07/18/2023 / mohan	M5776

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

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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.	58113 / Al, 10000 PPM, 500 ml	122926	12/29/2026	06/28/2024 / Jaswal	01/03/2024 / jaswal	M5809

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57005 / B, 1000 PPM, 125 ml	071123	07/11/2026	03/26/2024 / Sohil	01/03/2024 / jaswal	M5814

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	11/16/2024	05/15/2024 / Al-Terek	05/07/2024 / Al-Terek	M5904

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	12/08/2024	06/24/2024 / Al-Terek	06/07/2024 / Al-Terek	M5929

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	06/18/2024 / Jaswal	02/22/2024 / Jaswal	M5942

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	12/27/2024	07/04/2024 / Jaswal	06/23/2024 / Al-Terek	M5951

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

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 #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24B1362001	01/04/2025	07/09/2024 / Al-Terek	07/03/2024 / Al-Terek	M5963

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	01/04/2025	07/05/2024 / Jaswal	07/03/2024 / Al-Terek	M5965

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
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 #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / Iwona	07/03/2024 / Iwona	W3112

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 01/03/24 M5808, M5809

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58113
Lot Number: 122923
Description: Aluminum (Al)

Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

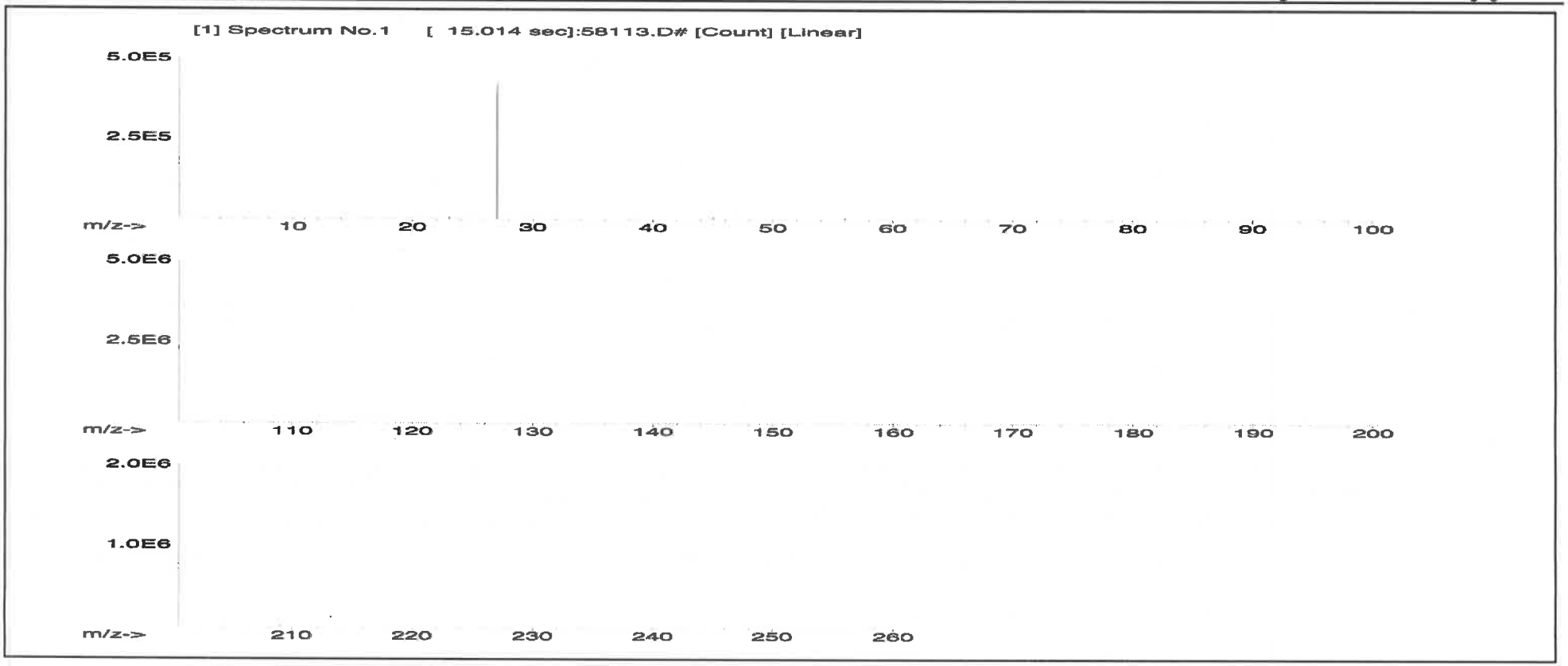
Giovanni Esposito

Formulated By:	Giovanni Esposito	122923

Pedro Rentas

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. Aluminum nitrate nonahydrate (Al)	IN022	ALM092022A1	10000	99.999	0.10	7.30	273.9779	273.9813	**10000.1**	**20.0**	7784-27-2	2 mg/m3	orl-rat 3671 mg/kg	3101a



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	T	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	17	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	0.03
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	4.5	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	0.56	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

INORGANIC VENTURES™
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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



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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

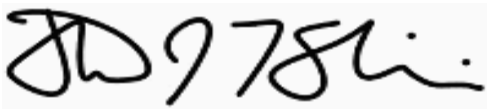
- Sealed TCT Bag Open Date: _____

- 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

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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.

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- **January 13, 2027**

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11.3 Period of Validity

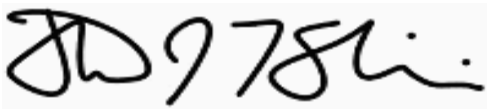
- Sealed TCT Bag Open Date: _____

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12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

M5776-83
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

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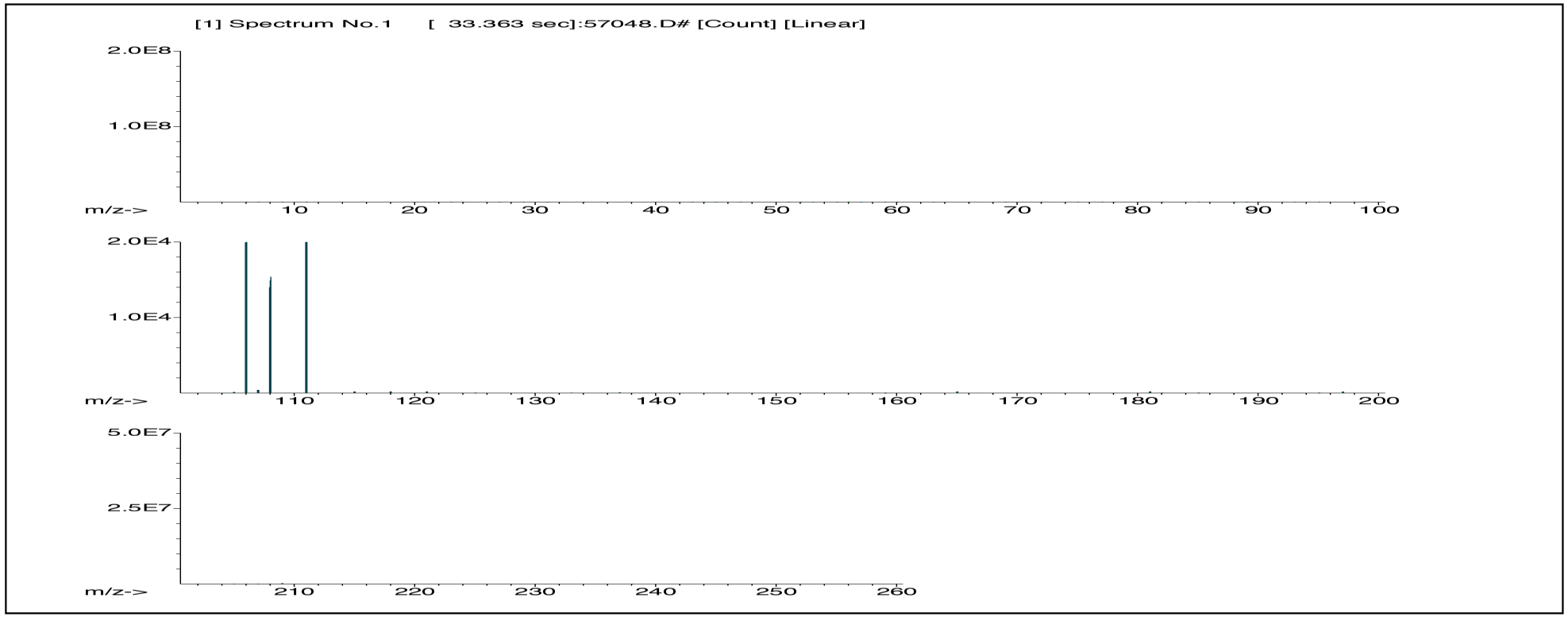
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AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57048**	20370011	Nitric Acid	
Lot Number:	**072821**			
Description:	**Cadmium (Cd)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	072824			
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:	Giovanni Esposito	072821
Reviewed By:	Pedro L. Rentas	072821

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. Cadmium nitrate tetrahydrate (Cd)	58148	010920	0.1000	200.0	0.084	1000	10000.5	**1000.0**	**2.2**	10022-68-1	0.2 mg/m3	orl-rat 300 mg/kg	3108



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																		
Al	<0.02	Cd	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:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:



* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57047**	20370011	Nitric Acid	
Lot Number:	**072921**			
Description:	**Silver (Ag)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	072924			
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	

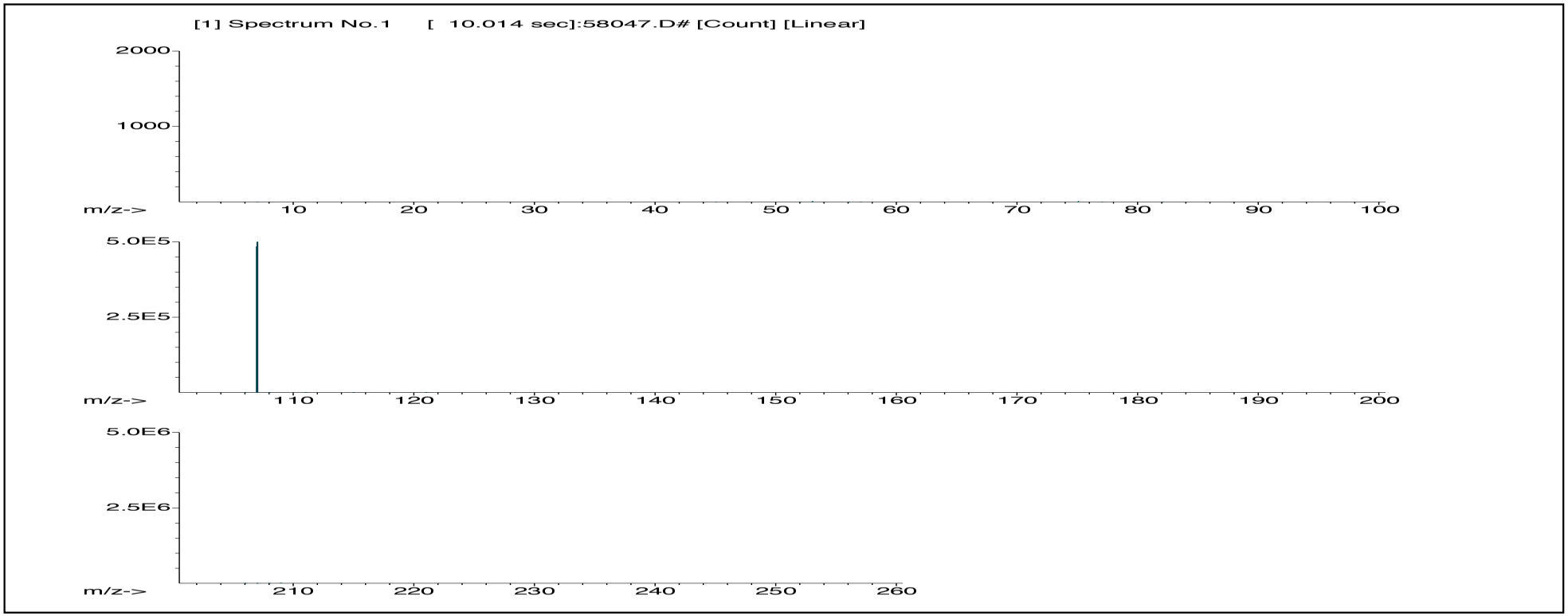
Giovanni Esposito

Formulated By:	Giovanni Esposito	072921

Pedro Rentas

Reviewed By:	Pedro L. Rentas	072921

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. Silver nitrate (Ag)	58147	010820	0.1000	200.0	0.084	1000	10000.4	**1000.0**	**2.2**	7761-88-8	10 ug/m3	N/A	3151



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	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:



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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57081**	20370011	Nitric Acid	
Lot Number:	**073021**			
Description:	**Thallium (Tl)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	073024			
Recommended Storage:	Ambient (20 ºC)			
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	

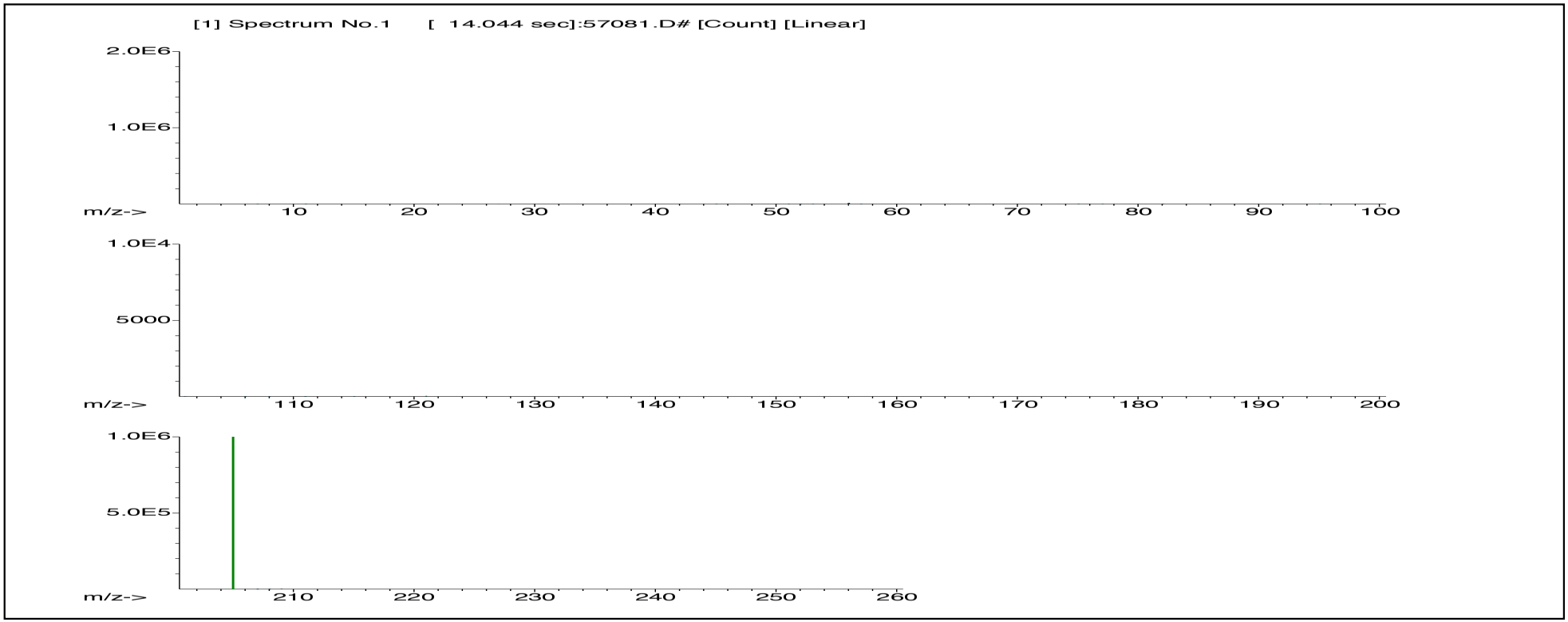
Giovanni Esposito

Formulated By:	Giovanni Esposito	073021

Pedro Rentas

Reviewed By:	Pedro L. Rentas	073021

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. Thallium (Tl)	58181	060920	0.1000	200.0	0.084	1000	10001.0	**1000.0**	**2.2**	7440-28-0	0.1 mg/m3	orl-rat 6700 mg/kg	3158



