

DATA PACKAGE METALS

PROJECT NAME : RAYMARK SUPERFUND SITE

NOBIS GROUP

585 Middlesex Street

Lowell, MA - 01851

Phone No: 978-683-0891

ORDER ID : Q1383

ATTENTION : Adam Roy



Laboratory Certification ID # 20012



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Cover Page

Order ID : Q1383**Project ID :** Raymark Superfund Site**Client :** Nobis Group**Lab Sample Number**

Q1383-01
Q1383-02
Q1383-03
Q1383-04
Q1383-05
Q1383-06
Q1383-07
Q1383-08
Q1383-09
Q1383-10
Q1383-11
Q1383-12
Q1383-13
Q1383-14
Q1383-15
Q1383-16
Q1383-17
Q1383-18
Q1383-19
Q1383-20
Q1383-21
Q1383-22

Client Sample Number

OU4-PCS-TC-11-021725
OU4-PCS-TC-11-021725
OU4-PCS-TC-12-021725
OU4-PCS-TC-12-021725
OU4-PCS-TC-13-021725
OU4-PCS-TC-13-021725
OU4-PCS-TC-14-021725
OU4-PCS-TC-14-021725
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OU4-PCS-TC-20-021725
OU4-PCS-TC-20-021725
OU4-CF-15-021725
OU4-CF-15-021725

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

Signature : _____

Date: 3/5/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

Nobis Group

Project Name: Raymark Superfund Site

Project # N/A

Chemtech Project # Q1383

Test Name: Metals ICP-TAL,Mercury

A. Number of Samples and Date of Receipt:

22 Solid samples were received on 02/18/2025.

B. Parameters:

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

C. Analytical Techniques:

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

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike (OU4-PCS-TC-17-021725MS) analysis met criteria for all samples except for Antimony, Beryllium, Chromium, Cobalt, Selenium, Zinc due to matrix interference.

The Matrix Spike Duplicate (OU4-PCS-TC-17-021725MSD) analysis met criteria for all samples except for Antimony, Beryllium, Chromium, Cobalt, Selenium, Zinc due to matrix interference.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

The Serial Dilution (OU4-PCS-TC-17-021725L) met criteria for all samples except for Calcium, Copper, Iron, Magnesium, Manganese, Vanadium due to unknown interference.

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_____

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DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

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

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: Q1383

MATRIX: Solid

METHOD: 6010D,7471B

	NA	NO	YES
1. Calibration Summary met criteria.			✓
2. ICP Interference Check Sample Results Summary Submitted.			✓
3. Serial Dilution Summary (if applicable) Submitted.		✓	
The Serial Dilution (OU4-PCS-TC-17-021725L) met criteria for all samples except for Calcium, Copper, Iron, Magnesium, Manganese, Vanadium due to unknown interference.			
4. Laboratory Control Sample Summary (if applicable) Submitted.			✓
5. Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6. Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
The Matrix Spike (OU4-PCS-TC-17-021725MS) analysis met criteria for all samples except for Antimony, Beryllium, Chromium, Cobalt, Selenium, Zinc due to matrix interference. The Matrix Spike Duplicate (OU4-PCS-TC-17-021725MSD) analysis met criteria for all samples except for Antimony, Beryllium, Chromium, Cobalt, Selenium, Zinc due to matrix interference.			
7. Sample Duplicate Analysis Met QC Criteria			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
8. Digestion Holding Time Met			✓
If not met, list number of days exceeded for each sample:			
9. Analysis Holding Time Met			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

QA REVIEW

Date

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q1383

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 Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 03/05/2025

LAB CHRONICLE

OrderID:	Q1383	OrderDate:	2/18/2025 11:19:00 AM
Client:	Nobis Group	Project:	Raymark Superfund Site
Contact:	Adam Roy	Location:	H31,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q1383-01	OU4-PCS-TC-11-0217 25	SOIL			02/17/25			02/18/25
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	03/04/25	
Q1383-02	OU4-PCS-TC-11-0217 25	Water			02/17/25			02/18/25
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/24/25	
Q1383-03	OU4-PCS-TC-12-0217 25	SOIL			02/17/25			02/18/25
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	03/04/25	
Q1383-04	OU4-PCS-TC-12-0217 25	Water			02/17/25			02/18/25
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/24/25	
Q1383-05	OU4-PCS-TC-13-0217 25	SOIL			02/17/25			02/18/25
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	03/04/25	
Q1383-06	OU4-PCS-TC-13-0217 25	Water			02/17/25			02/18/25
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/24/25	
Q1383-07	OU4-PCS-TC-14-0217 25	SOIL			02/17/25			02/18/25
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	03/04/25	

LAB CHRONICLE

Q1383-08	OU4-PCS-TC-14-0217 25	Water			02/17/25		02/18/25
			SPLP Mercury	7470A	02/24/25	02/24/25	
			SPLP MetalGroup3	6020B	02/19/25	02/24/25	
Q1383-09	OU4-PCS-TC-15-0217 25	SOIL			02/17/25		02/18/25
			Mercury	7471B	02/20/25	02/21/25	
			Metals ICP-TAL	6010D	02/18/25	03/04/25	
Q1383-10	OU4-PCS-TC-15-0217 25	Water			02/17/25		02/18/25
			SPLP Mercury	7470A	02/24/25	02/24/25	
			SPLP MetalGroup3	6020B	02/19/25	02/24/25	
Q1383-11	OU4-PCS-TC-16-0217 25	SOIL			02/17/25		02/18/25
			Mercury	7471B	02/20/25	02/21/25	
			Metals ICP-TAL	6010D	02/18/25	03/04/25	
Q1383-12	OU4-PCS-TC-16-0217 25	Water			02/17/25		02/18/25
			SPLP Mercury	7470A	02/24/25	02/24/25	
			SPLP MetalGroup3	6020B	02/19/25	02/24/25	
Q1383-13	OU4-PCS-TC-17-0217 25	SOIL			02/17/25		02/18/25
			Mercury	7471B	02/20/25	02/21/25	
			Metals ICP-TAL	6010D	02/18/25	03/04/25	
Q1383-14	OU4-PCS-TC-17-0217 25	Water			02/17/25		02/18/25
			SPLP Mercury	7470A	02/24/25	02/24/25	
			SPLP MetalGroup3	6020B	02/19/25	02/24/25	
Q1383-15	OU4-PCS-TC-18-0217 25	SOIL			02/17/25		02/18/25
			Mercury	7471B	02/20/25	02/21/25	
			Metals ICP-TAL	6010D	02/18/25	03/04/25	
Q1383-16	OU4-PCS-TC-18-0217 25	Water			02/17/25		02/18/25

LAB CHRONICLE

Q1383-17	OU4-PCS-TC-19-0217 25	SOIL	SPLP Mercury	7470A	02/24/25	02/24/25	02/17/25	02/18/25
			SPLP MetalGroup3	6020B	02/19/25	02/24/25		
Q1383-18	OU4-PCS-TC-19-0217 25	Water	Mercury	7471B	02/20/25	02/21/25	02/17/25	02/18/25
			Metals ICP-TAL	6010D	02/18/25	03/04/25		
Q1383-19	OU4-PCS-TC-20-0217 25	SOIL	SPLP Mercury	7470A	02/24/25	02/24/25	02/17/25	02/18/25
			SPLP MetalGroup3	6020B	02/19/25	02/24/25		
Q1383-20	OU4-PCS-TC-20-0217 25	Water	Mercury	7471B	02/20/25	02/21/25	02/17/25	02/18/25
			Metals ICP-TAL	6010D	02/18/25	03/04/25		
Q1383-21	OU4-CF-15-021725	SOIL	SPLP Mercury	7470A	02/24/25	02/24/25	02/17/25	02/18/25
			SPLP MetalGroup3	6020B	02/19/25	02/24/25		
Q1383-22	OU4-CF-15-021725	Water	Mercury	7471B	02/20/25	02/21/25	02/17/25	02/18/25
			Metals ICP-TAL	6010D	02/18/25	03/04/25		
			SPLP Mercury	7470A	02/24/25	02/24/25		
			SPLP MetalGroup3	6020B	02/19/25	02/24/25		

Hit Summary Sheet SW-846

SDG No.: Q1383 **Order ID:** Q1383
Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : OU4-PCS-TC-11-021725									
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Aluminum	8450		2.21	3.68	4.60	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Antimony	0.16	J	0.14	0.57	2.30	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Arsenic	0.99		0.27	0.74	0.92	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Barium	15.1		0.59	1.15	4.60	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Beryllium	0.081	J	0.011	0.069	0.28	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Cadmium	1.07		0.015	0.069	0.28	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Calcium	8150		2.57	23.0	91.9	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Chromium	1.26		0.050	0.12	0.46	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Cobalt	17.4		0.053	0.35	1.38	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Copper	33.2		0.43	0.74	0.92	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Iron	28000		2.47	3.68	4.60	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Lead	2.92		0.14	0.44	0.55	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Magnesium	6290		3.15	23.0	91.9	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Manganese	206		0.065	0.23	0.92	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Mercury	0.015		0.0060	0.011	0.013	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Nickel	8.83		0.083	0.46	1.84	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Potassium	140		26.4	73.5	91.9	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Silver	0.33	J	0.048	0.23	0.46	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Sodium	1650		33.2	73.5	91.9	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Vanadium	71.9		0.25	0.92	1.84	mg/Kg
Q1383-01	OU4-PCS-TC-11-021725	SOIL	Zinc	31.1		0.10	0.46	1.84	mg/Kg
Client ID : OU4-PCS-TC-12-021725									
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Aluminum	7410		2.51	4.17	5.21	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Arsenic	1.58		0.30	0.83	1.04	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Barium	12.1		0.67	1.30	5.21	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Beryllium	0.061	J	0.013	0.078	0.31	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Cadmium	0.54		0.017	0.078	0.31	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Calcium	7030		2.92	26.1	104	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Chromium	1.17		0.056	0.13	0.52	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Cobalt	17.6		0.060	0.39	1.56	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Copper	30.8		0.49	0.83	1.04	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Iron	27400		2.81	4.17	5.21	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Lead	3.48		0.16	0.50	0.63	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Magnesium	6140		3.58	26.1	104	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Manganese	204		0.074	0.26	1.04	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Mercury	0.011	J	0.0070	0.012	0.015	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Nickel	7.43		0.094	0.52	2.09	mg/Kg

Hit Summary Sheet
SW-846

SDG No.: Q1383 **Order ID:** Q1383
Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Potassium	108		29.9	83.4	104	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Silver	0.29	J	0.054	0.26	0.52	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Sodium	1400		37.6	83.4	104	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Vanadium	59.1		0.28	1.04	2.09	mg/Kg
Q1383-03	OU4-PCS-TC-12-021725	SOIL	Zinc	31.1		0.12	0.52	2.09	mg/Kg
Client ID : OU4-PCS-TC-13-021725									
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Aluminum	8880		2.23	3.70	4.62	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Antimony	0.23	J	0.14	0.58	2.31	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Arsenic	6.41		0.27	0.74	0.92	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Barium	13.2		0.59	1.16	4.62	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Beryllium	0.10	J	0.011	0.069	0.28	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Cadmium	1.20		0.015	0.069	0.28	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Calcium	9720		2.59	23.1	92.4	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Chromium	1.40		0.050	0.12	0.46	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Cobalt	20.5		0.054	0.35	1.39	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Copper	34.1		0.43	0.74	0.92	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Iron	30400		2.49	3.70	4.62	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Lead	4.93		0.14	0.44	0.55	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Magnesium	6960		3.17	23.1	92.4	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Manganese	233		0.066	0.23	0.92	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Nickel	9.56		0.083	0.46	1.85	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Potassium	133		26.5	73.9	92.4	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Silver	0.26	J	0.048	0.23	0.46	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Sodium	1610		33.4	73.9	92.4	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Vanadium	71.2		0.25	0.92	1.85	mg/Kg
Q1383-05	OU4-PCS-TC-13-021725	SOIL	Zinc	34.5		0.10	0.46	1.85	mg/Kg
Client ID : OU4-PCS-TC-14-021725									
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Aluminum	8880		2.29	3.79	4.74	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Arsenic	1.16		0.28	0.76	0.95	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Barium	14.9		0.61	1.19	4.74	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Beryllium	0.086	J	0.011	0.071	0.28	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Cadmium	1.15		0.015	0.071	0.28	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Calcium	8760		2.66	23.7	94.8	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Chromium	1.26		0.051	0.12	0.47	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Cobalt	18.5		0.055	0.36	1.42	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Copper	33.6		0.45	0.76	0.95	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Iron	29800		2.55	3.79	4.74	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Lead	2.97		0.14	0.46	0.57	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Magnesium	6820		3.25	23.7	94.8	mg/Kg

Hit Summary Sheet SW-846

SDG No.: Q1383 **Order ID:** Q1383
Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Manganese	229		0.067	0.24	0.95	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Nickel	8.51		0.085	0.47	1.90	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Potassium	135		27.2	75.9	94.8	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Silver	0.28	J	0.049	0.24	0.47	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Sodium	1630		34.2	75.9	94.8	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Vanadium	76.9		0.26	0.95	1.90	mg/Kg
Q1383-07	OU4-PCS-TC-14-021725	SOIL	Zinc	35.9		0.10	0.47	1.90	mg/Kg
Client ID : OU4-PCS-TC-15-021725									
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Aluminum	9010		2.25	3.73	4.66	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Antimony	0.22	J	0.14	0.58	2.33	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Arsenic	1.20		0.27	0.75	0.93	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Barium	12.4		0.60	1.16	4.66	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Beryllium	0.10	J	0.011	0.070	0.28	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Cadmium	1.13		0.015	0.070	0.28	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Calcium	8360		2.61	23.3	93.2	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Chromium	1.09		0.050	0.12	0.47	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Cobalt	18.3		0.054	0.35	1.40	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Copper	30.9		0.44	0.75	0.93	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Iron	30900		2.51	3.73	4.66	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Lead	3.16		0.14	0.45	0.56	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Magnesium	7860		3.20	23.3	93.2	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Manganese	220		0.066	0.23	0.93	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Nickel	8.74		0.084	0.47	1.86	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Potassium	127		26.7	74.6	93.2	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Silver	0.15	J	0.048	0.23	0.47	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Sodium	1640		33.6	74.6	93.2	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Vanadium	73.4		0.25	0.93	1.86	mg/Kg
Q1383-09	OU4-PCS-TC-15-021725	SOIL	Zinc	32.9		0.10	0.47	1.86	mg/Kg
Client ID : OU4-PCS-TC-16-021725									
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Aluminum	8420		2.46	4.08	5.10	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Antimony	0.15	J	0.15	0.64	2.55	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Arsenic	1.23		0.30	0.82	1.02	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Barium	18.9		0.65	1.27	5.10	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Beryllium	0.073	J	0.012	0.076	0.31	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Cadmium	0.90		0.016	0.076	0.31	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Calcium	8540		2.85	25.5	102	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Chromium	1.20		0.055	0.13	0.51	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Cobalt	18.1		0.059	0.38	1.53	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Copper	31.9		0.48	0.82	1.02	mg/Kg

Hit Summary Sheet SW-846

SDG No.: Q1383 **Order ID:** Q1383
Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Iron	28700		2.74	4.08	5.10	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Lead	2.59		0.15	0.49	0.61	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Magnesium	6550		3.50	25.5	102	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Manganese	237		0.072	0.26	1.02	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Mercury	0.0070	J	0.0060	0.010	0.013	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Nickel	8.41		0.092	0.51	2.04	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Potassium	127		29.3	81.6	102	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Silver	0.27	J	0.053	0.26	0.51	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Sodium	1530		36.8	81.6	102	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Vanadium	65.9		0.28	1.02	2.04	mg/Kg
Q1383-11	OU4-PCS-TC-16-021725	SOIL	Zinc	32.7		0.11	0.51	2.04	mg/Kg
Client ID : OU4-PCS-TC-17-021725									
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Aluminum	7550		2.21	3.66	4.58	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Arsenic	1.09		0.27	0.73	0.92	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Barium	12.7		0.59	1.14	4.58	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Beryllium	0.057	J	0.011	0.069	0.28	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Cadmium	0.77		0.015	0.069	0.28	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Calcium	7220		2.56	22.9	91.6	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Chromium	1.03		0.049	0.11	0.46	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Cobalt	15.9		0.053	0.34	1.37	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Copper	30.8		0.43	0.73	0.92	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Iron	25800		2.46	3.66	4.58	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Lead	2.43		0.14	0.44	0.55	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Magnesium	5960		3.14	22.9	91.6	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Manganese	194		0.065	0.23	0.92	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Nickel	7.55		0.082	0.46	1.83	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Potassium	114		26.3	73.2	91.6	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Silver	0.30	J	0.048	0.23	0.46	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Sodium	1440		33.1	73.2	91.6	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Vanadium	60.6		0.25	0.92	1.83	mg/Kg
Q1383-13	OU4-PCS-TC-17-021725	SOIL	Zinc	28.6		0.10	0.46	1.83	mg/Kg
Client ID : OU4-PCS-TC-18-021725									
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Aluminum	8410		2.45	4.07	5.08	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Antimony	0.16	J	0.15	0.64	2.54	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Arsenic	0.92	J	0.30	0.81	1.02	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Barium	17.2		0.65	1.27	5.08	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Beryllium	0.086	J	0.012	0.076	0.31	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Cadmium	1.03		0.016	0.076	0.31	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Calcium	7640		2.85	25.4	102	mg/Kg

Hit Summary Sheet SW-846

SDG No.: Q1383 **Order ID:** Q1383
Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Chromium	1.14		0.055	0.13	0.51	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Cobalt	18.6		0.059	0.38	1.53	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Copper	36.6		0.48	0.81	1.02	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Iron	29700		2.74	4.07	5.08	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Lead	2.93		0.15	0.49	0.61	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Magnesium	6770		3.49	25.4	102	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Manganese	244		0.072	0.25	1.02	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Nickel	8.08		0.092	0.51	2.03	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Potassium	123		29.2	81.4	102	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Silver	0.29	J	0.053	0.25	0.51	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Sodium	1590		36.7	81.4	102	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Vanadium	74.0		0.28	1.02	2.03	mg/Kg
Q1383-15	OU4-PCS-TC-18-021725	SOIL	Zinc	35.4		0.11	0.51	2.03	mg/Kg
Client ID : OU4-PCS-TC-19-021725									
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Aluminum	9250		2.40	3.98	4.98	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Antimony	0.19	J	0.15	0.62	2.49	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Arsenic	0.98	J	0.29	0.80	1.00	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Barium	14.7		0.64	1.25	4.98	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Beryllium	0.091	J	0.012	0.075	0.30	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Cadmium	1.12		0.016	0.075	0.30	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Calcium	8640		2.79	24.9	99.6	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Chromium	1.38		0.054	0.13	0.50	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Cobalt	17.9		0.058	0.37	1.49	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Copper	32.8		0.47	0.80	1.00	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Iron	28000		2.68	3.98	4.98	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Lead	2.53		0.15	0.48	0.60	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Magnesium	7120		3.42	24.9	99.6	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Manganese	215		0.071	0.25	1.00	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Nickel	8.85		0.090	0.50	1.99	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Potassium	131		28.6	79.7	99.6	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Silver	0.26	J	0.052	0.25	0.50	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Sodium	1670		36.0	79.7	99.6	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Vanadium	71.6		0.27	1.00	1.99	mg/Kg
Q1383-17	OU4-PCS-TC-19-021725	SOIL	Zinc	33.5		0.11	0.50	1.99	mg/Kg
Client ID : OU4-PCS-TC-20-021725									
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Aluminum	8840		2.37	3.93	4.91	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Arsenic	1.12		0.28	0.79	0.98	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Barium	22.0		0.63	1.23	4.91	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Beryllium	0.094	J	0.012	0.074	0.29	mg/Kg

Hit Summary Sheet SW-846

SDG No.: Q1383 **Order ID:** Q1383
Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Cadmium	1.15		0.016	0.074	0.29	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Calcium	8810		2.75	24.5	98.2	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Chromium	1.12		0.053	0.12	0.49	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Cobalt	19.1		0.057	0.37	1.47	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Copper	34.7		0.46	0.79	0.98	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Iron	31200		2.64	3.93	4.91	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Lead	3.82		0.15	0.47	0.59	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Magnesium	6700		3.37	24.5	98.2	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Manganese	246		0.070	0.25	0.98	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Nickel	8.63		0.088	0.49	1.96	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Potassium	143		28.2	78.5	98.2	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Silver	0.41	J	0.051	0.25	0.49	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Sodium	1680		35.4	78.5	98.2	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Vanadium	79.6		0.27	0.98	1.96	mg/Kg
Q1383-19	OU4-PCS-TC-20-021725	SOIL	Zinc	35.1		0.11	0.49	1.96	mg/Kg

Client ID : OU4-CF-15-021725

Q1383-21	OU4-CF-15-021725	SOIL	Aluminum	8650		2.47	4.10	5.12	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Arsenic	0.71	J	0.30	0.82	1.02	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Barium	4.20	J	0.66	1.28	5.12	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Beryllium	0.024	J	0.012	0.077	0.31	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Cadmium	0.20	J	0.016	0.077	0.31	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Calcium	6030		2.87	25.6	102	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Chromium	2.15		0.055	0.13	0.51	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Cobalt	15.9		0.059	0.38	1.54	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Copper	30.8		0.48	0.82	1.02	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Iron	24900		2.76	4.10	5.12	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Lead	2.27		0.15	0.49	0.62	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Magnesium	8500		3.51	25.6	102	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Manganese	135		0.073	0.26	1.02	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Nickel	12.3		0.092	0.51	2.05	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Potassium	114		29.4	82.0	102	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Silver	0.30	J	0.053	0.26	0.51	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Sodium	2020		37.0	82.0	102	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Vanadium	56.4		0.28	1.02	2.05	mg/Kg
Q1383-21	OU4-CF-15-021725	SOIL	Zinc	24.5		0.11	0.51	2.05	mg/Kg



SAMPLE DATA

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Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-11-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-01	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8450		1	2.21	3.68	4.60	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-36-0	Antimony	0.16	JN	1	0.14	0.57	2.30	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-38-2	Arsenic	0.99		1	0.27	0.74	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-39-3	Barium	15.1		1	0.59	1.15	4.60	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-41-7	Beryllium	0.081	JN	1	0.011	0.069	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-43-9	Cadmium	1.07		1	0.015	0.069	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-70-2	Calcium	8150		1	2.57	23.0	91.9	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-47-3	Chromium	1.26	N	1	0.050	0.12	0.46	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-48-4	Cobalt	17.4	N	1	0.053	0.35	1.38	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-50-8	Copper	33.2		1	0.43	0.74	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7439-89-6	Iron	28000		1	2.47	3.68	4.60	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7439-92-1	Lead	2.92		1	0.14	0.44	0.55	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7439-95-4	Magnesium	6290		1	3.15	23.0	91.9	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7439-96-5	Manganese	206		1	0.065	0.23	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7439-97-6	Mercury	0.015		1	0.0060	0.011	0.013	mg/Kg	02/20/25 15:15	02/21/25 13:18	SW7471B	
7440-02-0	Nickel	8.83		1	0.083	0.46	1.84	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-09-7	Potassium	140		1	26.4	73.5	91.9	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7782-49-2	Selenium	0.74	UN	1	0.30	0.74	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-22-4	Silver	0.33	J	1	0.048	0.23	0.46	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-23-5	Sodium	1650		1	33.2	73.5	91.9	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-28-0	Thallium	0.92	U	1	0.40	0.92	1.84	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-62-2	Vanadium	71.9		1	0.25	0.92	1.84	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050
7440-66-6	Zinc	31.1	N	1	0.10	0.46	1.84	mg/Kg	02/18/25 14:30	03/04/25 11:22	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-12-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-03	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7410		1	2.51	4.17	5.21	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-36-0	Antimony	0.65	UN	1	0.16	0.65	2.61	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-38-2	Arsenic	1.58		1	0.30	0.83	1.04	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-39-3	Barium	12.1		1	0.67	1.30	5.21	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-41-7	Beryllium	0.061	JN	1	0.013	0.078	0.31	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-43-9	Cadmium	0.54		1	0.017	0.078	0.31	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-70-2	Calcium	7030		1	2.92	26.1	104	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-47-3	Chromium	1.17	N	1	0.056	0.13	0.52	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-48-4	Cobalt	17.6	N	1	0.060	0.39	1.56	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-50-8	Copper	30.8		1	0.49	0.83	1.04	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7439-89-6	Iron	27400		1	2.81	4.17	5.21	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7439-92-1	Lead	3.48		1	0.16	0.50	0.63	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7439-95-4	Magnesium	6140		1	3.58	26.1	104	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7439-96-5	Manganese	204		1	0.074	0.26	1.04	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7439-97-6	Mercury	0.011	J	1	0.0070	0.012	0.015	mg/Kg	02/20/25 15:15	02/21/25 13:20	SW7471B	
7440-02-0	Nickel	7.43		1	0.094	0.52	2.09	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-09-7	Potassium	108		1	29.9	83.4	104	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7782-49-2	Selenium	0.83	UN	1	0.34	0.83	1.04	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-22-4	Silver	0.29	J	1	0.054	0.26	0.52	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-23-5	Sodium	1400		1	37.6	83.4	104	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-28-0	Thallium	1.04	U	1	0.46	1.04	2.09	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-62-2	Vanadium	59.1		1	0.28	1.04	2.09	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050
7440-66-6	Zinc	31.1	N	1	0.12	0.52	2.09	mg/Kg	02/18/25 14:30	03/04/25 11:26	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-13-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-05	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8880		1	2.23	3.70	4.62	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-36-0	Antimony	0.23	JN	1	0.14	0.58	2.31	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-38-2	Arsenic	6.41		1	0.27	0.74	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-39-3	Barium	13.2		1	0.59	1.16	4.62	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-41-7	Beryllium	0.10	JN	1	0.011	0.069	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-43-9	Cadmium	1.20		1	0.015	0.069	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-70-2	Calcium	9720		1	2.59	23.1	92.4	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-47-3	Chromium	1.40	N	1	0.050	0.12	0.46	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-48-4	Cobalt	20.5	N	1	0.054	0.35	1.39	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-50-8	Copper	34.1		1	0.43	0.74	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7439-89-6	Iron	30400		1	2.49	3.70	4.62	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7439-92-1	Lead	4.93		1	0.14	0.44	0.55	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7439-95-4	Magnesium	6960		1	3.17	23.1	92.4	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7439-96-5	Manganese	233		1	0.066	0.23	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.013	mg/Kg	02/20/25 15:15	02/21/25 13:23	SW7471B	
7440-02-0	Nickel	9.56		1	0.083	0.46	1.85	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-09-7	Potassium	133		1	26.5	73.9	92.4	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7782-49-2	Selenium	0.74	UN	1	0.31	0.74	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-22-4	Silver	0.26	J	1	0.048	0.23	0.46	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-23-5	Sodium	1610		1	33.4	73.9	92.4	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-28-0	Thallium	0.92	U	1	0.41	0.92	1.85	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-62-2	Vanadium	71.2		1	0.25	0.92	1.85	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050
7440-66-6	Zinc	34.5	N	1	0.10	0.46	1.85	mg/Kg	02/18/25 14:30	03/04/25 11:30	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-14-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-07	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8880		1	2.29	3.79	4.74	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-36-0	Antimony	0.59	UN	1	0.14	0.59	2.37	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-38-2	Arsenic	1.16		1	0.28	0.76	0.95	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-39-3	Barium	14.9		1	0.61	1.19	4.74	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-41-7	Beryllium	0.086	JN	1	0.011	0.071	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-43-9	Cadmium	1.15		1	0.015	0.071	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-70-2	Calcium	8760		1	2.66	23.7	94.8	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-47-3	Chromium	1.26	N	1	0.051	0.12	0.47	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-48-4	Cobalt	18.5	N	1	0.055	0.36	1.42	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-50-8	Copper	33.6		1	0.45	0.76	0.95	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7439-89-6	Iron	29800		1	2.55	3.79	4.74	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7439-92-1	Lead	2.97		1	0.14	0.46	0.57	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7439-95-4	Magnesium	6820		1	3.25	23.7	94.8	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7439-96-5	Manganese	229		1	0.067	0.24	0.95	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.013	mg/Kg	02/20/25 15:15	02/21/25 13:25	SW7471B	
7440-02-0	Nickel	8.51		1	0.085	0.47	1.90	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-09-7	Potassium	135		1	27.2	75.9	94.8	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7782-49-2	Selenium	0.76	UN	1	0.31	0.76	0.95	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-22-4	Silver	0.28	J	1	0.049	0.24	0.47	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-23-5	Sodium	1630		1	34.2	75.9	94.8	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-28-0	Thallium	0.95	U	1	0.42	0.95	1.90	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-62-2	Vanadium	76.9		1	0.26	0.95	1.90	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050
7440-66-6	Zinc	35.9	N	1	0.10	0.47	1.90	mg/Kg	02/18/25 14:30	03/04/25 11:43	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

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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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-15-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-09	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	9010		1	2.25	3.73	4.66	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-36-0	Antimony	0.22	JN	1	0.14	0.58	2.33	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-38-2	Arsenic	1.20		1	0.27	0.75	0.93	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-39-3	Barium	12.4		1	0.60	1.16	4.66	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-41-7	Beryllium	0.10	JN	1	0.011	0.070	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-43-9	Cadmium	1.13		1	0.015	0.070	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-70-2	Calcium	8360		1	2.61	23.3	93.2	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-47-3	Chromium	1.09	N	1	0.050	0.12	0.47	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-48-4	Cobalt	18.3	N	1	0.054	0.35	1.40	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-50-8	Copper	30.9		1	0.44	0.75	0.93	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7439-89-6	Iron	30900		1	2.51	3.73	4.66	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7439-92-1	Lead	3.16		1	0.14	0.45	0.56	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7439-95-4	Magnesium	7860		1	3.20	23.3	93.2	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7439-96-5	Manganese	220		1	0.066	0.23	0.93	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.014	mg/Kg	02/20/25 15:15	02/21/25 13:27	SW7471B	
7440-02-0	Nickel	8.74		1	0.084	0.47	1.86	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-09-7	Potassium	127		1	26.7	74.6	93.2	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7782-49-2	Selenium	0.75	UN	1	0.31	0.75	0.93	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-22-4	Silver	0.15	J	1	0.048	0.23	0.47	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-23-5	Sodium	1640		1	33.6	74.6	93.2	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-28-0	Thallium	0.93	U	1	0.41	0.93	1.86	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-62-2	Vanadium	73.4		1	0.25	0.93	1.86	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050
7440-66-6	Zinc	32.9	N	1	0.10	0.47	1.86	mg/Kg	02/18/25 14:30	03/04/25 11:47	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-16-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-11	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8420		1	2.46	4.08	5.10	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-36-0	Antimony	0.15	JN	1	0.15	0.64	2.55	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-38-2	Arsenic	1.23		1	0.30	0.82	1.02	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-39-3	Barium	18.9		1	0.65	1.27	5.10	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-41-7	Beryllium	0.073	JN	1	0.012	0.076	0.31	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-43-9	Cadmium	0.90		1	0.016	0.076	0.31	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-70-2	Calcium	8540		1	2.85	25.5	102	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-47-3	Chromium	1.20	N	1	0.055	0.13	0.51	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-48-4	Cobalt	18.1	N	1	0.059	0.38	1.53	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-50-8	Copper	31.9		1	0.48	0.82	1.02	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7439-89-6	Iron	28700		1	2.74	4.08	5.10	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7439-92-1	Lead	2.59		1	0.15	0.49	0.61	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7439-95-4	Magnesium	6550		1	3.50	25.5	102	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7439-96-5	Manganese	237		1	0.072	0.26	1.02	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7439-97-6	Mercury	0.0070	J	1	0.0060	0.010	0.013	mg/Kg	02/20/25 15:15	02/21/25 13:34	SW7471B	
7440-02-0	Nickel	8.41		1	0.092	0.51	2.04	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-09-7	Potassium	127		1	29.3	81.6	102	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7782-49-2	Selenium	0.82	UN	1	0.34	0.82	1.02	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-22-4	Silver	0.27	J	1	0.053	0.26	0.51	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-23-5	Sodium	1530		1	36.8	81.6	102	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-28-0	Thallium	1.02	U	1	0.45	1.02	2.04	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-62-2	Vanadium	65.9		1	0.28	1.02	2.04	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050
7440-66-6	Zinc	32.7	N	1	0.11	0.51	2.04	mg/Kg	02/18/25 14:30	03/04/25 11:52	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

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N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-17-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-13	Matrix:	SOIL
Level (low/med):	low	% Solid:	91.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7550		1	2.21	3.66	4.58	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-36-0	Antimony	0.57	UN	1	0.14	0.57	2.29	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-38-2	Arsenic	1.09		1	0.27	0.73	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-39-3	Barium	12.7		1	0.59	1.14	4.58	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-41-7	Beryllium	0.057	JN	1	0.011	0.069	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-43-9	Cadmium	0.77		1	0.015	0.069	0.28	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-70-2	Calcium	7220		1	2.56	22.9	91.6	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-47-3	Chromium	1.03	N	1	0.049	0.11	0.46	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-48-4	Cobalt	15.9	N	1	0.053	0.34	1.37	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-50-8	Copper	30.8		1	0.43	0.73	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7439-89-6	Iron	25800		1	2.46	3.66	4.58	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7439-92-1	Lead	2.43		1	0.14	0.44	0.55	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7439-95-4	Magnesium	5960		1	3.14	22.9	91.6	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7439-96-5	Manganese	194		1	0.065	0.23	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.014	mg/Kg	02/20/25 15:15	02/21/25 13:36	SW7471B	
7440-02-0	Nickel	7.55		1	0.082	0.46	1.83	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-09-7	Potassium	114		1	26.3	73.2	91.6	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7782-49-2	Selenium	0.73	UN	1	0.30	0.73	0.92	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-22-4	Silver	0.30	J	1	0.048	0.23	0.46	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-23-5	Sodium	1440		1	33.1	73.2	91.6	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-28-0	Thallium	0.92	U	1	0.40	0.92	1.83	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-62-2	Vanadium	60.6		1	0.25	0.92	1.83	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050
7440-66-6	Zinc	28.6	N	1	0.10	0.46	1.83	mg/Kg	02/18/25 14:30	03/04/25 11:56	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-18-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-15	Matrix:	SOIL
Level (low/med):	low	% Solid:	91.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8410		1	2.45	4.07	5.08	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-36-0	Antimony	0.16	JN	1	0.15	0.64	2.54	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-38-2	Arsenic	0.92	J	1	0.30	0.81	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-39-3	Barium	17.2		1	0.65	1.27	5.08	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-41-7	Beryllium	0.086	JN	1	0.012	0.076	0.31	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-43-9	Cadmium	1.03		1	0.016	0.076	0.31	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-70-2	Calcium	7640		1	2.85	25.4	102	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-47-3	Chromium	1.14	N	1	0.055	0.13	0.51	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-48-4	Cobalt	18.6	N	1	0.059	0.38	1.53	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-50-8	Copper	36.6		1	0.48	0.81	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7439-89-6	Iron	29700		1	2.74	4.07	5.08	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7439-92-1	Lead	2.93		1	0.15	0.49	0.61	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7439-95-4	Magnesium	6770		1	3.49	25.4	102	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7439-96-5	Manganese	244		1	0.072	0.25	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7439-97-6	Mercury	0.012	U	1	0.0070	0.012	0.015	mg/Kg	02/20/25 15:15	02/21/25 13:38	SW7471B	
7440-02-0	Nickel	8.08		1	0.092	0.51	2.03	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-09-7	Potassium	123		1	29.2	81.4	102	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7782-49-2	Selenium	0.81	UN	1	0.34	0.81	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-22-4	Silver	0.29	J	1	0.053	0.25	0.51	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-23-5	Sodium	1590		1	36.7	81.4	102	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-28-0	Thallium	1.02	U	1	0.45	1.02	2.03	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-62-2	Vanadium	74.0		1	0.28	1.02	2.03	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050
7440-66-6	Zinc	35.4	N	1	0.11	0.51	2.03	mg/Kg	02/18/25 14:30	03/04/25 12:21	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

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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.