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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
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Certified by:



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Certified Reference Material CRM

M4960 R: 10/08/21 BH

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CERTIFIED WEIGHT REPORT:

Part Number: 58149
Lot Number: 100721
Description: Indium (In)

Expiration Date: 100724
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

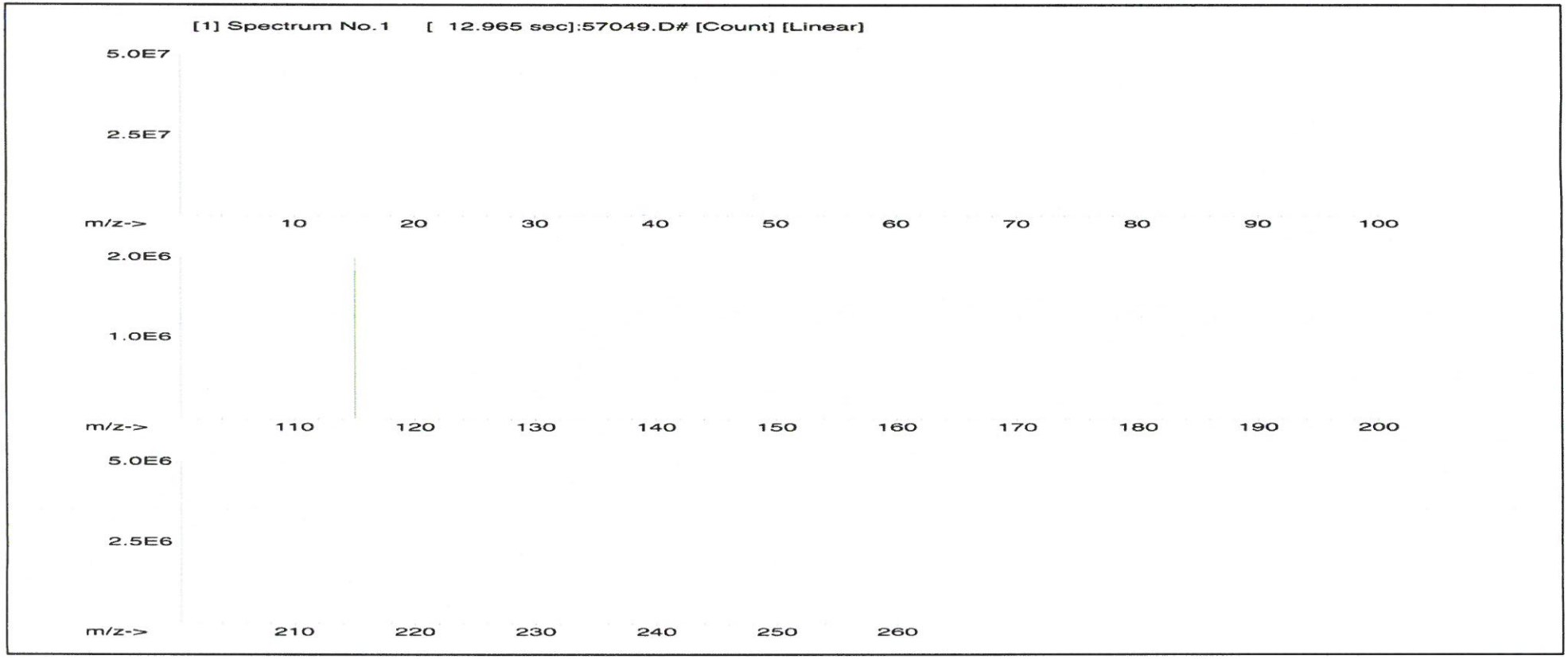
Weight shown below was diluted to (mL): 500.06 0.058 Flask Uncertainty

		Lot #	
Solvent:	20370011	Nitric Acid	
5%	25.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	100721
Reviewed By:	Pedro L. Rentas	100721

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. Indium Oxide (In)	IN086	W1096A	10000	99.999	0.10	82.6	6.05408	6.05441	**10000.6**	**20.1**	1312-43-2	NA	NA	3124a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	T	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).

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Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

M5062
M5063
M3

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSHG-10PPM
Lot Number:	S2-HG709270
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \Sigma(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance.

$$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)\,(u_{char\ a})$$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.000011	M	Eu	<	0.000201	O	Na		0.000004	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al		0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000005	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201				
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007				
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201				
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201				
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201				
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216				
O	Ca		0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201				
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402				
M	Ce	<	0.000201	O	K		0.000020	M	Rb	<	0.000201	O	Tl	<	0.016508				
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201				
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058				
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201				
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<	0.000604				
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201				
M	Er	<	0.000201	M	Mo		0.000009	M	Sc	<	0.000201	M	Yb	<	0.000201				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 22, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 22, 2026

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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.

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R: 6/2/22

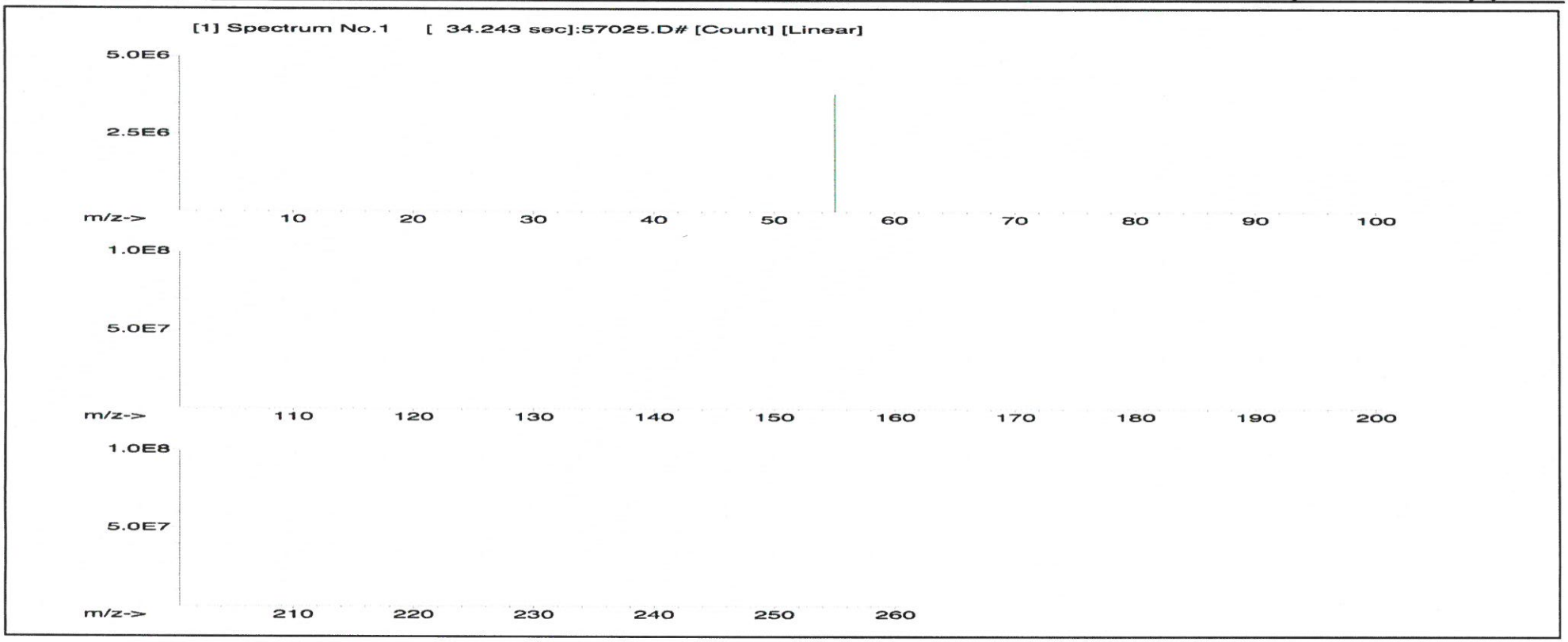
CERTIFIED WEIGHT REPORT:

M5184

		Lot #	Solvent:	
Part Number:	**58025**	20510011	Nitric Acid	
Lot Number:	**060122**			
Description:	**Manganese (Mn)**	2.0%	60.0 (mL)	Nitric Acid
Expiration Date:	060125			
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 060122
Reviewed By:	Pedro L. Rentas 060122

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	021022	0.1000	300.0	0.084	1000	10000.5	**1000.0**	**2.1**	20694-39-7	5 mg/m3	orl-rat >300mg/kg	3132



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AR-1539 Certificate Number
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																		
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	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).

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M5192 R: 06/17/22

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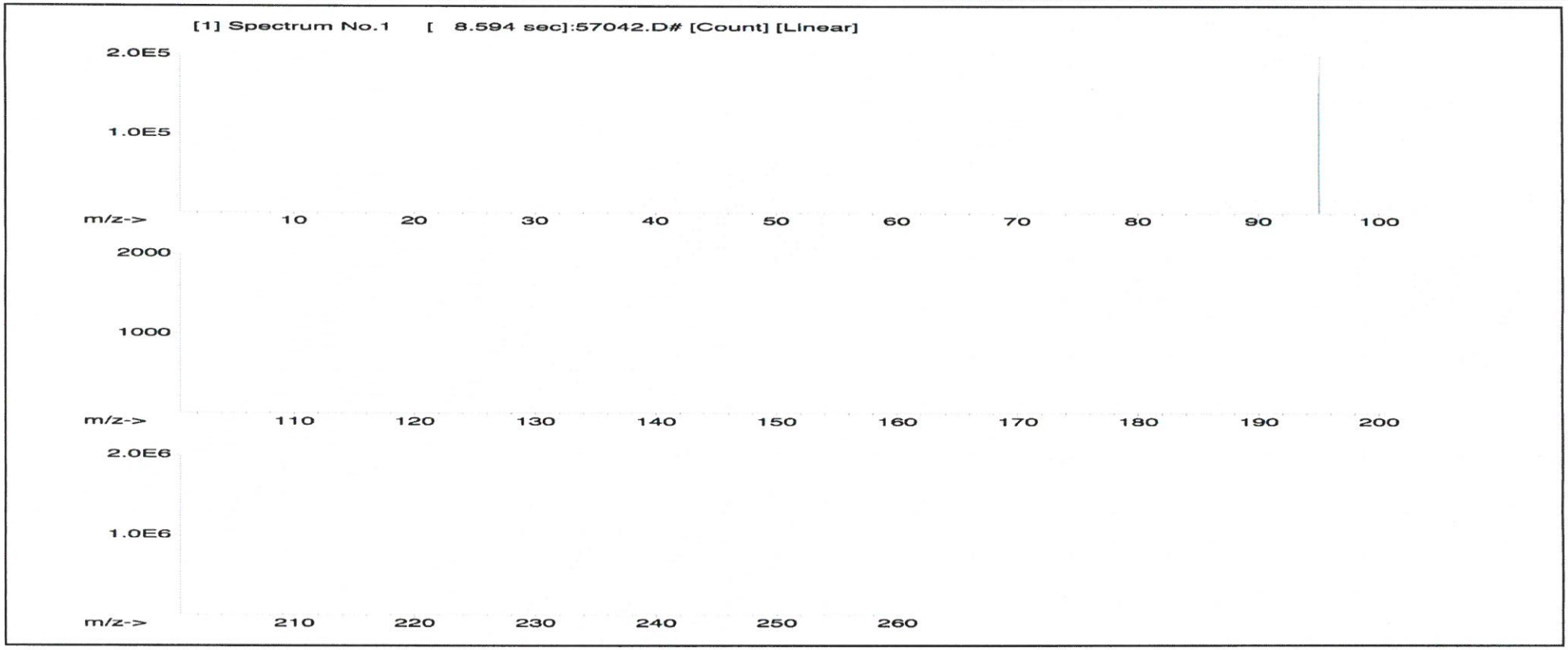
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:
Part Number:	**57042**		
Lot Number:	**051722**	MKBQ8597V	Ammonium hydroxide
Description:	**Molybdenum (Mo)**		
		0.5%	15.0 (mL) Ammonium hydroxide
Expiration Date:	051725		
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	051722
Reviewed By:	Pedro L. Rentas	051722

253 of 340

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



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	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:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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M 5700 R: 10/05/21 BH

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CERTIFIED WEIGHT REPORT:

Part Number: 58111
Lot Number: 092121
Description: Sodium (Na)

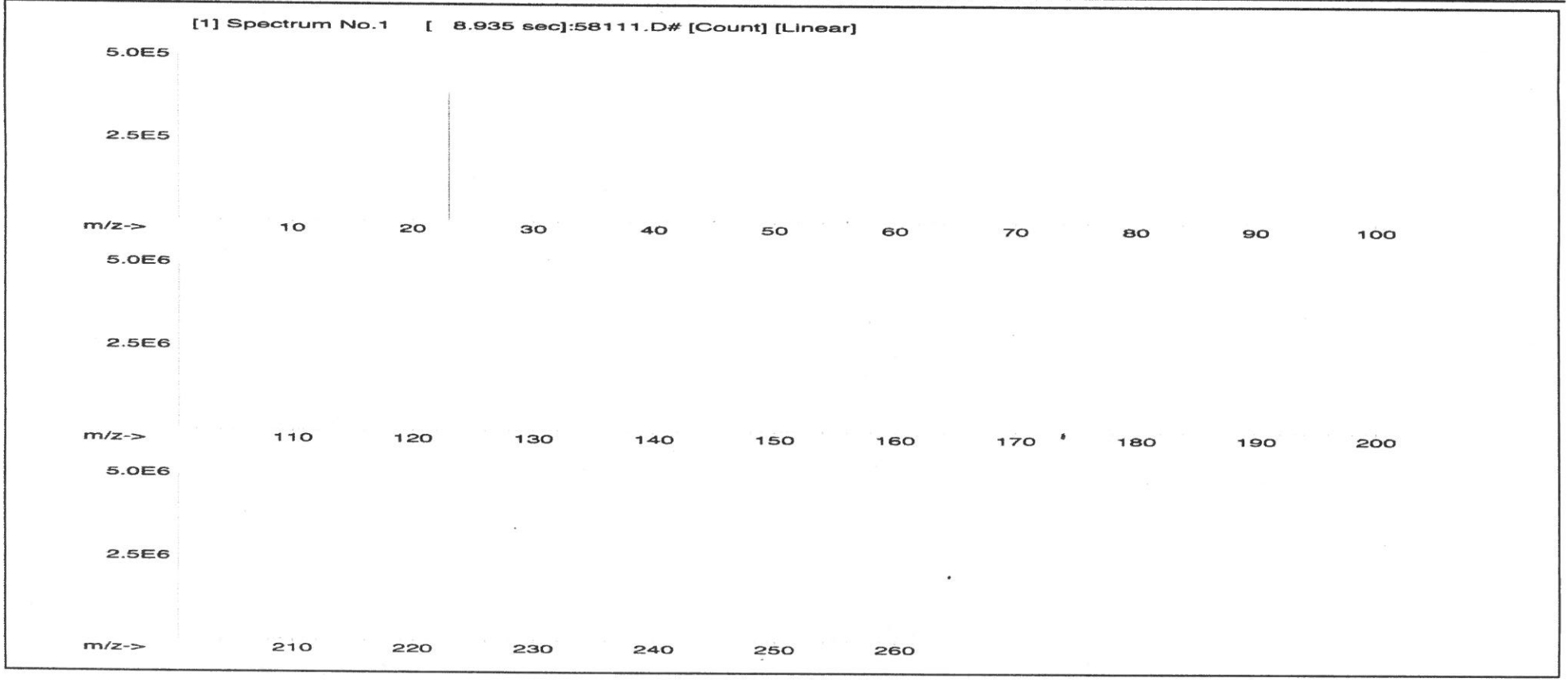
Expiration Date: 092124
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41

Lot #		
Solvent: 20370011	Nitric Acid	
2%	60.0 (mL)	Nitric Acid
5E-05	Balance Uncertainty	
0.058	Flask Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	092121
Reviewed By:	Pedro L. Rentas	092121

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	27.0	111.1274	111.1433	**10001.4**	**20.0**	7631-99-4	5 mg/m3	orl-rat 3236 mg/kg	3152a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	T	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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.