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N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-19-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-17	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	9250		1	2.40	3.98	4.98	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-36-0	Antimony	0.19	JN	1	0.15	0.62	2.49	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-38-2	Arsenic	0.98	J	1	0.29	0.80	1.00	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-39-3	Barium	14.7		1	0.64	1.25	4.98	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-41-7	Beryllium	0.091	JN	1	0.012	0.075	0.30	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-43-9	Cadmium	1.12		1	0.016	0.075	0.30	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-70-2	Calcium	8640		1	2.79	24.9	99.6	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-47-3	Chromium	1.38	N	1	0.054	0.13	0.50	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-48-4	Cobalt	17.9	N	1	0.058	0.37	1.49	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-50-8	Copper	32.8		1	0.47	0.80	1.00	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7439-89-6	Iron	28000		1	2.68	3.98	4.98	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7439-92-1	Lead	2.53		1	0.15	0.48	0.60	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7439-95-4	Magnesium	7120		1	3.42	24.9	99.6	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7439-96-5	Manganese	215		1	0.071	0.25	1.00	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.014	mg/Kg	02/20/25 15:15	02/21/25 13:41	SW7471B	
7440-02-0	Nickel	8.85		1	0.090	0.50	1.99	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-09-7	Potassium	131		1	28.6	79.7	99.6	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7782-49-2	Selenium	0.80	UN	1	0.33	0.80	1.00	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-22-4	Silver	0.26	J	1	0.052	0.25	0.50	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-23-5	Sodium	1670		1	36.0	79.7	99.6	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-28-0	Thallium	1.00	U	1	0.44	1.00	1.99	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-62-2	Vanadium	71.6		1	0.27	1.00	1.99	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050
7440-66-6	Zinc	33.5	N	1	0.11	0.50	1.99	mg/Kg	02/18/25 14:30	03/04/25 12:34	SW6010	SW3050

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

U = Not Detected
LOQ = Limit of Quantitation
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Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-20-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-19	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8840		1	2.37	3.93	4.91	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-36-0	Antimony	0.61	UN	1	0.15	0.61	2.45	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-38-2	Arsenic	1.12		1	0.28	0.79	0.98	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-39-3	Barium	22.0		1	0.63	1.23	4.91	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-41-7	Beryllium	0.094	JN	1	0.012	0.074	0.29	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-43-9	Cadmium	1.15		1	0.016	0.074	0.29	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-70-2	Calcium	8810		1	2.75	24.5	98.2	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-47-3	Chromium	1.12	N	1	0.053	0.12	0.49	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-48-4	Cobalt	19.1	N	1	0.057	0.37	1.47	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-50-8	Copper	34.7		1	0.46	0.79	0.98	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7439-89-6	Iron	31200		1	2.64	3.93	4.91	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7439-92-1	Lead	3.82		1	0.15	0.47	0.59	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7439-95-4	Magnesium	6700		1	3.37	24.5	98.2	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7439-96-5	Manganese	246		1	0.070	0.25	0.98	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7439-97-6	Mercury	0.010	U	1	0.0060	0.010	0.013	mg/Kg	02/20/25 15:15	02/21/25 13:43	SW7471B	
7440-02-0	Nickel	8.63		1	0.088	0.49	1.96	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-09-7	Potassium	143		1	28.2	78.5	98.2	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7782-49-2	Selenium	0.79	UN	1	0.32	0.79	0.98	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-22-4	Silver	0.41	J	1	0.051	0.25	0.49	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-23-5	Sodium	1680		1	35.4	78.5	98.2	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-28-0	Thallium	0.98	U	1	0.43	0.98	1.96	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-62-2	Vanadium	79.6		1	0.27	0.98	1.96	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050
7440-66-6	Zinc	35.1	N	1	0.11	0.49	1.96	mg/Kg	02/18/25 14:30	03/04/25 12:38	SW6010	SW3050

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-CF-15-021725	SDG No.:	Q1383
Lab Sample ID:	Q1383-21	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8650		1	2.47	4.10	5.12	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-36-0	Antimony	0.64	UN	1	0.15	0.64	2.56	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-38-2	Arsenic	0.71	J	1	0.30	0.82	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-39-3	Barium	4.20	J	1	0.66	1.28	5.12	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-41-7	Beryllium	0.024	JN	1	0.012	0.077	0.31	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-43-9	Cadmium	0.20	J	1	0.016	0.077	0.31	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-70-2	Calcium	6030		1	2.87	25.6	102	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-47-3	Chromium	2.15	N	1	0.055	0.13	0.51	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-48-4	Cobalt	15.9	N	1	0.059	0.38	1.54	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-50-8	Copper	30.8		1	0.48	0.82	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7439-89-6	Iron	24900		1	2.76	4.10	5.12	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7439-92-1	Lead	2.27		1	0.15	0.49	0.62	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7439-95-4	Magnesium	8500		1	3.51	25.6	102	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7439-96-5	Manganese	135		1	0.073	0.26	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.013	mg/Kg	02/20/25 15:15	02/21/25 13:45	SW7471B	
7440-02-0	Nickel	12.3		1	0.092	0.51	2.05	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-09-7	Potassium	114		1	29.4	82.0	102	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7782-49-2	Selenium	0.82	UN	1	0.34	0.82	1.02	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-22-4	Silver	0.30	J	1	0.053	0.26	0.51	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-23-5	Sodium	2020		1	37.0	82.0	102	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-28-0	Thallium	1.02	U	1	0.45	1.02	2.05	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-62-2	Vanadium	56.4		1	0.28	1.02	2.05	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050
7440-66-6	Zinc	24.5	N	1	0.11	0.51	2.05	mg/Kg	02/18/25 14:30	03/04/25 12:43	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits



METAL CALIBRATION DATA

- 1
- 2
- 3
- 4
- 5
- 6
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- 10
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- 16
- 17
- 18

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
Initial Calibration Source: EPA
Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV13	Mercury	4.00	4.0	100	90 - 110	CV	02/21/2025	12:52	LB134771



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Client:	<u>Nobis Group</u>	SDG No.:	<u>Q1383</u>				
Contract:	<u>NOBI03</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>Q1383</u>	SAS No.:	<u>Q1383</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	<u>PLASMA-PURE</u>						

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L							
CCV01	Mercury	4.73	5.0	95	90 - 110	CV	02/21/2025	12:56	LB134771
CCV02	Mercury	4.67	5.0	93	90 - 110	CV	02/21/2025	13:29	LB134771
CCV03	Mercury	4.93	5.0	98	90 - 110	CV	02/21/2025	13:57	LB134771
CCV04	Mercury	4.95	5.0	99	90 - 110	CV	02/21/2025	14:31	LB134771
CCV05	Mercury	5.42	5.0	108	90 - 110	CV	02/21/2025	15:01	LB134771
CCV06	Mercury	4.87	5.0	97	90 - 110	CV	02/21/2025	15:22	LB134771

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group SDG No.: Q1383
 Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383
 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	2500	2500	100	90 - 110	P	03/04/2025	10:07	LB134892
	Antimony	1000	1000	100	90 - 110	P	03/04/2025	10:07	LB134892
	Arsenic	1030	1000	103	90 - 110	P	03/04/2025	10:07	LB134892
	Barium	484	520	93	90 - 110	P	03/04/2025	10:07	LB134892
	Beryllium	501	510	98	90 - 110	P	03/04/2025	10:07	LB134892
	Cadmium	501	510	98	90 - 110	P	03/04/2025	10:07	LB134892
	Calcium	9670	10000	97	90 - 110	P	03/04/2025	10:07	LB134892
	Chromium	521	520	100	90 - 110	P	03/04/2025	10:07	LB134892
	Cobalt	508	520	98	90 - 110	P	03/04/2025	10:07	LB134892
	Copper	523	510	103	90 - 110	P	03/04/2025	10:07	LB134892
	Iron	9620	10000	96	90 - 110	P	03/04/2025	10:07	LB134892
	Lead	1010	1000	101	90 - 110	P	03/04/2025	10:07	LB134892
	Magnesium	5730	6000	95	90 - 110	P	03/04/2025	10:07	LB134892
	Manganese	500	520	96	90 - 110	P	03/04/2025	10:07	LB134892
	Nickel	511	530	96	90 - 110	P	03/04/2025	10:07	LB134892
	Potassium	9360	9900	95	90 - 110	P	03/04/2025	10:07	LB134892
	Selenium	1030	1000	103	90 - 110	P	03/04/2025	10:07	LB134892
	Silver	252	250	101	90 - 110	P	03/04/2025	10:07	LB134892
	Sodium	9450	10000	94	90 - 110	P	03/04/2025	10:07	LB134892
	Thallium	1050	1000	105	90 - 110	P	03/04/2025	10:07	LB134892
	Vanadium	480	500	96	90 - 110	P	03/04/2025	10:07	LB134892
	Zinc	1020	1000	102	90 - 110	P	03/04/2025	10:07	LB134892

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group SDG No.: Q1383
 Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383
 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	104	100	104	80 - 120	P	03/04/2025	10:13	LB134892
	Antimony	49.5	50.0	99	80 - 120	P	03/04/2025	10:13	LB134892
	Arsenic	19.6	20.0	98	80 - 120	P	03/04/2025	10:13	LB134892
	Barium	93.1	100	93	80 - 120	P	03/04/2025	10:13	LB134892
	Beryllium	5.73	6.0	96	80 - 120	P	03/04/2025	10:13	LB134892
	Cadmium	5.93	6.0	99	80 - 120	P	03/04/2025	10:13	LB134892
	Calcium	1960	2000	98	80 - 120	P	03/04/2025	10:13	LB134892
	Chromium	10.0	10.0	100	80 - 120	P	03/04/2025	10:13	LB134892
	Cobalt	29.2	30.0	98	80 - 120	P	03/04/2025	10:13	LB134892
	Copper	22.5	20.0	112	80 - 120	P	03/04/2025	10:13	LB134892
	Iron	101	100	101	80 - 120	P	03/04/2025	10:13	LB134892
	Lead	11.9	12.0	99	80 - 120	P	03/04/2025	10:13	LB134892
	Magnesium	2070	2000	103	80 - 120	P	03/04/2025	10:13	LB134892
	Manganese	20.9	20.0	104	80 - 120	P	03/04/2025	10:13	LB134892
	Nickel	39.1	40.0	98	80 - 120	P	03/04/2025	10:13	LB134892
	Potassium	1900	2000	95	80 - 120	P	03/04/2025	10:13	LB134892
	Selenium	17.7	20.0	89	80 - 120	P	03/04/2025	10:13	LB134892
	Silver	10.4	10.0	104	80 - 120	P	03/04/2025	10:13	LB134892
	Sodium	1920	2000	96	80 - 120	P	03/04/2025	10:13	LB134892
	Thallium	39.3	40.0	98	80 - 120	P	03/04/2025	10:13	LB134892
	Vanadium	38.6	40.0	96	80 - 120	P	03/04/2025	10:13	LB134892
	Zinc	42.4	40.0	106	80 - 120	P	03/04/2025	10:13	LB134892

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group SDG No.: Q1383
Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383
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	10200	10000	102	90 - 110	P	03/04/2025	10:43	LB134892
	Antimony	5190	5000	104	90 - 110	P	03/04/2025	10:43	LB134892
	Arsenic	5150	5000	103	90 - 110	P	03/04/2025	10:43	LB134892
	Barium	9920	10000	99	90 - 110	P	03/04/2025	10:43	LB134892
	Beryllium	252	250	101	90 - 110	P	03/04/2025	10:43	LB134892
	Cadmium	2540	2500	102	90 - 110	P	03/04/2025	10:43	LB134892
	Calcium	24800	25000	99	90 - 110	P	03/04/2025	10:43	LB134892
	Chromium	1040	1000	104	90 - 110	P	03/04/2025	10:43	LB134892
	Cobalt	2530	2500	101	90 - 110	P	03/04/2025	10:43	LB134892
	Copper	1290	1250	103	90 - 110	P	03/04/2025	10:43	LB134892
	Iron	5110	5000	102	90 - 110	P	03/04/2025	10:43	LB134892
	Lead	5100	5000	102	90 - 110	P	03/04/2025	10:43	LB134892
	Magnesium	24800	25000	99	90 - 110	P	03/04/2025	10:43	LB134892
	Manganese	2430	2500	97	90 - 110	P	03/04/2025	10:43	LB134892
	Nickel	2550	2500	102	90 - 110	P	03/04/2025	10:43	LB134892
	Potassium	25700	25000	103	90 - 110	P	03/04/2025	10:43	LB134892
	Selenium	5180	5000	104	90 - 110	P	03/04/2025	10:43	LB134892
	Silver	1280	1250	103	90 - 110	P	03/04/2025	10:43	LB134892
	Sodium	26200	25000	105	90 - 110	P	03/04/2025	10:43	LB134892
	Thallium	5210	5000	104	90 - 110	P	03/04/2025	10:43	LB134892
	Vanadium	2510	2500	100	90 - 110	P	03/04/2025	10:43	LB134892
	Zinc	2610	2500	104	90 - 110	P	03/04/2025	10:43	LB134892
CCV02	Aluminum	9880	10000	99	90 - 110	P	03/04/2025	11:34	LB134892
	Antimony	5030	5000	101	90 - 110	P	03/04/2025	11:34	LB134892
	Arsenic	4960	5000	99	90 - 110	P	03/04/2025	11:34	LB134892
	Barium	9590	10000	96	90 - 110	P	03/04/2025	11:34	LB134892
	Beryllium	239	250	96	90 - 110	P	03/04/2025	11:34	LB134892
	Cadmium	2450	2500	98	90 - 110	P	03/04/2025	11:34	LB134892
	Calcium	23700	25000	95	90 - 110	P	03/04/2025	11:34	LB134892
	Chromium	1010	1000	101	90 - 110	P	03/04/2025	11:34	LB134892
	Cobalt	2460	2500	98	90 - 110	P	03/04/2025	11:34	LB134892
	Copper	1260	1250	101	90 - 110	P	03/04/2025	11:34	LB134892
	Iron	4840	5000	97	90 - 110	P	03/04/2025	11:34	LB134892
	Lead	4910	5000	98	90 - 110	P	03/04/2025	11:34	LB134892

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group SDG No.: Q1383
 Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383
 Initial Calibration Source: EPA
 Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Magnesium	23900	25000	96	90 - 110	P	03/04/2025	11:34	LB134892
	Manganese	2340	2500	94	90 - 110	P	03/04/2025	11:34	LB134892
	Nickel	2450	2500	98	90 - 110	P	03/04/2025	11:34	LB134892
	Potassium	24400	25000	98	90 - 110	P	03/04/2025	11:34	LB134892
	Selenium	4990	5000	100	90 - 110	P	03/04/2025	11:34	LB134892
	Silver	1240	1250	99	90 - 110	P	03/04/2025	11:34	LB134892
	Sodium	25100	25000	100	90 - 110	P	03/04/2025	11:34	LB134892
	Thallium	5110	5000	102	90 - 110	P	03/04/2025	11:34	LB134892
	Vanadium	2420	2500	97	90 - 110	P	03/04/2025	11:34	LB134892
	Zinc	2520	2500	101	90 - 110	P	03/04/2025	11:34	LB134892
CCV03	Aluminum	9840	10000	98	90 - 110	P	03/04/2025	12:26	LB134892
	Antimony	5030	5000	101	90 - 110	P	03/04/2025	12:26	LB134892
	Arsenic	4980	5000	100	90 - 110	P	03/04/2025	12:26	LB134892
	Barium	9750	10000	98	90 - 110	P	03/04/2025	12:26	LB134892
	Beryllium	238	250	95	90 - 110	P	03/04/2025	12:26	LB134892
	Cadmium	2470	2500	99	90 - 110	P	03/04/2025	12:26	LB134892
	Calcium	24000	25000	96	90 - 110	P	03/04/2025	12:26	LB134892
	Chromium	1010	1000	101	90 - 110	P	03/04/2025	12:26	LB134892
	Cobalt	2480	2500	99	90 - 110	P	03/04/2025	12:26	LB134892
	Copper	1270	1250	101	90 - 110	P	03/04/2025	12:26	LB134892
	Iron	5010	5000	100	90 - 110	P	03/04/2025	12:26	LB134892
	Lead	4940	5000	99	90 - 110	P	03/04/2025	12:26	LB134892
	Magnesium	24200	25000	97	90 - 110	P	03/04/2025	12:26	LB134892
	Manganese	2400	2500	96	90 - 110	P	03/04/2025	12:26	LB134892
	Nickel	2470	2500	99	90 - 110	P	03/04/2025	12:26	LB134892
	Potassium	24800	25000	99	90 - 110	P	03/04/2025	12:26	LB134892
	Selenium	5010	5000	100	90 - 110	P	03/04/2025	12:26	LB134892
	Silver	1250	1250	100	90 - 110	P	03/04/2025	12:26	LB134892
	Sodium	25400	25000	102	90 - 110	P	03/04/2025	12:26	LB134892
	Thallium	5190	5000	104	90 - 110	P	03/04/2025	12:26	LB134892
	Vanadium	2460	2500	99	90 - 110	P	03/04/2025	12:26	LB134892
	Zinc	2530	2500	101	90 - 110	P	03/04/2025	12:26	LB134892
CCV04	Aluminum	9650	10000	96	90 - 110	P	03/04/2025	13:27	LB134892
	Antimony	4900	5000	98	90 - 110	P	03/04/2025	13:27	LB134892

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group SDG No.: Q1383
 Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383
 Initial Calibration Source: EPA
 Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV04	Arsenic	4840	5000	97	90 - 110	P	03/04/2025	13:27	LB134892
	Barium	9620	10000	96	90 - 110	P	03/04/2025	13:27	LB134892
	Beryllium	240	250	96	90 - 110	P	03/04/2025	13:27	LB134892
	Cadmium	2400	2500	96	90 - 110	P	03/04/2025	13:27	LB134892
	Calcium	23600	25000	94	90 - 110	P	03/04/2025	13:27	LB134892
	Chromium	984	1000	98	90 - 110	P	03/04/2025	13:27	LB134892
	Cobalt	2410	2500	96	90 - 110	P	03/04/2025	13:27	LB134892
	Copper	1230	1250	99	90 - 110	P	03/04/2025	13:27	LB134892
	Iron	4810	5000	96	90 - 110	P	03/04/2025	13:27	LB134892
	Lead	4820	5000	96	90 - 110	P	03/04/2025	13:27	LB134892
	Magnesium	23800	25000	95	90 - 110	P	03/04/2025	13:27	LB134892
	Manganese	2370	2500	95	90 - 110	P	03/04/2025	13:27	LB134892
	Nickel	2410	2500	96	90 - 110	P	03/04/2025	13:27	LB134892
	Potassium	23900	25000	96	90 - 110	P	03/04/2025	13:27	LB134892
	Selenium	4880	5000	98	90 - 110	P	03/04/2025	13:27	LB134892
	Silver	1220	1250	98	90 - 110	P	03/04/2025	13:27	LB134892
	Sodium	24300	25000	97	90 - 110	P	03/04/2025	13:27	LB134892
	Thallium	5070	5000	101	90 - 110	P	03/04/2025	13:27	LB134892
	Vanadium	2420	2500	97	90 - 110	P	03/04/2025	13:27	LB134892
	Zinc	2470	2500	99	90 - 110	P	03/04/2025	13:27	LB134892
CCV05	Aluminum	9280	10000	93	90 - 110	P	03/04/2025	14:08	LB134892
	Antimony	4750	5000	95	90 - 110	P	03/04/2025	14:08	LB134892
	Arsenic	4680	5000	94	90 - 110	P	03/04/2025	14:08	LB134892
	Barium	9150	10000	92	90 - 110	P	03/04/2025	14:08	LB134892
	Beryllium	228	250	91	90 - 110	P	03/04/2025	14:08	LB134892
	Cadmium	2300	2500	92	90 - 110	P	03/04/2025	14:08	LB134892
	Calcium	22700	25000	91	90 - 110	P	03/04/2025	14:08	LB134892
	Chromium	938	1000	94	90 - 110	P	03/04/2025	14:08	LB134892
	Cobalt	2320	2500	93	90 - 110	P	03/04/2025	14:08	LB134892
	Copper	1190	1250	96	90 - 110	P	03/04/2025	14:08	LB134892
	Iron	4570	5000	91	90 - 110	P	03/04/2025	14:08	LB134892
	Lead	4630	5000	92	90 - 110	P	03/04/2025	14:08	LB134892
	Magnesium	22800	25000	91	90 - 110	P	03/04/2025	14:08	LB134892
	Manganese	2280	2500	91	90 - 110	P	03/04/2025	14:08	LB134892

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Client:	<u>Nobis Group</u>	SDG No.:	<u>Q1383</u>	
Contract:	<u>NOBI03</u>	Lab Code:	<u>CHEM</u>	Case No.: <u>Q1383</u> SAS No.: <u>Q1383</u>
Initial Calibration Source:	<u>EPA</u>			
Continuing Calibration Source:	Inorganic Ventures			

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Metals

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CRDL STANDARD FOR AA & ICP

Client: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
Initial Calibration Source: _____
Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRA	Mercury	0.21	0.2	105	40 - 160	CV	02/21/2025	13:04	LB134771
CRI01	Aluminum	103	100	103	40 - 160	P	03/04/2025	10:22	LB134892
	Antimony	51.1	50.0	102	40 - 160	P	03/04/2025	10:22	LB134892
	Arsenic	20.7	20.0	103	40 - 160	P	03/04/2025	10:22	LB134892
	Barium	88.5	100	88	40 - 160	P	03/04/2025	10:22	LB134892
	Beryllium	6.05	6.0	101	40 - 160	P	03/04/2025	10:22	LB134892
	Cadmium	5.97	6.0	100	40 - 160	P	03/04/2025	10:22	LB134892
	Calcium	1960	2000	98	40 - 160	P	03/04/2025	10:22	LB134892
	Chromium	10.6	10.0	106	40 - 160	P	03/04/2025	10:22	LB134892
	Cobalt	29.4	30.0	98	40 - 160	P	03/04/2025	10:22	LB134892
	Copper	22.7	20.0	114	40 - 160	P	03/04/2025	10:22	LB134892
	Iron	95.3	100	95	40 - 160	P	03/04/2025	10:22	LB134892
	Lead	11.7	12.0	98	40 - 160	P	03/04/2025	10:22	LB134892
	Magnesium	2080	2000	104	40 - 160	P	03/04/2025	10:22	LB134892
	Manganese	20.5	20.0	102	40 - 160	P	03/04/2025	10:22	LB134892
	Nickel	39.7	40.0	99	40 - 160	P	03/04/2025	10:22	LB134892
	Potassium	1860	2000	93	40 - 160	P	03/04/2025	10:22	LB134892
	Selenium	18.9	20.0	95	40 - 160	P	03/04/2025	10:22	LB134892
	Silver	10.1	10.0	101	40 - 160	P	03/04/2025	10:22	LB134892
	Sodium	1870	2000	93	40 - 160	P	03/04/2025	10:22	LB134892
	Thallium	40.0	40.0	100	40 - 160	P	03/04/2025	10:22	LB134892
	Vanadium	37.8	40.0	94	40 - 160	P	03/04/2025	10:22	LB134892
	Zinc	42.5	40.0	106	40 - 160	P	03/04/2025	10:22	LB134892



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

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client:	Nobis Group				SDG No.:	Q1383				
Contract:	NOBI03	Lab Code:	CHEM	Case No.:	Q1383	SAS No.:	Q1383			
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB13	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	02/21/2025	12:54	LB134771

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: <u>Nobis Group</u>		SDG No.: <u>Q1383</u>								
Contract: <u>NOBI03</u>	Lab Code: <u>CHEM</u>	Case No.: <u>Q1383</u>			SAS No.: <u>Q1383</u>					
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	02/21/2025	13:01	LB134771
CCB02	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	02/21/2025	13:32	LB134771
CCB03	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	02/21/2025	14:02	LB134771
CCB04	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	02/21/2025	14:33	LB134771
CCB05	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	02/21/2025	15:06	LB134771
CCB06	Mercury	0.20	+/-0.20	U	0.16	0.20	CV	02/21/2025	15:24	LB134771

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group SDG No.: Q1383
Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	100	+/-100	U	80.0	100	P	03/04/2025	10:17	LB134892
	Antimony	50.0	+/-50.0	U	12.5	50.0	P	03/04/2025	10:17	LB134892
	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	10:17	LB134892
	Barium	100	+/-100	U	25.0	100	P	03/04/2025	10:17	LB134892
	Beryllium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	10:17	LB134892
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	10:17	LB134892
	Calcium	2000	+/-2000	U	500	2000	P	03/04/2025	10:17	LB134892
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	10:17	LB134892
	Cobalt	30.0	+/-30.0	U	7.50	30.0	P	03/04/2025	10:17	LB134892
	Copper	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	10:17	LB134892
	Iron	100	+/-100	U	80.0	100	P	03/04/2025	10:17	LB134892
	Lead	12.0	+/-12.0	U	9.60	12.0	P	03/04/2025	10:17	LB134892
	Magnesium	2000	+/-2000	U	500	2000	P	03/04/2025	10:17	LB134892
	Manganese	20.0	+/-20.0	U	5.00	20.0	P	03/04/2025	10:17	LB134892
	Nickel	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	10:17	LB134892
	Potassium	2000	+/-2000	U	1600	2000	P	03/04/2025	10:17	LB134892
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	10:17	LB134892
	Silver	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	10:17	LB134892
	Sodium	2000	+/-2000	U	1000	2000	P	03/04/2025	10:17	LB134892
	Thallium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	10:17	LB134892
	Vanadium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	10:17	LB134892
	Zinc	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	10:17	LB134892

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group		SDG No.: Q1383								
Contract: NOBI03	Lab Code: CHEM	Case No.: Q1383			SAS No.: Q1383					
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	100	+/-100	U	80.0	100	P	03/04/2025	10:47	LB134892
	Antimony	50.0	+/-50.0	U	12.5	50.0	P	03/04/2025	10:47	LB134892
	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	10:47	LB134892
	Barium	100	+/-100	U	25.0	100	P	03/04/2025	10:47	LB134892
	Beryllium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	10:47	LB134892
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	10:47	LB134892
	Calcium	2000	+/-2000	U	500	2000	P	03/04/2025	10:47	LB134892
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	10:47	LB134892
	Cobalt	30.0	+/-30.0	U	7.50	30.0	P	03/04/2025	10:47	LB134892
	Copper	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	10:47	LB134892
	Iron	100	+/-100	U	80.0	100	P	03/04/2025	10:47	LB134892
	Lead	12.0	+/-12.0	U	9.60	12.0	P	03/04/2025	10:47	LB134892
	Magnesium	2000	+/-2000	U	500	2000	P	03/04/2025	10:47	LB134892
	Manganese	20.0	+/-20.0	U	5.00	20.0	P	03/04/2025	10:47	LB134892
	Nickel	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	10:47	LB134892
	Potassium	2000	+/-2000	U	1600	2000	P	03/04/2025	10:47	LB134892
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	10:47	LB134892
	Silver	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	10:47	LB134892
	Sodium	2000	+/-2000	U	1000	2000	P	03/04/2025	10:47	LB134892
	Thallium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	10:47	LB134892
	Vanadium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	10:47	LB134892
	Zinc	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	10:47	LB134892
CCB02	Aluminum	100	+/-100	U	80.0	100	P	03/04/2025	11:39	LB134892
	Antimony	50.0	+/-50.0	U	12.5	50.0	P	03/04/2025	11:39	LB134892
	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	11:39	LB134892
	Barium	100	+/-100	U	25.0	100	P	03/04/2025	11:39	LB134892
	Beryllium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	11:39	LB134892
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	11:39	LB134892
	Calcium	2000	+/-2000	U	500	2000	P	03/04/2025	11:39	LB134892
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	11:39	LB134892
	Cobalt	30.0	+/-30.0	U	7.50	30.0	P	03/04/2025	11:39	LB134892
	Copper	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	11:39	LB134892
	Iron	100	+/-100	U	80.0	100	P	03/04/2025	11:39	LB134892
	Lead	12.0	+/-12.0	U	9.60	12.0	P	03/04/2025	11:39	LB134892
	Magnesium	2000	+/-2000	U	500	2000	P	03/04/2025	11:39	LB134892
	Manganese	20.0	+/-20.0	U	5.00	20.0	P	03/04/2025	11:39	LB134892
	Nickel	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	11:39	LB134892
	Potassium	2000	+/-2000	U	1600	2000	P	03/04/2025	11:39	LB134892
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	11:39	LB134892

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group		SDG No.: Q1383								
Contract: NOBI03	Lab Code: CHEM	Case No.: Q1383			SAS No.: Q1383					
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	11:39	LB134892
	Sodium	2000	+/-2000	U	1000	2000	P	03/04/2025	11:39	LB134892
	Thallium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	11:39	LB134892
	Vanadium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	11:39	LB134892
	Zinc	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	11:39	LB134892
CCB03	Aluminum	100	+/-100	U	80.0	100	P	03/04/2025	12:30	LB134892
	Antimony	50.0	+/-50.0	U	12.5	50.0	P	03/04/2025	12:30	LB134892
	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	12:30	LB134892
	Barium	100	+/-100	U	25.0	100	P	03/04/2025	12:30	LB134892
	Beryllium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	12:30	LB134892
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	12:30	LB134892
	Calcium	2000	+/-2000	U	500	2000	P	03/04/2025	12:30	LB134892
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	12:30	LB134892
	Cobalt	30.0	+/-30.0	U	7.50	30.0	P	03/04/2025	12:30	LB134892
	Copper	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	12:30	LB134892
	Iron	100	+/-100	U	80.0	100	P	03/04/2025	12:30	LB134892
	Lead	12.0	+/-12.0	U	9.60	12.0	P	03/04/2025	12:30	LB134892
	Magnesium	2000	+/-2000	U	500	2000	P	03/04/2025	12:30	LB134892
	Manganese	20.0	+/-20.0	U	5.00	20.0	P	03/04/2025	12:30	LB134892
	Nickel	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	12:30	LB134892
	Potassium	2000	+/-2000	U	1600	2000	P	03/04/2025	12:30	LB134892
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	12:30	LB134892
	Silver	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	12:30	LB134892
	Sodium	2000	+/-2000	U	1000	2000	P	03/04/2025	12:30	LB134892
	Thallium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	12:30	LB134892
	Vanadium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	12:30	LB134892
	Zinc	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	12:30	LB134892
CCB04	Aluminum	100	+/-100	U	80.0	100	P	03/04/2025	13:31	LB134892
	Antimony	50.0	+/-50.0	U	12.5	50.0	P	03/04/2025	13:31	LB134892
	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	13:31	LB134892
	Barium	100	+/-100	U	25.0	100	P	03/04/2025	13:31	LB134892
	Beryllium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	13:31	LB134892
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	13:31	LB134892
	Calcium	2000	+/-2000	U	500	2000	P	03/04/2025	13:31	LB134892
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	13:31	LB134892
	Cobalt	30.0	+/-30.0	U	7.50	30.0	P	03/04/2025	13:31	LB134892
	Copper	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	13:31	LB134892
	Iron	100	+/-100	U	80.0	100	P	03/04/2025	13:31	LB134892
	Lead	12.0	+/-12.0	U	9.60	12.0	P	03/04/2025	13:31	LB134892

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group		SDG No.: Q1383								
Contract:	NOBI03	Lab Code:	CHEM	Case No.:	Q1383	SAS No.: Q1383				
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	2000	+/-2000	U	500	2000	P	03/04/2025	13:31	LB134892
	Manganese	20.0	+/-20.0	U	5.00	20.0	P	03/04/2025	13:31	LB134892
	Nickel	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	13:31	LB134892
	Potassium	2000	+/-2000	U	1600	2000	P	03/04/2025	13:31	LB134892
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	13:31	LB134892
	Silver	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	13:31	LB134892
	Sodium	2000	+/-2000	U	1000	2000	P	03/04/2025	13:31	LB134892
	Thallium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	13:31	LB134892
	Vanadium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	13:31	LB134892
	Zinc	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	13:31	LB134892
CCB05	Aluminum	100	+/-100	U	80.0	100	P	03/04/2025	14:12	LB134892
	Antimony	50.0	+/-50.0	U	12.5	50.0	P	03/04/2025	14:12	LB134892
	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	14:12	LB134892
	Barium	100	+/-100	U	25.0	100	P	03/04/2025	14:12	LB134892
	Beryllium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	14:12	LB134892
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	14:12	LB134892
	Calcium	2000	+/-2000	U	500	2000	P	03/04/2025	14:12	LB134892
	Chromium	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	14:12	LB134892
	Cobalt	30.0	+/-30.0	U	7.50	30.0	P	03/04/2025	14:12	LB134892
	Copper	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	14:12	LB134892
	Iron	100	+/-100	U	80.0	100	P	03/04/2025	14:12	LB134892
	Lead	12.0	+/-12.0	U	9.60	12.0	P	03/04/2025	14:12	LB134892
	Magnesium	2000	+/-2000	U	500	2000	P	03/04/2025	14:12	LB134892
	Manganese	20.0	+/-20.0	U	5.00	20.0	P	03/04/2025	14:12	LB134892
	Nickel	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	14:12	LB134892
	Potassium	2000	+/-2000	U	1600	2000	P	03/04/2025	14:12	LB134892
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	14:12	LB134892
	Silver	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	14:12	LB134892
	Sodium	2000	+/-2000	U	1000	2000	P	03/04/2025	14:12	LB134892
	Thallium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	14:12	LB134892
CCB06	Vanadium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	14:12	LB134892
	Zinc	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	14:12	LB134892
	Aluminum	100	+/-100	U	80.0	100	P	03/04/2025	14:34	LB134892
	Antimony	50.0	+/-50.0	U	12.5	50.0	P	03/04/2025	14:34	LB134892
	Arsenic	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	14:34	LB134892
	Barium	100	+/-100	U	25.0	100	P	03/04/2025	14:34	LB134892
	Beryllium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	14:34	LB134892
	Cadmium	6.00	+/-6.00	U	1.50	6.00	P	03/04/2025	14:34	LB134892
	Calcium	2000	+/-2000	U	500	2000	P	03/04/2025	14:34	LB134892

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: <u>Nobis Group</u>		SDG No.: <u>Q1383</u>								
Contract: <u>NOBI03</u>	Lab Code: <u>CHEM</u>	Case No.: <u>Q1383</u>			SAS No.: <u>Q1383</u>					
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Chromium	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	14:34	LB134892
	Cobalt	30.0	+/-30.0	U	7.50	30.0	P	03/04/2025	14:34	LB134892
	Copper	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	14:34	LB134892
	Iron	100	+/-100	U	80.0	100	P	03/04/2025	14:34	LB134892
	Lead	12.0	+/-12.0	U	9.60	12.0	P	03/04/2025	14:34	LB134892
	Magnesium	2000	+/-2000	U	500	2000	P	03/04/2025	14:34	LB134892
	Manganese	20.0	+/-20.0	U	5.00	20.0	P	03/04/2025	14:34	LB134892
	Nickel	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	14:34	LB134892
	Potassium	2000	+/-2000	U	1600	2000	P	03/04/2025	14:34	LB134892
	Selenium	20.0	+/-20.0	U	16.0	20.0	P	03/04/2025	14:34	LB134892
	Silver	10.0	+/-10.0	U	5.00	10.0	P	03/04/2025	14:34	LB134892
	Sodium	2000	+/-2000	U	1000	2000	P	03/04/2025	14:34	LB134892
	Thallium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	14:34	LB134892
	Vanadium	40.0	+/-40.0	U	20.0	40.0	P	03/04/2025	14:34	LB134892
	Zinc	40.0	+/-40.0	U	10.0	40.0	P	03/04/2025	14:34	LB134892