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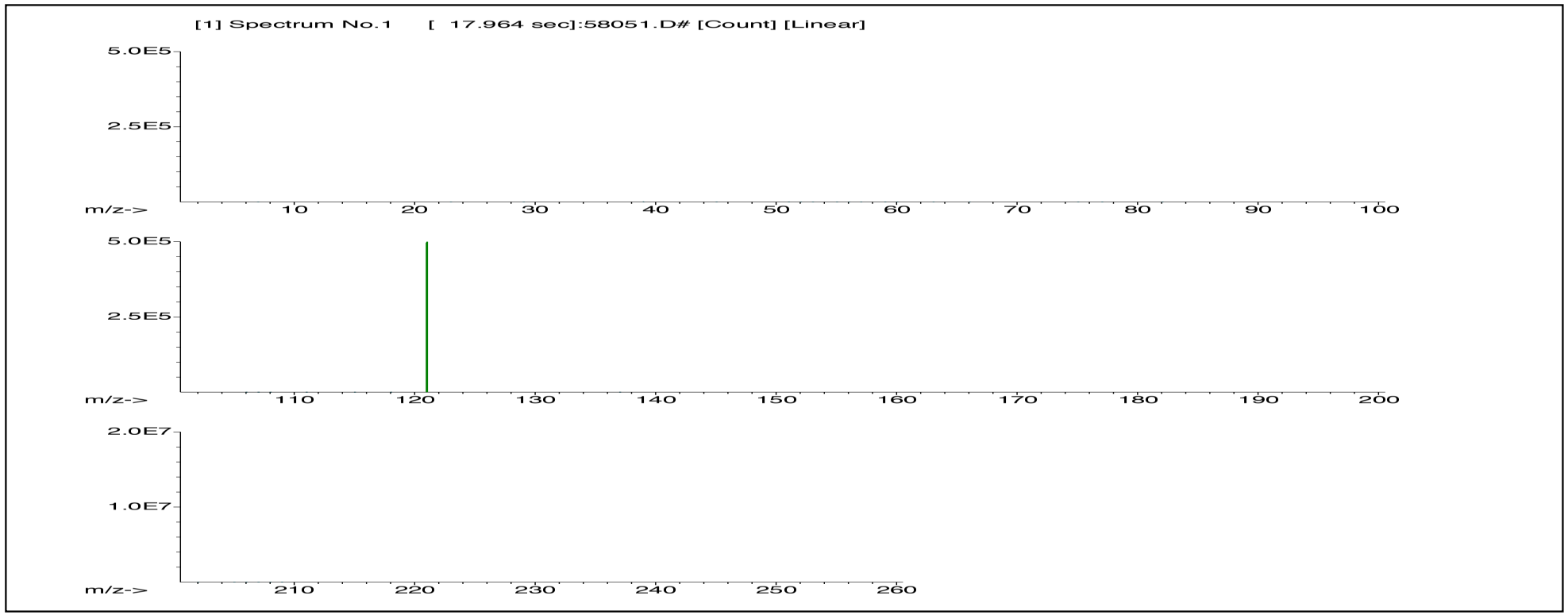
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57051**	20370011	Nitric Acid	
Lot Number:	**101521**			
Description:	**Antimony (Sb)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	101524			
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):	2000.25	0.116	Flask Uncertainty	

Formulated By:	Giovanni Esposito	101521
Reviewed By:	Pedro L. Rentas	101521

	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	081820	0.1000	200.0	0.084	1000	10001.5	**1000.0**	**2.2**	7440-36-0	0.5 mg/m3	orl-rat 7000 mg/kg	3102a



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Instrumental Analysis by Inductively Coupled Plasma Mass 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	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.
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* 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).

M5227 R: 10/18/2021

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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57023**	20370011	Nitric Acid	
Lot Number:	**100121**			
Description:	**Vanadium (V)**	2.0%	60.0 (mL)	Nitric Acid
Expiration Date:	100124			
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):	3000.4	0.06	Flask Uncertainty	

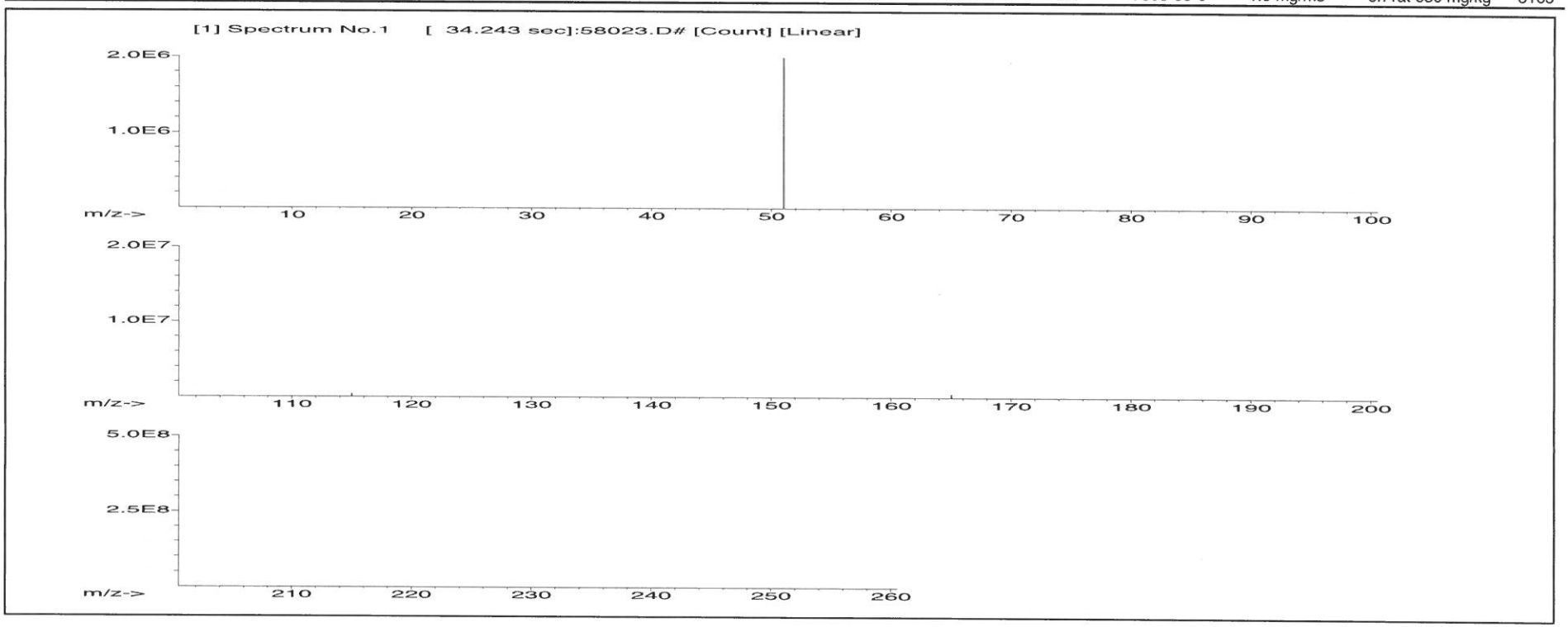
Giovanni Esposito

Formulated By:	Giovanni Esposito	100121

Pedro Rentas

Reviewed By:	Pedro L. Rentas	100121

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	070721	0.1000	300.0	0.084	1000	10000.4	**1000.0**	**2.1**	7803-55-6	1.0 mg/m3	orl-rat 630 mg/kg	3165



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	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).

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CERTIFIED WEIGHT REPORT:

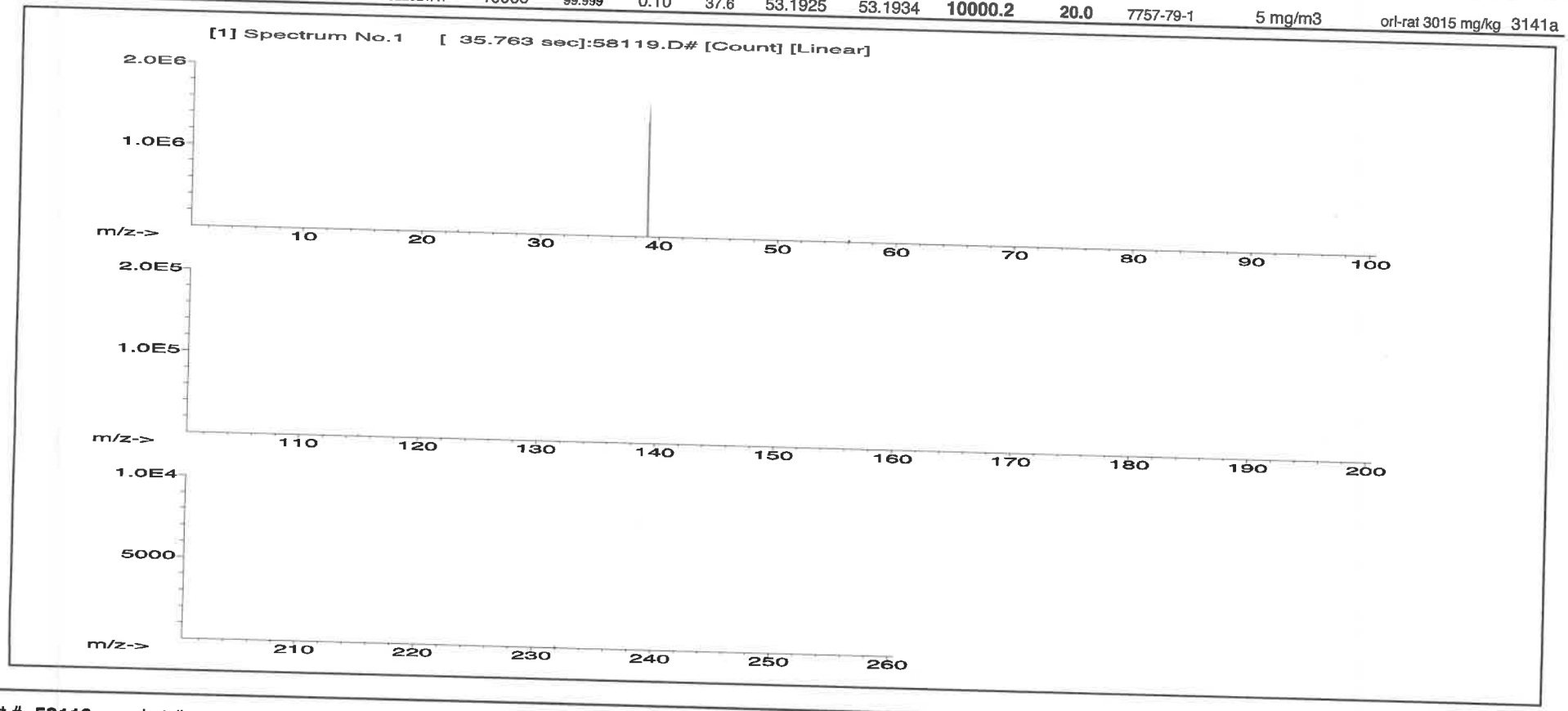
Part Number: 58119
Lot Number: 071122
Description: Potassium (K)

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



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

IM5291
IM5292
IM5293
IM5294
IM5295

(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.

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

SJ 6/15/22

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CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 020422
Description: Iron (Fe)

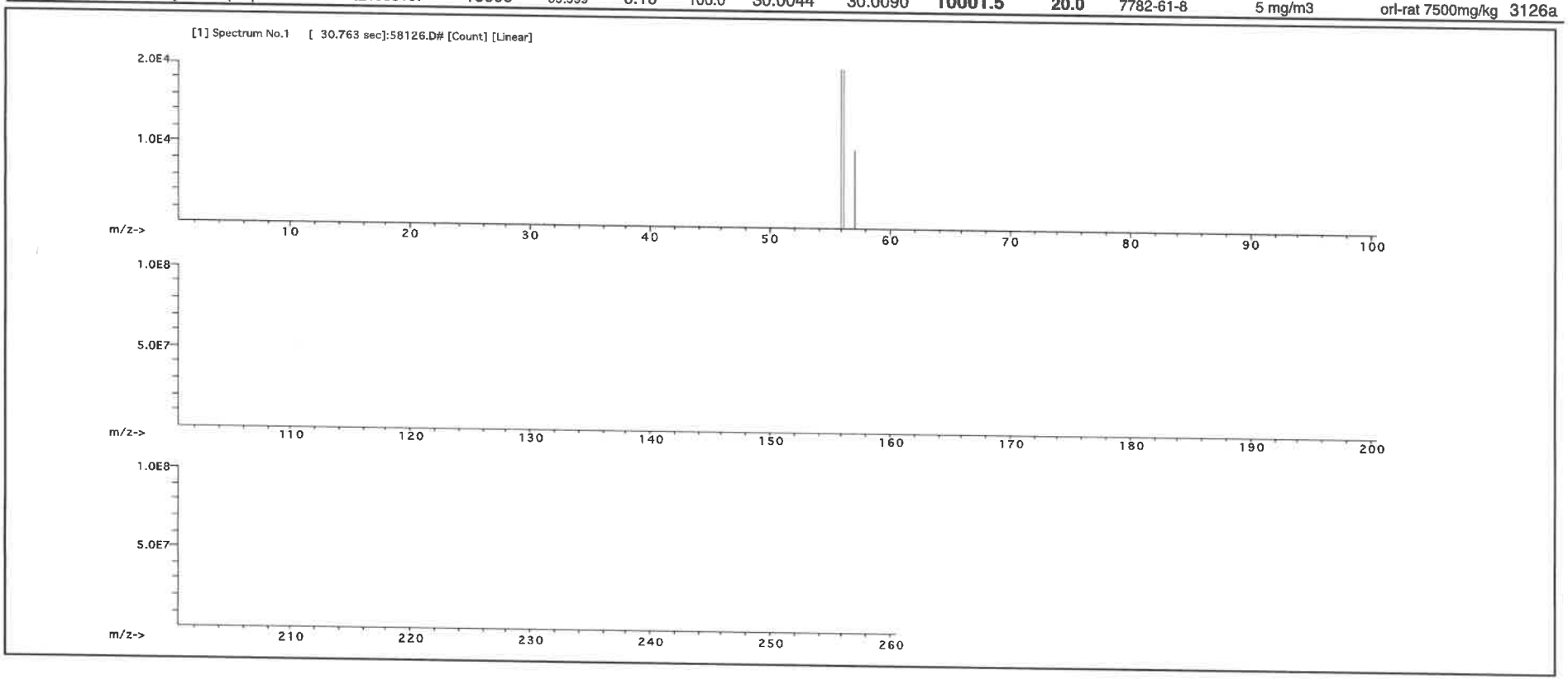
M5298

Expiration Date: 020425
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:	20370011	Nitric Acid	
5.0%	150.0 (mL)	Nitric Acid	
5E-05	Balance Uncertainty		
0.058	Flask Uncertainty		

Giovanni Esposito
Formulated By: Giovanni Esposito 020422
Pedro Rentas
Reviewed By: Pedro L. Rentas 020422

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Iron(III) nitrate nonahydrate (Fe)	IN346	221035107	10000	99.999	0.10	100.0	30.0044	30.0090	**10001.5**	**20.0**	7782-61-8	5 mg/m3	orl-rat 7500mg/kg	3126a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.10	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	<0.5	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	<0.02
B	<0.02	Cu	<0.10	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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Part # **58126** Lot # **020422**

Printed: 2/16/2022, 11:15:09 PM

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R:09/08/22 (BA)

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M5387 . M5389 . M5390 . M5391 . M5392

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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