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Nobis Group

SDG No.: Q1383

Instrument: CV1

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB166828BL		SOLID		Batch Number:		PB166828		Prep Date:	02/20/2025	
	Mercury	0.014	<0.014	U	0.011	0.014	CV	02/21/2025	13:13	LB134771

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Nobis Group

SDG No.: Q1383

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB166768BL	SOLID			Batch Number:	PB166768			Prep Date:	02/18/2025	
	Aluminum	4.88	<4.88	U	3.90	4.88	P	03/04/2025	12:52	LB134892
	Antimony	2.44	<2.44	U	0.61	2.44	P	03/04/2025	12:52	LB134892
	Arsenic	0.98	<0.98	U	0.78	0.98	P	03/04/2025	12:52	LB134892
	Barium	4.88	<4.88	U	1.22	4.88	P	03/04/2025	12:52	LB134892
	Beryllium	0.29	<0.29	U	0.073	0.29	P	03/04/2025	12:52	LB134892
	Cadmium	0.29	<0.29	U	0.073	0.29	P	03/04/2025	12:52	LB134892
	Calcium	97.6	<97.6	U	24.4	97.6	P	03/04/2025	12:52	LB134892
	Chromium	0.49	<0.49	U	0.12	0.49	P	03/04/2025	12:52	LB134892
	Cobalt	1.46	<1.46	U	0.37	1.46	P	03/04/2025	12:52	LB134892
	Copper	0.98	<0.98	U	0.78	0.98	P	03/04/2025	12:52	LB134892
	Iron	4.88	<4.88	U	3.90	4.88	P	03/04/2025	12:52	LB134892
	Lead	0.59	<0.59	U	0.47	0.59	P	03/04/2025	12:52	LB134892
	Magnesium	97.6	<97.6	U	24.4	97.6	P	03/04/2025	12:52	LB134892
	Manganese	0.98	<0.98	U	0.24	0.98	P	03/04/2025	12:52	LB134892
	Nickel	1.95	<1.95	U	0.49	1.95	P	03/04/2025	12:52	LB134892
	Potassium	97.6	<97.6	U	78.0	97.6	P	03/04/2025	12:52	LB134892
	Selenium	0.98	<0.98	U	0.78	0.98	P	03/04/2025	12:52	LB134892
	Silver	0.49	<0.49	U	0.24	0.49	P	03/04/2025	12:52	LB134892
	Sodium	97.6	<97.6	U	78.0	97.6	P	03/04/2025	12:52	LB134892
	Thallium	1.95	<1.95	U	0.98	1.95	P	03/04/2025	12:52	LB134892
	Vanadium	1.95	<1.95	U	0.98	1.95	P	03/04/2025	12:52	LB134892
	Zinc	1.95	<1.95	U	0.49	1.95	P	03/04/2025	12:52	LB134892

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
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	251000	255000	98	216000	294000	03/04/2025	10:26	LB134892
	Antimony	-1.67			-50	50	03/04/2025	10:26	LB134892
	Arsenic	2.68			-20	20	03/04/2025	10:26	LB134892
	Barium	1.46	6.0	24	-94	106	03/04/2025	10:26	LB134892
	Beryllium	-0.075			-6	6	03/04/2025	10:26	LB134892
	Cadmium	-1.36	1.0	136	-5	7	03/04/2025	10:26	LB134892
	Calcium	232000	245000	95	208000	282000	03/04/2025	10:26	LB134892
	Chromium	58.1	52.0	112	42	62	03/04/2025	10:26	LB134892
	Cobalt	1.85			-30	30	03/04/2025	10:26	LB134892
	Copper	-4.42	2.0	221	-18	22	03/04/2025	10:26	LB134892
	Iron	100000	101000	99	85600	116500	03/04/2025	10:26	LB134892
	Lead	5.20			-12	12	03/04/2025	10:26	LB134892
	Magnesium	255000	255000	100	216000	294000	03/04/2025	10:26	LB134892
	Manganese	4.41	7.0	63	-13	27	03/04/2025	10:26	LB134892
	Nickel	3.04	2.0	152	-38	42	03/04/2025	10:26	LB134892
	Potassium	34.3			0	0	03/04/2025	10:26	LB134892
	Selenium	-11.1			-20	20	03/04/2025	10:26	LB134892
	Silver	1.08			-10	10	03/04/2025	10:26	LB134892
	Sodium	39.2			0	0	03/04/2025	10:26	LB134892
	Thallium	9.87			-40	40	03/04/2025	10:26	LB134892
	Vanadium	2.11			-40	40	03/04/2025	10:26	LB134892
	Zinc	4.95			-40	40	03/04/2025	10:26	LB134892
ICSAB01	Aluminum	246000	247000	100	209000	285000	03/04/2025	10:30	LB134892
	Antimony	611	618	99	525	711	03/04/2025	10:30	LB134892
	Arsenic	111	104	107	88.4	120	03/04/2025	10:30	LB134892
	Barium	478	537	89	437	637	03/04/2025	10:30	LB134892
	Beryllium	475	495	96	420	570	03/04/2025	10:30	LB134892
	Cadmium	1000	972	103	826	1120	03/04/2025	10:30	LB134892
	Calcium	229000	235000	97	199000	271000	03/04/2025	10:30	LB134892
	Chromium	563	542	104	460	624	03/04/2025	10:30	LB134892
	Cobalt	508	476	107	404	548	03/04/2025	10:30	LB134892
	Copper	491	511	96	434	588	03/04/2025	10:30	LB134892
	Iron	99900	99300	101	84400	114500	03/04/2025	10:30	LB134892
	Lead	53.6	49.0	109	37	61	03/04/2025	10:30	LB134892
	Magnesium	251000	248000	101	210000	286000	03/04/2025	10:30	LB134892
	Manganese	469	507	92	430	584	03/04/2025	10:30	LB134892
	Nickel	1000	954	105	810	1100	03/04/2025	10:30	LB134892
	Potassium	-16.3			0	0	03/04/2025	10:30	LB134892
	Selenium	35.9	46.0	78	26	66	03/04/2025	10:30	LB134892
	Silver	219	201	109	170	232	03/04/2025	10:30	LB134892
	Sodium	45.9			0	0	03/04/2025	10:30	LB134892
	Thallium	104	108	96	68	148	03/04/2025	10:30	LB134892

Metals
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INTERFERENCE CHECK SAMPLE

Client: <u>Nobis Group</u>	SDG No.: <u>Q1383</u>
Contract: <u>NOBI03</u>	Lab Code: <u>CHEM</u>
ICS Source: <u>EPA</u>	Case No.: <u>Q1383</u>
	SAS No.: <u>Q1383</u>
	Instrument ID: <u>P4</u>

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSAB01	Vanadium	466	491	95	417	565	03/04/2025	10:30	LB134892
	Zinc	1060	952	111	809	1095	03/04/2025	10:30	LB134892



METAL QC DATA

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metals
- 5a -
MATRIX SPIKE SUMMARY

client:	<u>Nobis Group</u>	level:	<u>low</u>	sdg no.:	<u>Q1383</u>
contract:	<u>NOBI03</u>	lab code:	<u>CHEM</u>	case no.:	<u>Q1383</u>
matrix:	<u>Solid</u>	sample id:	<u>Q1383-13</u>	client id:	<u>OU4-PCS-TC-17-021725MS</u>
Percent Solids for Sample:	91.4	Spiked ID:	Q1383-13MS	Percent Solids for Spike Sample:	91.4

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	9990		7550		99.0	2462		P
Antimony	mg/Kg	79 - 114	11.1		2.29	U	39.6	28	N	P
Arsenic	mg/Kg	82 - 111	34.2		1.09		39.6	83		P
Barium	mg/Kg	83 - 113	23.3		12.7		9.9	107		P
Beryllium	mg/Kg	83 - 113	6.96		0.057	J	9.9	70	N	P
Cadmium	mg/Kg	82 - 113	10.4		0.77		9.9	97		P
Calcium	mg/Kg	81 - 116	8960		7220		49.5	3510		P
Chromium	mg/Kg	85 - 113	16.3		1.03		19.8	77	N	P
Cobalt	mg/Kg	85 - 112	30.0		15.9		9.9	142	N	P
Copper	mg/Kg	81 - 117	48.2		30.8		14.9	117		P
Iron	mg/Kg	81 - 118	32600		25800		150	4509		P
Lead	mg/Kg	81 - 112	48.1		2.43		49.5	92		P
Magnesium	mg/Kg	78 - 115	7350		5960		99.0	1404		P
Manganese	mg/Kg	84 - 114	252		194		9.9	589		P
Nickel	mg/Kg	83 - 113	31.9		7.55		24.8	98		P
Potassium	mg/Kg	81 - 116	579		114		500	93		P
Selenium	mg/Kg	78 - 111	66.9		0.92	U	99.0	68	N	P
Silver	mg/Kg	82 - 112	3.37		0.30	J	3.7	83		P
Sodium	mg/Kg	83 - 118	1970		1440		150	354		P
Thallium	mg/Kg	83 - 111	87.1		1.83	U	99.0	88		P
Vanadium	mg/Kg	82 - 114	93.7		60.6		14.9	222		P
Zinc	mg/Kg	82 - 113	42.4		28.6		9.9	139	N	P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client:	<u>Nobis Group</u>	level:	<u>low</u>	sdg no.:	<u>Q1383</u>
contract:	<u>NOBI03</u>	lab code:	<u>CHEM</u>	case no.:	<u>Q1383</u>
matrix:	<u>Solid</u>	sample id:	<u>Q1383-13</u>	client id:	<u>OU4-PCS-TC-17-021725MSD</u>
Percent Solids for Sample:	91.4	Spiked ID:	Q1383-13MSD	Percent Solids for Spike Sample:	91.4

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	9710		7550		94.3	2286		P
Antimony	mg/Kg	79 - 114	10.5		2.29	U	37.7	28	N	P
Arsenic	mg/Kg	82 - 111	32.8		1.09		37.7	84		P
Barium	mg/Kg	83 - 113	22.2		12.7		9.4	102		P
Beryllium	mg/Kg	83 - 113	6.58		0.057	J	9.4	69	N	P
Cadmium	mg/Kg	82 - 113	10.1		0.77		9.4	99		P
Calcium	mg/Kg	81 - 116	8560		7220		47.2	2825		P
Chromium	mg/Kg	85 - 113	15.5		1.03		18.9	77	N	P
Cobalt	mg/Kg	85 - 112	28.7		15.9		9.4	136	N	P
Copper	mg/Kg	81 - 117	46.2		30.8		14.1	109		P
Iron	mg/Kg	81 - 118	30900		25800		140	3664		P
Lead	mg/Kg	81 - 112	45.9		2.43		47.2	92		P
Magnesium	mg/Kg	78 - 115	6950		5960		94.3	1047		P
Manganese	mg/Kg	84 - 114	238		194		9.4	472		P
Nickel	mg/Kg	83 - 113	30.6		7.55		23.6	98		P
Potassium	mg/Kg	81 - 116	552		114		470	93		P
Selenium	mg/Kg	78 - 111	65.1		0.92	U	94.3	69	N	P
Silver	mg/Kg	82 - 112	3.22		0.30	J	3.5	83		P
Sodium	mg/Kg	83 - 118	1910		1440		140	337		P
Thallium	mg/Kg	83 - 111	83.3		1.83	U	94.3	88		P
Vanadium	mg/Kg	82 - 114	89.4		60.6		14.1	204		P
Zinc	mg/Kg	82 - 113	40.3		28.6		9.4	124	N	P

metals
- 5a -
MATRIX SPIKE SUMMARY

client: <u>Nobis Group</u>	level: <u>low</u>	sdg no.: <u>Q1383</u>
contract: <u>NOBI03</u>	lab code: <u>CHEM</u>	case no.: <u>Q1383</u> sas no.: <u>Q1383</u>
matrix: <u>Solid</u>	sample id: <u>Q1397-05</u>	client id: <u>TP8MS</u>
Percent Solids for Sample: 89.9	Spiked ID: Q1397-05MS	Percent Solids for Spike Sample: 89.9

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.33		0.072		0.28	91		CV

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: <u>Nobis Group</u>	level: <u>low</u>	sdg no.: <u>Q1383</u>
contract: <u>NOBI03</u>	lab code: <u>CHEM</u>	case no.: <u>Q1383</u> sas no.: <u>Q1383</u>
matrix: <u>Solid</u>	sample id: <u>Q1397-05</u>	client id: <u>TP8MSD</u>
Percent Solids for Sample: 89.9	Spiked ID: Q1397-05MSD	Percent Solids for Spike Sample: 89.9

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.32		0.072		0.28	90		CV

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
Matrix: Solid **Level:** LOW **Client ID:** OU4-PCS-TC-17-021725A
Sample ID: Q1383-13 **Spiked ID:** Q1383-13A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Antimony	mg/Kg	79 - 114	9.72		2.29	U	36.6	27		P
Beryllium	mg/Kg	83 - 113	6.32		0.057	J	9.20	68		P
Chromium	mg/Kg	85 - 113	14.8		1.03		18.3	75		P
Cobalt	mg/Kg	85 - 112	29.4		15.9		9.20	147		P
Selenium	mg/Kg	78 - 111	61.4		0.92	U	91.6	67		P
Zinc	mg/Kg	82 - 113	42.9		28.6		9.20	155		P

Metals

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DUPLICATE SAMPLE SUMMARY

Client: Nobis Group **Level:** LOW **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
Matrix: Solid **Sample ID:** Q1383-13 **Client ID:** OU4-PCS-TC-17-021725DUP
Percent Solids for Sample: 91.4 **Duplicate ID** Q1383-13DUP **Percent Solids for Spike Sample:** 91.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	7550		8640		13		P
Antimony	mg/Kg	20	2.29	U	0.16	J	200.0		P
Arsenic	mg/Kg	20	1.09		1.19		9		P
Barium	mg/Kg	20	12.7		14.1		10		P
Beryllium	mg/Kg	20	0.057	J	0.064	J	12		P
Cadmium	mg/Kg	20	0.77		0.90		17		P
Calcium	mg/Kg	20	7220		8110		12		P
Chromium	mg/Kg	20	1.03		1.18		14		P
Cobalt	mg/Kg	20	15.9		17.7		11		P
Copper	mg/Kg	20	30.8		34.1		10		P
Iron	mg/Kg	20	25800		28500		10		P
Lead	mg/Kg	20	2.43		2.63		8		P
Magnesium	mg/Kg	20	5960		6610		10		P
Manganese	mg/Kg	20	194		215		10		P
Nickel	mg/Kg	20	7.55		8.41		11		P
Potassium	mg/Kg	20	114		127		11		P
Selenium	mg/Kg	20	0.92	U	1.00	U			P
Silver	mg/Kg	20	0.30	J	0.31	J	4		P
Sodium	mg/Kg	20	1440		1630		12		P
Thallium	mg/Kg	20	1.83	U	1.99	U			P
Vanadium	mg/Kg	20	60.6		68.2		12		P
Zinc	mg/Kg	20	28.6		31.8		11		P

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”

Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Nobis Group</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q1383</u>		
Contract:	<u>NOBI03</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>Q1383</u>	SAS No.:	<u>Q1383</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q1383-13MS</u>	Client ID:	<u>OU4-PCS-TC-17-021725MSD</u>		
Percent Solids for Sample:	91.4	Duplicate ID	Q1383-13MSD	Percent Solids for Spike Sample:	91.4		

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	9990		9710		3		P
Antimony	mg/Kg	20	11.1		10.5		5		P
Arsenic	mg/Kg	20	34.2		32.8		4		P
Barium	mg/Kg	20	23.3		22.2		5		P
Beryllium	mg/Kg	20	6.96		6.58		6		P
Cadmium	mg/Kg	20	10.4		10.1		3		P
Calcium	mg/Kg	20	8960		8560		5		P
Chromium	mg/Kg	20	16.3		15.5		5		P
Cobalt	mg/Kg	20	30.0		28.7		4		P
Copper	mg/Kg	20	48.2		46.2		4		P
Iron	mg/Kg	20	32600		30900		5		P
Lead	mg/Kg	20	48.1		45.9		5		P
Magnesium	mg/Kg	20	7350		6950		6		P
Manganese	mg/Kg	20	252		238		6		P
Nickel	mg/Kg	20	31.9		30.6		4		P
Potassium	mg/Kg	20	579		552		5		P
Selenium	mg/Kg	20	66.9		65.1		3		P
Silver	mg/Kg	20	3.37		3.22		5		P
Sodium	mg/Kg	20	1970		1910		3		P
Thallium	mg/Kg	20	87.1		83.3		4		P
Vanadium	mg/Kg	20	93.7		89.4		5		P
Zinc	mg/Kg	20	42.4		40.3		5		P

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”

Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Nobis Group</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q1383</u>
Contract:	<u>NOBI03</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>Q1383</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q1397-05</u>	Client ID:	<u>TP8DUP</u>
Percent Solids for Sample:	89.9	Duplicate ID	Q1397-05DUP	Percent Solids for Spike Sample:	89.9

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.072		0.088		20		CV

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Nobis Group</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q1383</u>
Contract:	<u>NOBI03</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>Q1383</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q1397-05MS</u>	Client ID:	<u>TP8MSD</u>
Percent Solids for Sample:	89.9	Duplicate ID	Q1397-05MSD	Percent Solids for Spike Sample:	89.9

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.33		0.32		2		CV

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Nobis Group SDG No.: Q1383
 Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB166768BS							
Aluminum	mg/Kg	89.3	79.2		89	74 - 119	P
Antimony	mg/Kg	35.7	31.7		89	79 - 114	P
Arsenic	mg/Kg	35.7	31.3		88	82 - 111	P
Barium	mg/Kg	8.9	7.42		83	83 - 113	P
Beryllium	mg/Kg	8.9	7.41		83	83 - 113	P
Cadmium	mg/Kg	8.9	7.38		83	82 - 113	P
Calcium	mg/Kg	44.6	40.2	J	90	81 - 116	P
Chromium	mg/Kg	17.9	16.5		92	85 - 113	P
Cobalt	mg/Kg	8.9	7.72		87	85 - 112	P
Copper	mg/Kg	13.4	12.3		92	81 - 117	P
Iron	mg/Kg	130	124		95	81 - 118	P
Lead	mg/Kg	44.6	37.5		84	81 - 112	P
Magnesium	mg/Kg	89.3	76.6	J	86	78 - 115	P
Manganese	mg/Kg	8.9	7.77		87	84 - 114	P
Nickel	mg/Kg	22.3	19.4		87	83 - 113	P
Potassium	mg/Kg	450	382		85	81 - 116	P
Selenium	mg/Kg	89.3	74.1		83	78 - 111	P
Silver	mg/Kg	3.3	2.94		89	82 - 112	P
Sodium	mg/Kg	130	120		92	83 - 118	P
Thallium	mg/Kg	89.3	78.1		88	83 - 111	P
Vanadium	mg/Kg	13.4	11.7		87	82 - 114	P
Zinc	mg/Kg	8.9	8.12		91	82 - 113	P

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Nobis Group SDG No.: Q1383
Contract: NOBI03 Lab Code: CHEM Case No.: Q1383 SAS No.: Q1383

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB166828BS Mercury	mg/Kg	0.27	0.25		94	80 - 124	CV

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ICP SERIAL DILUTIONS

SAMPLE NO.

OU4-PCS-TC-17-021725L

Lab Name: Chemtech Consulting Group

Contract: NOBI03

Lab Code: CHEM Lb No.: lb134892 Lab Sample ID : Q1383-13L SDG No.: Q1383

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

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Differ- ence	Q	M
Aluminum	7550		8890		18		P
Antimony	2.29	U	11.4	U			P
Arsenic	1.09		4.58	U	100.0		P
Barium	12.7		14.6	J	15		P
Beryllium	0.057	J	1.37	U	100.0		P
Cadmium	0.77		1.37	U	100.0		P
Calcium	7220		8920		23		P
Chromium	1.03		1.36	J	32		P
Cobalt	15.9		16.5		4		P
Copper	30.8		39.0		27		P
Iron	25800		31800		23		P
Lead	2.43		2.83		16		P
Magnesium	5960		7190		21		P
Manganese	194		243		25		P
Nickel	7.55		8.04	J	6		P
Potassium	114		458	U	100.0		P
Selenium	0.92	U	4.58	U			P
Silver	0.30	J	0.53	J	80		P
Sodium	1440		1550		8		P
Thallium	1.83	U	9.16	U			P
Vanadium	60.6		74.8		24		P
Zinc	28.6		33.5		17		P

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ICP SERIAL DILUTIONS

SAMPLE NO.

TP8L

Lab Name: Chemtech Consulting Group **Contract:** NOBI03

Lab Code: CHEM **Lb No.:** lb134771 **Lab Sample ID :** Q1397-05L **SDG No.:** Q1383

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

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I) C	Serial Dilution Result (S) C	% Differ- ence	Q	M
Mercury	0.072	0.082	13		CV



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ICP INTERELEMENT CORRECTION FACTORS

Client: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
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

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
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: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
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: Nobis Group **SDG No.:** Q1383
Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1383 **SAS No.:** Q1383
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: Nobis Group

SDG No.: Q1383

Contract: NOBI03

Lab Code: CHEM

Case No.: Q1383

SAS No.: Q1383

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:	<u>Nobis Group</u>	SDG No.:	<u>Q1383</u>
Contract:	<u>NOBI03</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>Q1383</u>
		SAS No.:	<u>Q1383</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB166768							
PB166768BL	PB166768BL	MB	SOLID	02/18/2025	2.05	100.0	100.00
PB166768BS	PB166768BS	LCS	SOLID	02/18/2025	2.24	100.0	100.00
Q1383-01	OU4-PCS-TC-11-021725	SAM	SOLID	02/18/2025	2.35	100.0	92.60
Q1383-03	OU4-PCS-TC-12-021725	SAM	SOLID	02/18/2025	2.08	100.0	92.20
Q1383-05	OU4-PCS-TC-13-021725	SAM	SOLID	02/18/2025	2.34	100.0	92.50
Q1383-07	OU4-PCS-TC-14-021725	SAM	SOLID	02/18/2025	2.29	100.0	92.10
Q1383-09	OU4-PCS-TC-15-021725	SAM	SOLID	02/18/2025	2.32	100.0	92.50
Q1383-11	OU4-PCS-TC-16-021725	SAM	SOLID	02/18/2025	2.13	100.0	92.10
Q1383-13	OU4-PCS-TC-17-021725	SAM	SOLID	02/18/2025	2.39	100.0	91.40
Q1383-13DUP	OU4-PCS-TC-17-021725DUP	DUP	SOLID	02/18/2025	2.20	100.0	91.40
Q1383-13MS	OU4-PCS-TC-17-021725MS	MS	SOLID	02/18/2025	2.21	100.0	91.40
Q1383-13MSD	OU4-PCS-TC-17-021725MSD	MSD	SOLID	02/18/2025	2.32	100.0	91.40
Q1383-15	OU4-PCS-TC-18-021725	SAM	SOLID	02/18/2025	2.14	100.0	91.90
Q1383-17	OU4-PCS-TC-19-021725	SAM	SOLID	02/18/2025	2.18	100.0	92.10
Q1383-19	OU4-PCS-TC-20-021725	SAM	SOLID	02/18/2025	2.21	100.0	92.20
Q1383-21	OU4-CF-15-021725	SAM	SOLID	02/18/2025	2.11	100.0	92.50

Metals
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SAMPLE PREPARATION SUMMARY

Client:	<u>Nobis Group</u>	SDG No.:	<u>Q1383</u>
Contract:	<u>NOBI03</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>Q1383</u>
		SAS No.:	<u>Q1383</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB166828							
PB166828BL	PB166828BL	MB	SOLID	02/20/2025	0.50	35.0	100.00
PB166828BS	PB166828BS	LCS	SOLID	02/20/2025	0.52	35.0	100.00
Q1383-01	OU4-PCS-TC-11-021725	SAM	SOLID	02/20/2025	0.57	35.0	92.60
Q1383-03	OU4-PCS-TC-12-021725	SAM	SOLID	02/20/2025	0.51	35.0	92.20
Q1383-05	OU4-PCS-TC-13-021725	SAM	SOLID	02/20/2025	0.57	35.0	92.50
Q1383-07	OU4-PCS-TC-14-021725	SAM	SOLID	02/20/2025	0.57	35.0	92.10
Q1383-09	OU4-PCS-TC-15-021725	SAM	SOLID	02/20/2025	0.53	35.0	92.50
Q1383-11	OU4-PCS-TC-16-021725	SAM	SOLID	02/20/2025	0.58	35.0	92.10
Q1383-13	OU4-PCS-TC-17-021725	SAM	SOLID	02/20/2025	0.56	35.0	91.40
Q1383-15	OU4-PCS-TC-18-021725	SAM	SOLID	02/20/2025	0.50	35.0	91.90
Q1383-17	OU4-PCS-TC-19-021725	SAM	SOLID	02/20/2025	0.56	35.0	92.10
Q1383-19	OU4-PCS-TC-20-021725	SAM	SOLID	02/20/2025	0.59	35.0	92.20
Q1383-21	OU4-CF-15-021725	SAM	SOLID	02/20/2025	0.57	35.0	92.50
Q1397-05DUP	TP8DUP	DUP	SOLID	02/20/2025	0.58	35.0	89.90
Q1397-05MS	TP8MS	MS	SOLID	02/20/2025	0.56	35.0	89.90
Q1397-05MSD	TP8MSD	MSD	SOLID	02/20/2025	0.55	35.0	89.90

metals
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ANALYSIS RUN LOG

Client: Nobis Group **Contract:** NOBI03

Lab code: CHEM **Case no.:** Q1383 **Sas no.:** Q1383 **Sdg no.:** Q1383

Instrument id number: **Method:** **Run number:** LB134771

Start date: 02/21/2025 **End date:** 02/21/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1229	HG
S0.2	S0.2	1	1232	HG
S2.5	S2.5	1	1234	HG
S5	S5	1	1236	HG
S7.5	S7.5	1	1239	HG
S10	S10	1	1241	HG
ICV13	ICV13	1	1252	HG
ICB13	ICB13	1	1254	HG
CCV01	CCV01	1	1256	HG
CCB01	CCB01	1	1301	HG
CRA	CRA	1	1304	HG
PB166828BL	PB166828BL	1	1313	HG
PB166828BS	PB166828BS	1	1316	HG
Q1383-01	OU4-PCS-TC-11-021725	1	1318	HG
Q1383-03	OU4-PCS-TC-12-021725	1	1320	HG
Q1383-05	OU4-PCS-TC-13-021725	1	1323	HG
Q1383-07	OU4-PCS-TC-14-021725	1	1325	HG
Q1383-09	OU4-PCS-TC-15-021725	1	1327	HG
CCV02	CCV02	1	1329	HG
CCB02	CCB02	1	1332	HG
Q1383-11	OU4-PCS-TC-16-021725	1	1334	HG
Q1383-13	OU4-PCS-TC-17-021725	1	1336	HG
Q1383-15	OU4-PCS-TC-18-021725	1	1338	HG
Q1383-17	OU4-PCS-TC-19-021725	1	1341	HG
Q1383-19	OU4-PCS-TC-20-021725	1	1343	HG
Q1383-21	OU4-CF-15-021725	1	1345	HG
Q1397-05DUP	TP8DUP	1	1354	HG
CCV03	CCV03	1	1357	HG
CCB03	CCB03	1	1402	HG
Q1397-05MSD	TP8MSD	1	1407	HG
Q1397-05MS	TP8MS	1	1410	HG
CCV04	CCV04	1	1431	HG
CCB04	CCB04	1	1433	HG
CCV05	CCV05	1	1501	HG
CCB05	CCB05	1	1506	HG
Q1397-05L	TP8L	5	1513	HG
CCV06	CCV06	1	1522	HG
CCB06	CCB06	1	1524	HG

metals
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ANALYSIS RUN LOG

Client: Nobis Group **Contract:** NOBI03

Lab code: CHEM **Case no.:** Q1383 **Sas no.:** Q1383 **Sdg no.:** Q1383

Instrument id number: **Method:** **Run number:** LB134892

Start date: 03/04/2025 **End date:** 03/04/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	0942	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S1	S1	1	0946	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S2	S2	1	0951	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S3	S3	1	0955	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S4	S4	1	0959	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S5	S5	1	1003	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICV01	ICV01	1	1007	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
LLICV01	LLICV01	1	1013	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICB01	ICB01	1	1017	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CRI01	CRI01	1	1022	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSA01	ICSA01	1	1026	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSAB01	ICSAB01	1	1030	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV01	CCV01	1	1043	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB01	CCB01	1	1047	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-01	OU4-PCS-TC-11-021725	1	1122	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-03	OU4-PCS-TC-12-021725	1	1126	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-05	OU4-PCS-TC-13-021725	1	1130	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV02	CCV02	1	1134	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB02	CCB02	1	1139	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-07	OU4-PCS-TC-14-021725	1	1143	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-09	OU4-PCS-TC-15-021725	1	1147	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-11	OU4-PCS-TC-16-021725	1	1152	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-13	OU4-PCS-TC-17-021725	1	1156	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-13DUP	OU4-PCS-TC-17-021725DUP	1	1200	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-13L	OU4-PCS-TC-17-021725L	5	1204	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-13MS	OU4-PCS-TC-17-021725MS	1	1208	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-13MSD	OU4-PCS-TC-17-021725MSD	1	1213	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-13A	OU4-PCS-TC-17-021725A	1	1217	Be,Co,Cr,Sb,Se,Zn
Q1383-15	OU4-PCS-TC-18-021725	1	1221	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV03	CCV03	1	1226	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB03	CCB03	1	1230	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-17	OU4-PCS-TC-19-021725	1	1234	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-19	OU4-PCS-TC-20-021725	1	1238	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1383-21	OU4-CF-15-021725	1	1243	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB166768BL	PB166768BL	1	1252	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB166768BS	PB166768BS	1	1256	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV04	CCV04	1	1327	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB04	CCB04	1	1331	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV05	CCV05	1	1408	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB05	CCB05	1	1412	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV06	CCV06	1	1430	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn

metals
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ANALYSIS RUN LOG

Client: Nobis Group **Contract:** NOBI03

Lab code: CHEM **Case no.:** Q1383 **Sas no.:** Q1383 **Sdg no.:** Q1383

Instrument id number: **Method:** **Run number:** LB134892

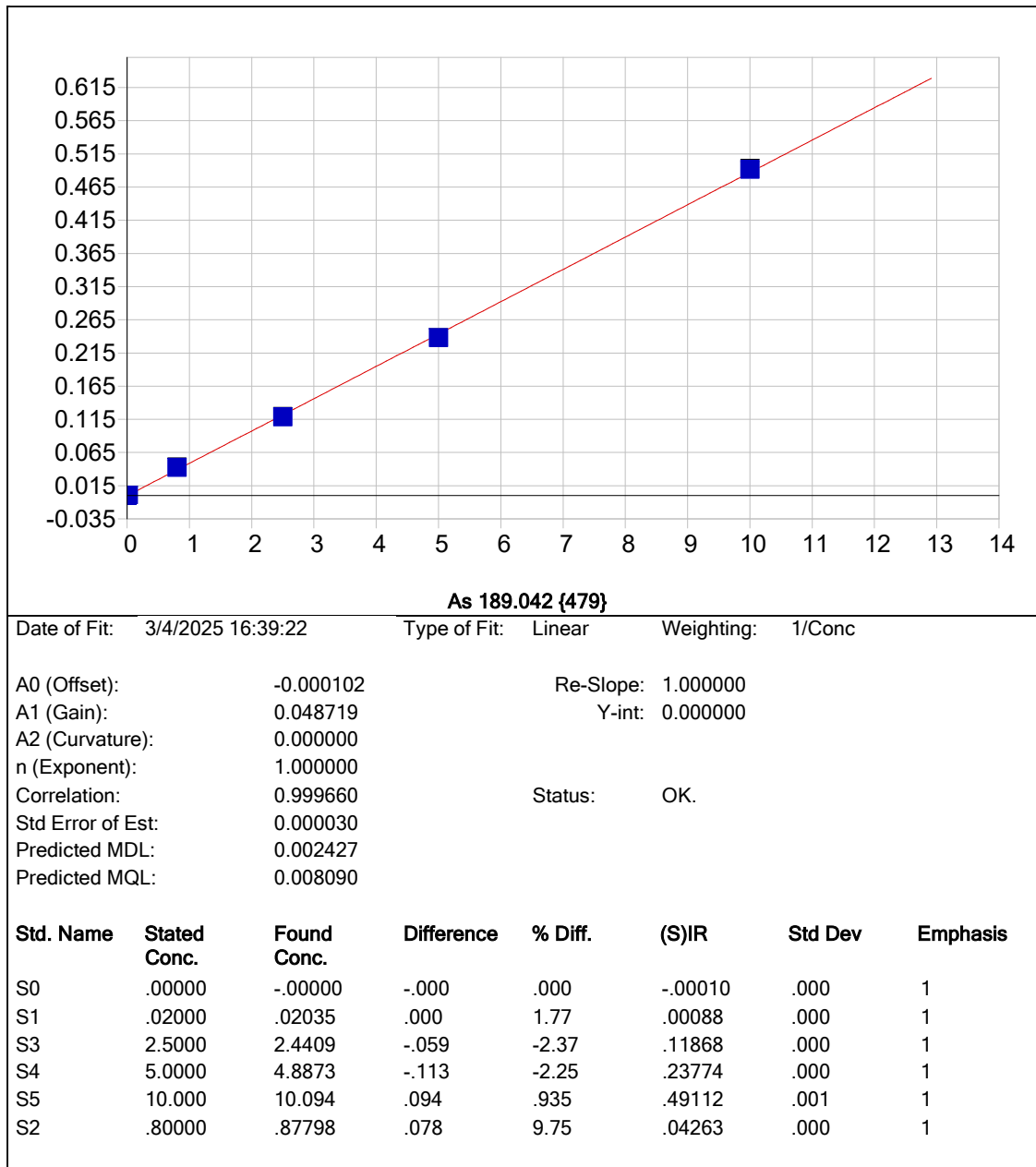
Start date: 03/04/2025 **End date:** 03/04/2025