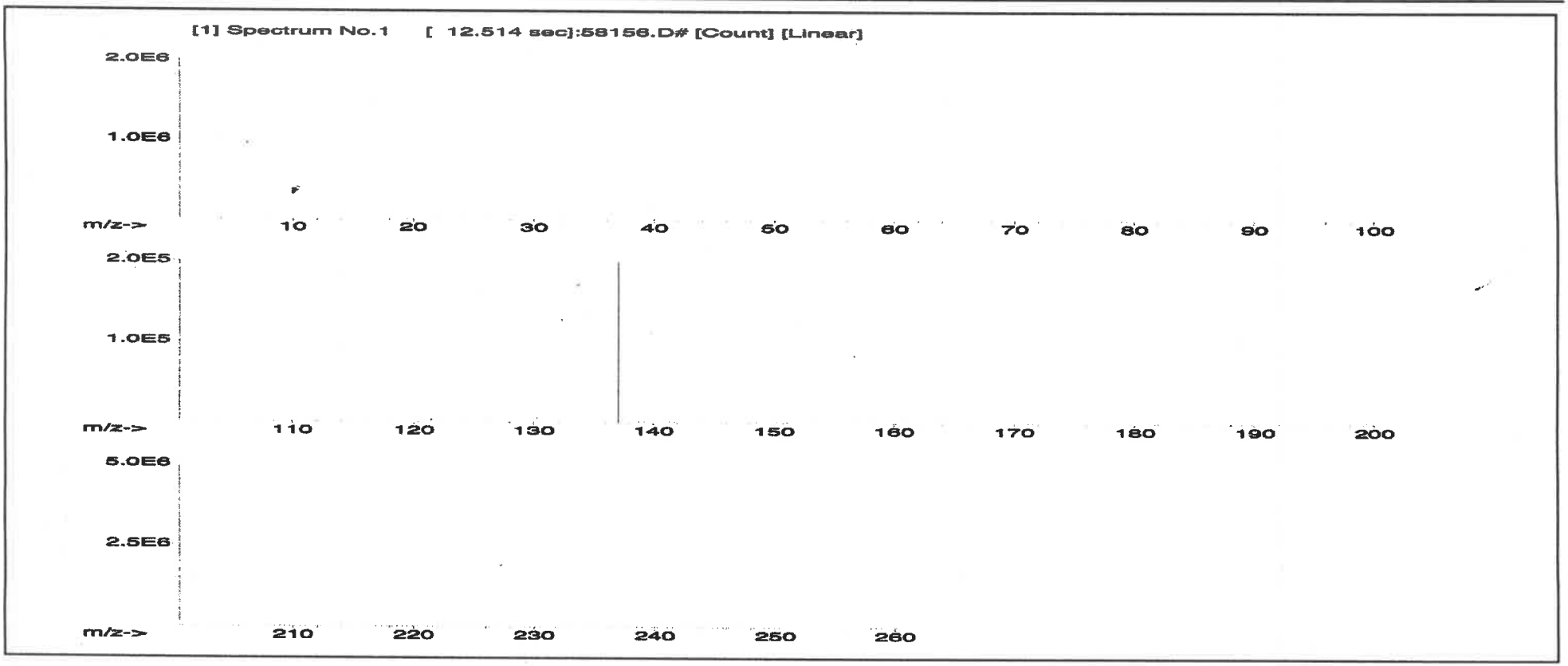
	Lot #		
Solvent:	20510011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

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



A3329-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.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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M 5466

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R: 03/01/23 BH

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CERTIFIED WEIGHT REPORT:

Part Number: 57058
Lot Number: 061322
Description: Cerium (Ce)

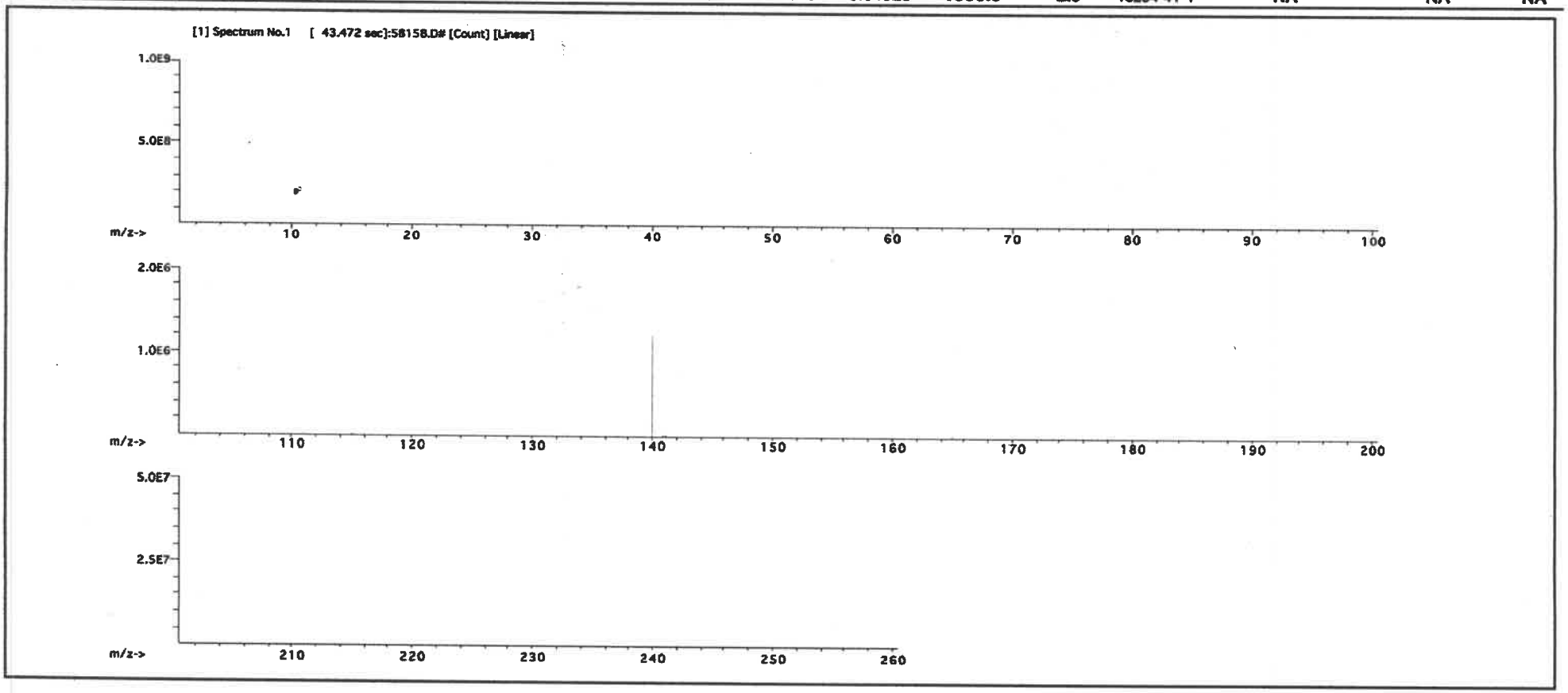
Expiration Date: 061325
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 1000.12 ± 0.058 Flask Uncertainty

	Lot #		±	
Solvent:	20510011	Nitric Acid	5E-05	Balance Uncertainty
2%	20.0 (mL)	Nitric Acid		

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



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	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:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

M5497 - M5498 R: 03/17/23 (BA)

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CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 031523
Description: Calcium (Ca)

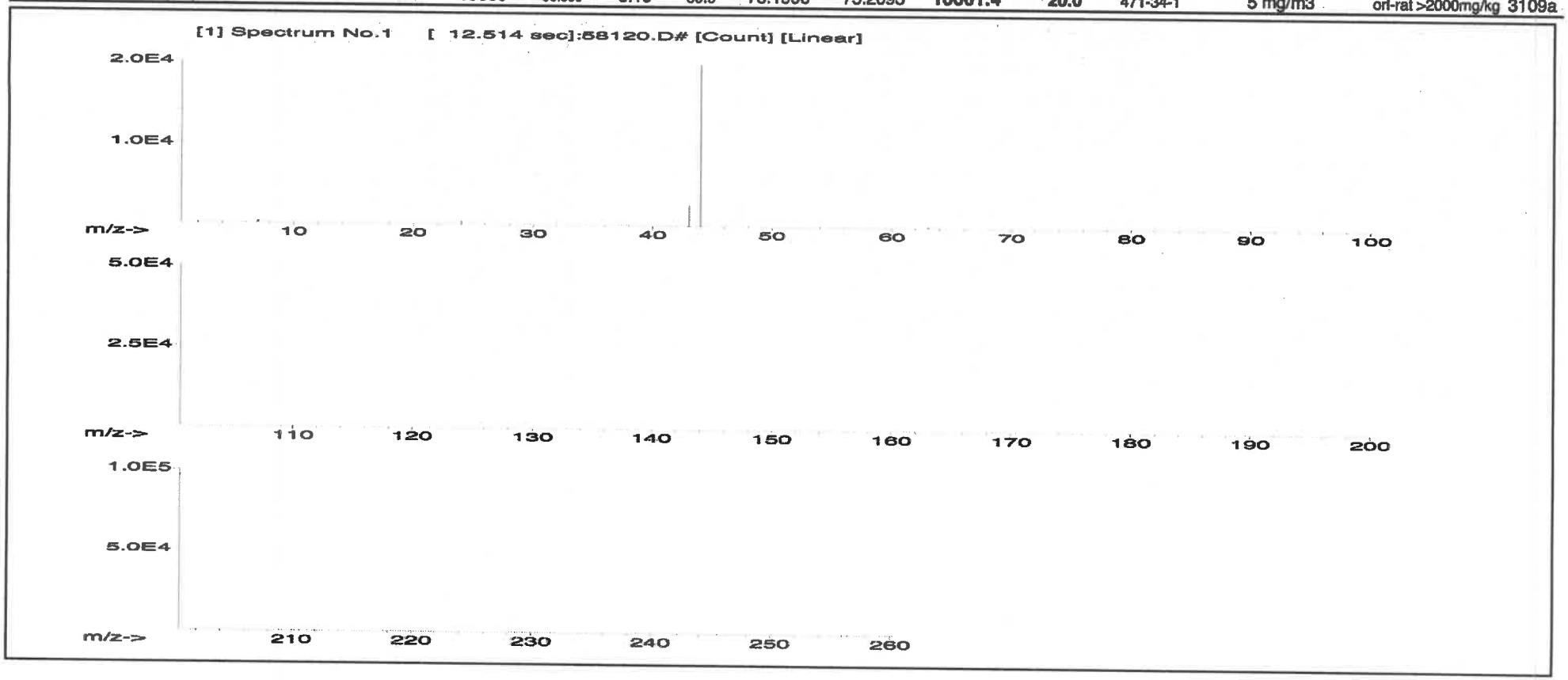
Expiration Date: 031526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41

	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
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.

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M5658 R ! 8/25/23

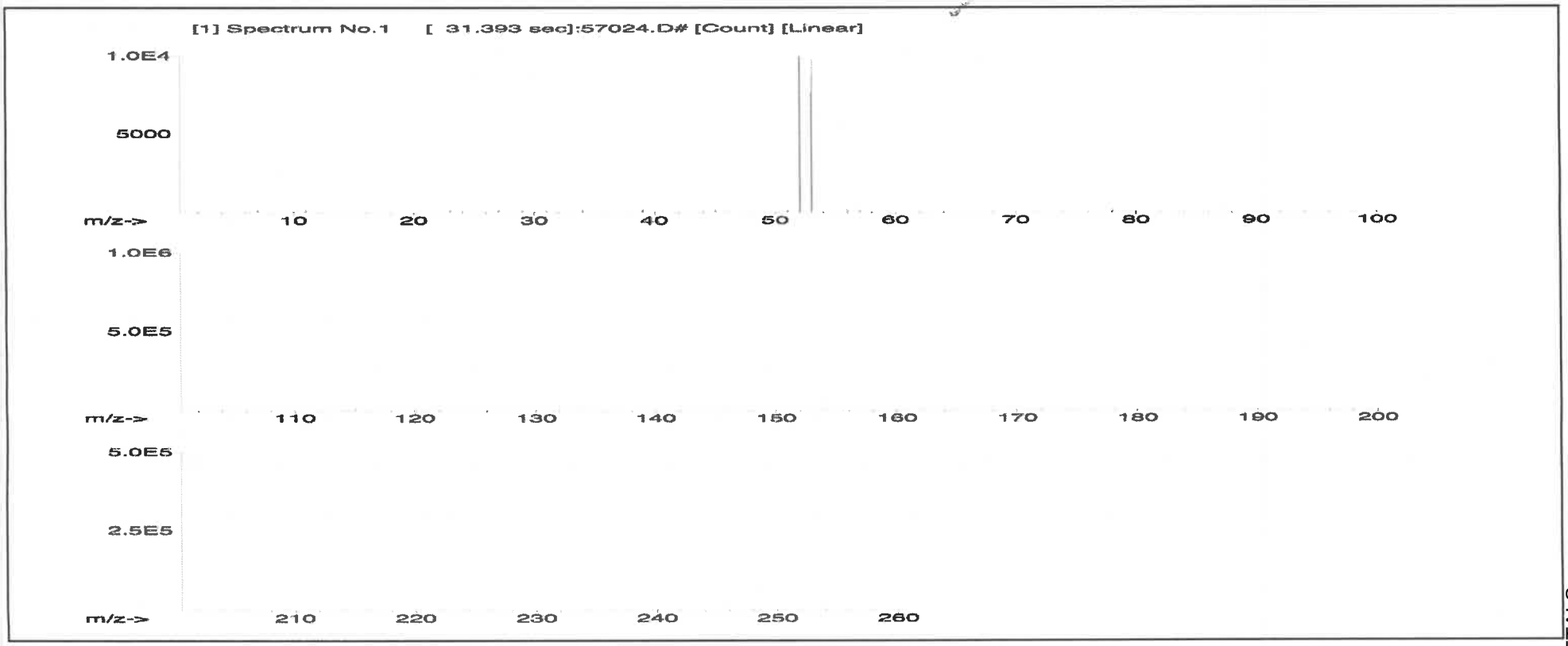
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58024**	21110221	Nitric Acid	
Lot Number:	**060523**			
Description:	**Chromium (Cr)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	060523
Reviewed By:	Pedro L. Rentas	060523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Chromium(III) nitrate nonahydrate (Cr)	58124	071122	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	7789-02-8	0.5 mg(Cr)/m3	orl-rat 3250 mg/kg	3112a



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AR-1539 Certificate Number
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	T	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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M5697 R: 10/27/23

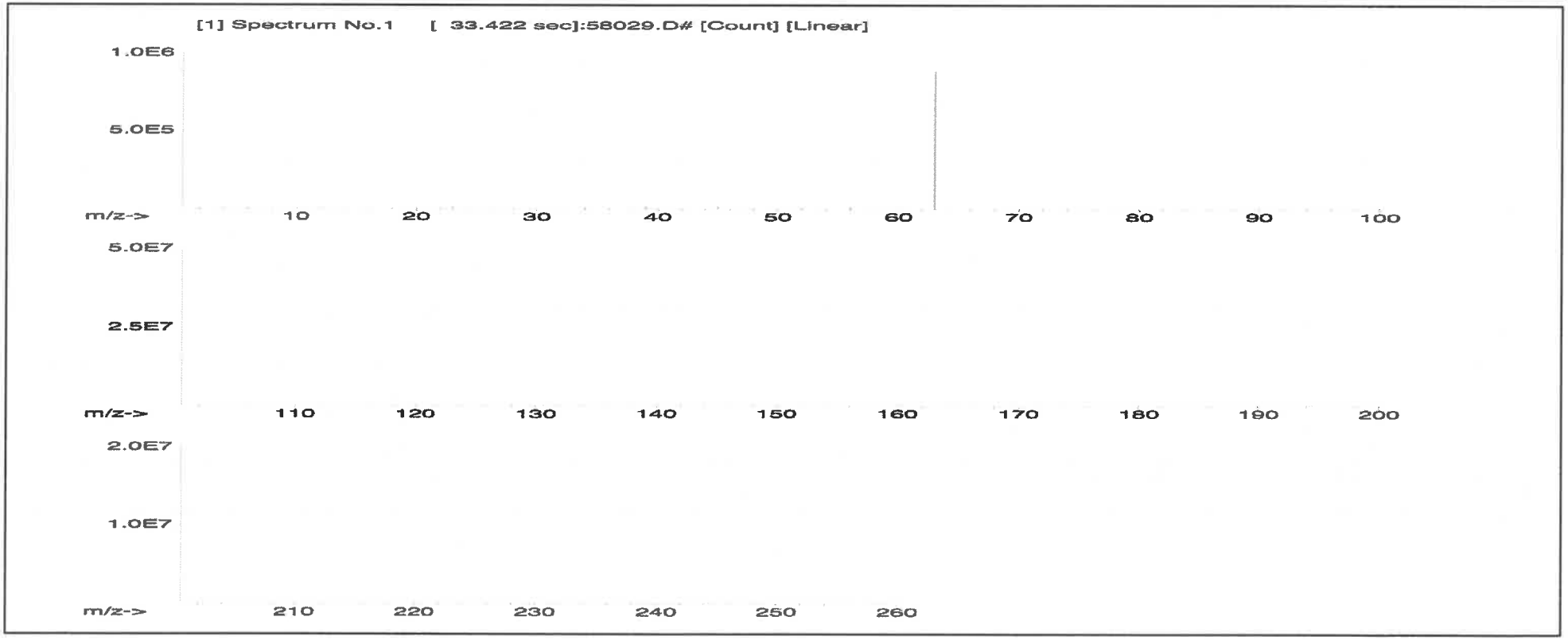
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:
Part Number:	**58029**	24002546	Nitric Acid
Lot Number:	**102523**		
Description:	**Copper (Cu)**		
		2.0%	40.0 (mL) Nitric Acid
Expiration Date:	102526		
Recommended Storage:	Ambient (20 °C)		
Nominal Concentration (µg/mL):	**1000**		
NIST Test Number:	6UTB	5E-05	Balance Uncertainty
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Copper(II) nitrate trihydrate (Cu)	58129	100223	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	10031-43-3	1 mg/m3	orl-rat 794 mg/kg	3114



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	T	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* 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.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 12/20/23 M5747

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CERTIFIED WEIGHT REPORT:

Part Number: 57082
Lot Number: 100923
Description: Lead (Pb)

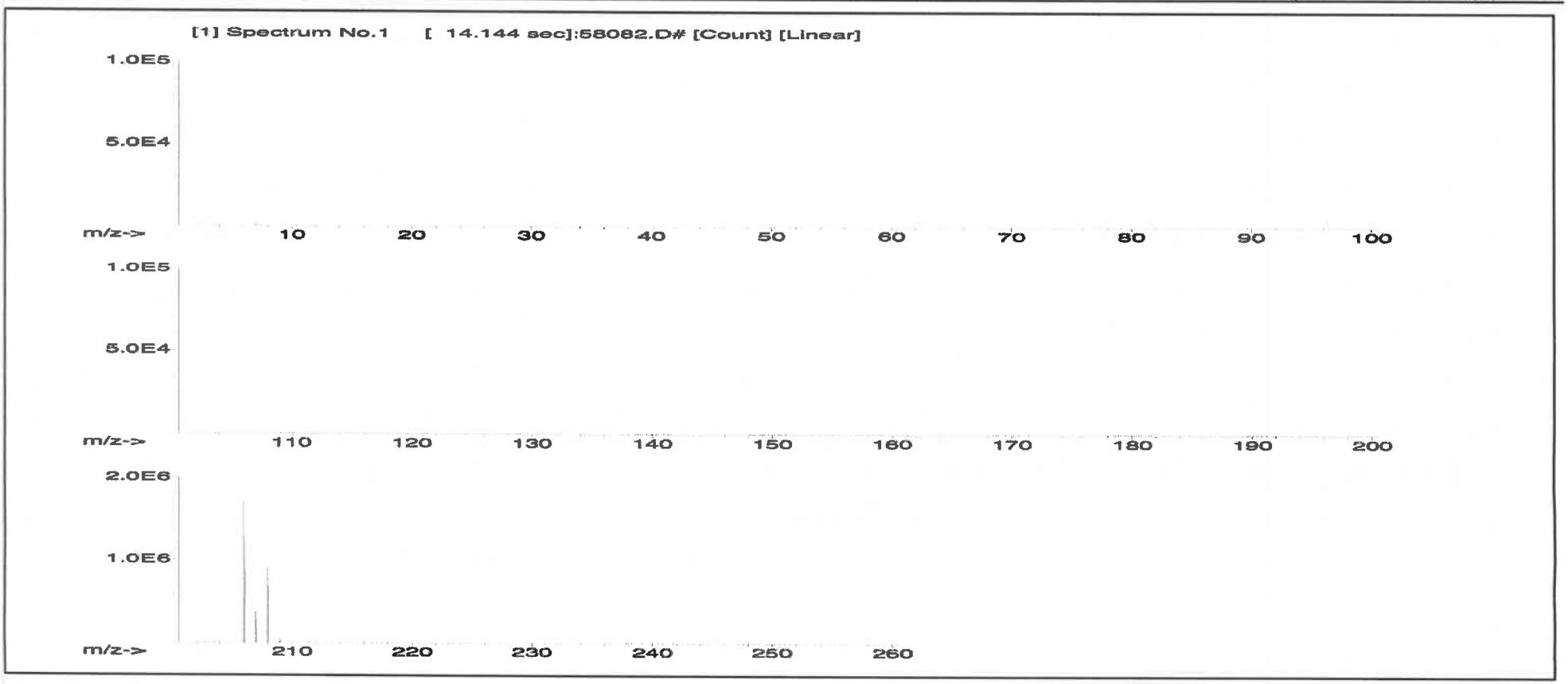
Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 0.06 Flask Uncertainty

	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



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	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.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

R: 12/20/23 M5748

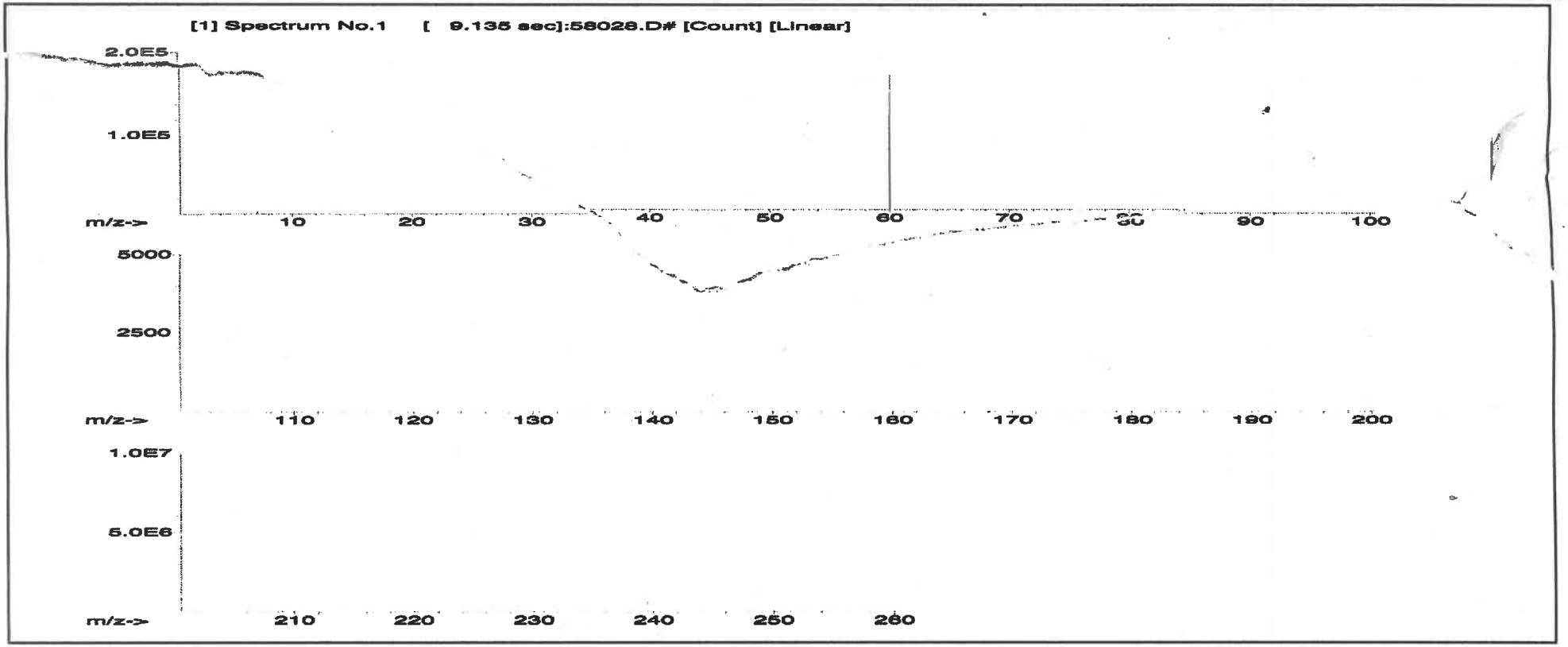
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57028**	24002546	Nitric Acid	
Lot Number:	**091223**			
Description:	**Nickel (Ni)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	091226			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	091223
Reviewed By:	Pedro L. Rentas	091223

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Nickel(II) nitrate hexahydrate (Ni)	58128	062023	0.1000	200.0	0.084	1000	10000.4	**1000.0**	2.2	13478-00-7	1 mg/m3	orl-rat 1620 mg/kg	3136



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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M5768 M5769 (BP) R:1/3/24

Certified Reference Material CRM

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AR-1539 Certificate Number
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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

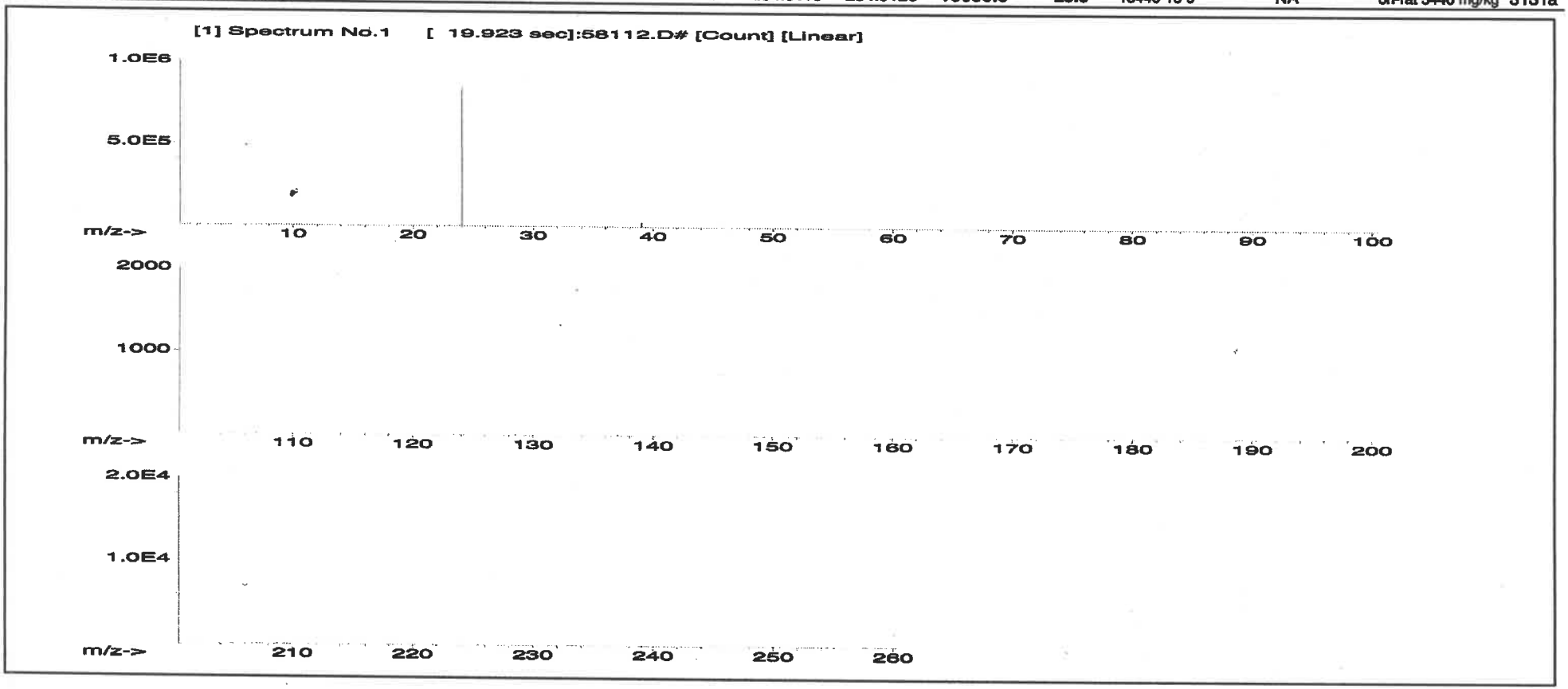
M5768, M5769 (BP) R: 1/3/24

Weight shown below was diluted to (mL): 2000.02 ± 0.058 Flask Uncertainty (5E-05 Balance Uncertainty)

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

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	orl-rat 5440 mg/kg	3131a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	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.

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R: 02/09/24 M5798

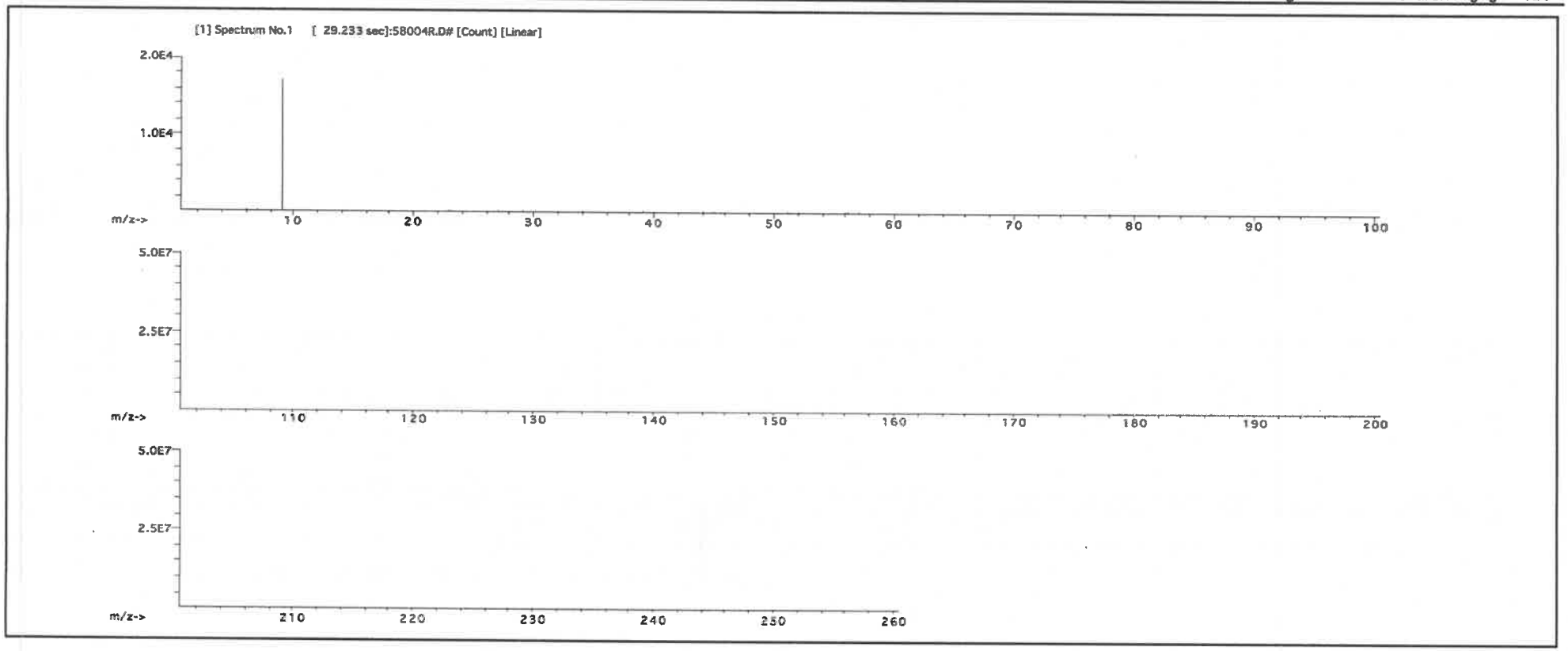
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57004**	24002546	Nitric Acid	
Lot Number:	**102523**			
Description:	**Beryllium (Be)**	2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	102526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	**1000.0**	**2.2**	13597-99-4	0.2ug/m3	intrvns-rat 3.16mg/kg	NA



A3429-METALS

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																		
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	T	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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R? 02/09/24 IV15799