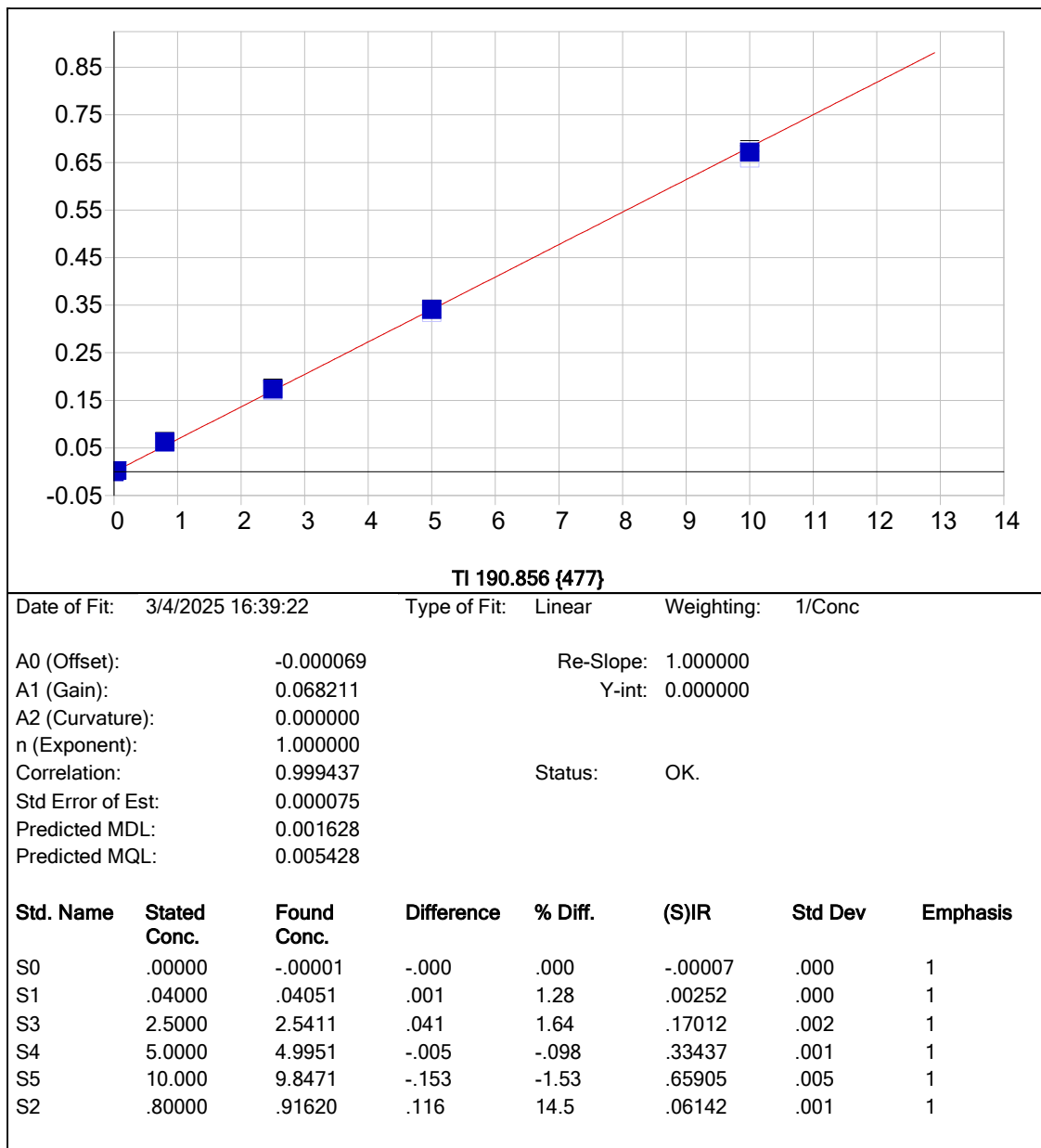
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
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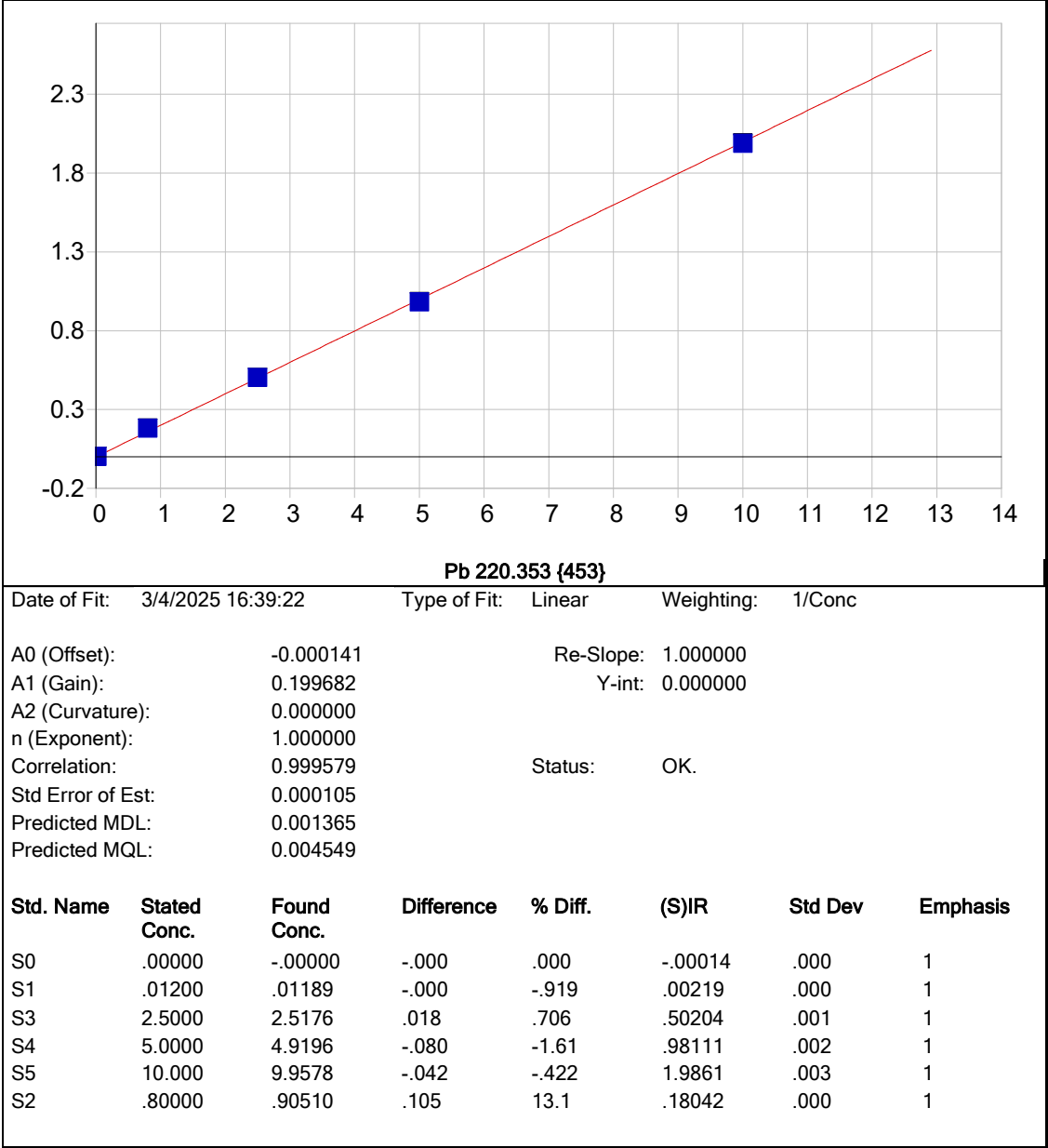


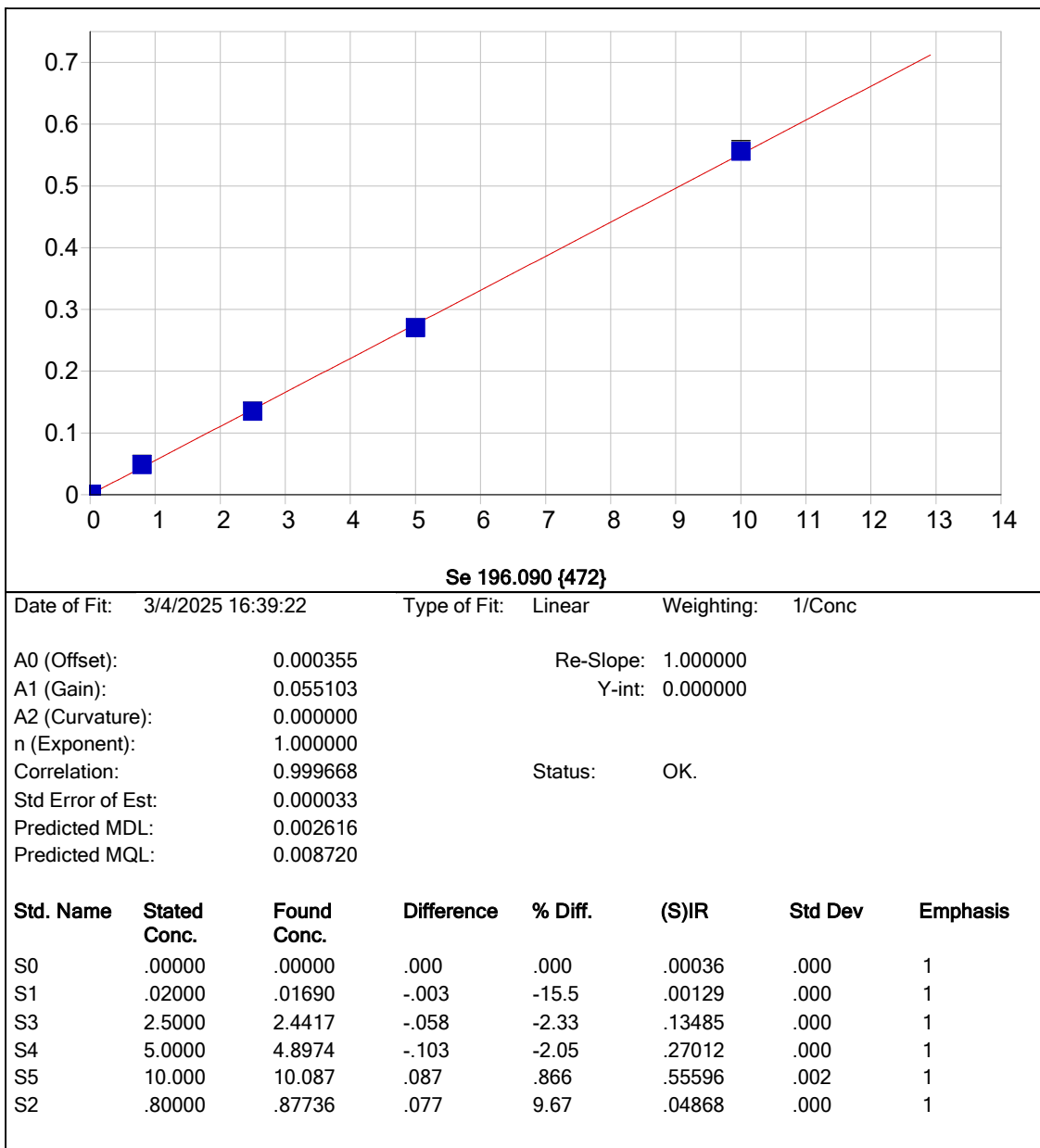
METAL RAW DATA

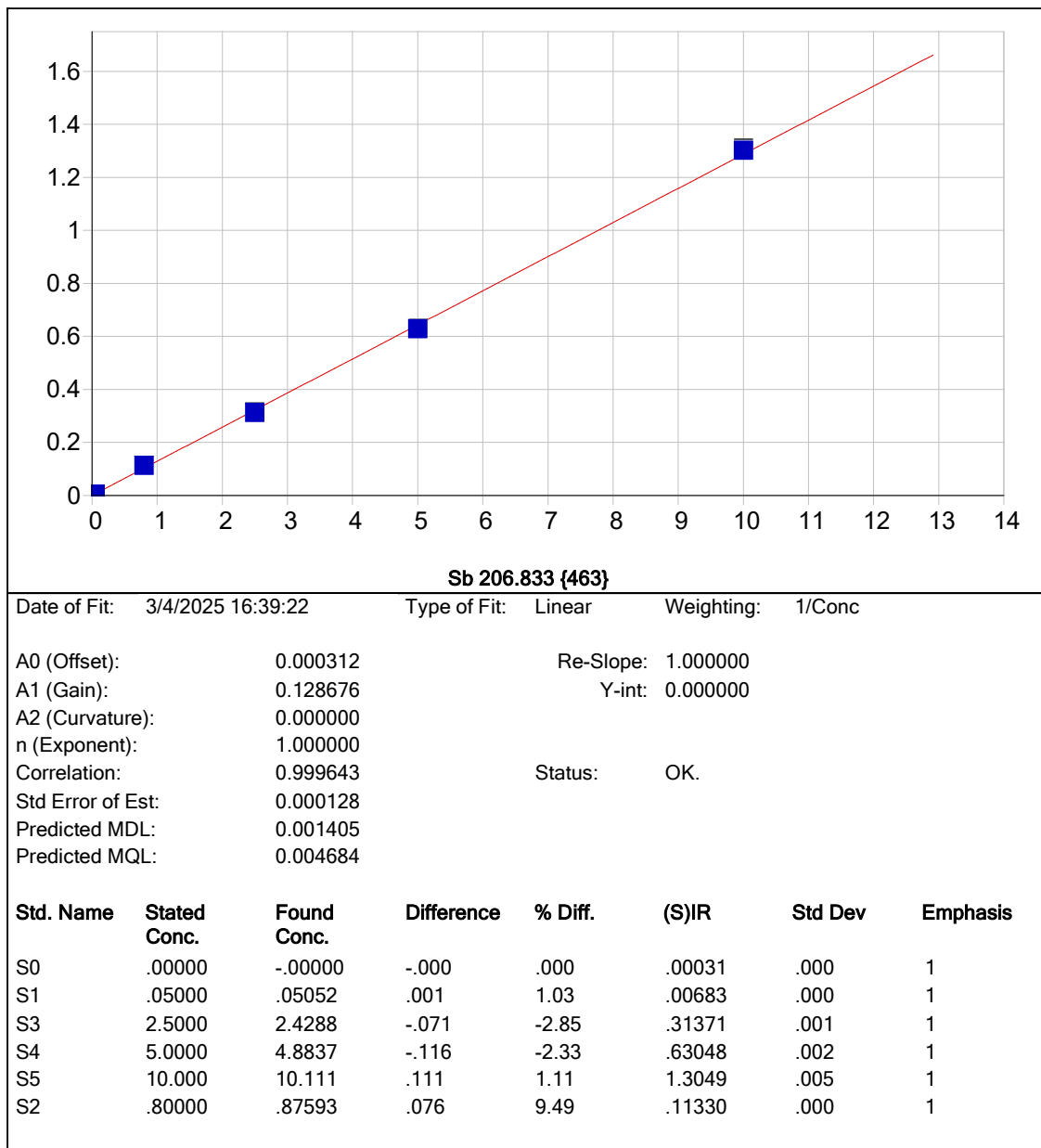
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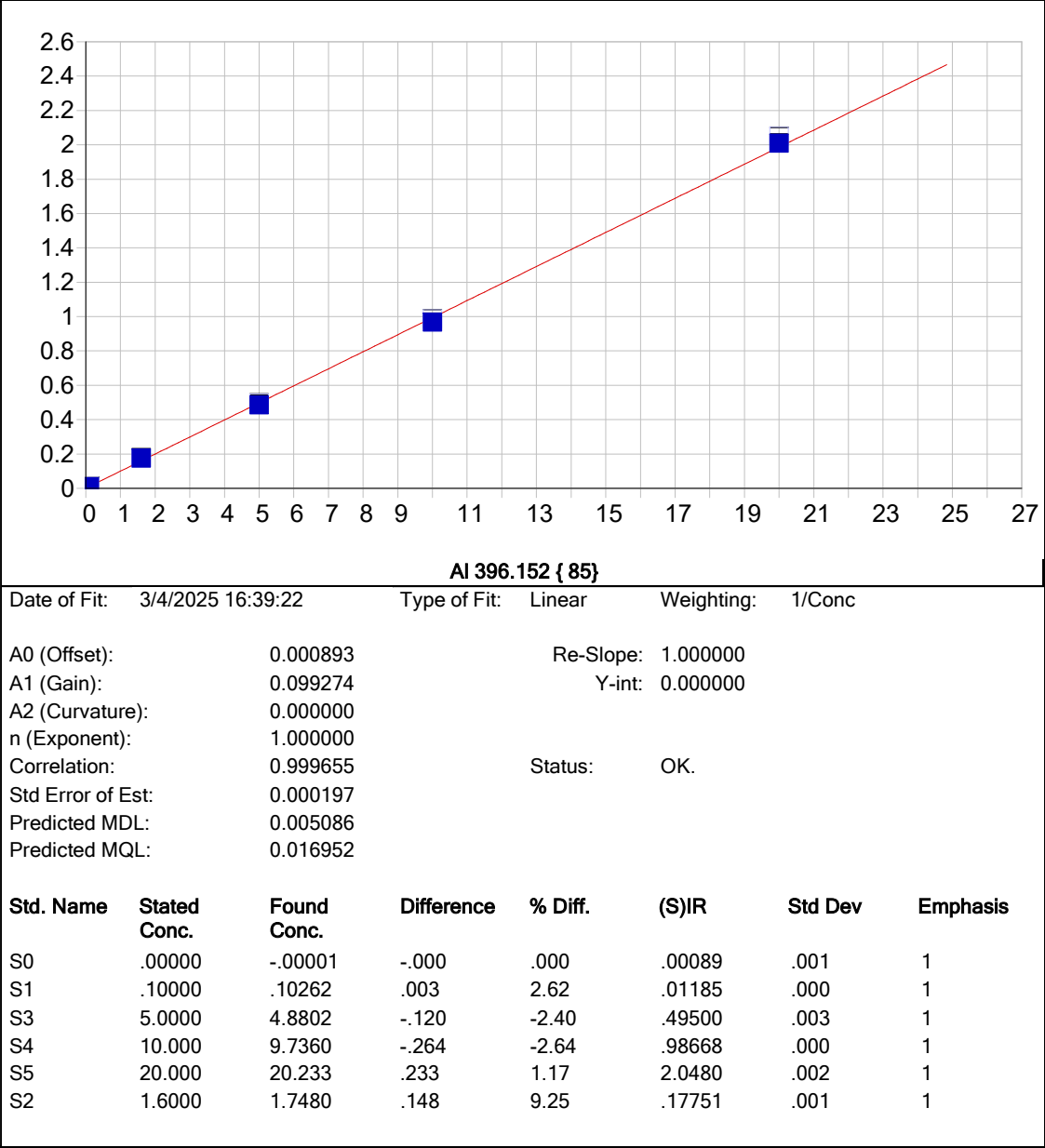


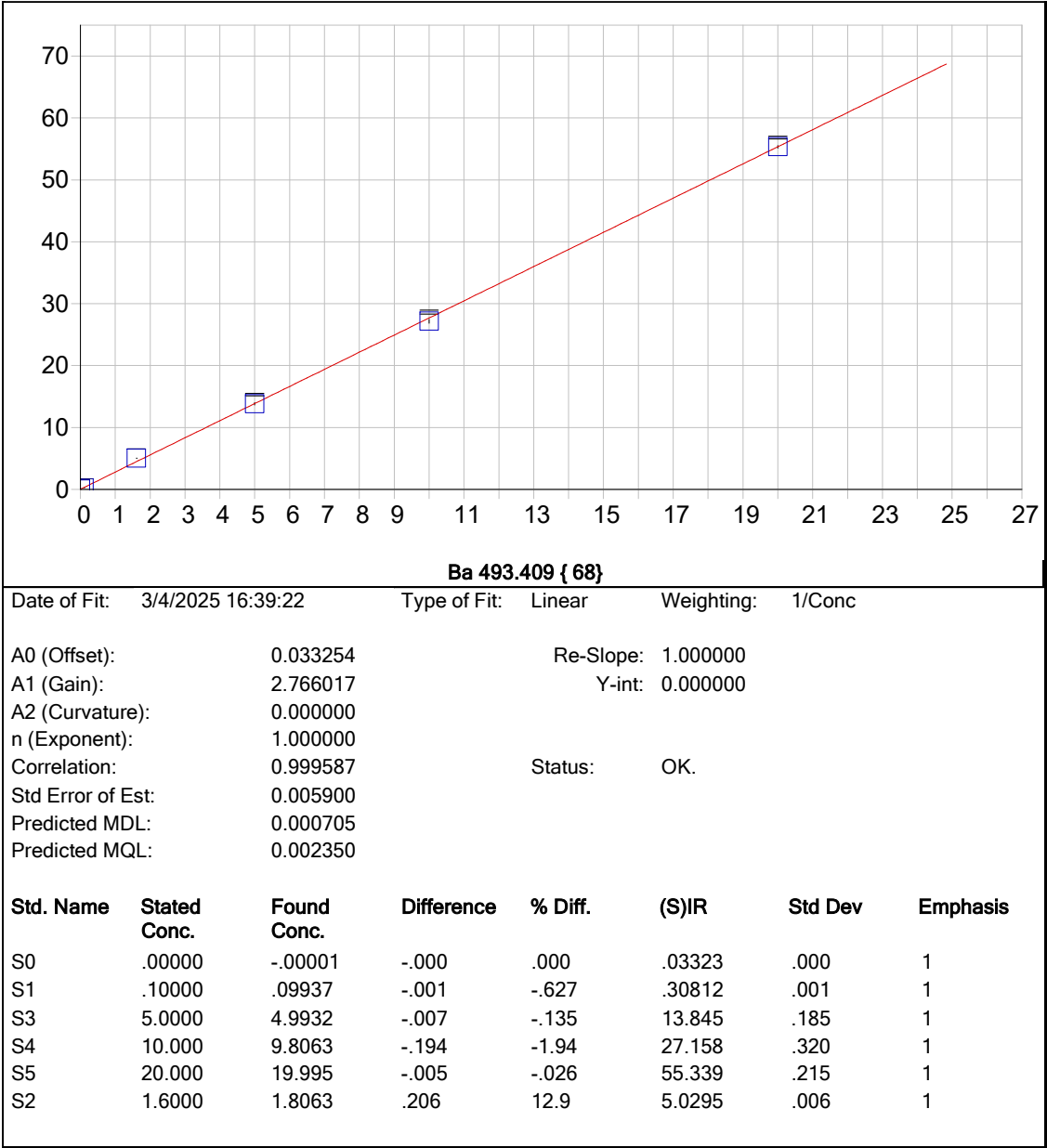


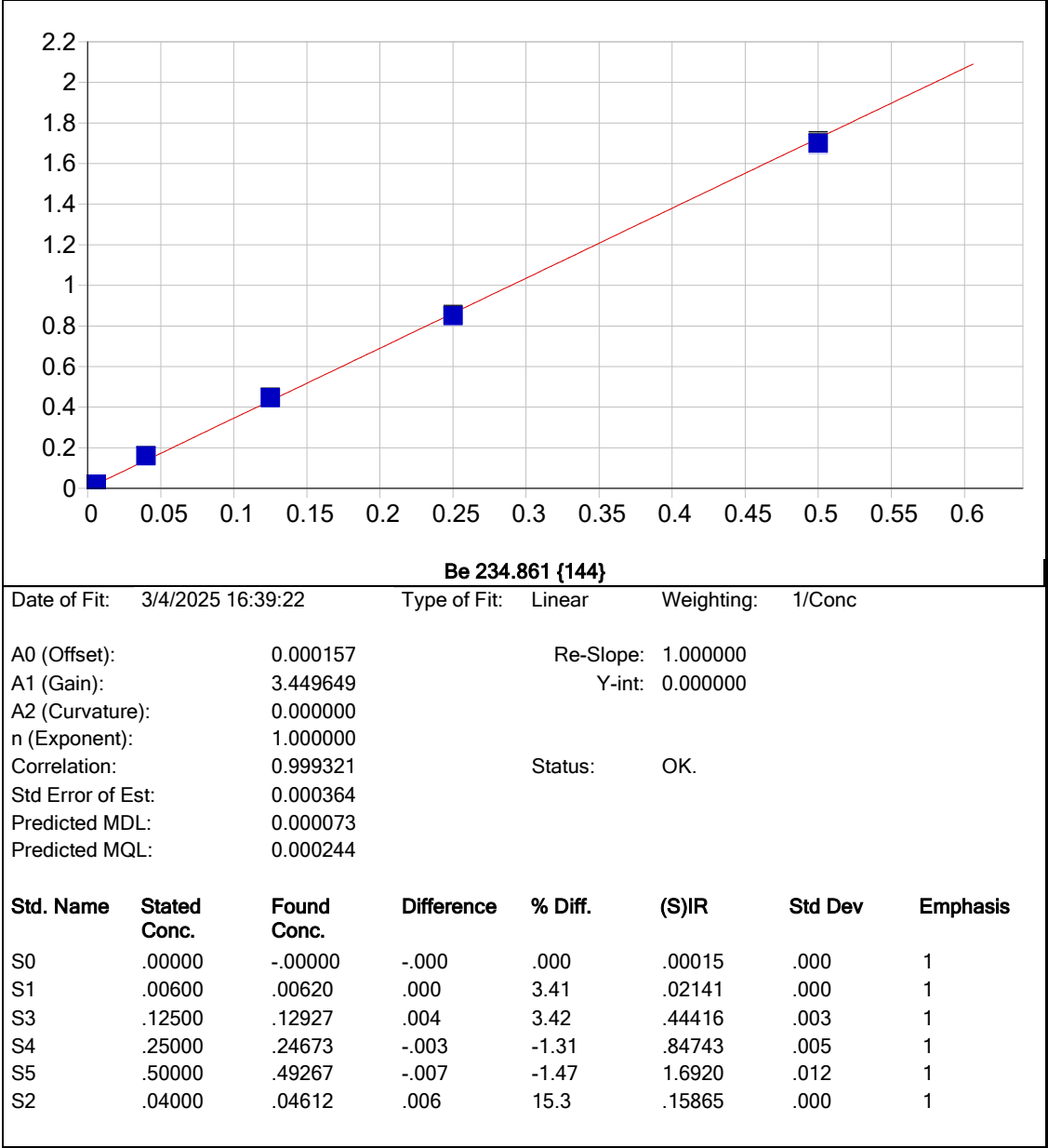


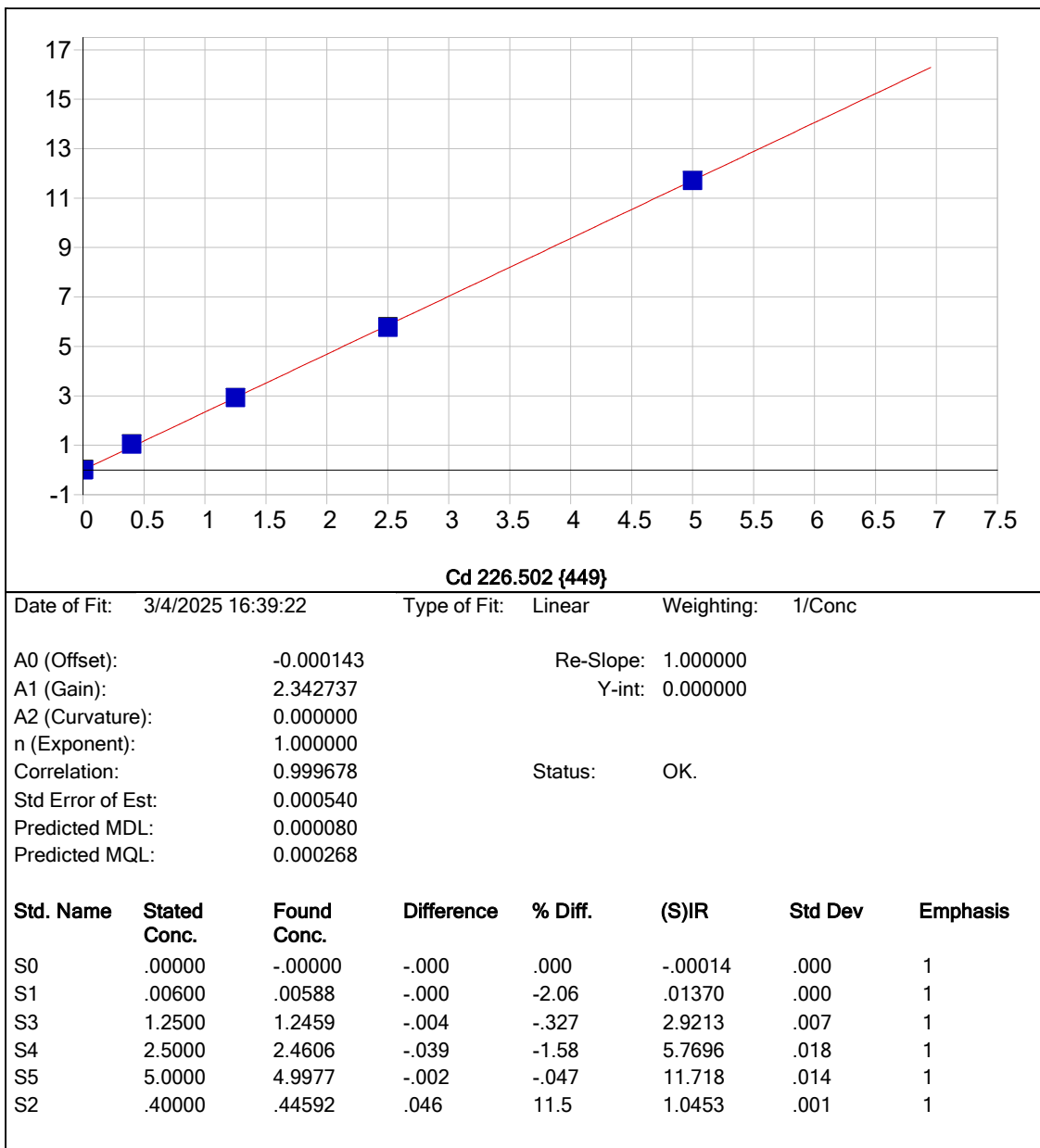


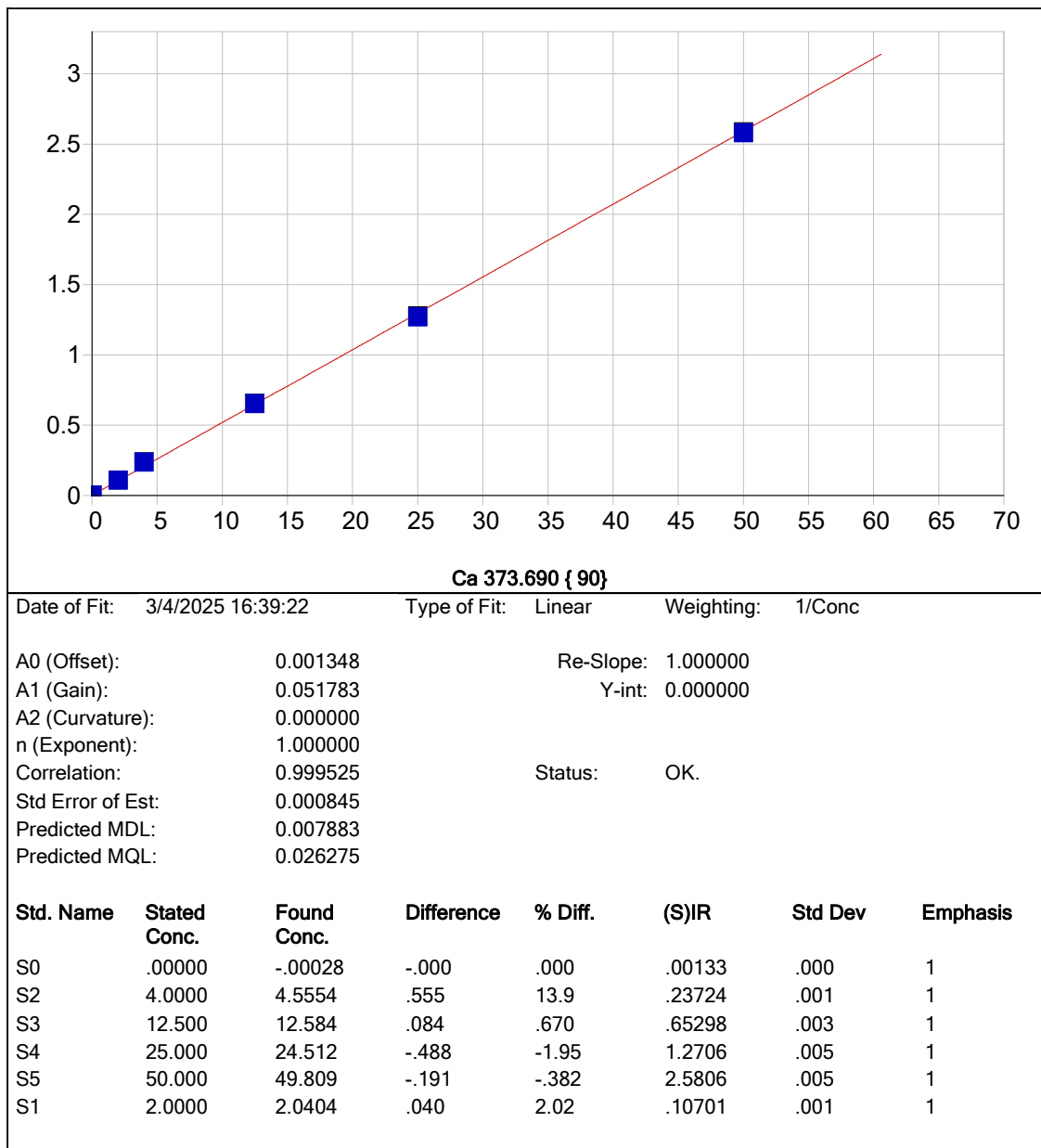




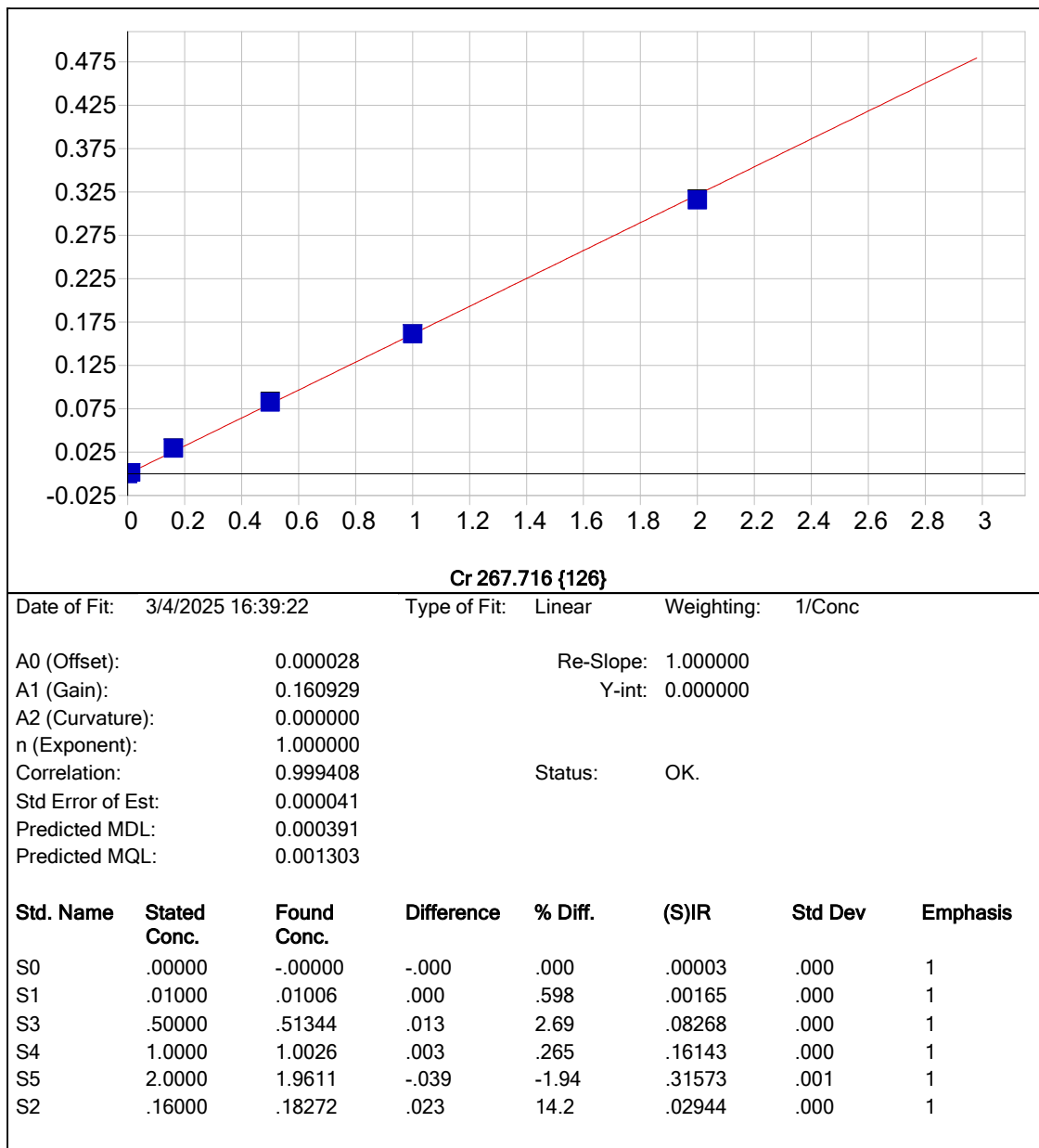


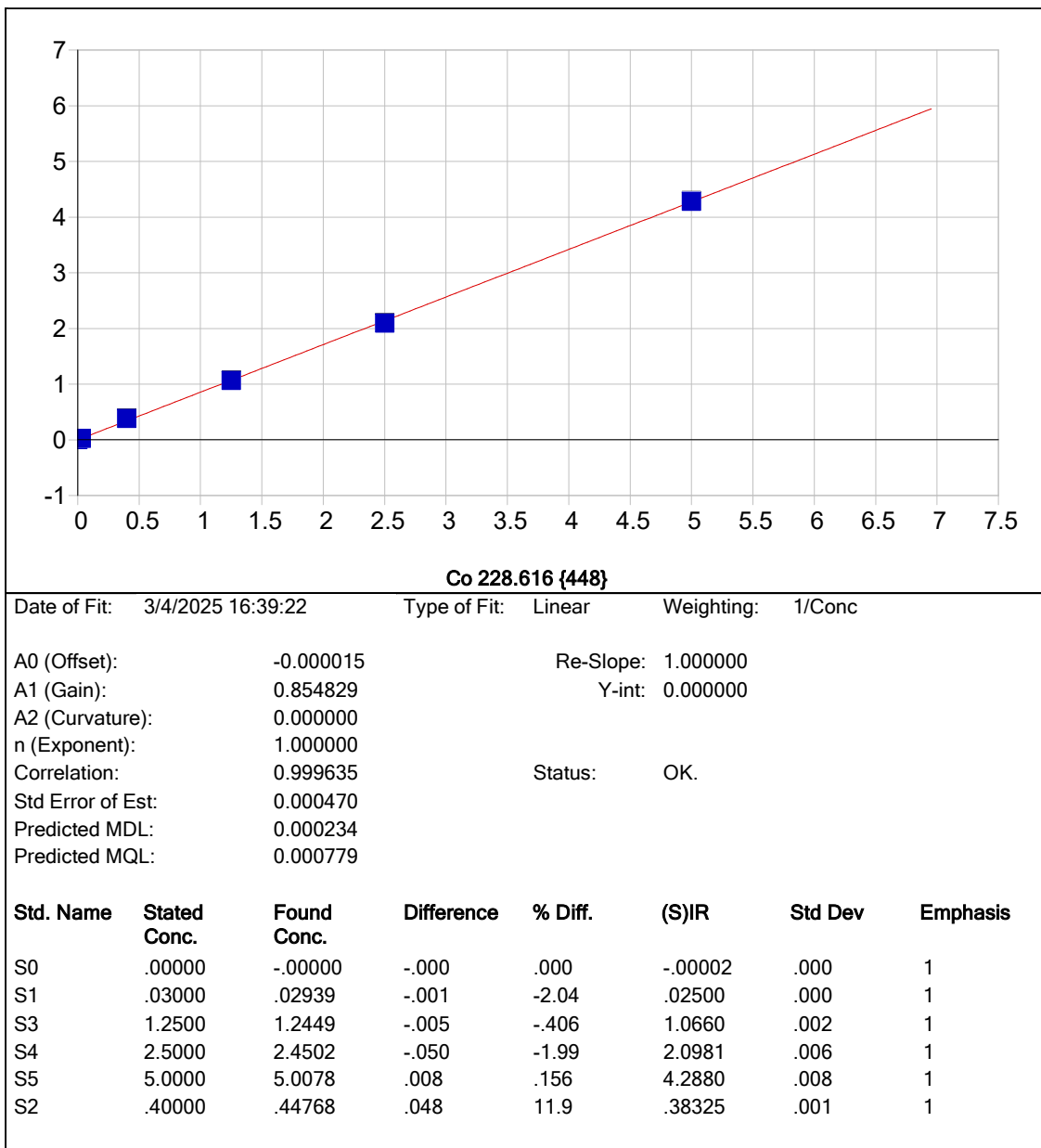




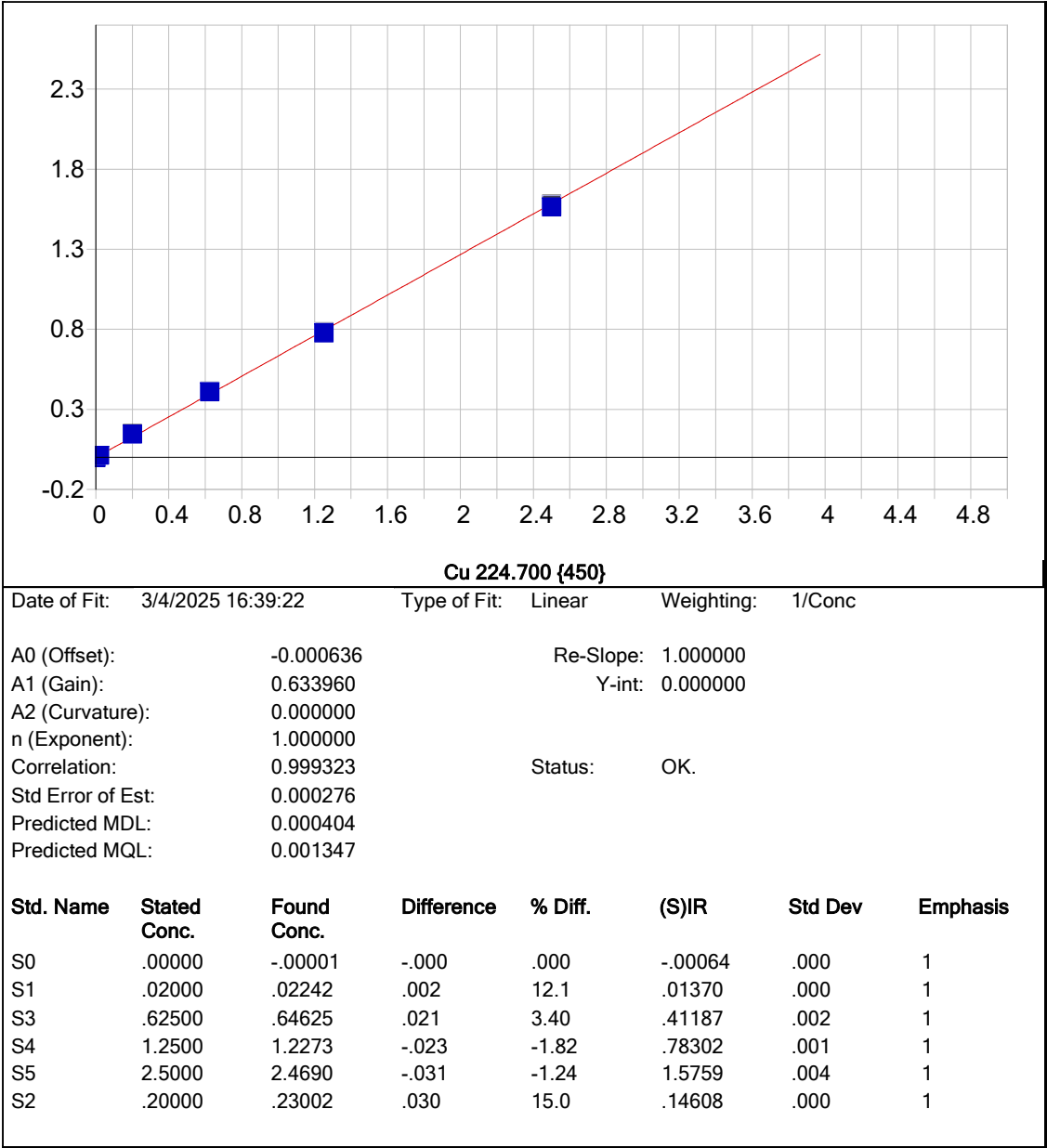


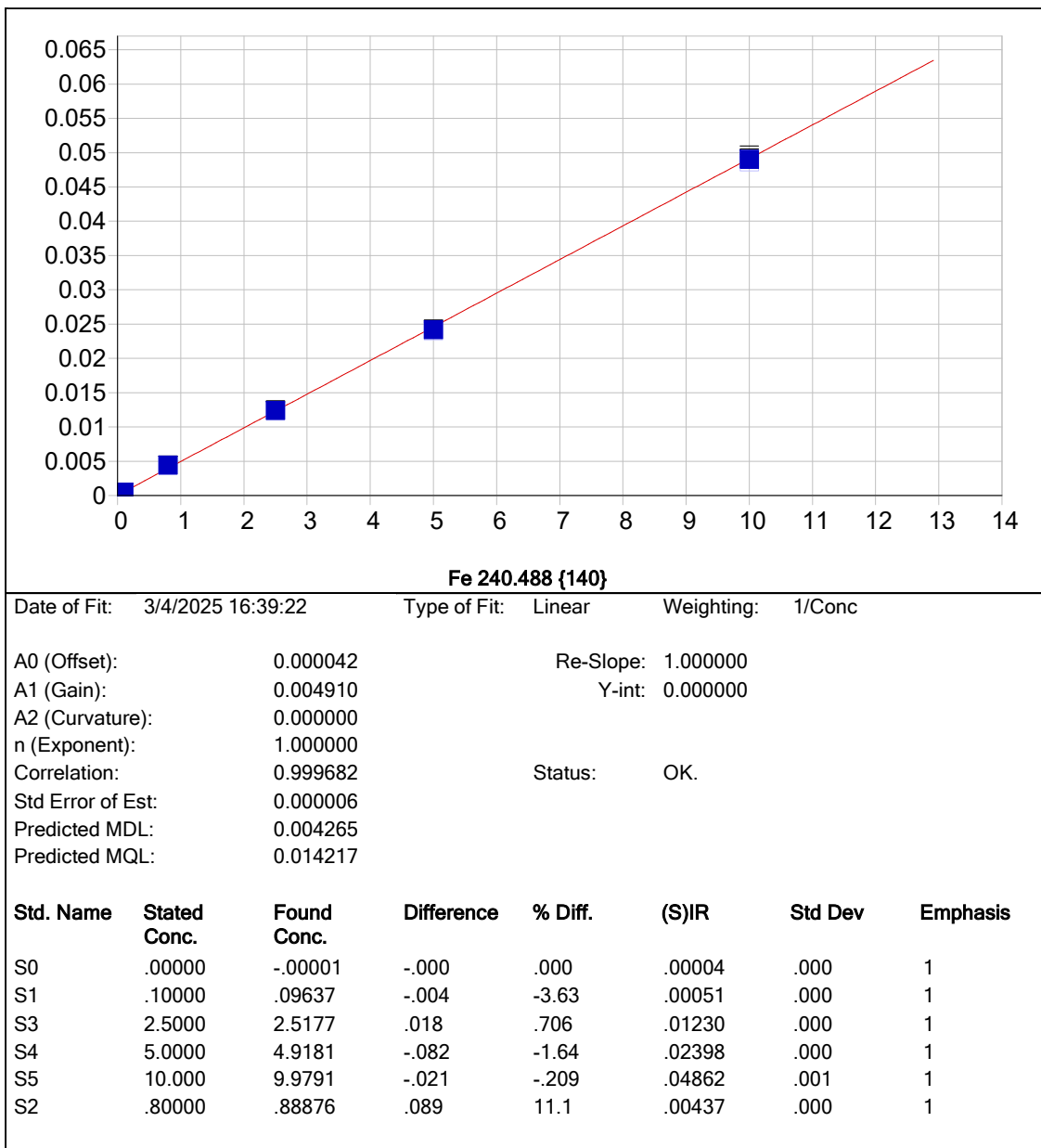
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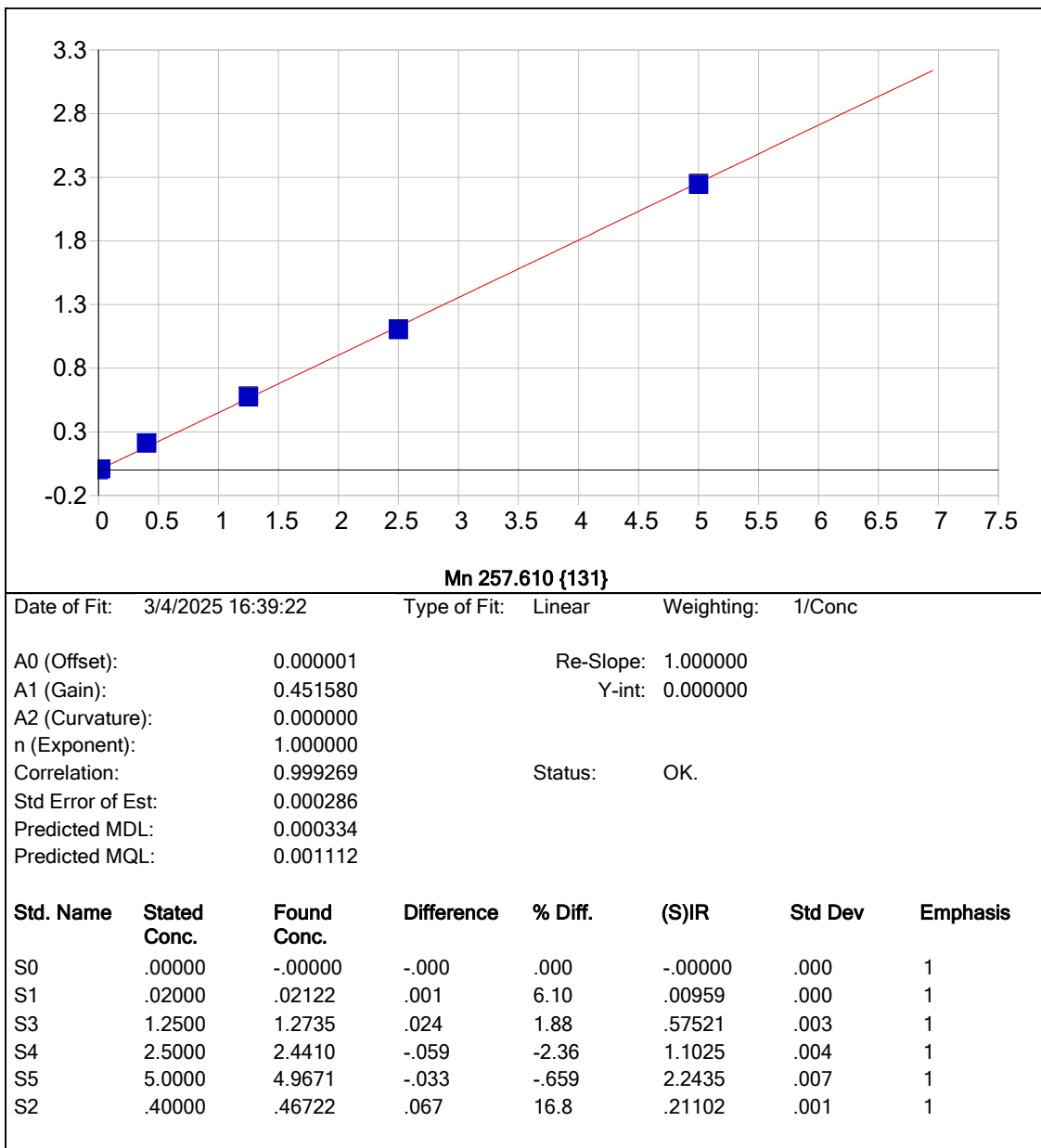


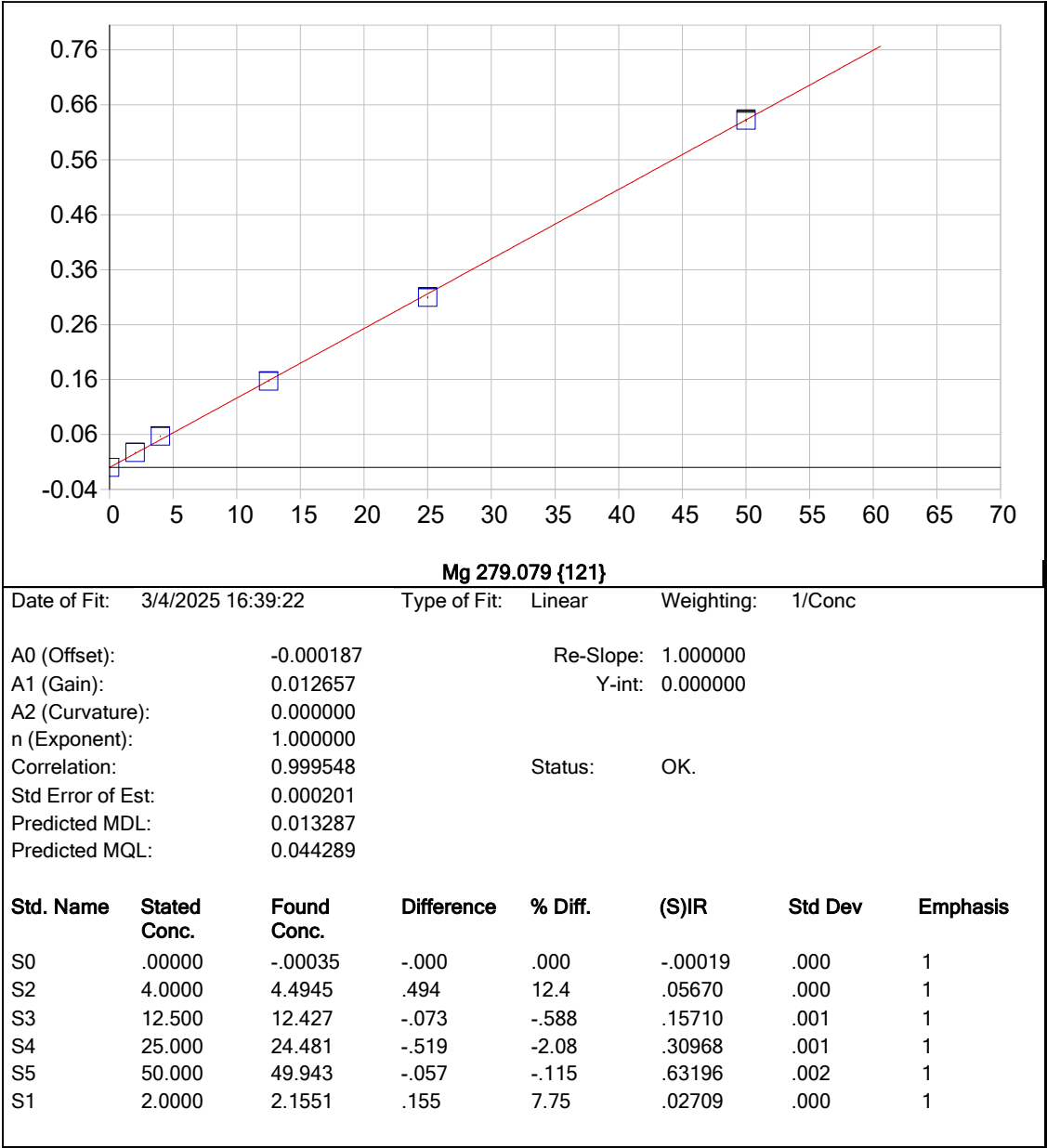


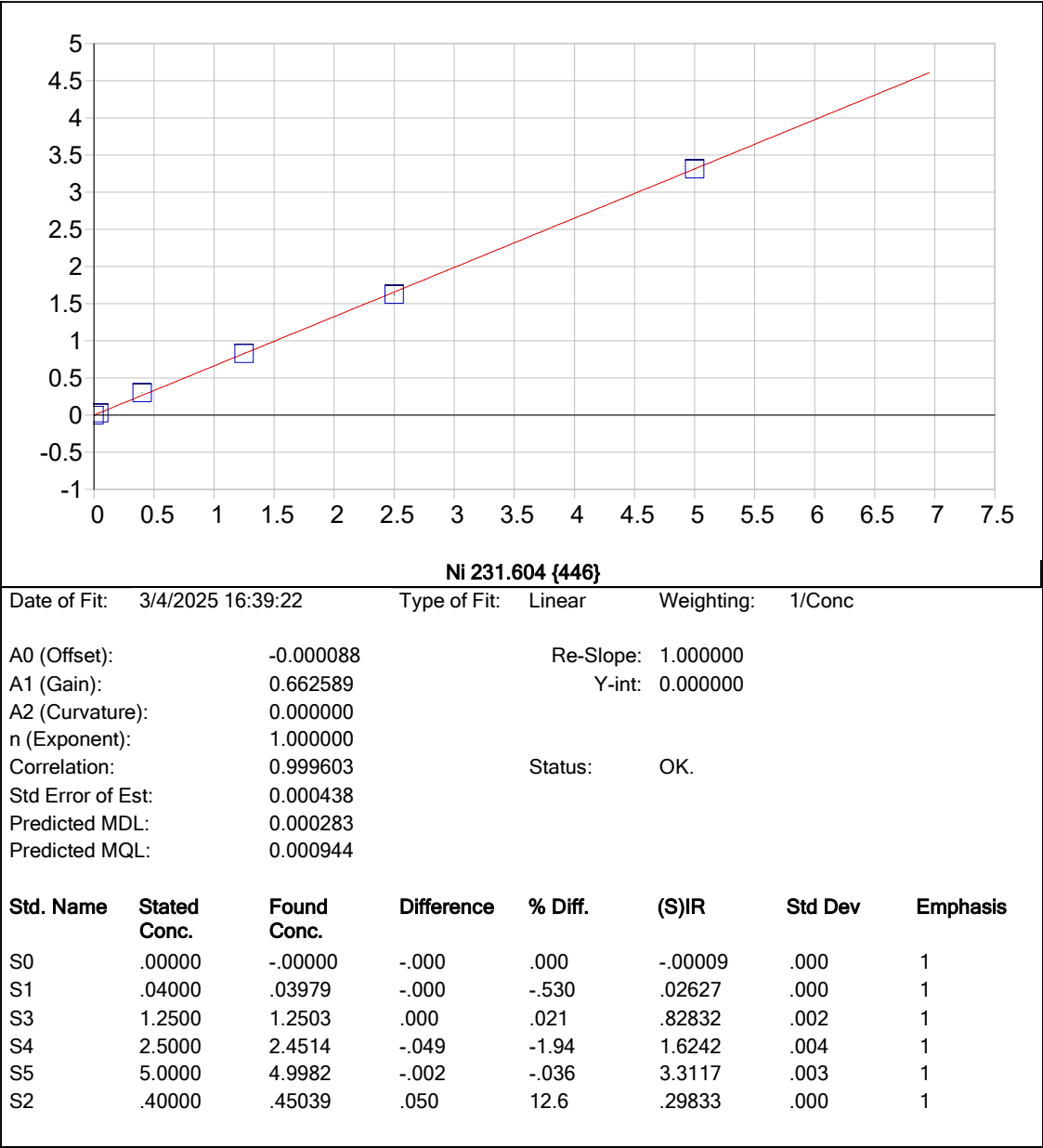
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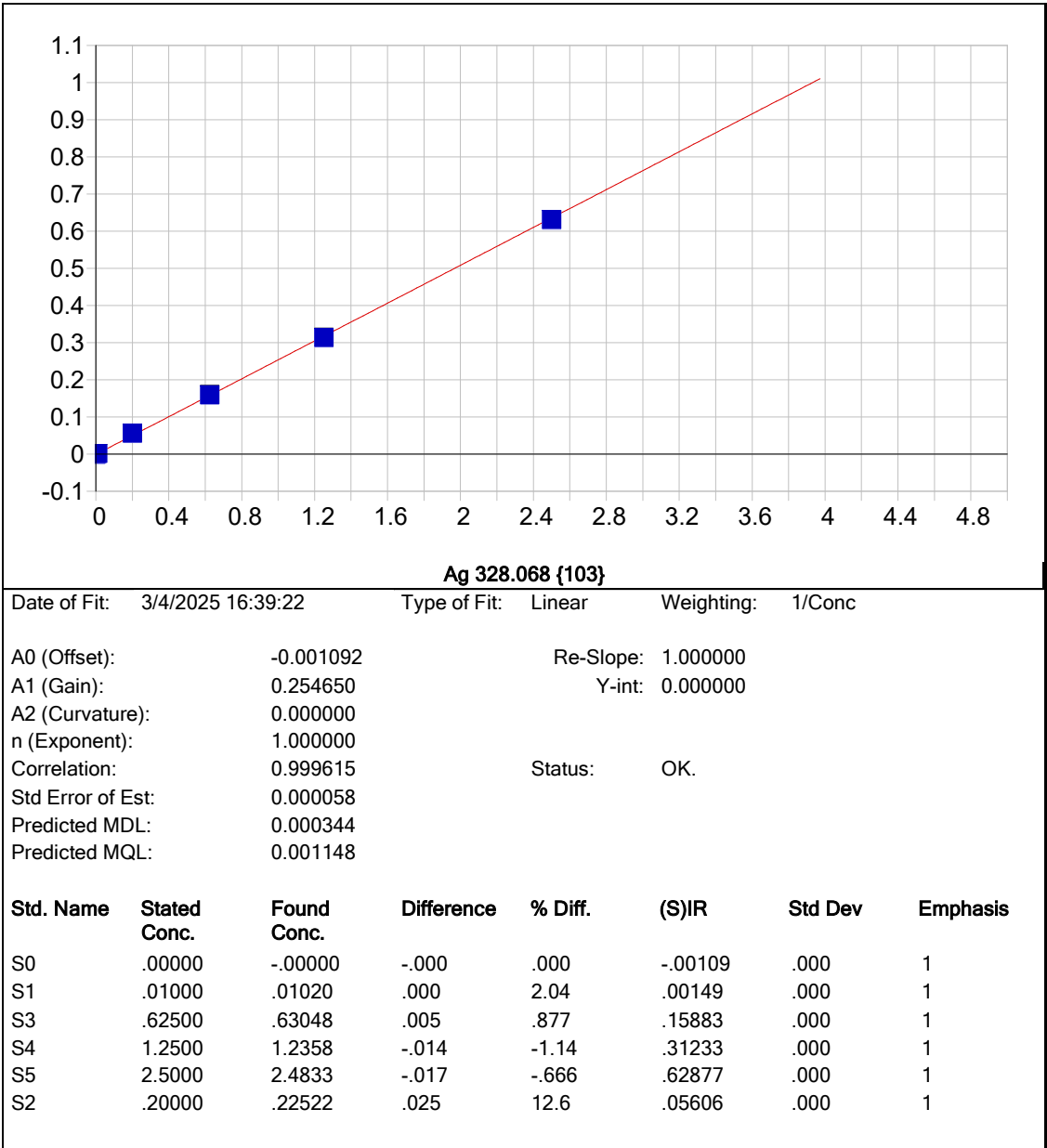