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BG

CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

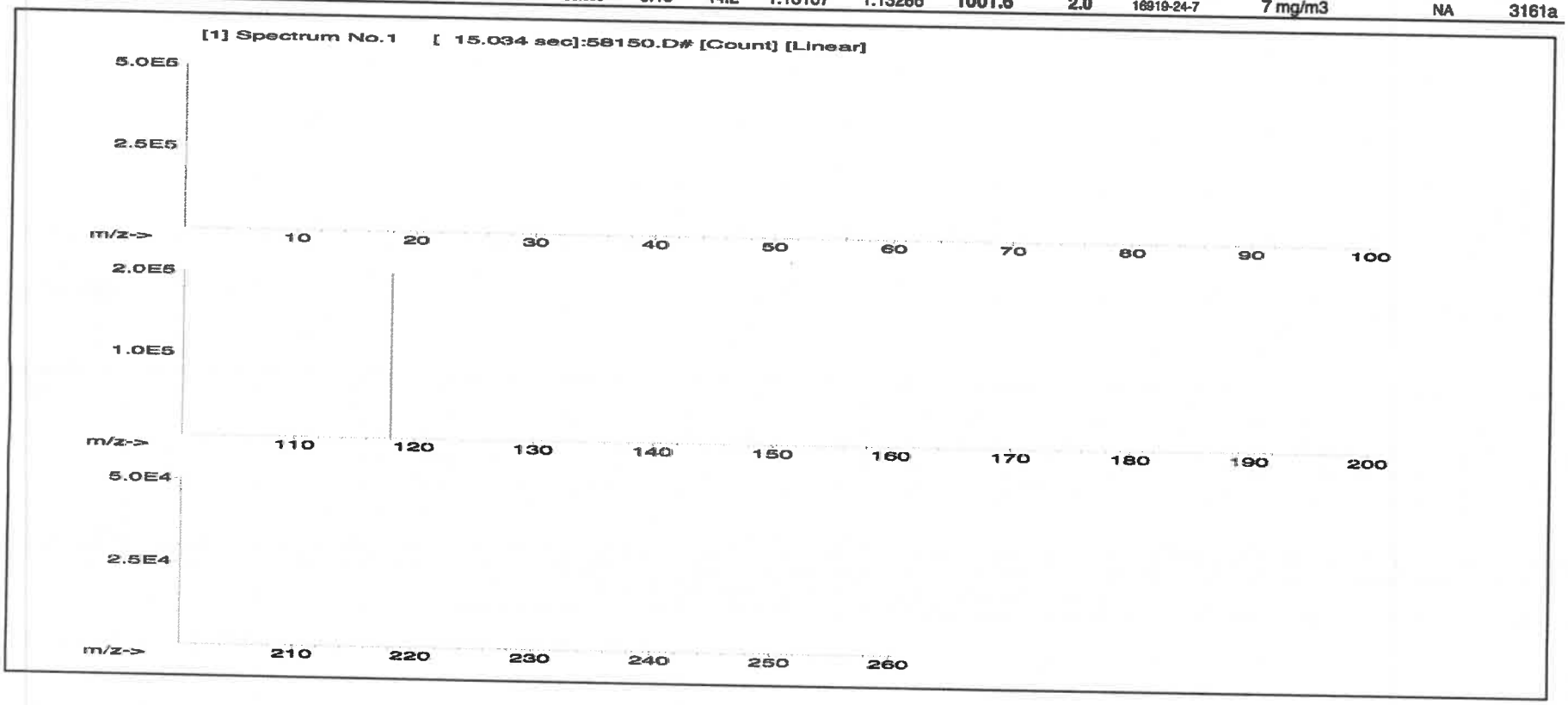
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	Lot #	
Solvents:	21110221	Nitric Acid
	22D0562008	Hydrochloric acid
2%	10.0	Nitric Acid
6%	30.0	Hydrochloric acid
	(mL)	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rentas	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium hexafluorostannate(IV) (Sn)	IN010	SND042023A1	1000	99.999	0.10	44.2	1.13107	1.13286	**1001.6**	**2.0**	16919-24-7	7 mg/m3	NA	3161a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	T	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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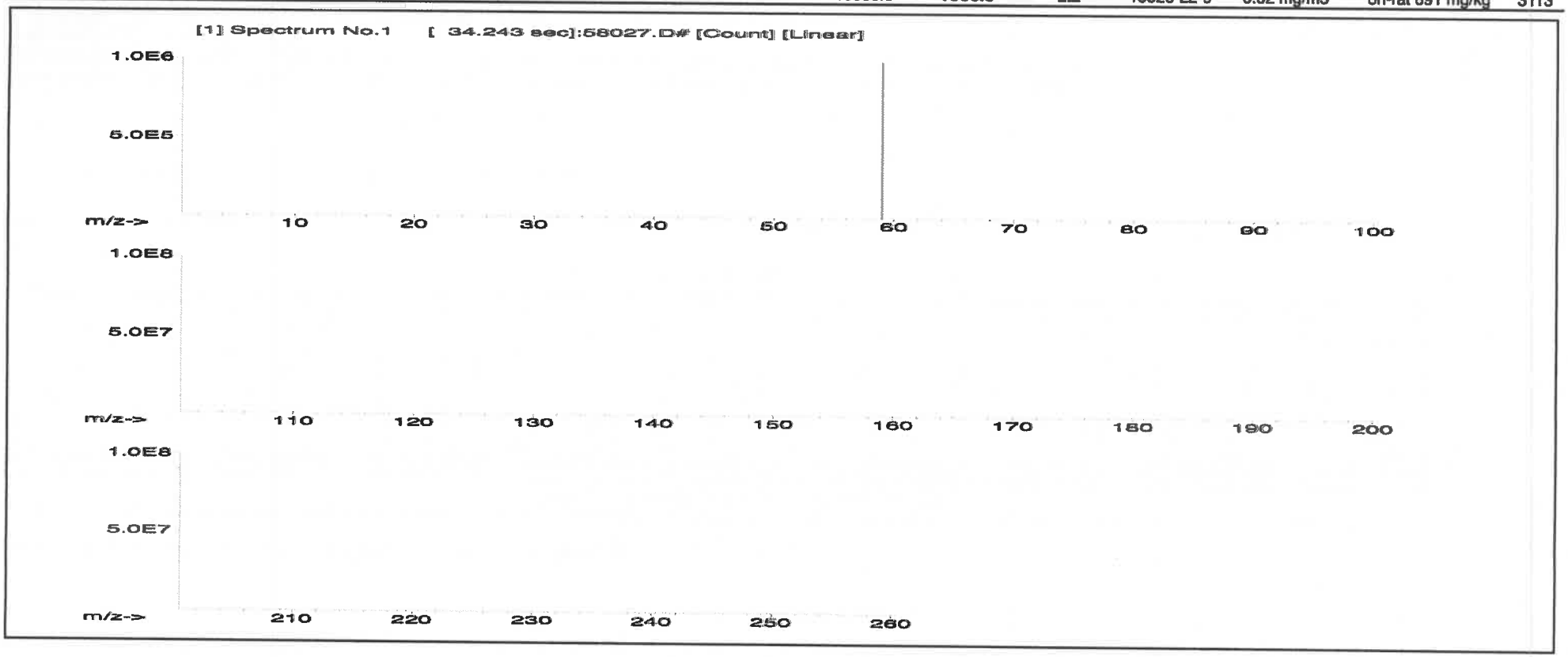
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57027**	24002546	Nitric Acid		
Lot Number:	**091923**				
Description:	**Cobalt (Co)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	091926				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Formulated By: Lawrence Barry 091923

Reviewed By: Pedro L. Rentas 091923

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cobalt(II) nitrate hexahydrate (Co)	58127	050923	0.1000	200.0	0.084	1000	10000.0	**1000.0**	**2.2**	10026-22-9	0.02 mg/m3	orl-rat 691 mg/kg	3113



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	T	Gé	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 02/09/24 M5801 BH

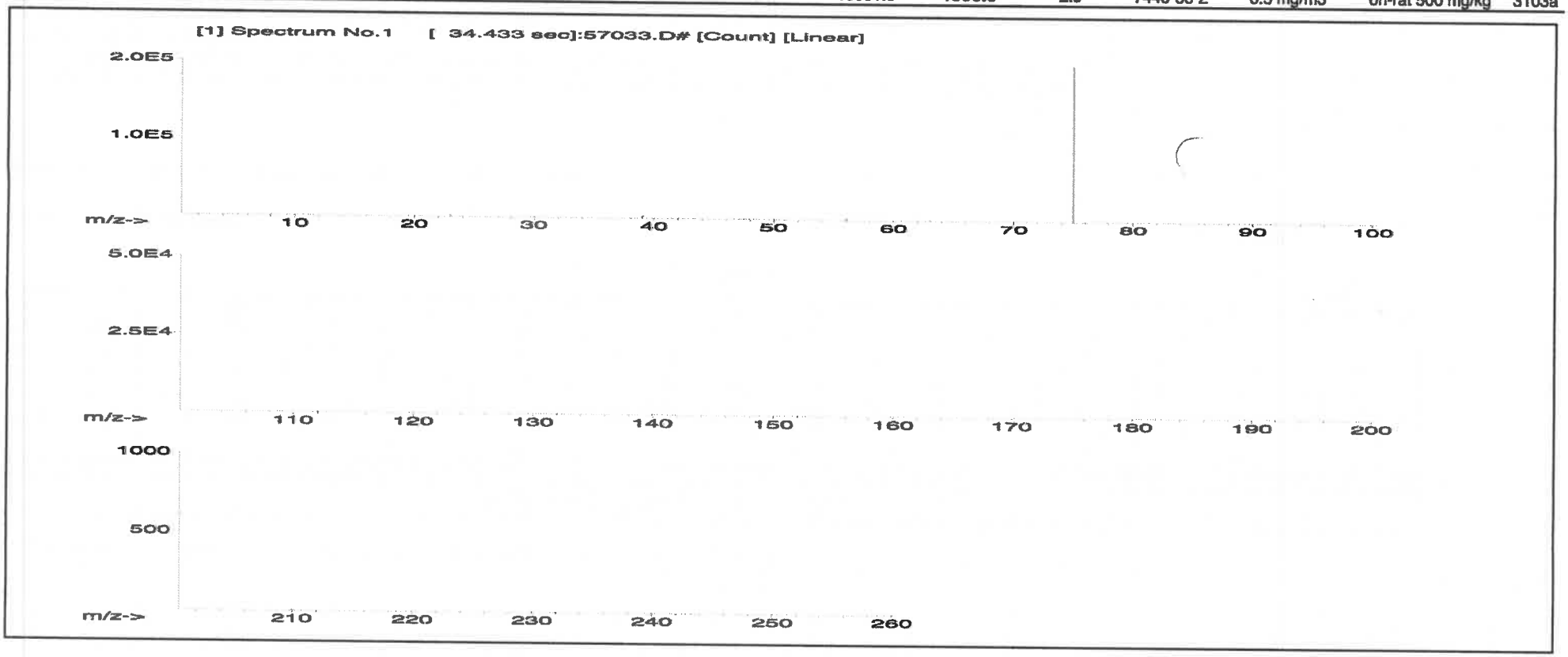
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CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**				
Lot Number:	**111323**	24002546	Nitric Acid		
Description:	**Arsenic (As)**				
		2.0%	80.0 (mL)	Nitric Acid	
Expiration Date:	111326				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	4000.0	0.06	Flask Uncertainty		

Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rentas	111323

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	**1000.0**	2.0	7440-38-2	0.5 mg/m3	orl-rat 500 mg/kg	3103a



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge*	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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A: 02/09/24 M.5814

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CERTIFIED WEIGHT REPORT:

Part Number: 57005
Lot Number: 071123
Description: Boron (B)

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

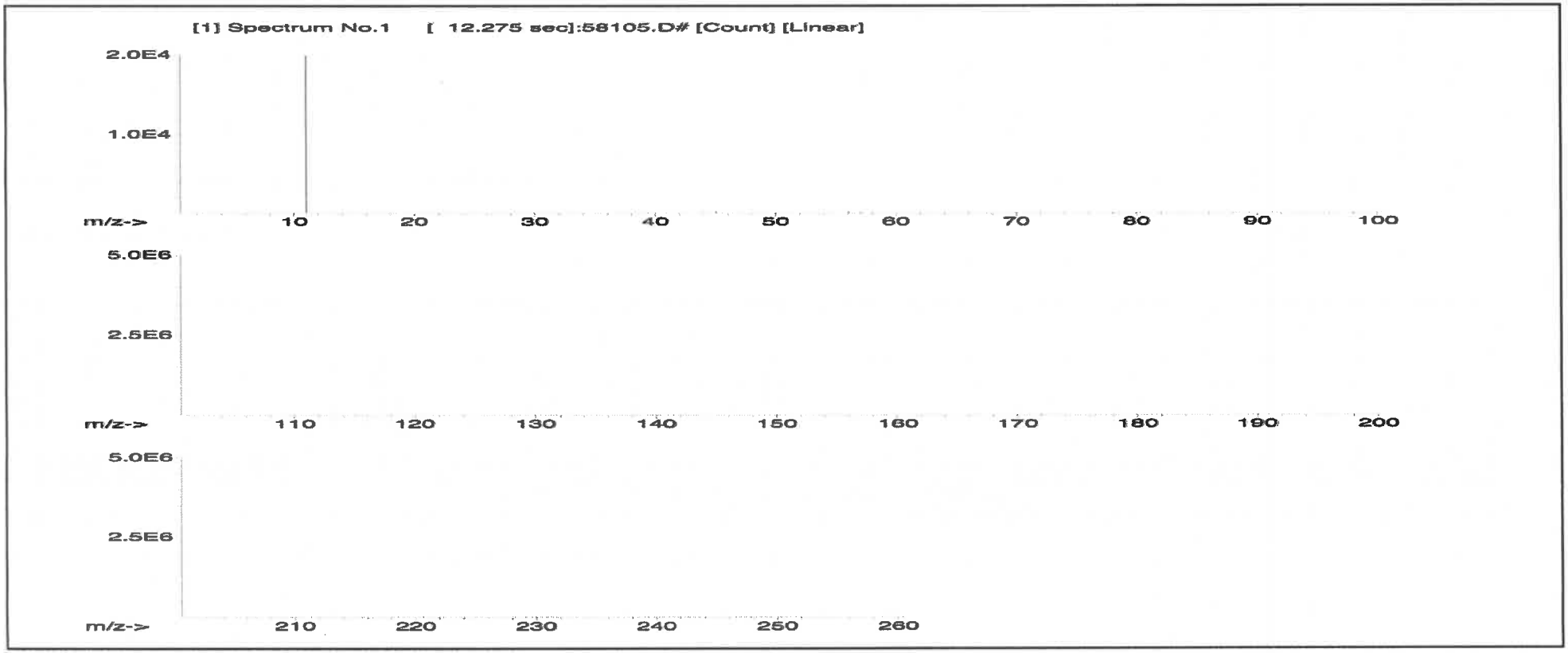
Weight shown below was diluted to (mL): 1999.48 0.058 Flask Uncertainty

	Lot #			
Solvent:	MKBQ8597V	Ammonium hydroxide		
	2.0%	40.0 (mL)	Ammonium hydroxide	
		5E-05	Balance Uncertainty	

Formulated By: Benson Chan 071123

Reviewed By: Pedro L. Rentas 071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Boric acid (B)	IN018	BV092016A1	1000	99.9999	0.10	17.3	11.55772	11.56201	**1000.4**	**2.0**	10043-35-3	2 mg/m3	orl-rat 2660 mg/kg	3107



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	T	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:



* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 02/09/24 M5816

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CERTIFIED WEIGHT REPORT:

Part Number: 57016
Lot Number: 122923
Description: Sulfur (S)

Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

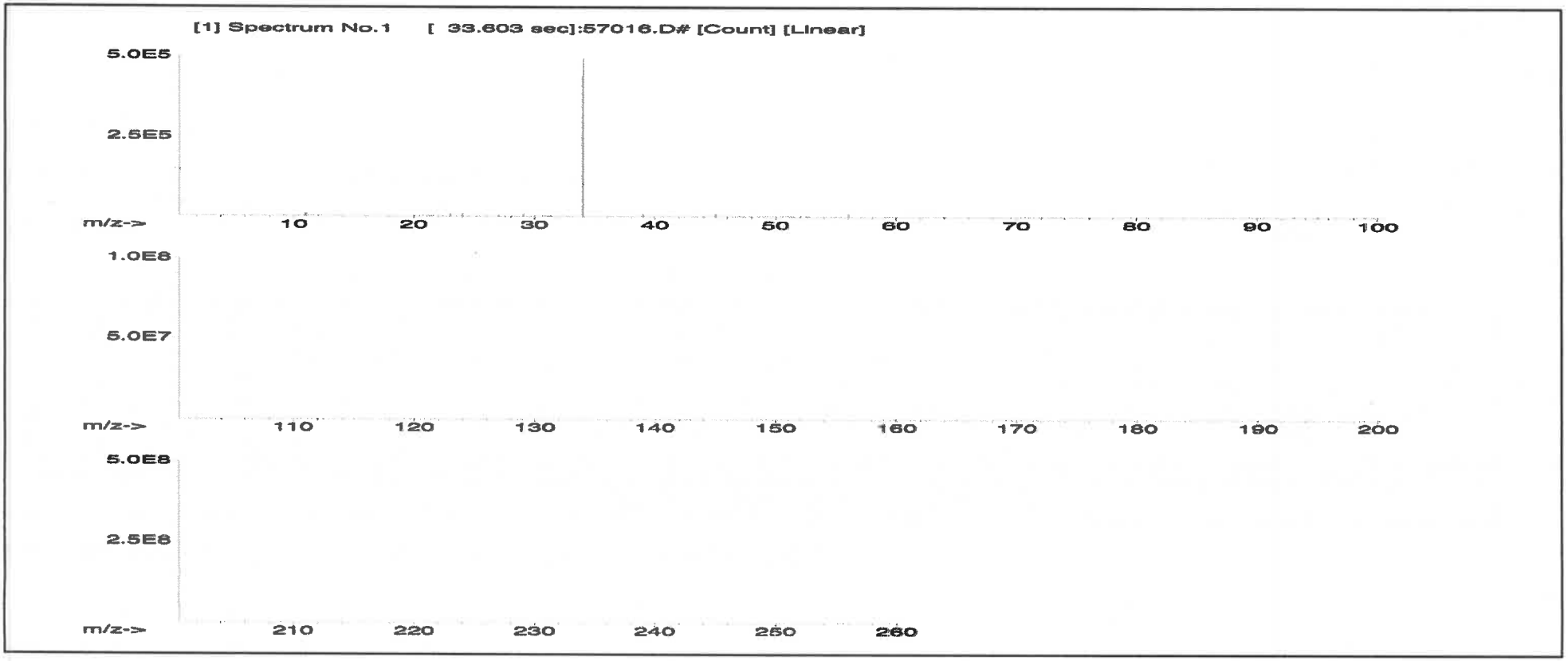
Weight shown below was diluted to (mL): 4000.0 0.06 Flask Uncertainty

	Lot #	
Solvent:	122923	ASTM Type 1 Water

5E-05 Balance Uncertainty

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	1000	99.9	0.10	24.3	16.4979	16.4980	**1000.0**	**2.0**	7783-20-2	NA	orl-rat 4250mg/kg	3181



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	T	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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.
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R: 02/09/24 M.5818

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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

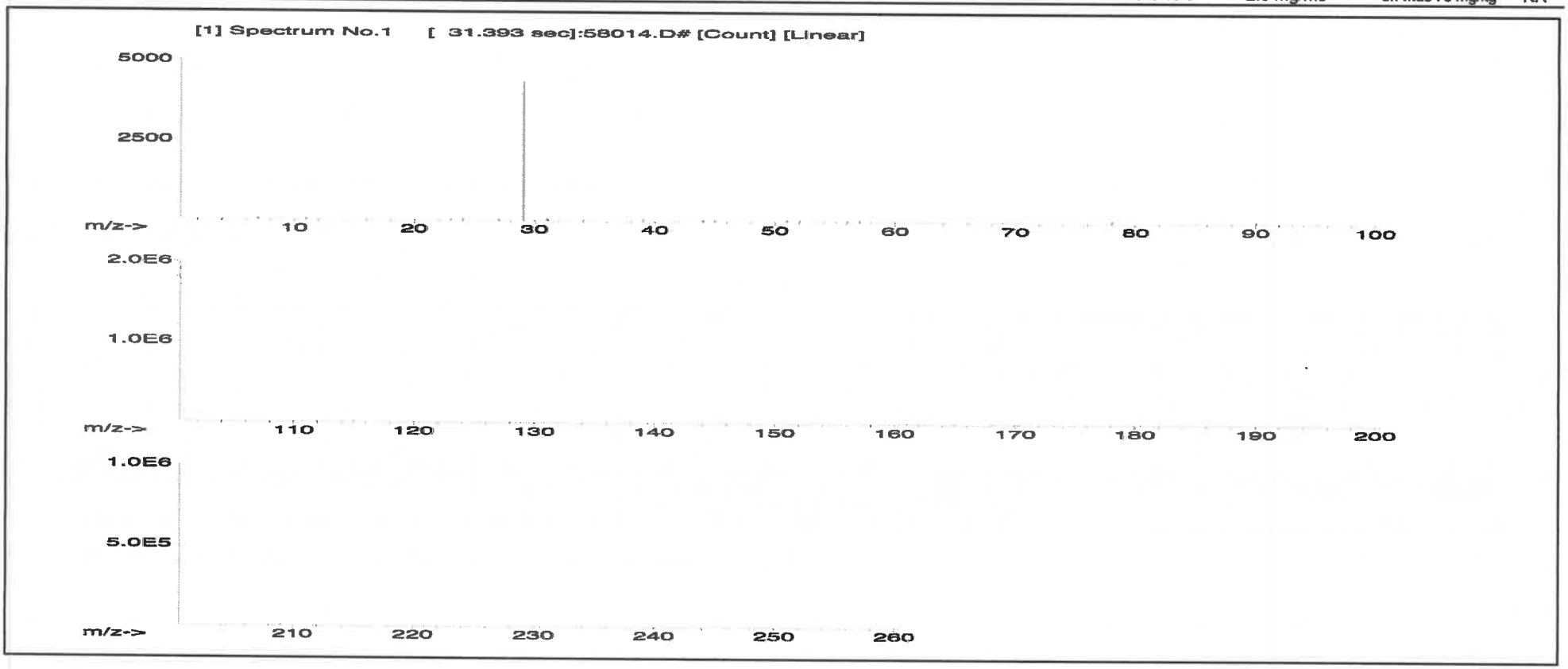
Aleah O'Brady

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



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	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:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

R: 02/09/24 M5819

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AR-1539 Certificate Number
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CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 111623
Description: Zinc (Zn)

Expiration Date: 111626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

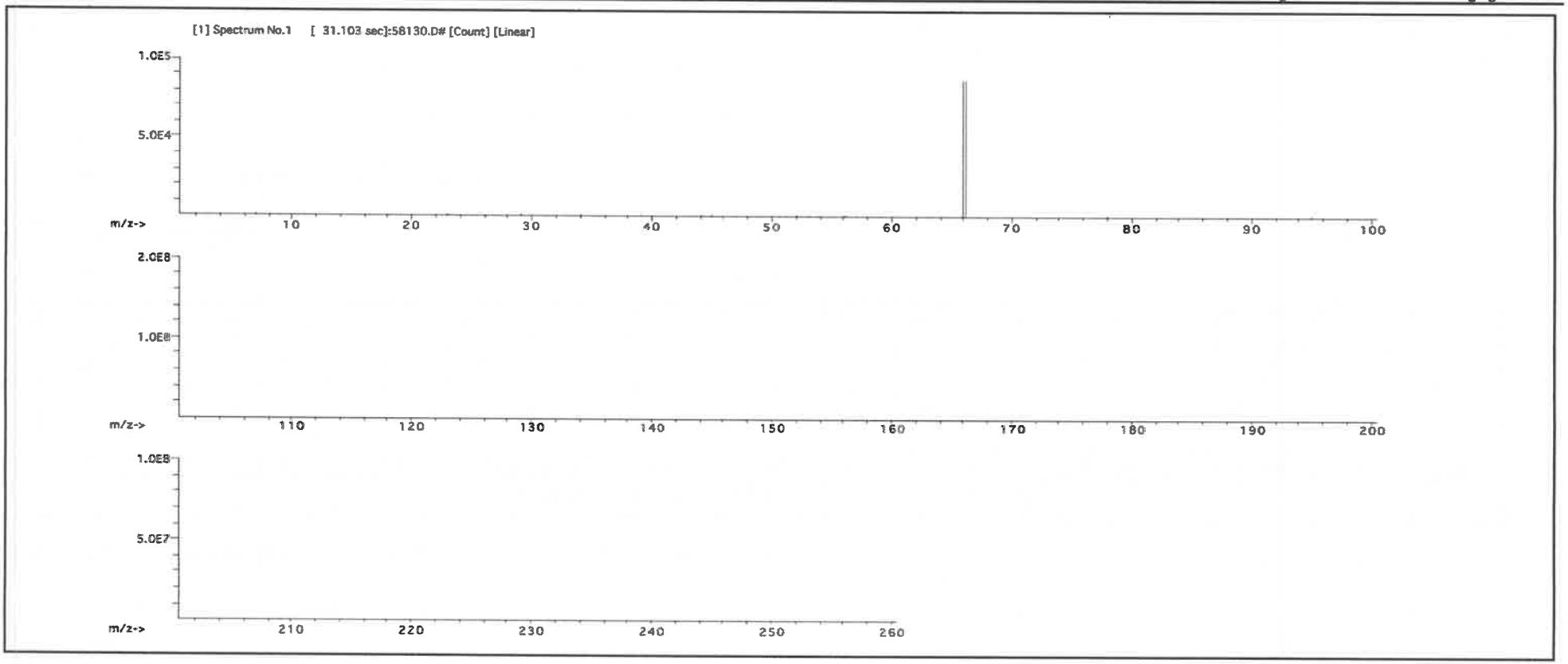
Weight shown below was diluted to (mL): 3000.4 0.06 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

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



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	T
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

R: 02/09/24 M5820

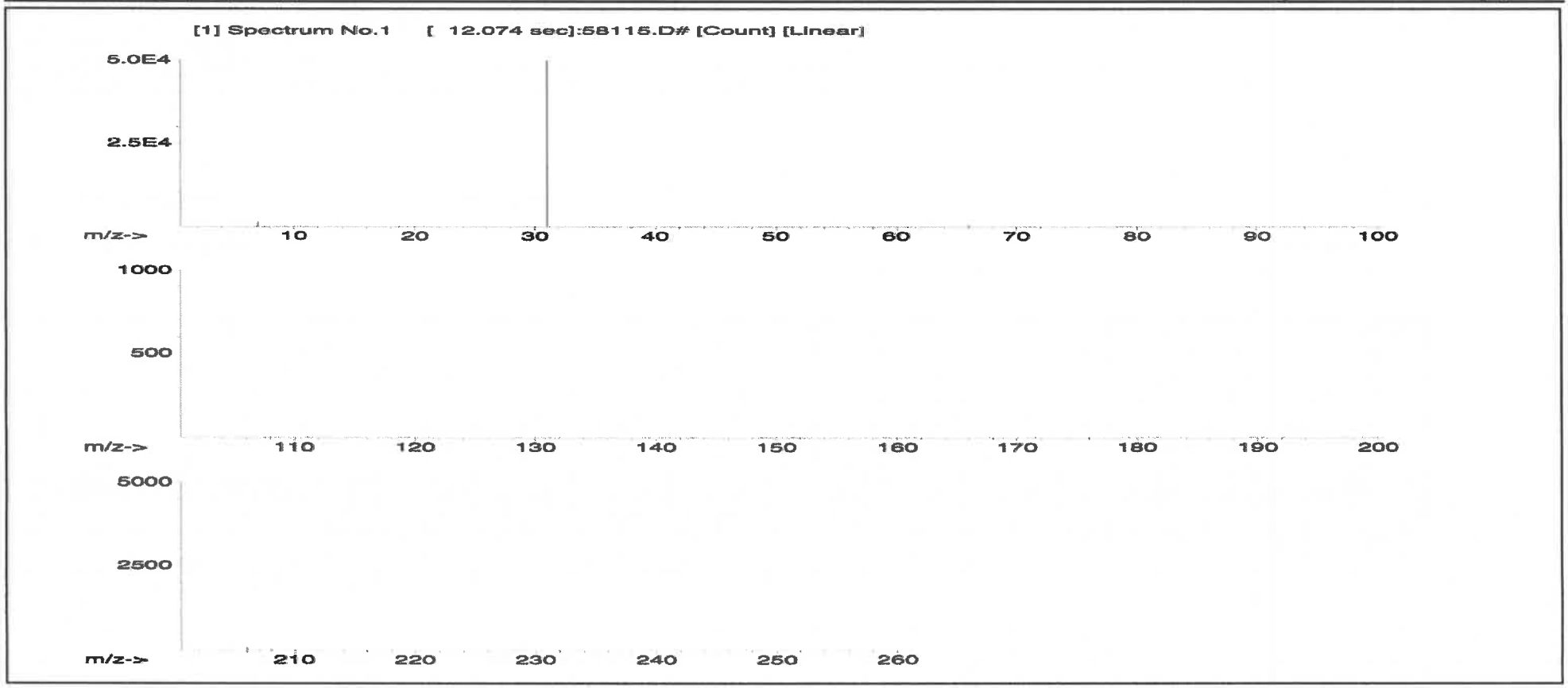
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
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CERTIFIED WEIGHT REPORT:

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



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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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Certificate of Analysis

R: 02/22/24 M5942

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Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTI1
Lot Number:	T2-TI719972
Matrix:	2% (v/v) HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Titanium
Starting Material:	Ti Metal
Starting Material Lot#:	2094
Starting Material Purity:	99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **1002 ± 4 µg/mL**
ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 chemically stable for years in 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 17, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

MS947 MS948 MS949
MS950 MS951 MS952

Material No.: 9530-33
Batch No.: 22G2862015
Manufactured Date: 2022-06-15
Retest Date: 2027-06-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.9 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.191
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl_2)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO_4)	≤ 0.05 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO_3)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH_4)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	1.3 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	163.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.7 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	0.6 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	6 ppb

>>> Continued on page 2 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
Trace Impurities - Lead (Pb)	≤ 1.0 ppb	< 0.5 ppb
Trace Impurities - Lithium (Li)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Magnesium (Mg)	≤ 10.0 ppb	2.9 ppb
Trace Impurities - Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities - Mercury (Hg)	≤ 0.5 ppb	0.1 ppb
Trace Impurities - Molybdenum (Mo)	≤ 10.0 ppb	< 3.0 ppb
Trace Impurities - Nickel (Ni)	≤ 4.0 ppb	< 0.3 ppb
Trace Impurities - Niobium (Nb)	≤ 1.0 ppb	0.8 ppb
Trace Impurities - Potassium (K)	≤ 9.0 ppb	< 2.0 ppb
Trace Impurities - Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities - Silver (Ag)	≤ 1.0 ppb	0.5 ppb
Trace Impurities - Sodium (Na)	≤ 100.0 ppb	2.3 ppb
Trace Impurities - Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Tantalum (Ta)	≤ 1.0 ppb	1.6 ppb
Trace Impurities - Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Tin (Sn)	≤ 5.0 ppb	4.0 ppb
Trace Impurities - Titanium (Ti)	≤ 1.0 ppb	1.5 ppb
Trace Impurities - Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities - Zirconium (Zr)	≤ 1.0 ppb	0.3 ppb

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result

For Laboratory,Research,or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

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 - 32
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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004600	M	Eu		0.009037	M	Na		0.086360	M	Se	<	0.005200	M	Zn		0.030125
M	Al		0.014862	O	Fe		0.002410	M	Nb	<	0.000570	O	Si		0.024100	O	Zr	<	0.002600
M	As	<	0.003500	M	Ga	<	0.000570	M	Nd		0.000923	M	Sm		0.000461				
M	Au	<	0.001700	M	Gd	<	0.003500	M	Ni	<	0.005700	M	Sn	<	0.002300				
O	B		0.002209	M	Ge	<	0.005200	M	Os	<	0.001200	M	Sr	<	0.004600				
O	Ba	<	0.002500	M	Hf	<	0.000570	n	P	<		M	Ta	<	0.000570				
O	Be	<	0.001400	M	Hg	<	0.000570	M	Pb		0.005020	M	Tb		0.001044				
M	Bi	<	0.003500	M	Ho		0.009037	M	Pd	<	0.005100	M	Te	<	0.002300				
O	Ca		0.009841	M	In	<	0.002300	M	Pr	<	0.002300	M	Th	<	0.000570				
M	Cd	<	0.000570	M	Ir	<	0.000570	M	Pt	<	0.000570	M	Ti	<	0.003500				
M	Ce	<	0.002300	O	K		0.018677	M	Rb	<	0.000570	M	Tl	<	0.000570				
M	Co	<	0.000570	M	La		0.000461	M	Re	<	0.000570	M	Tm	<	0.003500				
M	Cr	<	0.004000	O	Li	<	0.009300	M	Rh	<	0.008000	M	U	<	0.000570				
M	Cs	<	0.000570	M	Lu		0.000582	M	Ru	<	0.000570	M	V		0.001265				
M	Cu		0.002610	O	Mg		0.001486	n	S	<		M	W	<	0.002300				
M	Dy		0.003815	M	Mn		0.000582	M	Sb		0.005422	s	Y	<					
M	Er		0.003615	M	Mo	<	0.005700	M	Sc	<	0.001200	M	Yb		0.001827				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 88.91 +3 6 Y(OH)(H2O)x+2

Chemical Compatibility -Soluble in HCl, H2SO4 and HNO3. Avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H2O/ HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H2O / HCl or HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	73Ge16O, 178Hf+2
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 20, 2029

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5962 R! 06/14/24.