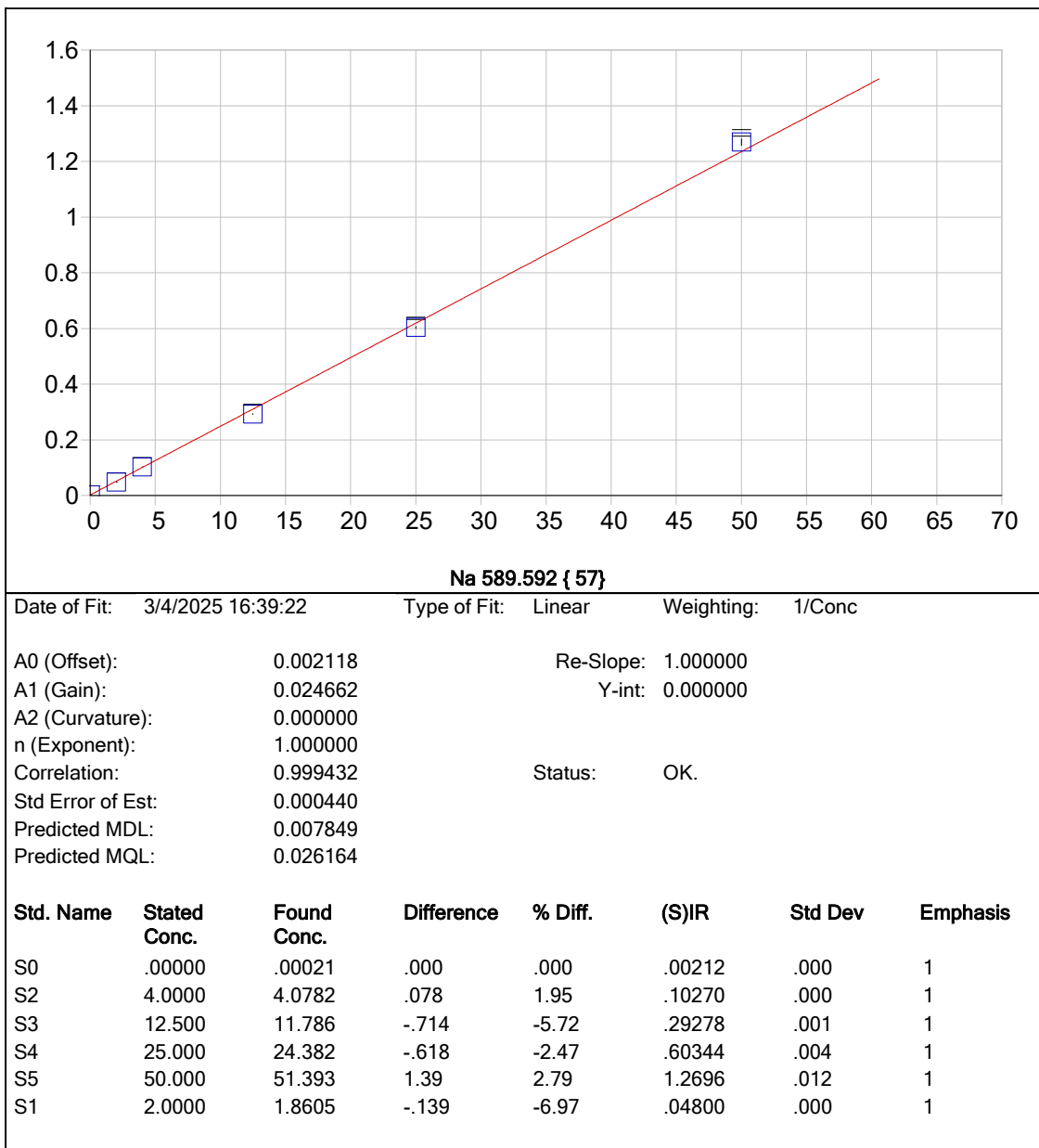


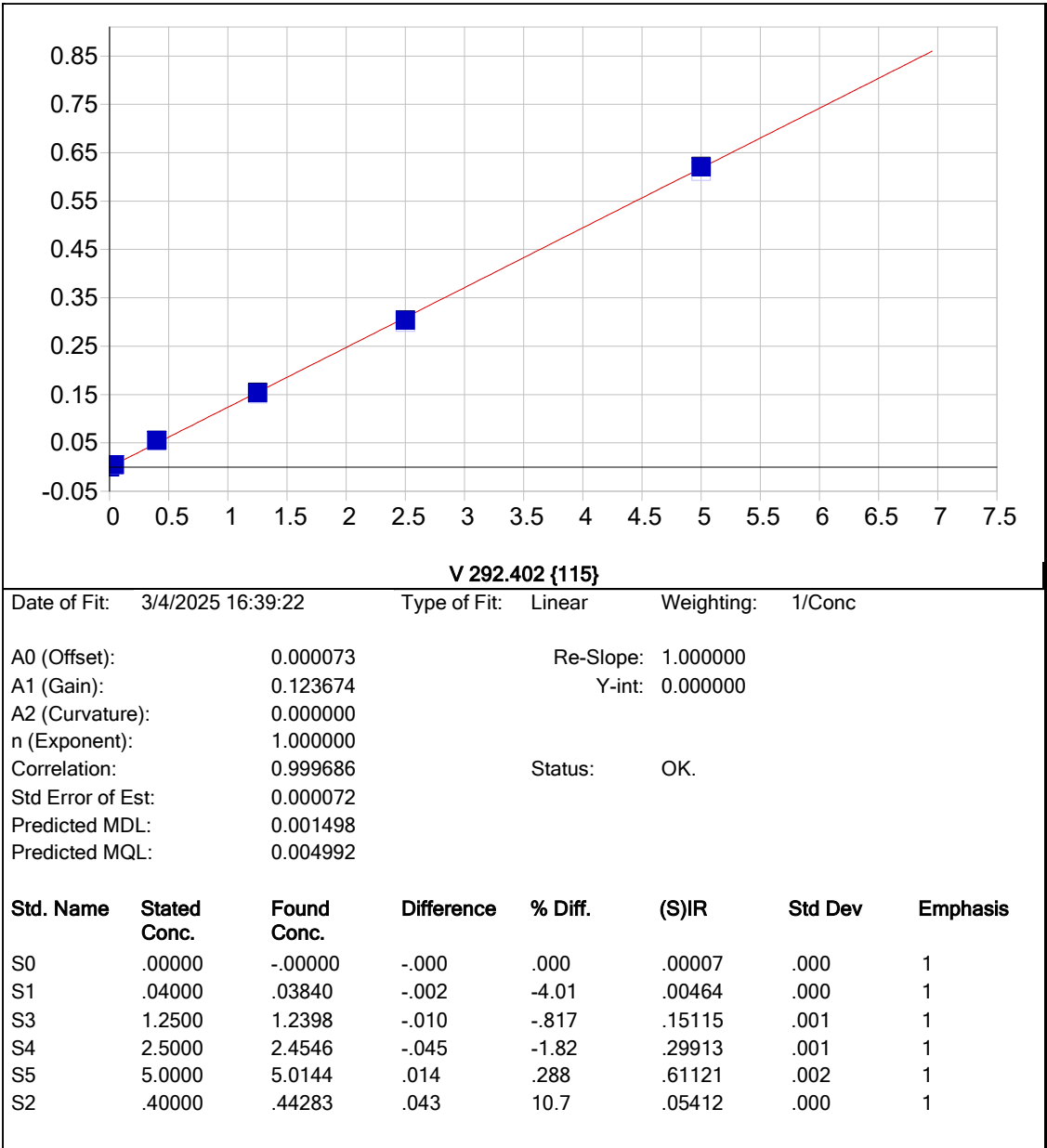


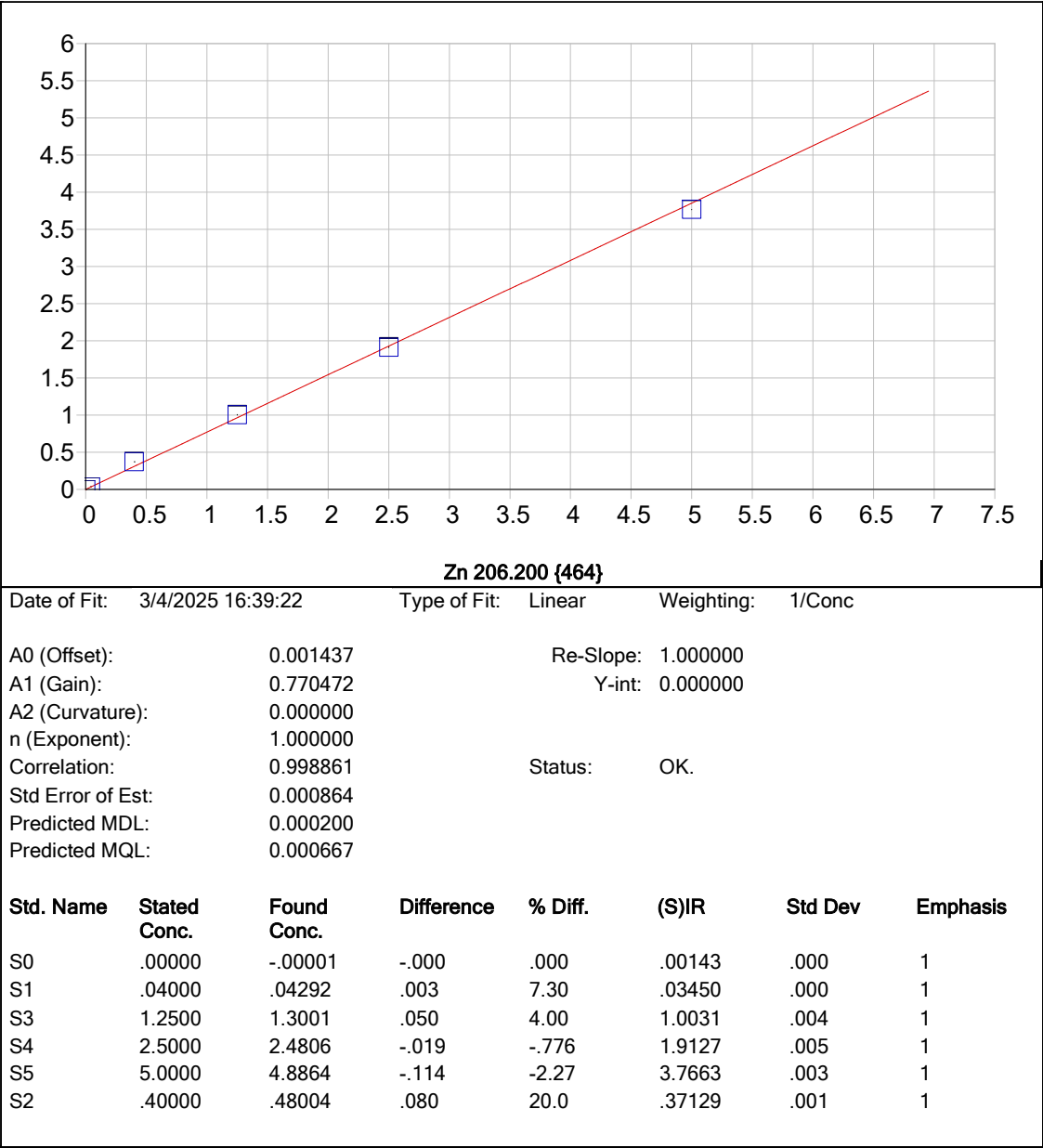


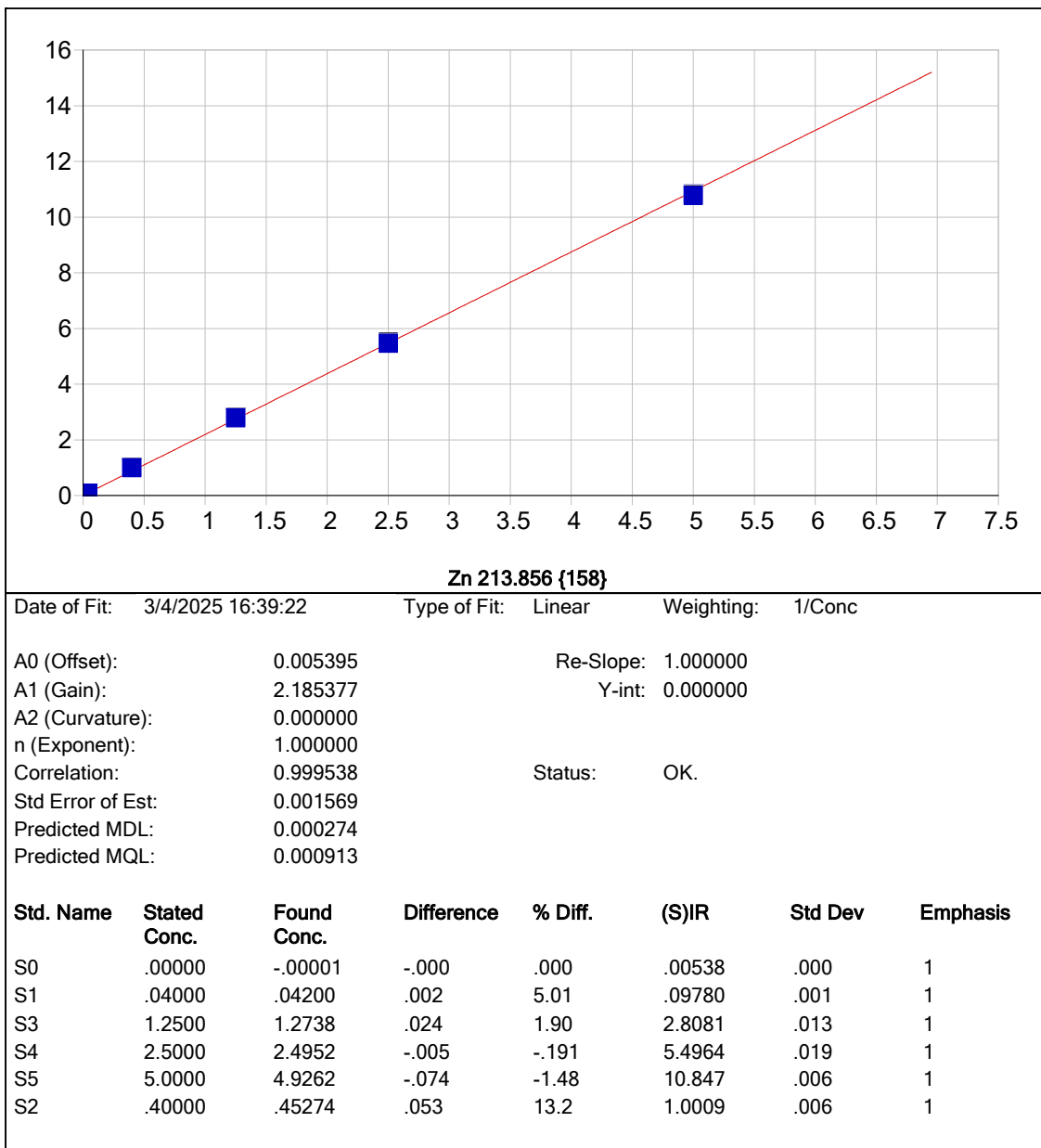


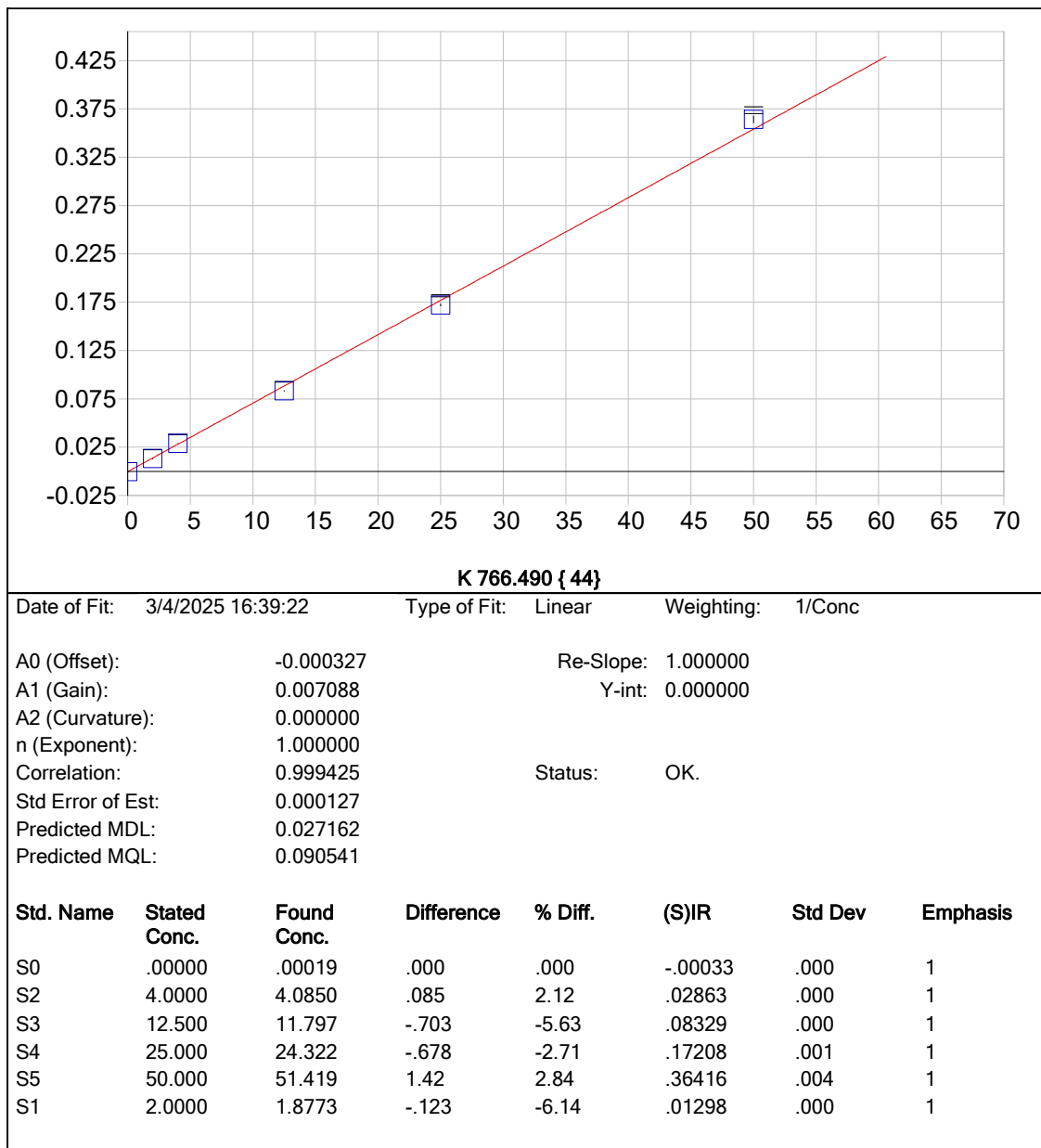


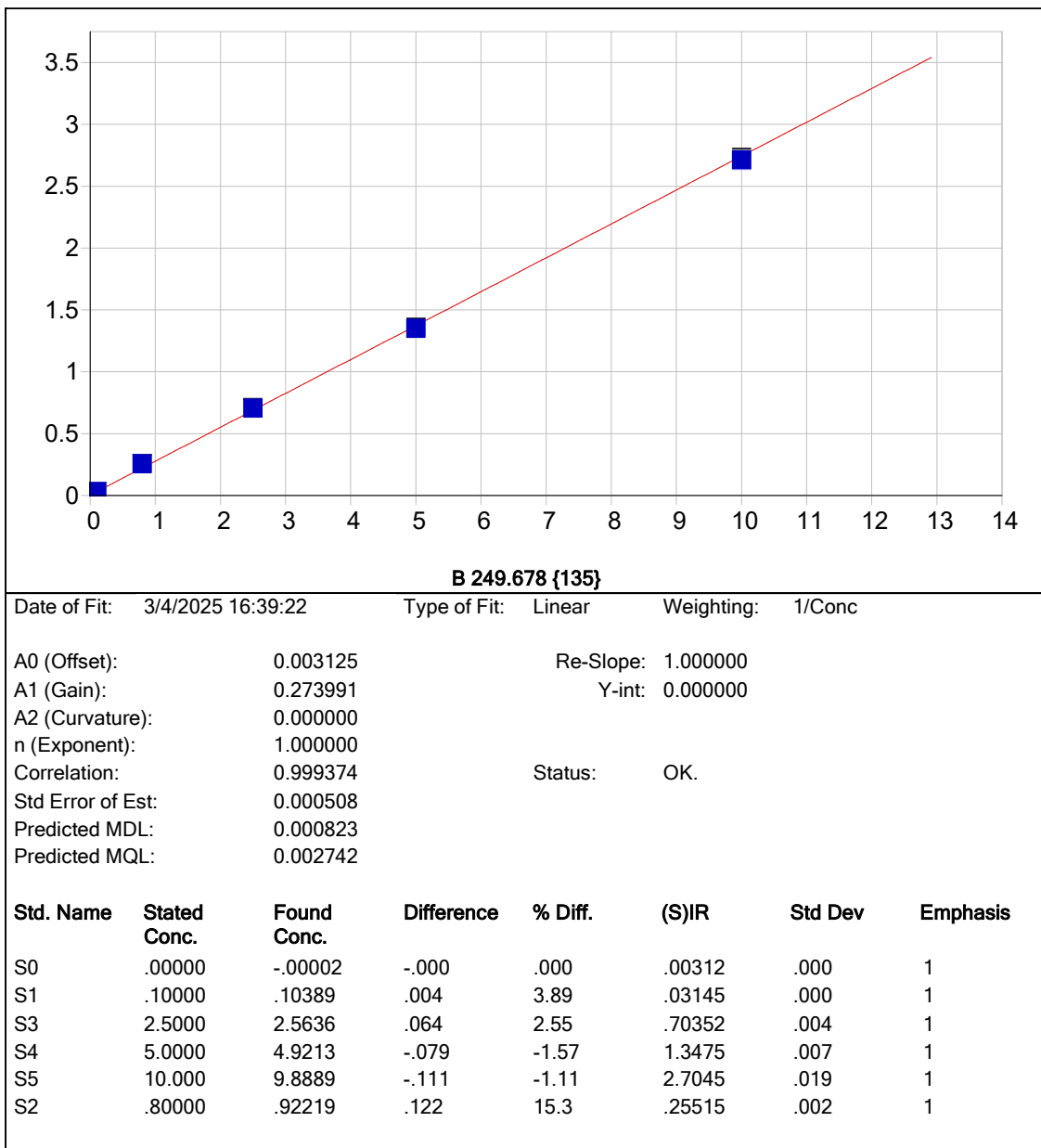


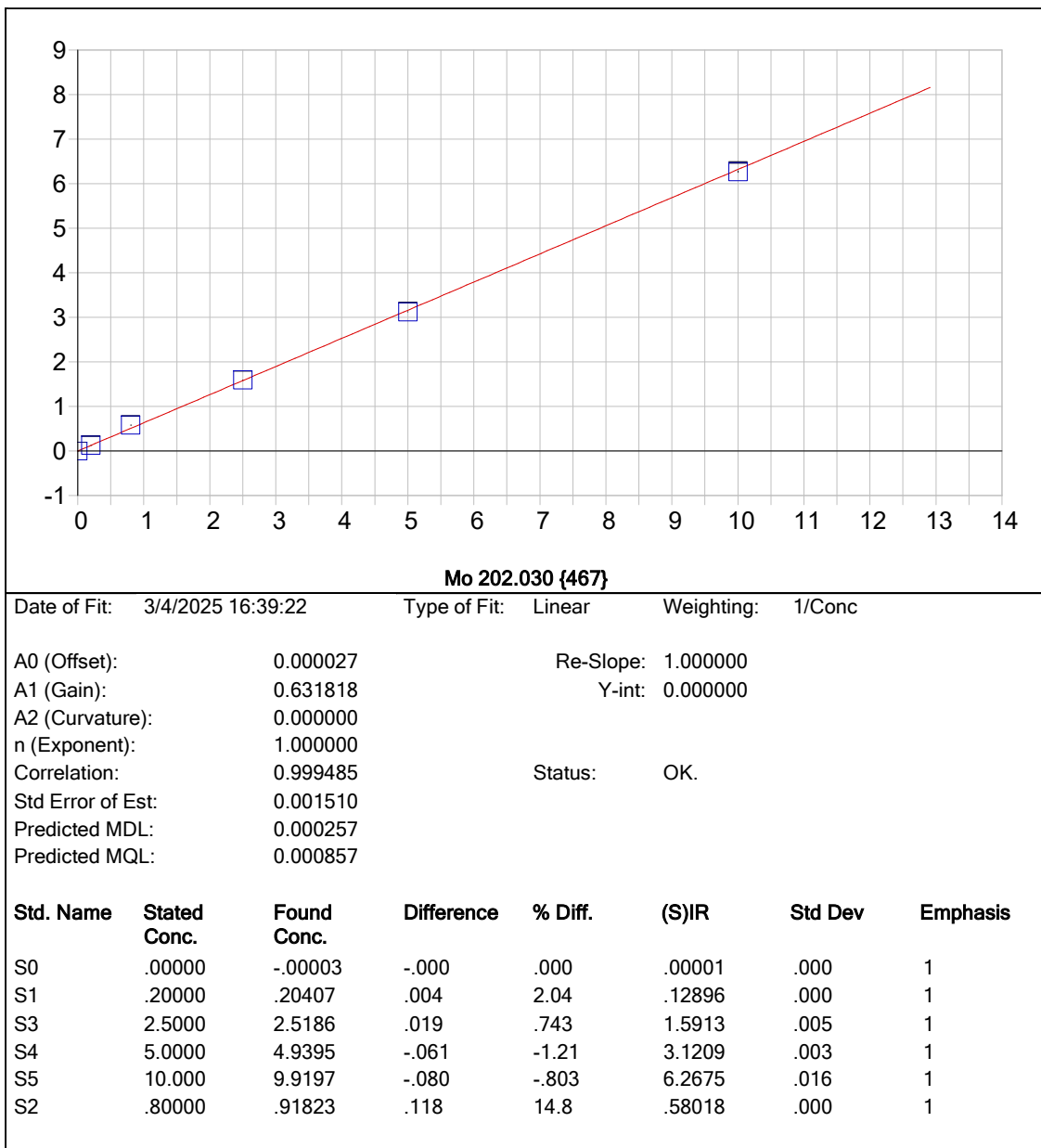


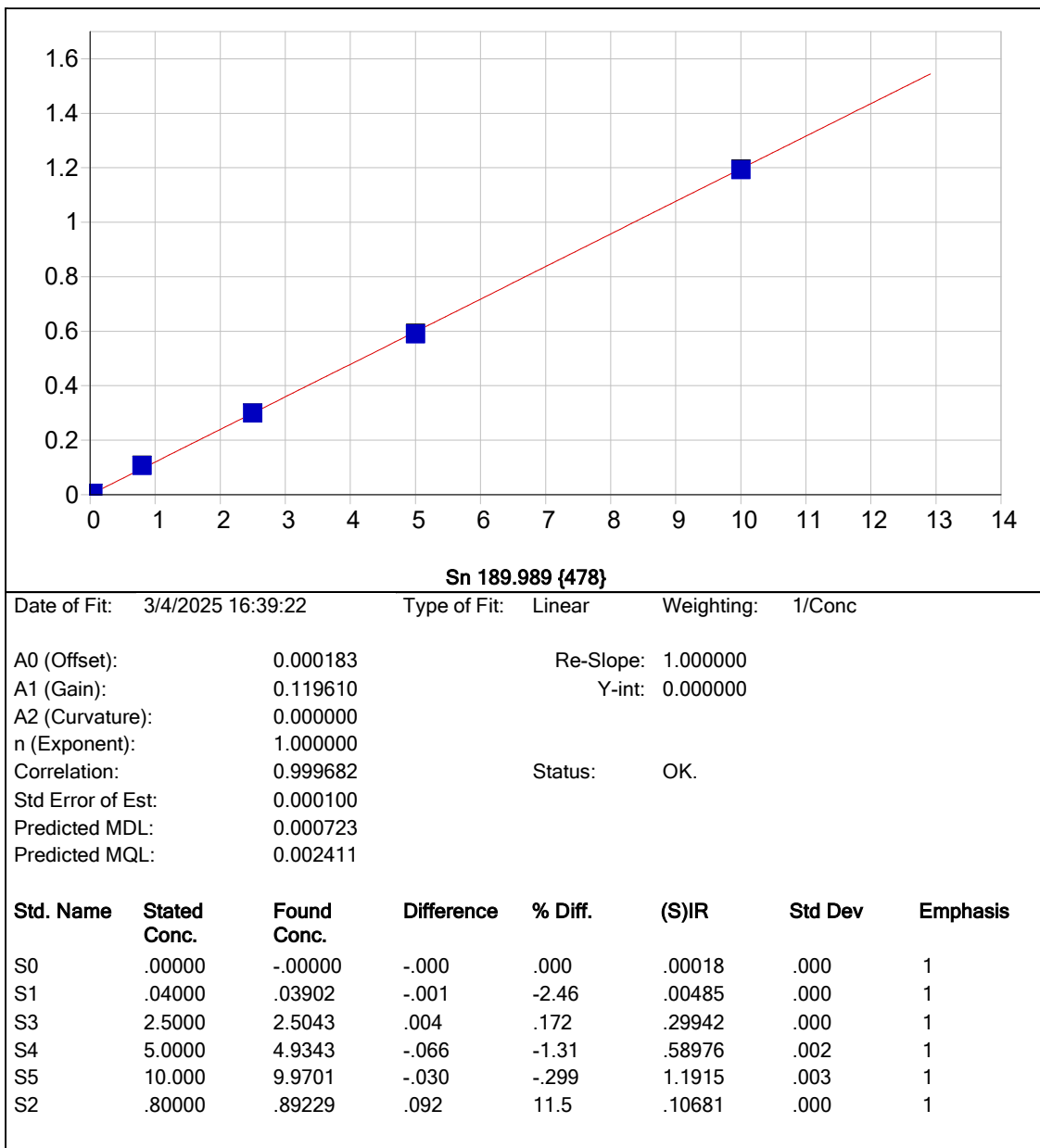


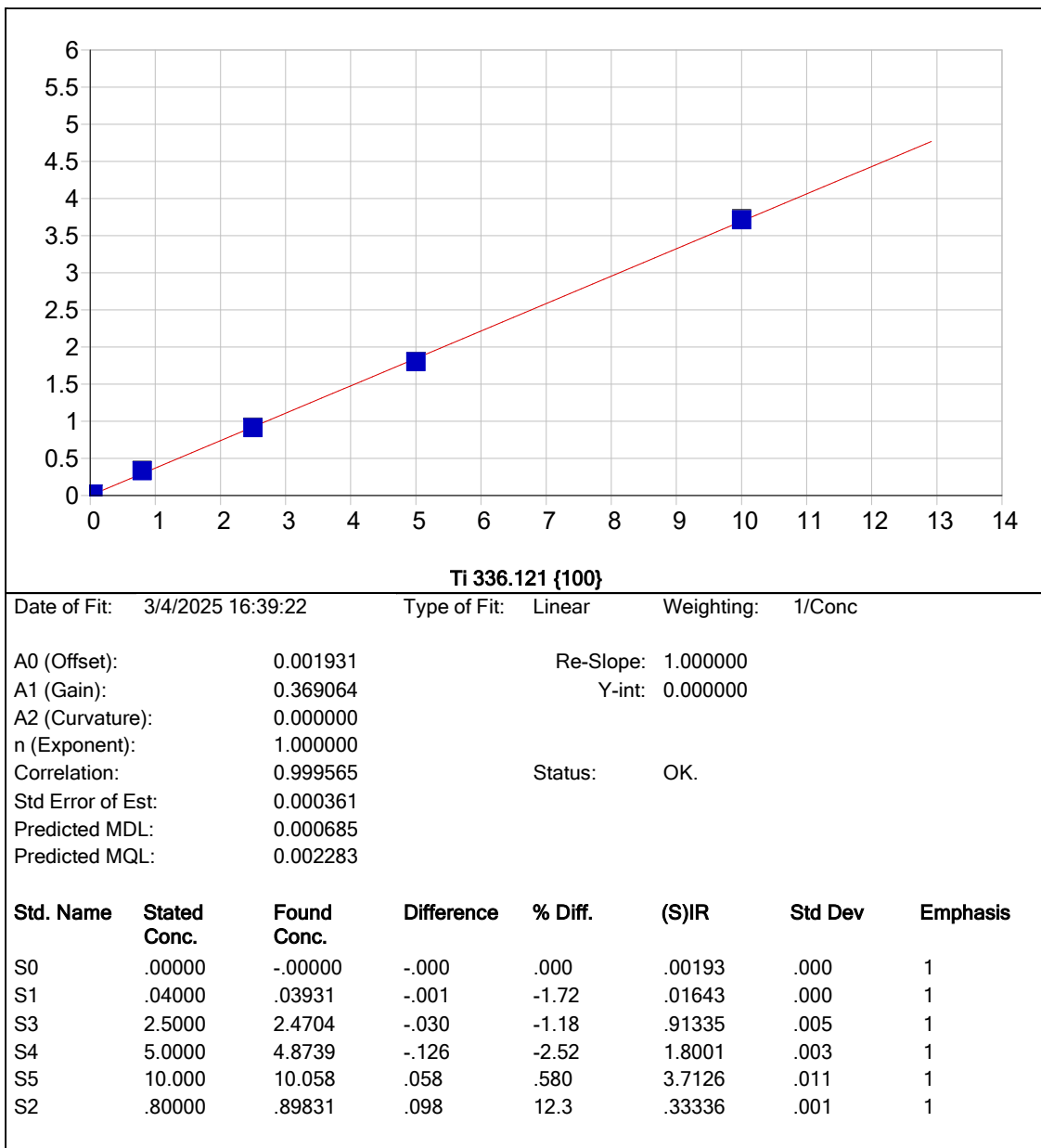


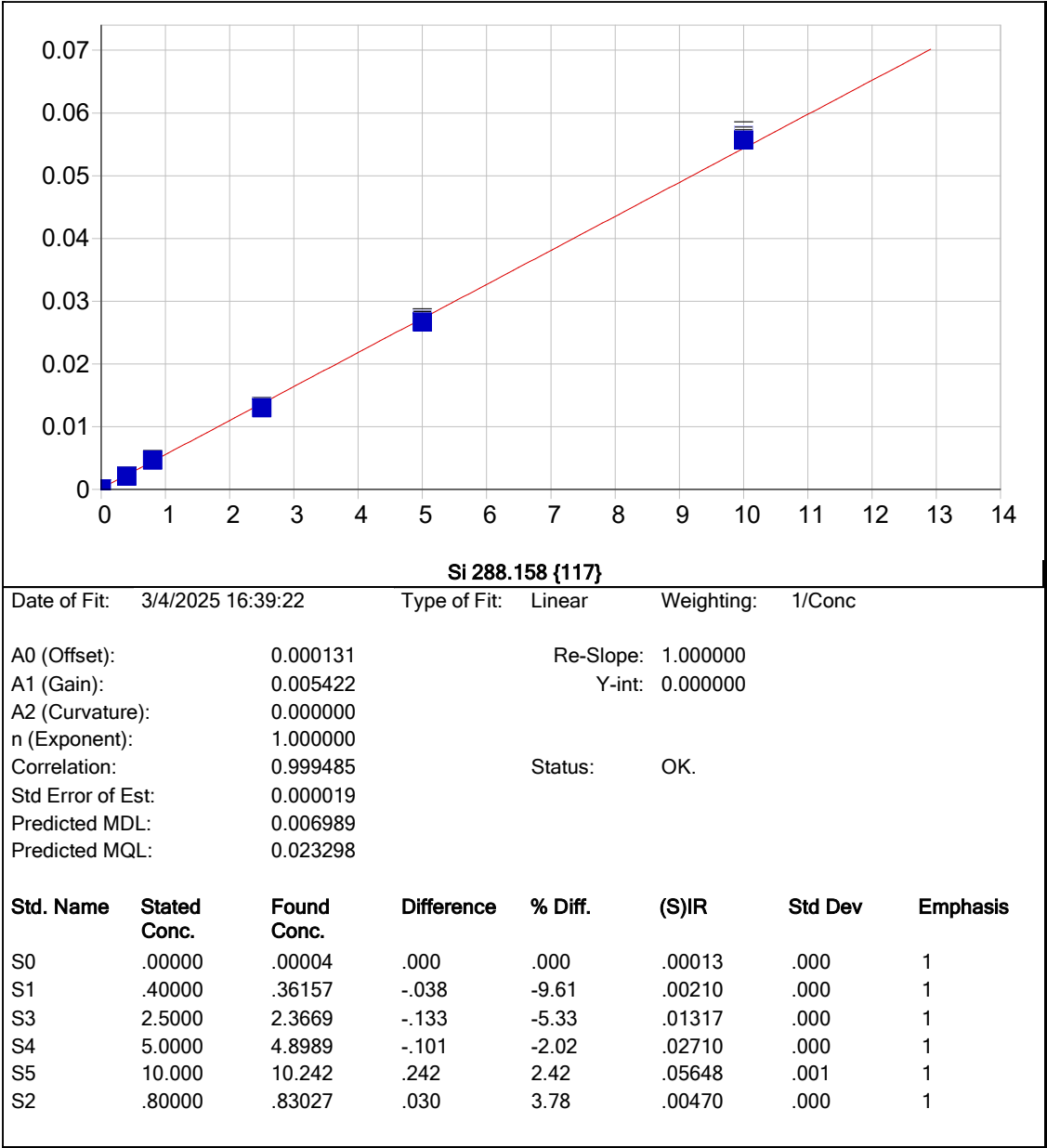


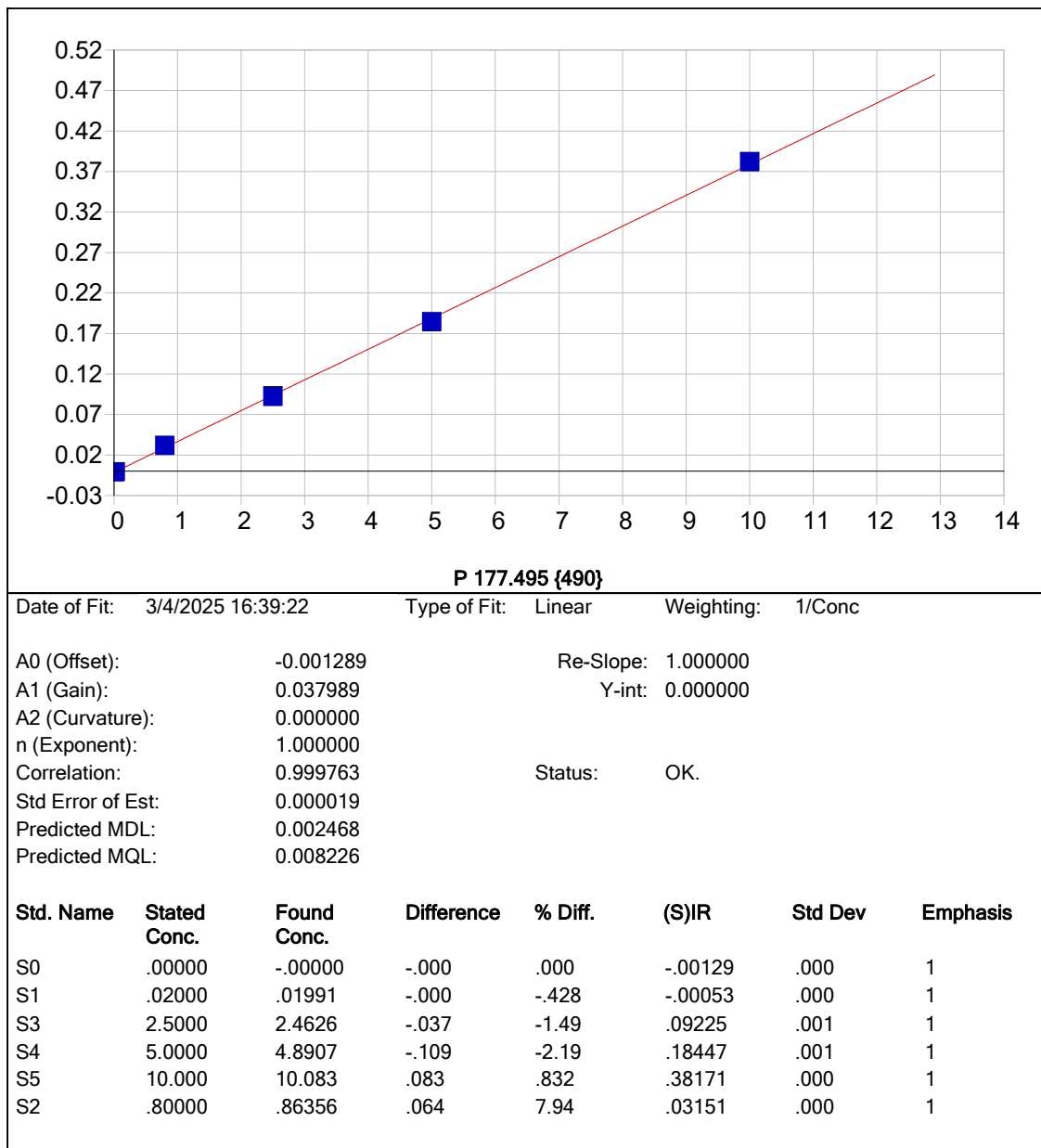


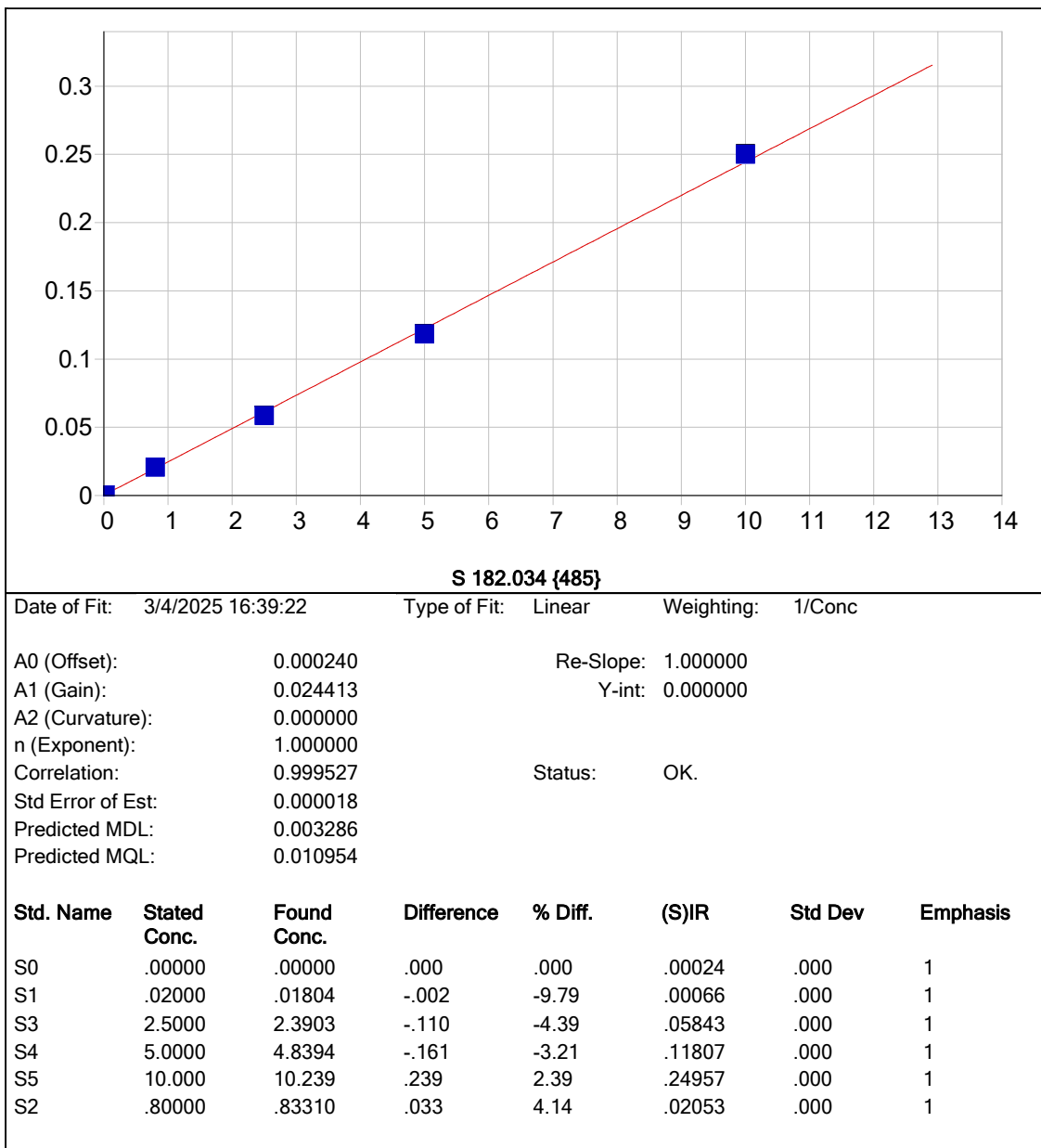


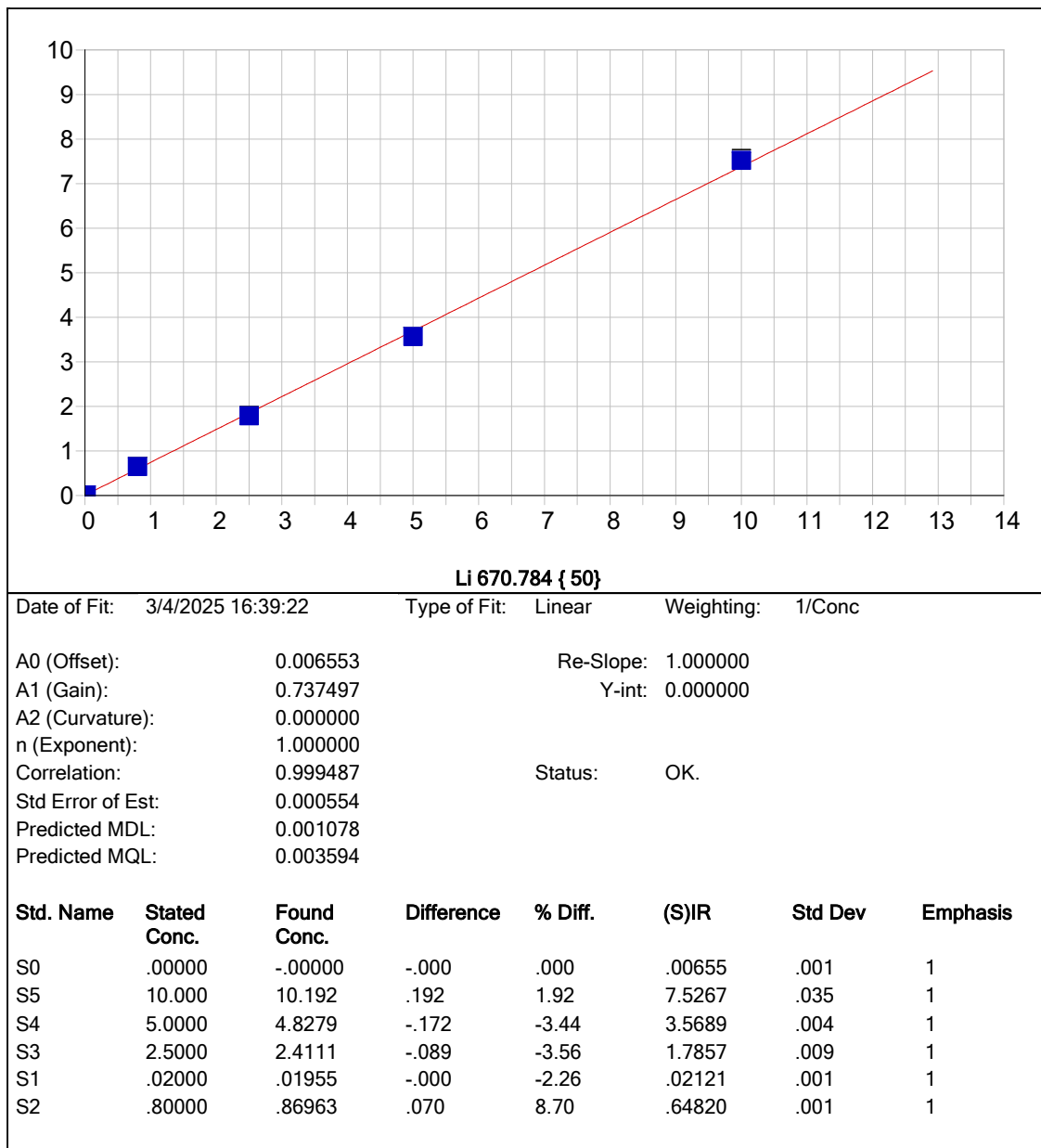


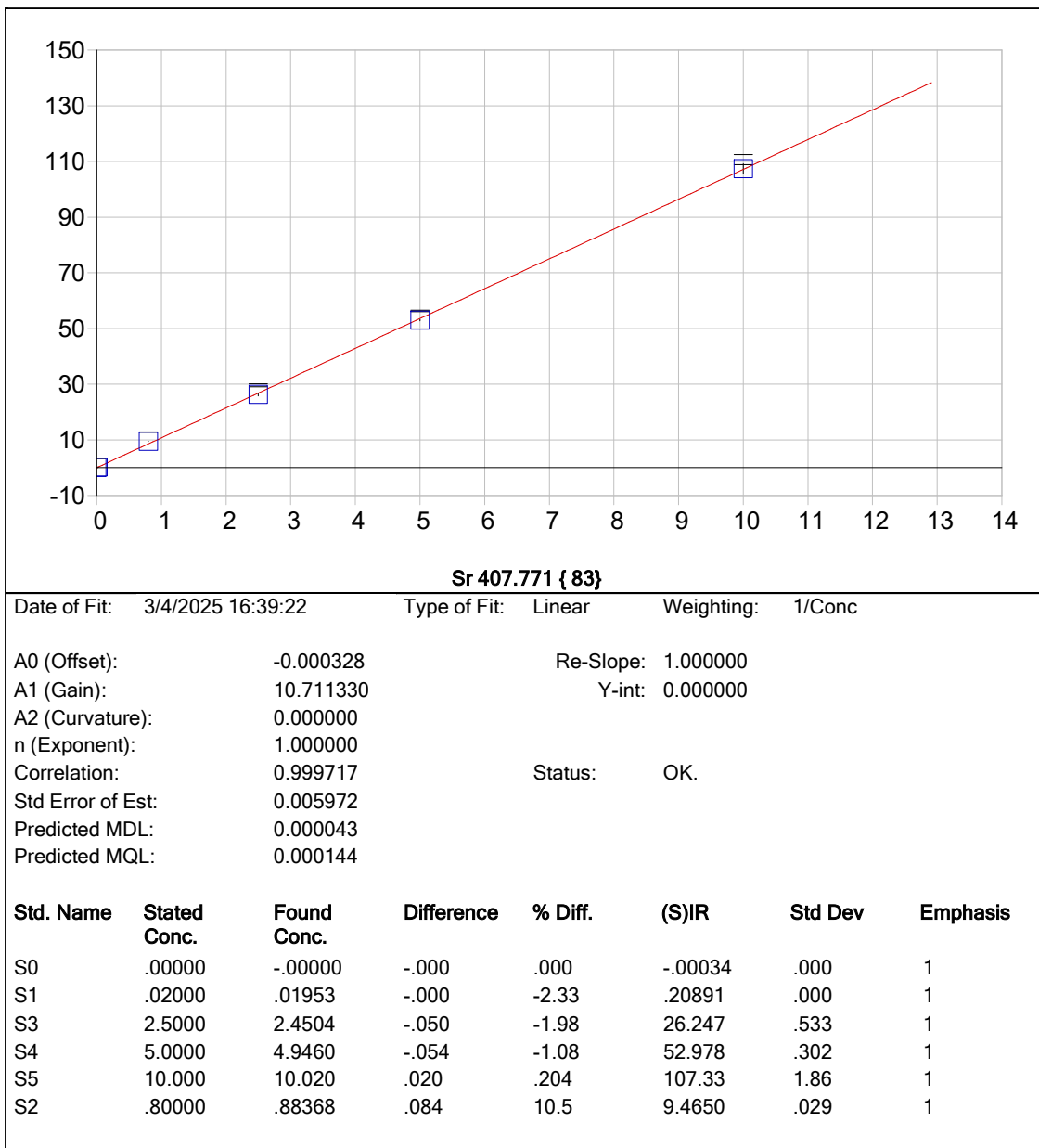


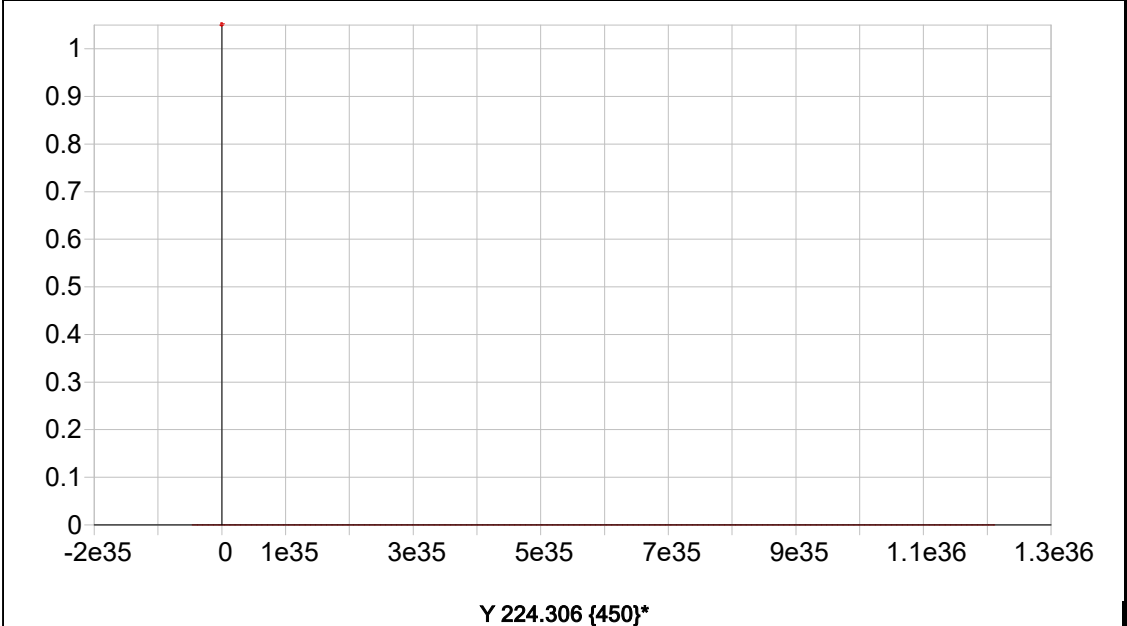






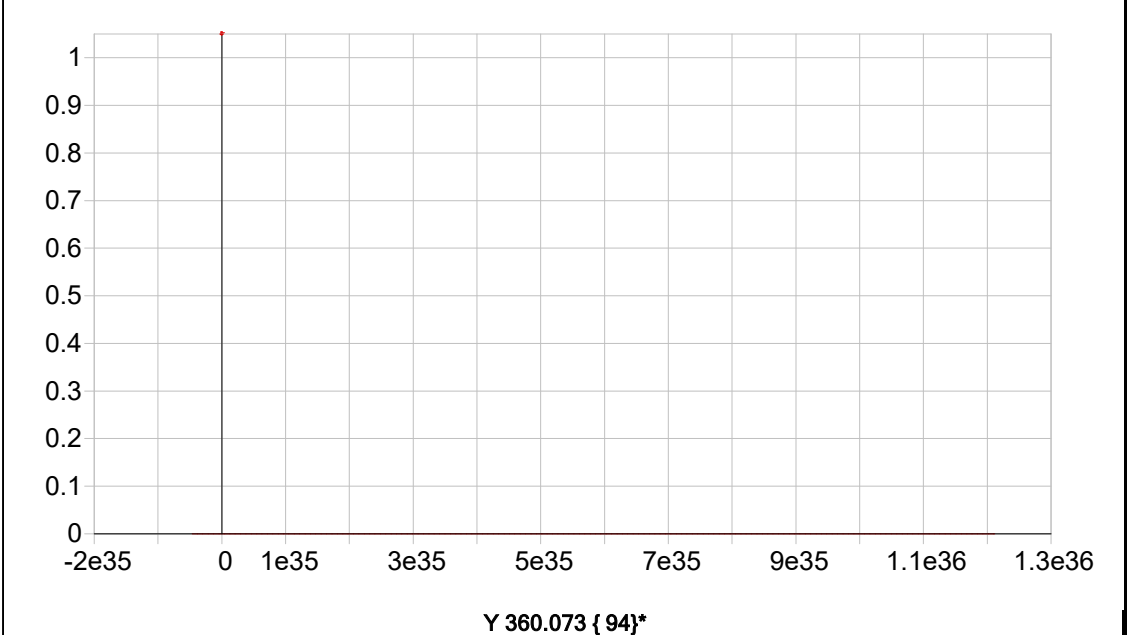




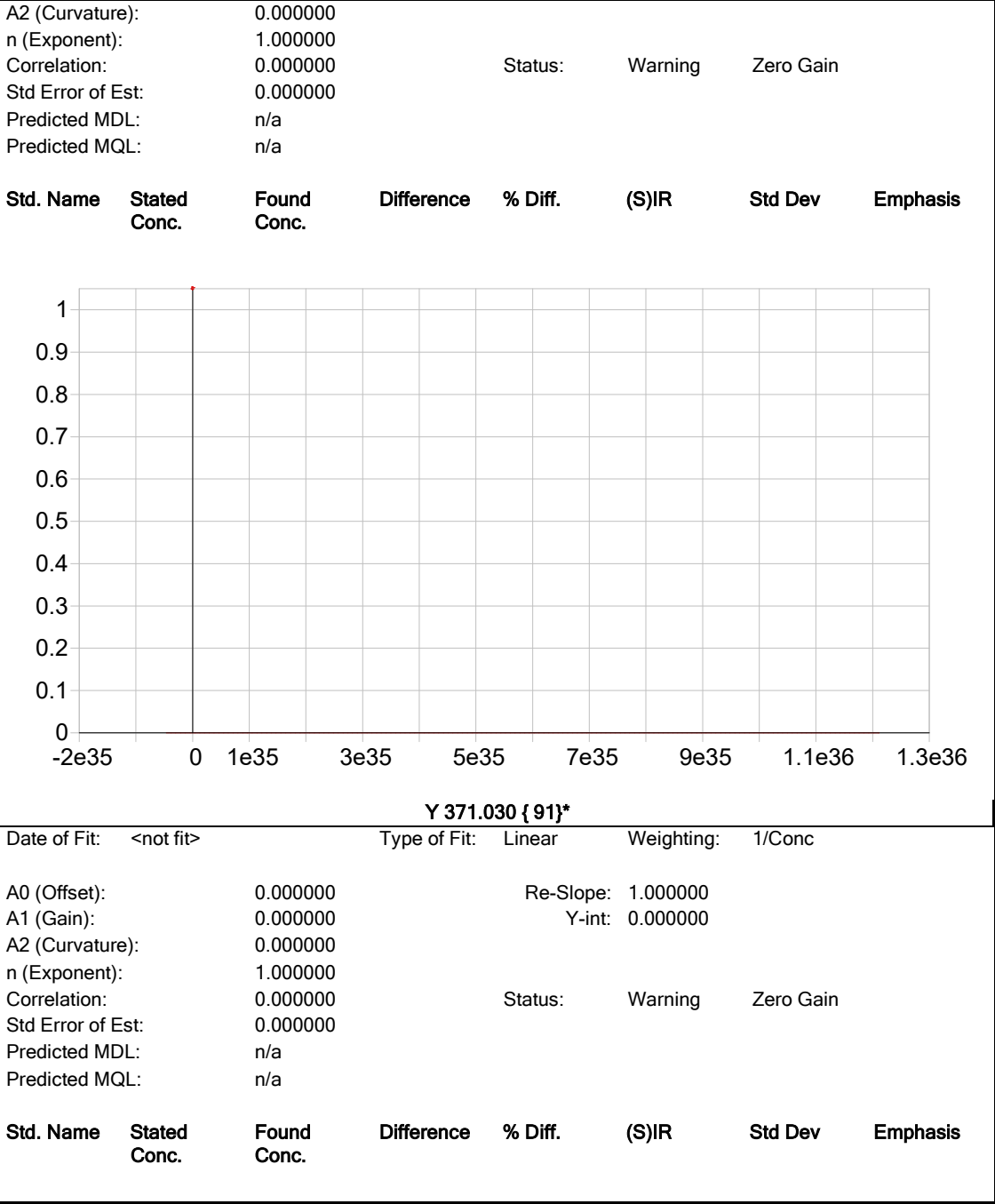


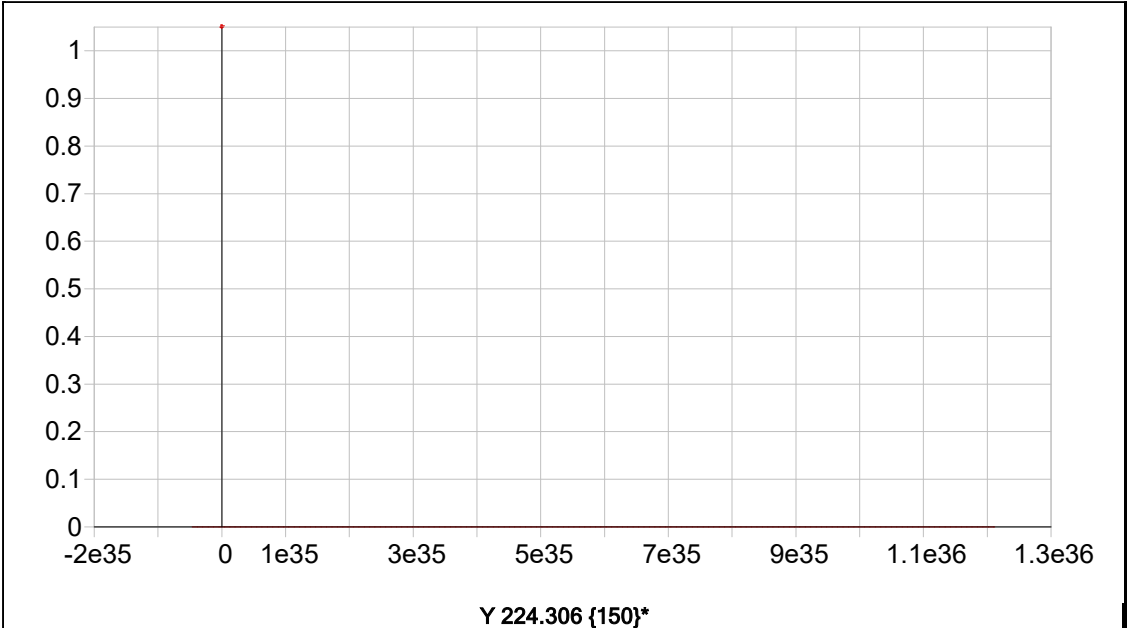
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A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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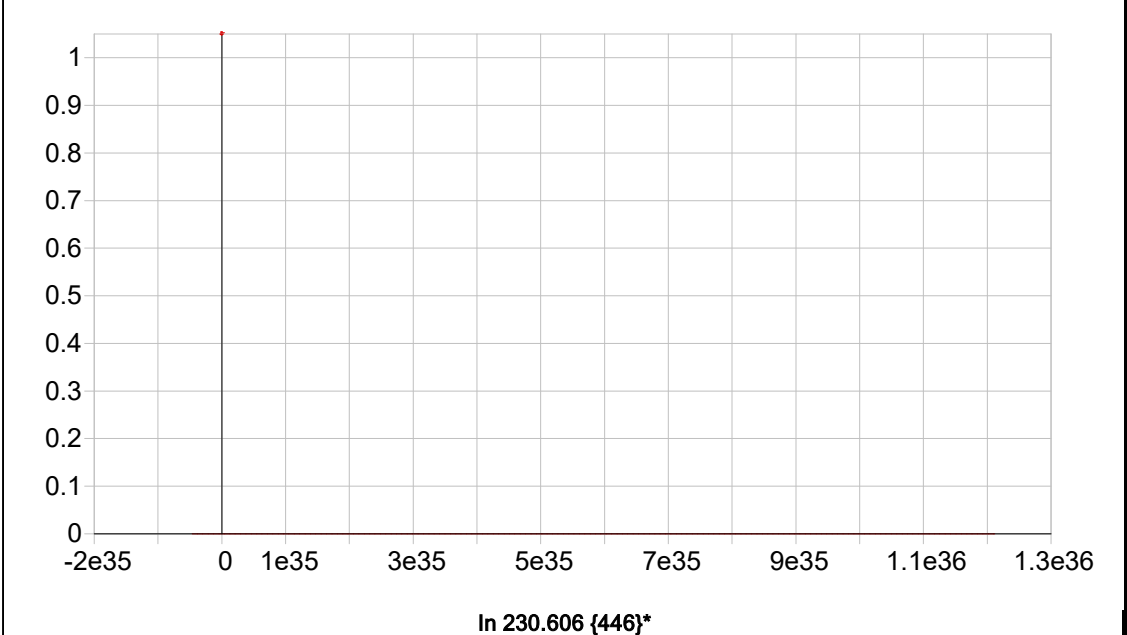
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		





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
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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

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Sample Name: S0 Acquired: 3/4/2025 9:42:12 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	-.00010	-.00007	-.00014	.00036	.00031	.00089	.03323	.00015
Stddev	.00010	.00007	.00004	.00006	.00009	.00053	.00012	.00006
%RSD	97.003	103.06	29.125	17.716	29.665	59.514	.34618	41.317
#1	-.00020	-.00007	-.00010	.00030	.00028	.00085	.03321	.00013
#2	.00000	-.00014	-.00015	.00042	.00042	.00038	.03335	.00022
#3	-.00011	.00000	-.00018	.00034	.00024	.00144	.03312	.00010
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	-.00014	.00133	.00003	-.00002	-.00064	.00004	-.00000	-.00019
Stddev	.00011	.00038	.00005	.00011	.00022	.00001	.00003	.00014
%RSD	78.939	28.770	181.67	632.95	33.654	19.343	3267.6	72.999
#1	-.00012	.00154	.00002	-.00005	-.00066	.00003	-.00000	-.00003
#2	-.00004	.00089	-.00002	.00011	-.00041	.00005	-.00003	-.00030
#3	-.00027	.00156	.00008	-.00011	-.00084	.00004	.00003	-.00024
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	-.00009	-.00109	.00212	.00007	.00538	-.00033	.00312	.00001
Stddev	.00014	.00000	.00019	.00026	.00015	.00002	.00016	.00013
%RSD	152.38	.42191	8.7848	362.83	2.7545	7.3498	5.0775	1766.2
#1	-.00025	-.00110	.00203	.00002	.00531	-.00031	.00295	-.00010
#2	-.00001	-.00109	.00201	-.00016	.00528	-.00035	.00314	.00015
#3	-.00001	-.00109	.00234	.00036	.00555	-.00032	.00326	-.00003
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	.00018	.00193	.00013	-.00129	.00024	.00655	-.00034	
Stddev	.00005	.00031	.00002	.00005	.00011	.00078	.00025	
%RSD	25.699	16.100	13.576	3.6953	46.257	11.908	72.265	
#1	.00016	.00217	.00015	-.00125	.00020	.00589	-.00060	
#2	.00015	.00204	.00013	-.00134	.00015	.00741	-.00011	
#3	.00024	.00158	.00012	-.00127	.00036	.00636	-.00031	

Sample Name: S0 Acquired: 3/4/2025 9:42:12 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	3683.5	78830.	15321.	3268.1	5175.9
Stddev	8.8	328.	113.	5.5	4.0
%RSD	.23819	.41580	.73561	.16682	.07724
#1	3675.1	78980.	15225.	3261.8	5178.8
#2	3682.8	78454.	15445.	3271.2	5171.3
#3	3692.6	79056.	15293.	3271.3	5177.5

Sample Name: S1 Acquired: 3/4/2025 9:46:38 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	.00088	.00252	.00219	.00129	.00683	.01185	.30812	.02141
Stddev	.00007	.00003	.00012	.00010	.00015	.00035	.00104	.00017
%RSD	7.3757	1.0151	5.3082	8.0442	2.1889	2.9807	.33683	.77955
#1	.00089	.00251	.00207	.00140	.00666	.01223	.30902	.02157
#2	.00082	.00255	.00230	.00119	.00686	.01154	.30837	.02124
#3	.00094	.00250	.00218	.00127	.00696	.01178	.30698	.02141
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	.01370	.10701	.00165	.02500	.01370	.00051	.00959	.02709
Stddev	.00009	.00054	.00003	.00004	.00014	.00001	.00008	.00007
%RSD	.64153	.50478	1.6106	.14770	.99272	1.5839	.84847	.26658
#1	.01364	.10713	.00166	.02496	.01376	.00051	.00955	.02710
#2	.01365	.10641	.00162	.02503	.01354	.00052	.00968	.02701
#3	.01380	.10747	.00167	.02501	.01379	.00050	.00953	.02716
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	.02627	.00149	.04800	.00464	.09780	.01298	.03145	.12896
Stddev	.00031	.00004	.00021	.00016	.00087	.00016	.00017	.00045
%RSD	1.1910	2.9507	.42900	3.4844	.88681	1.2133	.54328	.34849
#1	.02645	.00149	.04821	.00476	.09879	.01287	.03136	.12912
#2	.02591	.00145	.04780	.00445	.09744	.01291	.03133	.12846
#3	.02646	.00153	.04800	.00469	.09718	.01316	.03164	.12932
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	.00485	.01643	.00210	-.00053	.00066	.02121	.20891	
Stddev	.00005	.00021	.00003	.00004	.00004	.00075	.00034	
%RSD	1.0356	1.3059	1.3065	6.6902	6.5490	3.5412	.16292	
#1	.00489	.01620	.00207	-.00050	.00063	.02206	.20887	
#2	.00486	.01662	.00209	-.00057	.00064	.02093	.20926	
#3	.00479	.01647	.00213	-.00052	.00071	.02063	.20859	

Sample Name: S1 Acquired: 3/4/2025 9:46:38 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	3683.6	78612.	15246.	3270.7	5069.4
Stddev	7.9	257.	71.	11.9	5.6
%RSD	.21484	.32720	.46283	.36391	.11105
#1	3689.8	78338.	15203.	3258.3	5075.9
#2	3674.7	78650.	15207.	3282.1	5066.4
#3	3686.3	78848.	15327.	3271.6	5065.9

Sample Name: S2 Acquired: 3/4/2025 9:51:00 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	.04263	.06142	.18042	.04868	.11330	.17751	5.0295	.15865
Stddev	.00006	.00081	.00027	.00012	.00027	.00111	.0063	.00048
%RSD	.14811	1.3188	.15155	.24885	.24062	.62493	.12466	.30334
#1	.04270	.06235	.18012	.04856	.11345	.17750	5.0358	.15920
#2	.04258	.06107	.18048	.04869	.11299	.17640	5.0296	.15830
#3	.04261	.06085	.18065	.04880	.11347	.17862	5.0232	.15845
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.0453	.23724	.02944	.38325	.14608	.00437	.21102	.05670
Stddev	.0015	.00070	.00011	.00140	.00022	.00001	.00081	.00046
%RSD	.13991	.29462	.36006	.36553	.14770	.33547	.38556	.81161
#1	1.0447	.23766	.02956	.38257	.14588	.00436	.21192	.05672
#2	1.0443	.23644	.02937	.38233	.14606	.00438	.21081	.05623
#3	1.0470	.23763	.02939	.38487	.14631	.00438	.21033	.05715
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	.29833	.05606	.10270	.05412	1.0009	.02863	.25515	.58018
Stddev	.00040	.00009	.00015	.00027	.0057	.00013	.00209	.00012
%RSD	.13534	.15846	.14993	.49526	.57172	.44722	.81875	.02009
#1	.29792	.05608	.10254	.05385	1.0069	.02851	.25575	.58007
#2	.29836	.05596	.10285	.05411	.99553	.02877	.25282	.58018
#3	.29872	.05613	.10270	.05439	1.0002	.02861	.25687	.58030
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	.10681	.33336	.00470	.03151	.02053	.64820	9.4650	
Stddev	.00040	.00062	.00006	.00014	.00008	.00093	.0293	
%RSD	.37046	.18582	1.3117	.45875	.40855	.14424	.30949	
#1	.10675	.33401	.00464	.03156	.02059	.64720	9.4451	
#2	.10645	.33277	.00469	.03135	.02043	.64905	9.4514	
#3	.10724	.33329	.00476	.03162	.02056	.64833	9.4987	

Sample Name: S2 Acquired: 3/4/2025 9:51:00 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	3669.9	80920.	15240.	3350.7	4943.0
Stddev	6.0	51.	41.	3.1	8.1
%RSD	.16373	.06261	.26670	.09324	.16337
#1	3676.8	80880.	15206.	3352.4	4950.9
#2	3666.1	80977.	15285.	3352.6	4943.4
#3	3666.8	80902.	15229.	3347.1	4934.8

Sample Name: S3 Acquired: 3/4/2025 9:55:07 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	.11868	.17012	.50204	.13485	.31371	.49500	13.845	.44416
Stddev	.00040	.00234	.00094	.00019	.00107	.00284	.185	.00269
%RSD	.34076	1.3767	.18661	.13859	.34015	.57357	1.3341	.60612
#1	.11875	.17278	.50264	.13485	.31288	.49591	13.838	.44644
#2	.11825	.16923	.50096	.13467	.31333	.49182	14.032	.44119
#3	.11905	.16836	.50252	.13504	.31491	.49727	13.663	.44486
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	2.9213	.65298	.08268	1.0660	.41187	.01230	.57521	.15710
Stddev	.0067	.00294	.00047	.0019	.00166	.00006	.00337	.00056
%RSD	.22823	.45052	.56276	.17374	.40370	.50913	.58625	.35901
#1	2.9234	.65625	.08219	1.0663	.41226	.01225	.57905	.15749
#2	2.9138	.65055	.08272	1.0640	.41004	.01228	.57272	.15645
#3	2.9266	.65213	.08312	1.0677	.41330	.01237	.57387	.15736
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	.82832	.15883	.29278	.15115	2.8081	.08329	.70352	1.5913
Stddev	.00207	.00040	.00123	.00122	.0131	.00028	.00401	.0046
%RSD	.24948	.25320	.41956	.80582	.46689	.33656	.56961	.29000
#1	.82828	.15844	.29144	.15178	2.8034	.08311	.70667	1.5942
#2	.82628	.15881	.29385	.14974	2.7979	.08315	.69901	1.5860
#3	.83041	.15924	.29304	.15192	2.8229	.08361	.70487	1.5937
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	.29942	.91335	.01317	.09225	.05843	1.7857	26.247	
Stddev	.00025	.00461	.00007	.00059	.00027	.0091	.533	
%RSD	.08265	.50522	.50449	.64001	.46916	.50756	2.0326	
#1	.29961	.91841	.01309	.09266	.05868	1.7958	26.601	
#2	.29914	.90937	.01322	.09157	.05848	1.7783	25.633	
#3	.29951	.91226	.01320	.09251	.05814	1.7829	26.505	

Sample Name: S3 Acquired: 3/4/2025 9:55:07 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	3626.1	77180.	15053.	3246.1	4768.1
Stddev	12.4	100.	95.	2.7	11.8
%RSD	.34184	.12914	.63229	.08349	.24709
#1	3628.8	77290.	14953.	3243.1	4768.0
#2	3637.0	77155.	15143.	3246.7	4779.9
#3	3612.6	77096.	15064.	3248.4	4756.4

Sample Name: S4 Acquired: 3/4/2025 9:59:22 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	.23774	.33437	.98111	.27012	.63048	.98668	27.158	.84743
Stddev	.00008	.00096	.00219	.00049	.00171	.00029	.320	.00487
%RSD	.03319	.28564	.22366	.18126	.27167	.02926	1.1783	.57489
#1	.23765	.33541	.98302	.26962	.62863	.98670	27.451	.85304
#2	.23775	.33418	.97871	.27060	.63079	.98638	26.816	.84429
#3	.23781	.33353	.98161	.27014	.63202	.98696	27.206	.84495
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.7696	1.2706	.16143	2.0981	.78302	.02398	1.1025	.30968
Stddev	.0177	.0046	.00012	.0062	.00090	.00008	.0037	.00103
%RSD	.30673	.36451	.07716	.29613	.11447	.34423	.33892	.33274
#1	5.7885	1.2760	.16142	2.1042	.78220	.02389	1.1065	.31087
#2	5.7534	1.2682	.16131	2.0918	.78289	.02405	1.1020	.30906
#3	5.7670	1.2677	.16156	2.0983	.78398	.02400	1.0991	.30911
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	1.6242	.31233	.60344	.29913	5.4964	.17208	1.3475	3.1209
Stddev	.0038	.00041	.00376	.00056	.0190	.00102	.0071	.0027
%RSD	.23434	.13079	.62287	.18672	.34503	.59038	.52523	.08755
#1	1.6276	.31186	.59919	.29973	5.4745	.17092	1.3553	3.1211
#2	1.6201	.31254	.60481	.29862	5.5063	.17284	1.3455	3.1180
#3	1.6249	.31258	.60632	.29905	5.5084	.17246	1.3416	3.1235
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	.58976	1.8001	.02710	.18447	.11807	3.5689	52.978	
Stddev	.00153	.0033	.00026	.00051	.00034	.0036	.302	
%RSD	.25892	.18309	.94547	.27435	.28820	.10064	.56996	
#1	.59147	1.8039	.02681	.18506	.11834	3.5662	53.040	
#2	.58853	1.7982	.02723	.18413	.11769	3.5730	53.244	
#3	.58929	1.7981	.02727	.18424	.11817	3.5676	52.650	

Sample Name: S4 Acquired: 3/4/2025 9:59:22 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	3549.9	75690.	15283.	3191.7	4601.1
Stddev	6.9	75.	119.	8.4	6.9
%RSD	.19507	.09846	.77884	.26415	.15035
#1	3556.8	75608.	15147.	3201.1	4600.7
#2	3550.0	75710.	15328.	3184.7	4608.3
#3	3542.9	75753.	15372.	3189.4	4594.4