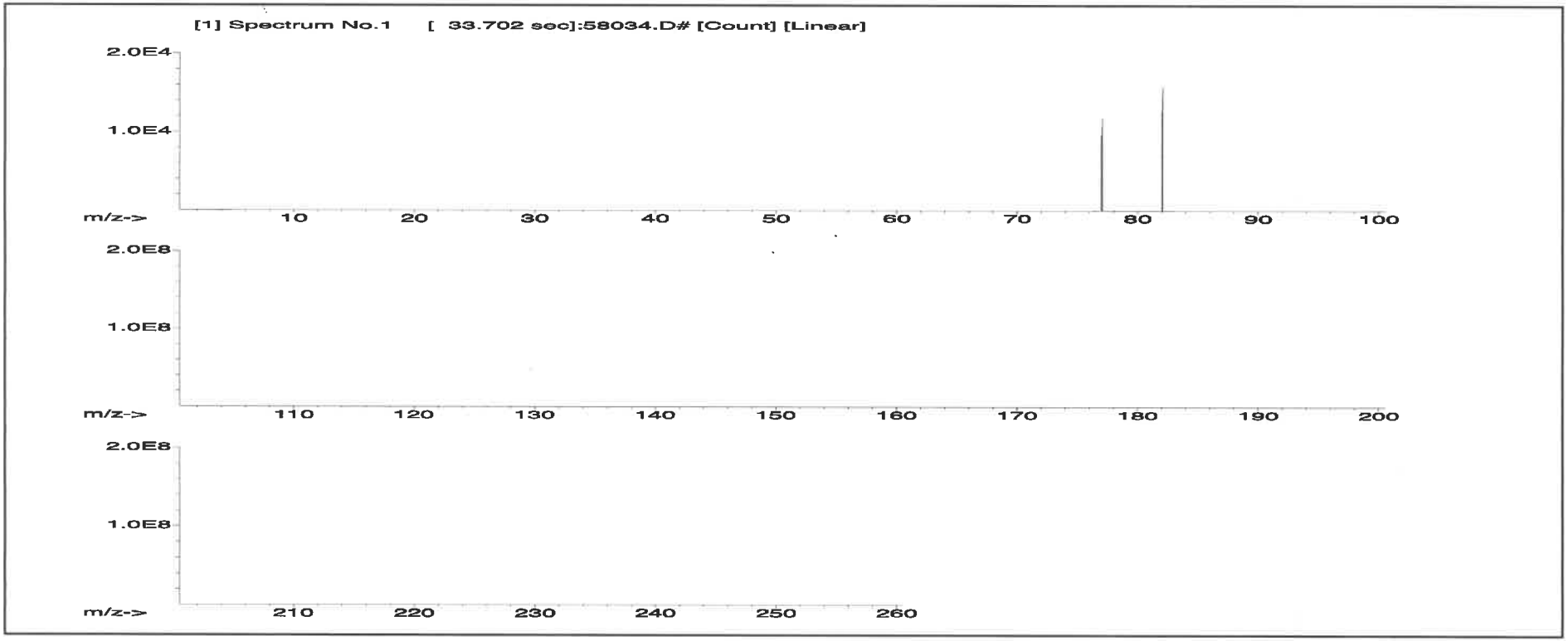
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57034**	24002546	Nitric Acid	
Lot Number:	**060624**			
Description:	**Selenium (Se)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060627			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty	

Formulated By:	Benson Chan	060624
Reviewed By:	Pedro L. Rentas	060624

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	**1000.0**	**2.2**	7782-49-2	0.2 mg/m3	orl-rat 6700 mg/kg	3149



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																		
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	T	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

MS963 MS964 MS965
MS966 MS967 MS968

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

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

MS963 MS964 MS965
MS966 MS967 MS968

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

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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

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5970, M5971 R: 7/01/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

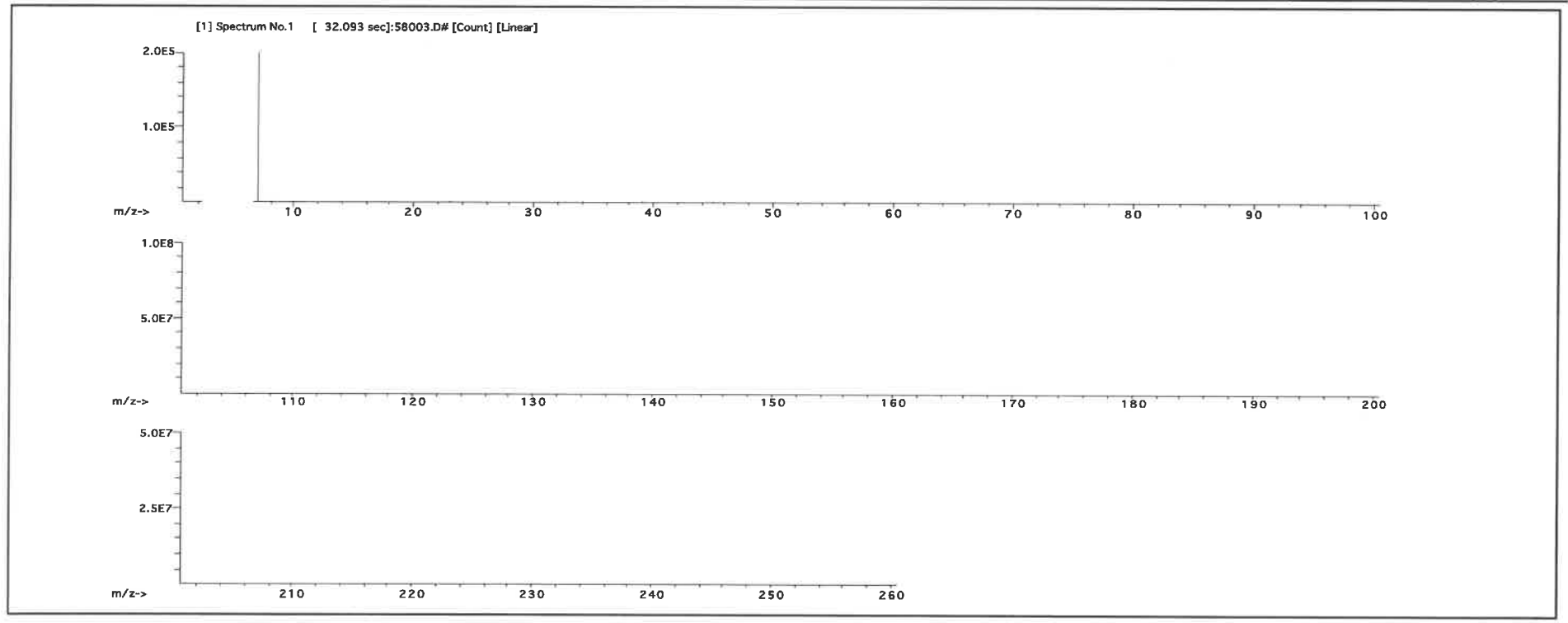
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57003**			
Lot Number:	**062124**	24002546	Nitric Acid	
Description:	**Lithium (Li)**			
		2.0%	5.0 (mL)	Nitric Acid
Expiration Date:	062127			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	250.11	0.016	Flask Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	062124
Reviewed By:	Pedro L. Rentas	062124

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	**1000.0**	**2.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



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Certified Reference Material CRM

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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	T	Ni	<0.02	Pr	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
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Certified Reference Material CRM

45982 R: 6/11/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

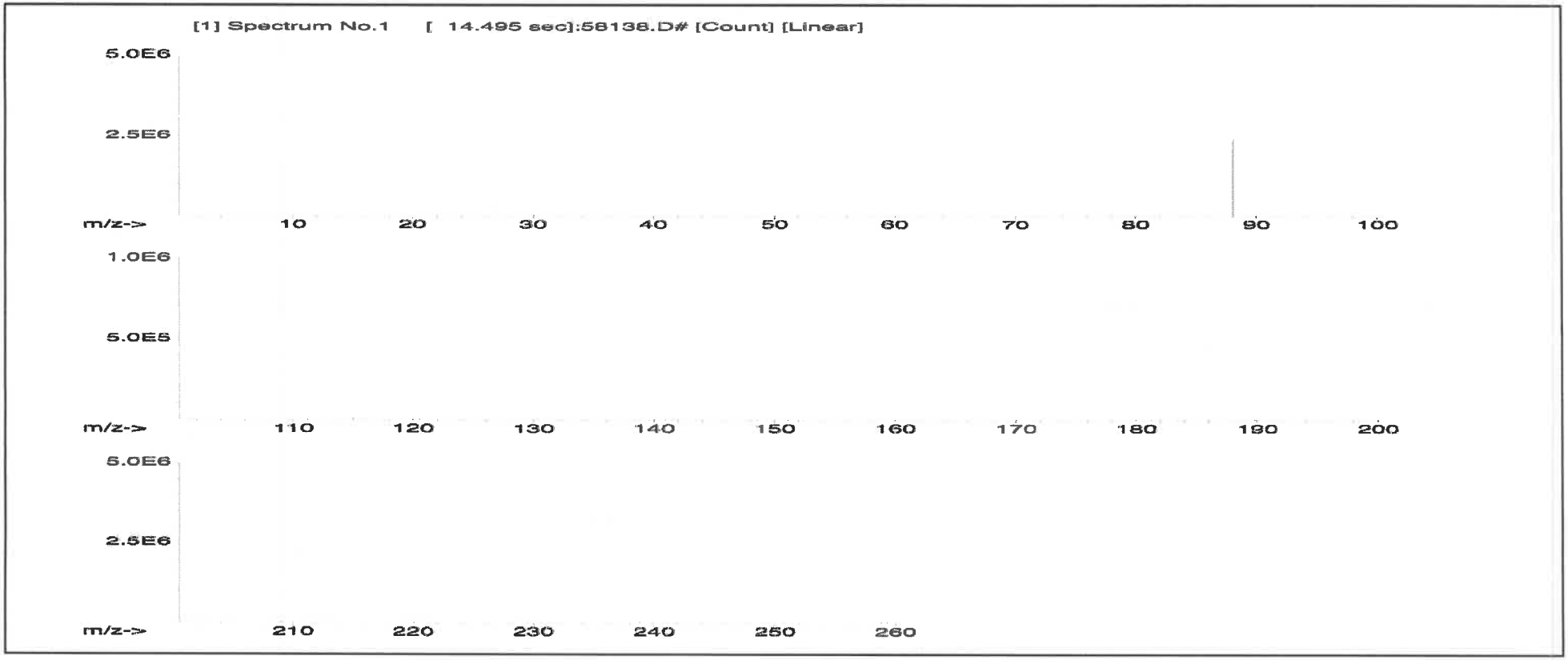
Part Number: 57038
Lot Number: 031524
Description: Strontium (Sr)

Expiration Date: 031527
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		

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



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™
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Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-1
Lot Number:	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 ºC)

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

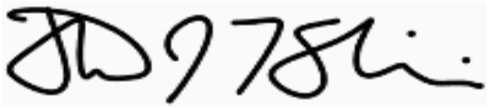
- Sealed TCT Bag Open Date: _____

- 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



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300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-2
Lot Number:	T2-MEB715594
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**	**40.04 ± 0.24 µg/mL**
Silica, SiO2	**200.2 ± 1.1 µg/mL**	**Tin, Sn**	**70.1 ± 0.4 µg/mL**
Titanium, Ti	**20.02 ± 0.14 µg/mL**		

Density: 1.025 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
SiO2	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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**

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

February 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

- **February 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

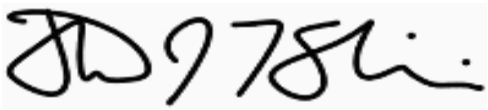
- Sealed TCT Bag Open Date: _____

- 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



SHIPPING DOCUMENTS

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. P3429
QUOTE NO.
COC Number 2041346

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Jacobs
ADDRESS: 412 Mt Kemble Ave Suite #100
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: John Yntema
PHONE: (281) 414-1714 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: STC PTC
PROJECT NO.: D3779922 LOCATION: Princeton Junction
PROJECT MANAGER: Mary Murphy
e-mail: Mary.Murphy@Jacobs.com
PHONE: (201) 930-0586 FAX:

CLIENT BILLING INFORMATION

BILL TO: Mary Murphy PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) Standard TAT DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☒ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced
- ☐ NYS ASP A
- ☐ NYS ASP B
- ☐ Other
- ☐ EDD FORMAT

ANALYSIS

1 VOCs 8260D
2 SVOCs + PAHs 8270E, 8270E SIM
3 Metals 6020B; Hg 7470A
4 Cr(VI) 7196A
5
6
7
8
9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES A/E 1	E 2	B/E 3	E 4	5	6	7	8	9	COMMENTS
1.	926-KI-WS-073124	WS		X	7/31/24	1400	6	2	2	1	1						
2.	931-KI-WS-073124	WS		X	7/31/24	1450	6	2	2	1	1						
3.	925-KI-WS-073124	WS		X	7/31/24	1575	6	2	2	1	1						
4.	TB-01-073124	DI		X	7/31/24	1600	1	1									
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

Specify Preservatives: A-HCl D-NaOH B-HN03 E-ICE C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1.	7/31/24 1630	1. 1630 7-31-24
2.		2.
3.	7-31-24 1745	3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 2.5 °C
Comments: See attached table for required analytes list of ECO-VOCs, ECO-SVOCs, and ECO-metals
Short (24hr) hold time for Hexavalent Chromium!

Page ____ of ____

CLIENT: ☐ Hand Delivered ☐ Other
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☐ YES ☐ NO

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WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (L-A-B)	L2219
Maine	2022022
Maryland	296
New Hampshire	255423
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488

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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : P3429 JACO05
Client Name : JACOBS Engineering Grou
Client Contact : Mary I. Murphy
Invoice Name : JACOBS Engineering Grou
Invoice Contact : Mary I. Murphy

Order Date : 7/31/2024 4:38:00 PM
Project Name : Former Schlumberger Site I
Receive DateTime : 7/31/2024 5:45:00 PM
Purchase Order :

Project Mgr : YAZMEEN
Report Type : Level 4
EDD Type : CH2MHILL
Hard Copy Date :
Date Signoff : 8/1/2024 9:54:09 AM

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
P3429-01	926-K1-WS-073124	Water	07/31/2024	14:00					
					VOCMS Group6		8260-Low	10 Bus. Days	
P3429-02	931-K1-WS-073124	Water	07/31/2024	14:50					
					VOCMS Group6		8260-Low	10 Bus. Days	
P3429-03	925-K1-WS-073124	Water	07/31/2024	15:15					
					VOCMS Group6		8260-Low	10 Bus. Days	
P3429-04	TB-01-073124	Water	07/31/2024	16:00					
					VOCMS Group6		8260-Low	10 Bus. Days	

Relinguished By :
Date / Time : 8-1-24 11:10

Received By :
Date / Time : 8/01/24 11:10

Storage Area : **VOA Refridgerator Room** Rack 4