Sample Name: S5 Acquired: 3/4/2025 10:03:35 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	.49112	.65905	1.9861	.55596	1.3049	2.0480	55.339	1.6920
Stddev	.00147	.00476	.0030	.00243	.0046	.0020	.215	.0122
%RSD	.29911	.72206	.15314	.43739	.35562	.09848	.38875	.72215
#1	.48943	.65573	1.9858	.55324	1.2998	2.0458	55.425	1.6973
#2	.49213	.66450	1.9832	.55791	1.3058	2.0486	55.094	1.7006
#3	.49179	.65691	1.9892	.55674	1.3090	2.0497	55.498	1.6780
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	11.718	2.5806	.31573	4.2880	1.5759	.04862	2.2435	.63196
Stddev	.014	.0053	.00099	.0076	.0042	.00059	.0067	.00225
%RSD	.11758	.20596	.31326	.17692	.26883	1.2237	.29852	.35597
#1	11.708	2.5862	.31667	4.2831	1.5711	.04865	2.2477	.63423
#2	11.713	2.5756	.31470	4.2843	1.5775	.04801	2.2358	.63191
#3	11.734	2.5800	.31580	4.2968	1.5791	.04919	2.2470	.62974
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	3.3117	.62877	1.2696	.61121	10.847	.36416	2.7045	6.2675
Stddev	.0032	.00024	.0116	.00154	.006	.00358	.0193	.0161
%RSD	.09737	.03856	.91277	.25138	.05613	.98260	.71196	.25726
#1	3.3097	.62863	1.2654	.61298	10.849	.36326	2.7061	6.2489
#2	3.3099	.62905	1.2607	.61036	10.840	.36111	2.7229	6.2785
#3	3.3154	.62862	1.2827	.61028	10.852	.36810	2.6845	6.2750
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	1.1915	3.7126	.05648	.38171	.24957	7.5267	107.33	
Stddev	.0025	.0112	.00063	.00026	.00039	.0347	1.86	
%RSD	.21294	.30254	1.1214	.06833	.15566	.46065	1.7365	
#1	1.1893	3.7157	.05603	.38196	.24925	7.5158	107.01	
#2	1.1909	3.7002	.05622	.38173	.25000	7.4987	109.33	
#3	1.1942	3.7220	.05721	.38144	.24947	7.5655	105.65	

Sample Name: S5 Acquired: 3/4/2025 10:03:35 Type: Cal
Method: NON EPA-6010-200.7(v2765) 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	3385.1	74261.	15050.	3069.0	4300.6
Stddev	8.1	251.	97.	9.2	8.8
%RSD	.23847	.33748	.64606	.29921	.20513
#1	3393.9	74083.	14960.	3077.2	4306.3
#2	3383.3	74547.	15036.	3070.6	4305.0
#3	3378.0	74151.	15153.	3059.1	4290.4

Sample Name: ICV01 Acquired: 3/4/2025 10:07:56 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	1.030384	1.048253	1.007785	1.027019	1.002206	2.503661
Stddev	.007034	.006867	.000270	.002865	.002325	.009068
%RSD	.6826351	.6551209	.0267671	.2789706	.2319923	.3621822
#1	1.025672	1.042776	1.007843	1.027507	.999548	2.498183
#2	1.027011	1.046025	1.008021	1.023941	1.003211	2.514128
#3	1.038469	1.055958	1.007491	1.029609	1.003860	2.498672
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4836644	.5010659	.5013650	9.665309	.5210655	.5084857
Stddev	.0009144	.0022469	.0001296	.034207	.0004528	.0010155
%RSD	.1890558	.4484170	.0258390	.3539175	.0869030	.1997087
#1	.4834669	.4987277	.5014801	9.668953	.5205437	.5088680
#2	.4846614	.5032087	.5013900	9.697548	.5213559	.5073345
#3	.4828649	.5012612	.5012247	9.629426	.5212969	.5092545
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5232187	9.624850	.5001664	5.725262	.5113704	.2518290
Stddev	.0011146	.011040	.0011106	.015310	.0014715	.0003394
%RSD	.2130196	.1147005	.2220530	.2674162	.2877460	.1347842
#1	.5238557	9.635096	.4996880	5.721369	.5130286	.2514867
#2	.5219317	9.626294	.5014360	5.742143	.5108624	.2521655
#3	.5238685	9.613159	.4993751	5.712274	.5102203	.2518350
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.445996	.4797779	1.019476	9.362123	2.404694	2.467666
Stddev	.014065	.0002580	.002622	.040718	.007152	.005646
%RSD	.1489008	.0537834	.2571637	.4349183	.2974192	.2287982
#1	9.460425	.4794910	1.020047	9.397177	2.399253	2.464434
#2	9.432326	.4799911	1.016616	9.317460	2.412795	2.464379
#3	9.445237	.4798516	1.021765	9.371732	2.402034	2.474186

Sample Name: ICV01 Acquired: 3/4/2025 10:07:56 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	2.399562	2.328422	F 2.155720	2.305047	2.285707	2.305173
Stddev	.001741	.005474	.012311	.010096	.001673	.004738
%RSD	.0725680	.2350872	.5710884	.4379895	.0731769	.2055479
#1	2.398336	2.329086	2.165686	2.295324	2.287005	2.300841
#2	2.398796	2.333533	2.141957	2.304338	2.283819	2.310233
#3	2.401555	2.322646	2.159515	2.315478	2.286297	2.304446

Elem	Sr4077
Units	ppm
Avg	2.442703
Stddev	.009919
%RSD	.4060516
#1	2.440802
#2	2.433873
#3	2.453435

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3621.429	79511.59	15879.46	3318.432	4845.662
Stddev	11.565	66.43	30.84	2.779	12.990
%RSD	.3193550	.0835532	.1942106	.0837554	.2680779
#1	3618.378	79516.87	15896.98	3321.218	4834.808
#2	3634.214	79575.22	15843.85	3315.660	4860.055
#3	3611.695	79442.67	15897.54	3318.417	4842.122

Sample Name: LLICV01 Acquired: 3/4/2025 10:13:24 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0196137	.0393168	.0118805	.0177476	.0495485	.1038287	.0930754
Stddev	.0005294	.0005008	.0006302	.0001157	.0011962	.0036766	.0003844
%RSD	2.698942	1.273619	5.304867	.6517297	2.414127	3.541014	.4129743
#1	.0199673	.0390393	.0125470	.0176718	.0487714	.1006403	.0926719
#2	.0198688	.0390163	.0118003	.0176903	.0509260	.1029953	.0931170
#3	.0190051	.0398949	.0112942	.0178808	.0489482	.1078505	.0934373
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057287	.0059297	1.959092	.0100002	.0292482	.0224955	.1006772
Stddev	.0001173	.0000966	.007537	.0003115	.0000383	.0002509	.0017342
%RSD	2.047767	1.628635	.3847435	3.114576	.1308376	1.115103	1.722569
#1	.0056297	.0058427	1.958984	.0098477	.0292043	.0226162	.1026185
#2	.0056981	.0060336	1.951610	.0097944	.0292659	.0222071	.1001322
#3	.0058583	.0059127	1.966683	.0103585	.0292744	.0226631	.0992810
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0208632	2.066838	.0391488	.0103759	1.920700	.0385929	.0423842
Stddev	.0000657	.008109	.0002860	.0002096	.013990	.0008027	.0003662
%RSD	.3149845	.3923239	.7305889	2.019554	.7284014	2.079836	.8640014
#1	.0208071	2.061547	.0388490	.0106026	1.925620	.0380704	.0427615
#2	.0208471	2.062792	.0391787	.0103358	1.931565	.0381912	.0423608
#3	.0209355	2.076173	.0394187	.0101893	1.904914	.0395171	.0420302
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.904404	.1050801	.2049509	.0387863	.0389023	.3696004	.0188447
Stddev	.007819	.0009913	.0013261	.0004434	.0004470	.0024935	.0008273
%RSD	.4105601	.9434137	.6470525	1.143048	1.148969	.6746355	4.390193
#1	1.911710	.1057272	.2040002	.0383202	.0384072	.3710606	.0188675
#2	1.905345	.1055744	.2043868	.0392027	.0392762	.3710193	.0180061
#3	1.896157	.1039388	.2064659	.0388359	.0390235	.3667213	.0196603

Sample Name: LLICV01 Acquired: 3/4/2025 10:13:24 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0170165	.0195929	.0201245
Stddev	.0005396	.0003067	.0000484
%RSD	3.170819	1.565104	.2407636
#1	.0164544	.0195413	.0201430
#2	.0170651	.0193153	.0200696
#3	.0175302	.0199221	.0201611

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3739.660	80687.90	16352.12	3374.718	5186.922
Stddev	17.859	367.89	43.74	20.078	14.869
%RSD	.4775675	.4559403	.2674769	.5949608	.2866620
#1	3754.822	80302.34	16367.79	3355.023	5201.112
#2	3744.185	80726.25	16385.87	3373.974	5188.195
#3	3719.973	81035.12	16302.71	3395.159	5171.457

Sample Name: ICB01 Acquired: 3/4/2025 10:17:41 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	1
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	2
Avg	-.002537	.0000601	-.000776	-.001383	-.000435	-.003585	-.002999	3
Stddev	.000609	.0009127	.000532	.003523	.000626	.002197	.000388	4
%RSD	24.01797	1517.709	68.61341	254.7050	143.9564	61.27544	12.94858	5
#1	-.002407	-.000904	-.000243	-.005238	.000227	-.001290	-.002564	7
#2	-.002002	.000174	-.000777	-.000579	-.001017	-.003797	-.003310	8
#3	-.003200	.000911	-.001308	.001668	-.000515	-.005668	-.003123	9
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	10
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	11
Avg	-.000020	.0000574	-.000281	.0002577	.0000856	-.000167	.0007043	12
Stddev	.000101	.0000410	.003595	.0002403	.0001103	.000106	.0031718	13
%RSD	509.7511	71.46216	1278.705	93.27476	128.9092	63.80500	450.3547	14
#1	-.000103	.0000908	-.001601	.0005270	.0000835	-.000208	.0007221	15
#2	-.000049	.0000116	-.003030	.0000652	-.000024	-.000246	.0038672	16
#3	.000093	.0000699	.003787	.0001808	.000197	-.000046	-.002476	17
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138	18
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	.0001944	-.005051	.0003592	-.000184	-.014639	-.000604	-.000410	
Stddev	.0000293	.008457	.0000856	.000116	.005523	.000585	.000211	
%RSD	15.07242	167.4357	23.83234	63.21538	37.72597	96.80688	51.52146	
#1	.0001630	-.011101	.0003740	-.000146	-.015555	.000041	-.000544	
#2	.0002211	-.008664	.0004365	-.000314	-.008716	-.000752	-.000166	
#3	.0001992	.004612	.0002672	-.000091	-.019647	-.001100	-.000520	
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774	
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	.0018736	-.003182	-.000069	.0001936	.0001317	.0026742	.0025821	
Stddev	.0059023	.000235	.000081	.0002683	.0003846	.0063542	.0023856	
%RSD	315.0289	7.373185	117.2007	138.5781	291.9458	237.6092	92.39127	
#1	-.000474	-.002933	-.000083	.0004460	.0001846	-.001980	.0050747	
#2	.008588	-.003399	.000018	.0002231	-.000277	.009914	.0023514	
#3	-.002494	-.003214	-.000143	-.000088	.000487	.000089	.0003202	

Sample Name: ICB01 Acquired: 3/4/2025 10:17:41 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.004314	-.000448	.0000357		
Stddev	.000897	.000184	.0000504		
%RSD	20.80195	41.07385	141.2935		
#1	-.004898	-.000327	.0000560		
#2	-.003281	-.000660	.0000728		
#3	-.004765	-.000357	-.000022		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3690.775	80901.53	16316.51	3404.946	5180.477
Stddev	13.512	100.84	53.81	5.459	8.306
%RSD	.3660985	.1246394	.3297819	.1603217	.1603391
#1	3695.780	81017.04	16367.04	3405.304	5181.752
#2	3701.071	80856.43	16322.56	3410.218	5188.072
#3	3675.475	80831.11	16259.93	3399.318	5171.607

Sample Name: CRI01 Acquired: 3/4/2025 10:22:01 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0206570	.0400119	.0117090	.0189150	.0510923	.1028165	.0884718
Stddev	.0012633	.0006646	.0001475	.0010022	.0008242	.0006474	.0006359
%RSD	6.115555	1.661043	1.259793	5.298195	1.613090	.6296938	.7187135
#1	.0210545	.0392651	.0118014	.0198034	.0501919	.1020979	.0877747
#2	.0192428	.0405384	.0117866	.0178286	.0518093	.1029970	.0890200
#3	.0216738	.0402321	.0115389	.0191131	.0512759	.1033545	.0886206
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060486	.0059671	1.959302	.0105798	.0294003	.0227379	.0952908
Stddev	.0000819	.0000945	.001876	.0003197	.0001457	.0002569	.0030526
%RSD	1.353328	1.582965	.0957273	3.021455	.4957022	1.129815	3.203498
#1	.0060232	.0058581	1.958760	.0102131	.0292987	.0229106	.0920580
#2	.0061402	.0060253	1.961389	.0107269	.0293349	.0224426	.0956906
#3	.0059825	.0060180	1.957757	.0107994	.0295673	.0228603	.0981239
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0204553	2.078586	.0397264	.0101307	1.866662	.0377643	.0424939
Stddev	.0001610	.021130	.0002804	.0003363	.006037	.0007388	.0002137
%RSD	.7872972	1.016546	.7059110	3.319945	.3234001	1.956408	.5028194
#1	.0205786	2.054196	.0395574	.0097831	1.866798	.0369990	.0426077
#2	.0202731	2.090236	.0395717	.0104546	1.860559	.0384734	.0426265
#3	.0205142	2.091328	.0400501	.0101545	1.872630	.0378206	.0422474
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.861432	.0983879	.2066011	.0386291	.0383668	.3609821	.0207630
Stddev	.029008	.0012157	.0003048	.0007197	.0006283	.0058786	.0021327
%RSD	1.558356	1.235576	.1475048	1.863019	1.637634	1.628504	10.27186
#1	1.893813	.0974940	.2065230	.0379417	.0386363	.3617305	.0184882
#2	1.837823	.0997722	.2063430	.0385685	.0388155	.3547651	.0227174
#3	1.852659	.0978977	.2069372	.0393772	.0376487	.3664507	.0210833

Sample Name: CRI01 Acquired: 3/4/2025 10:22:01 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077		
Units	ppm	ppm	ppm		
Avg	.0174460	.0169076	.0208101		
Stddev	.0052014	.0007574	.0000714		
%RSD	29.81408	4.479724	.3432195		
#1	.0217553	.0175051	.0207343		
#2	.0116683	.0171620	.0208762		
#3	.0189143	.0160558	.0208198		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3670.505	80256.30	15822.61	3378.043	5101.806
Stddev	1.142	159.94	98.32	9.284	1.941
%RSD	.0311255	.1992855	.6214078	.2748462	.0380453
#1	3670.088	80439.19	15915.01	3380.549	5103.218
#2	3669.630	80187.08	15719.28	3367.763	5102.607
#3	3671.798	80142.62	15833.54	3385.817	5099.592

Sample Name: ICSA01 Acquired: 3/4/2025 10:26:18 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0026763	.0098688	.0051971	-.011071	-.001666	251.3930
Stddev	.0022083	.0014363	.0013037	.003241	.002710	1.6235
%RSD	82.51217	14.55427	25.08477	29.27696	162.6410	.6458138
#1	.0002455	.0087866	.0056986	-.009863	-.000940	252.1223
#2	.0045587	.0114983	.0061755	-.008606	-.004666	249.5327
#3	.0032248	.0093214	.0037171	-.014742	.000606	252.5240
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014623	-.000075	-.001362	232.3960	.0581115	.0018543
Stddev	.0001968	.000075	.000120	.6820	.0002460	.0005568
%RSD	13.46104	99.66675	8.833774	.2934780	.4233989	30.02668
#1	.0016120	.000008	-.001417	231.6632	.0583956	.0021702
#2	.0012393	-.000096	-.001445	232.5125	.0579707	.0012114
#3	.0015356	-.000137	-.001224	233.0123	.0579683	.0021812
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004423	100.4836	.0044058	254.7604	.0030350	.0010751
Stddev	.000562	.2941	.0003645	1.5601	.0002235	.0001128
%RSD	12.71206	.2927195	8.272114	.6123652	7.365190	10.49329
#1	-.004647	100.4402	.0043509	253.1874	.0032271	.0009759
#2	-.004838	100.7970	.0040720	254.7865	.0030884	.0011979
#3	-.003783	100.2136	.0047946	256.3072	.0027896	.0010516
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0391611	.0021130	.0049460	.0342931	F .1154519	.0007104
Stddev	.0069141	.0007174	.0000596	.0081711	.0020374	.0004570
%RSD	17.65548	33.95135	1.204742	23.82733	1.764697	64.31966
#1	.0341285	.0019414	.0049677	.0340126	.1177018	.0012380
#2	.0363101	.0029006	.0049916	.0426008	.1149225	.0004547
#3	.0470448	.0014970	.0048785	.0262658	.1137316	.0004387

Sample Name: ICSA01 Acquired: 3/4/2025 10:26:18 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003506	-.001397	.0161530	.0054279	-.019370	.0036656
Stddev	.000713	.000371	.0044501	.0058584	.005916	.0002337
%RSD	20.33848	26.54852	27.54980	107.9324	30.54296	6.375608
#1	-.004274	-.001715	.0112440	.0118334	-.025886	.0038878
#2	-.002865	-.001486	.0172924	.0041087	-.014334	.0034219
#3	-.003378	-.000990	.0199228	.0003415	-.017892	.0036871

Elem	Sr4077
Units	ppm
Avg	F .1020116
Stddev	.0001799
%RSD	.1763197
#1	.1018326
#2	.1020098
#3	.1021923

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3267.435	69617.59	15433.83	2953.149	4050.707
Stddev	7.359	182.60	83.60	9.077	3.756
%RSD	.2252231	.2622960	.5416859	.3073535	.0927303
#1	3270.117	69826.98	15512.87	2959.724	4053.237
#2	3259.111	69491.43	15442.31	2942.793	4046.391
#3	3273.077	69534.37	15346.31	2956.929	4052.494

Sample Name: ICSAB01 Acquired: 3/4/2025 10:30:42 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.1109820	.1038878	.0535640	.0359179	.6110925	246.3041
Stddev	.0047164	.0011468	.0018112	.0022814	.0015567	.9318
%RSD	4.249676	1.103876	3.381311	6.351723	.2547408	.3783010
#1	.1061500	.1037122	.0554093	.0374216	.6108800	246.4617
#2	.1112224	.1028390	.0534938	.0332928	.6096530	247.1470
#3	.1155736	.1051123	.0517890	.0370393	.6127446	245.3036
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4783742	.4750411	1.000418	229.4525	.5631490	.5084386
Stddev	.0011546	.0011157	.000277	.2383	.0008524	.0006080
%RSD	.2413657	.2348573	.0277052	.1038393	.1513552	.1195721
#1	.4771969	.4762138	1.000268	229.7261	.5621657	.5077999
#2	.4784210	.4749163	1.000738	229.2903	.5636776	.5085056
#3	.4795047	.4739930	1.000249	229.3412	.5636037	.5090103
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4913030	99.87664	.4693181	251.0349	1.000964	.2189901
Stddev	.0005324	.39734	.0011787	.3313	.000282	.0007765
%RSD	.1083652	.3978331	.2511444	.1319756	.0281795	.3546017
#1	.4915983	99.43249	.4706407	251.4084	1.000639	.2182745
#2	.4906884	99.99907	.4683788	250.9198	1.001144	.2198159
#3	.4916224	100.1984	.4689349	250.7765	1.001109	.2188801
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0458826	.4662179	1.061484	-.016257	F .6981576	F .6493710
Stddev	.0101523	.0010072	.002121	.008591	.0016715	.0010462
%RSD	22.12661	.2160359	.1998195	52.84773	.2394148	.1611106
#1	.0343764	.4659072	1.063239	-.011288	.6998634	.6486585
#2	.0496931	.4654027	1.059127	-.011305	.6965227	.6505722
#3	.0535782	.4673439	1.062086	-.026177	.6980867	.6488825

Sample Name: ICSAB01 Acquired: 3/4/2025 10:30:42 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	F .6490502	F .6065763	F .5955009	F .0047542	F -.022851	F .0026844
Stddev	.0008330	.0011807	.0055467	.0034379	.005076	.0004629
%RSD	.1283361	.1946410	.9314362	72.31250	22.21452	17.24559
#1	.6492272	.6071530	.5890979	.0072927	-.023090	.0030160
#2	.6497804	.6052182	.5985707	.0008418	-.027803	.0021555
#3	.6481429	.6073578	.5988341	.0061279	-.017659	.0028816

Elem	Sr4077
Units	ppm
Avg	F .0993015
Stddev	.0001517
%RSD	.1527967
#1	.0994471
#2	.0993131
#3	.0991443

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3256.854	70065.75	15698.69	2964.718	4036.268
Stddev	1.313	159.47	24.70	6.034	1.992
%RSD	.0403282	.2276048	.1573383	.2035217	.0493587
#1	3255.457	70243.52	15684.88	2968.264	4038.251
#2	3257.041	70018.47	15727.21	2968.140	4036.288
#3	3258.064	69935.27	15683.99	2957.751	4034.266

Sample Name: ICSADLX20 Acquired: 3/4/2025 10:34:53 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSADLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001969	-.000016	-.000081	-.000765	-.000037	13.80075	-.002029
Stddev	.002506	.001042	.001003	.001263	.000922	.17271	.000323
%RSD	127.3152	6487.061	1244.344	165.2353	2480.285	1.251427	15.89899
#1	-.000818	.000925	.001035	-.001608	-.001060	13.95619	-.001806
#2	-.004844	-.001136	-.000371	.000688	.000729	13.83124	-.002399
#3	-.000244	.000163	-.000907	-.001374	.000219	13.61483	-.001883
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000019	-.000201	13.27336	.0036415	.0000648	-.000296	5.527154
Stddev	.000036	.000084	.15871	.0002247	.0002717	.000445	.078895
%RSD	185.9879	41.70391	1.195679	6.171564	418.9870	150.5671	1.427401
#1	-.000016	-.000159	13.43128	.0038445	-.000221	.000166	5.602597
#2	-.000057	-.000146	13.27491	.0034000	.000096	-.000723	5.533655
#3	.000015	-.000297	13.11388	.0036801	.000320	-.000331	5.445210
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003369	13.88583	.0004398	-.000164	-.008731	-.000789	-.000185
Stddev	.0004527	.14781	.0003058	.000456	.002726	.000393	.000178
%RSD	134.4013	1.064485	69.53632	278.7976	31.21641	49.82475	96.24439
#1	.0004146	14.04035	.0007930	-.000204	-.005736	-.000947	-.000303
#2	.0007457	13.87137	.0002610	.000311	-.011065	-.000342	-.000271
#3	-.000150	13.74579	.0002655	-.000598	-.009393	-.001079	.000020
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.045186	-.000039	-.000221	-.000468	-.000133	.0027132	.0001158
Stddev	.036694	.000727	.000155	.000676	.000468	.0015179	.0021812
%RSD	81.20729	1864.879	70.20986	144.4150	350.8146	55.94513	1884.271
#1	-.052204	-.000566	-.000046	-.000987	-.000083	.0012456	-.002132
#2	-.077863	-.000341	-.000342	.000297	-.000625	.0042768	.002224
#3	-.005489	.000790	-.000274	-.000715	.000307	.0026171	.000256

Sample Name: ICSADLX20 Acquired: 3/4/2025 10:34:53 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSADLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.004133	-.002353	.0057507
Stddev	.001998	.000863	.0000671
%RSD	48.33657	36.66880	1.167558

#1	-.005574	-.002246	.0058096
#2	-.001853	-.003265	.0057649
#3	-.004972	-.001549	.0056776

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3651.718	78016.47	16095.66	3325.851	4950.611
Stddev	16.107	188.62	33.29	7.927	14.335
%RSD	.4410852	.2417746	.2068346	.2383461	.2895585

#1	3667.421	77990.17	16057.51	3333.814	4959.802
#2	3652.500	78216.86	16118.86	3325.777	4957.938
#3	3635.235	77842.37	16110.60	3317.960	4934.094

Sample Name: ICSABDLX20 Acquired: 3/4/2025 10:39:09 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSABDLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	1
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	2
Avg	.0049082	.0044132	.0014857	.0025543	.0291656	12.22308	.0197164	3
Stddev	.0020681	.0013268	.0010461	.0010666	.0009949	.03244	.0002486	4
%RSD	42.13627	30.06470	70.40812	41.75520	3.411188	.2654027	1.260698	5
#1	.0049430	.0029470	.0003053	.0036699	.0287965	12.25872	.0198473	7
#2	.0028229	.0055312	.0018540	.0015448	.0284080	12.19527	.0194297	8
#3	.0069587	.0047614	.0022979	.0024482	.0302923	12.21526	.0198721	9
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	10
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	11
Avg	.0247432	.0493628	11.85020	.0295047	.0248284	.0262291	4.880649	12
Stddev	.0000722	.0001177	.03318	.0000677	.0001881	.0003737	.027768	13
%RSD	.2919897	.2385074	.2800051	.2292913	.7575054	1.424664	.5689506	14
#1	.0247316	.0493376	11.81742	.0295521	.0246118	.0266579	4.852712	15
#2	.0248206	.0492598	11.88377	.0295347	.0249494	.0260557	4.880988	16
#3	.0246775	.0494911	11.84940	.0294272	.0249242	.0259735	4.908246	17
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138	18
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	.0245124	12.28232	.0501741	.0105583	-.016454	.0236230	.0526325	
Stddev	.0001405	.03480	.0001127	.0002638	.001487	.0010583	.0003269	
%RSD	.5729776	.2833019	.2246889	2.498343	9.036786	4.480002	.6210737	
#1	.0243687	12.25171	.0501658	.0105161	-.015519	.0245936	.0525217	
#2	.0246493	12.32016	.0500657	.0108407	-.018168	.0224947	.0523754	
#3	.0245191	12.27508	.0502907	.0103182	-.015673	.0237806	.0530004	
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774	
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	-.041847	.0286564	.0328997	.0305559	.0311008	.0274804	-.000642	
Stddev	.015637	.0006259	.0003249	.0008755	.0000646	.0110704	.001172	
%RSD	37.36719	2.184284	.9874224	2.865133	.2076622	40.28469	182.5892	
#1	-.057676	.0279528	.0325315	.0297773	.0310789	.0147026	-.000809	
#2	-.026409	.0291515	.0330217	.0303870	.0311735	.0335538	.000605	
#3	-.041457	.0288647	.0331459	.0315036	.0310500	.0341849	-.001722	

Sample Name: ICSABDLX20 Acquired: 3/4/2025 10:39:09 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSABDLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077		
Units	ppm	ppm	ppm		
Avg	-.004535	-.002741	.0051912		
Stddev	.005174	.000389	.0000372		
%RSD	114.0731	14.19916	.7174622		
#1	-.009535	-.002806	.0051766		
#2	.000796	-.003094	.0052335		
#3	-.004868	-.002324	.0051635		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3614.542	77989.49	16175.98	3329.068	4908.262
Stddev	9.686	41.01	55.04	12.055	6.315
%RSD	.2679718	.0525798	.3402879	.3621129	.1286662
#1	3607.343	77987.74	16168.69	3315.148	4903.990
#2	3625.554	78031.34	16124.94	3336.058	4915.516
#3	3610.729	77949.38	16234.31	3335.997	4905.278

Sample Name: CCV01 Acquired: 3/4/2025 10:43:23 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	5.146572	5.205873	5.099886	5.184297	5.194684	10.19801	9.918688
Stddev	.027180	.048788	.014736	.014220	.019511	.01212	.029370
%RSD	.5281150	.9371652	.2889529	.2742805	.3755996	.1188097	.2961035
#1	5.157554	5.238662	5.106233	5.178566	5.197228	10.21189	9.903004
#2	5.115619	5.149806	5.083039	5.173838	5.174025	10.19260	9.952570
#3	5.166542	5.229151	5.110385	5.200488	5.212798	10.18955	9.900490
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2519806	2.539138	24.77893	1.043963	2.531666	1.290931	5.106353
Stddev	.0019288	.006071	.02565	.002563	.006260	.004120	.015687
%RSD	.7654393	.2390942	.1035066	.2455080	.2472782	.3191577	.3071987
#1	.2501114	2.539385	24.74952	1.046005	2.531100	1.289843	5.112079
#2	.2539639	2.532947	24.79664	1.041087	2.525708	1.287464	5.088608
#3	.2518664	2.545081	24.79064	1.044797	2.538190	1.295486	5.118372
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.429945	24.78580	2.547640	1.282293	26.23315	2.509843	2.608937
Stddev	.004527	.10140	.005585	.001887	.18619	.000907	.002921
%RSD	.1862816	.4091029	.2192139	.1471830	.7097439	.0361230	.1119734
#1	2.427326	24.68525	2.548633	1.283807	26.42343	2.509618	2.605662
#2	2.435171	24.88803	2.541625	1.280179	26.05134	2.509071	2.611273
#3	2.427336	24.78412	2.552661	1.282894	26.22468	2.510842	2.609877
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.72635	4.938084	5.162475	5.113967	4.952197	5.260554	5.029628
Stddev	.14172	.022718	.016760	.018181	.009768	.020330	.020559
%RSD	.5508777	.4600660	.3246545	.3555077	.1972430	.3864584	.4087483
#1	25.87200	4.912270	5.164564	5.113732	4.946515	5.284001	5.043336
#2	25.58892	4.955037	5.144768	5.095905	4.946600	5.247837	5.005990
#3	25.71813	4.946944	5.178093	5.132264	4.963476	5.249824	5.039559

Sample Name: CCV01 Acquired: 3/4/2025 10:43:23 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	5.020646	4.960112	5.294841
Stddev	.019879	.013626	.019849
%RSD	.3959482	.2747207	.3748705
#1	5.026382	4.971383	5.296872
#2	4.998529	4.944969	5.313596
#3	5.037026	4.963985	5.274054

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3484.910	74560.83	15700.20	3188.068	4534.723
Stddev	5.295	190.78	76.30	8.498	5.861
%RSD	.1519529	.2558758	.4859840	.2665489	.1292502
#1	3479.304	74477.39	15788.23	3186.622	4528.009
#2	3489.827	74779.12	15659.38	3197.196	4538.818
#3	3485.598	74425.99	15652.99	3180.387	4537.342

Sample Name: CCB01 Acquired: 3/4/2025 10:47:34 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.000158	-.000945	-.000435	-.002186	-.000062	-.001757	-.003152
Stddev	.001335	.000818	.001156	.000137	.000993	.006697	.000073
%RSD	842.9033	86.63221	265.9640	6.271029	1601.687	381.2887	2.308010
#1	.000156	-.001115	-.001764	-.002123	.000101	-.001097	-.003225
#2	.000991	-.000054	.000337	-.002343	-.001127	.004587	-.003080
#3	-.001623	-.001664	.000123	-.002092	.000840	-.008759	-.003151
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000032	.0000290	-.001988	.0001562	.0001270	.0001291	-.003073
Stddev	.000046	.0000761	.003690	.0002745	.0000698	.0000379	.002793
%RSD	142.9196	262.4924	185.6065	175.6945	54.98491	29.34732	90.89842
#1	-.000013	.0000944	-.001293	.0001517	.0000717	.0000930	-.005094
#2	-.000085	.0000472	-.005976	.0004329	.0001039	.0001686	-.004239
#3	.000001	-.000055	.001305	-.000116	.0002055	.0001259	.000114
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000916	.0073967	.0004311	.0001082	-.017088	-.000072	-.000301
Stddev	.0000879	.0125684	.0001710	.0001419	.004106	.000965	.000078
%RSD	95.95434	169.9179	39.66723	131.1142	24.02720	1333.939	25.74849
#1	.0001242	-.001108	.0002668	.0001624	-.021174	-.000548	-.000387
#2	-.000008	.021833	.0006081	-.000053	-.012963	.001038	-.000281
#3	.000158	.001465	.0004184	.000215	-.017126	-.000707	-.000236
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.035554	.0047601	-.000155	.0003032	.0001240	.0027318	.0014088
Stddev	.012583	.0002902	.000154	.0003564	.0002858	.0067375	.0016708
%RSD	35.38982	6.096770	98.86824	117.5723	230.5669	246.6333	118.5958
#1	-.027352	.0044277	-.000322	.0006603	.0004358	.0032288	-.000517
#2	-.050041	.0049629	-.000126	.0003017	.0000615	-.004240	.002471
#3	-.029270	.0048896	-.000019	-.000053	-.000125	.009207	.002273

Sample Name: CCB01 Acquired: 3/4/2025 10:47:34 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003039	-.001783	.0000470		
Stddev	.001573	.000763	.0000251		
%RSD	51.75305	42.76999	53.36930		
#1	-.004072	-.002472	.0000550		
#2	-.001229	-.000964	.0000189		
#3	-.003816	-.001913	.0000671		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3714.910	80901.12	16462.86	3411.425	5265.630
Stddev	2.630	153.17	101.29	6.809	2.451
%RSD	.0707991	.1893246	.6152713	.1995927	.0465389
#1	3716.274	80747.39	16579.01	3411.410	5267.919
#2	3716.577	81053.71	16392.88	3404.623	5263.045
#3	3711.878	80902.26	16416.69	3418.241	5265.926

Sample Name: Q1398-06 Acquired: 3/4/2025 10:51:54 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0026635	-.006181	.0856138	.0022175	.0033577	.0625327	.6655432
Stddev	.0012443	.001024	.0002341	.0016155	.0008331	.0017774	.0008894
%RSD	46.71770	16.56698	.2733984	72.85320	24.81082	2.842323	.1336381
#1	.0037484	-.007352	.0853862	.0037531	.0037094	.0623659	.6650197
#2	.0013052	-.005736	.0856014	.0023669	.0039572	.0608445	.6650397
#3	.0029370	-.005454	.0858538	.0005324	.0024064	.0643875	.6665701
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000258	.0085896	10.35091	.0120742	-.000080	.1479928	-.005049
Stddev	.0000278	.0000453	.02578	.0000271	.000255	.0003802	.002574
%RSD	107.6982	.5279198	.2490646	.2248601	320.2822	.2568891	50.97994
#1	.0000214	.0086300	10.32166	.0120430	-.000303	.1477459	-.002466
#2	.0000005	.0085982	10.36074	.0120871	.000198	.1478019	-.007614
#3	.0000555	.0085405	10.37032	.0120924	-.000134	.1484306	-.005068
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0761074	1.506810	.0061448	-.000208	385.1679	-.000874	2.366409
Stddev	.0002419	.017415	.0001515	.000074	1.5553	.000877	.009876
%RSD	.3178400	1.155755	2.465734	35.57725	.4037930	100.3226	.4173278
#1	.0758286	1.492228	.0063173	-.000251	384.3885	-.000313	2.366155
#2	.0762307	1.502110	.0060837	-.000249	386.9588	-.001884	2.356663
#3	.0762627	1.526093	.0060334	-.000122	384.1565	-.000425	2.376409
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.519474	.0861550	-.000398	.0001757	.0002246	.8121820	.0179095
Stddev	.020585	.0008671	.000140	.0006942	.0005363	.0035138	.0015227
%RSD	1.354731	1.006459	35.11367	395.0636	238.7756	.4326364	8.502423
#1	1.531261	.0855595	-.000350	-.000081	-.000104	.8118832	.0163187
#2	1.531455	.0857556	-.000555	.000962	-.000066	.8158357	.0180561
#3	1.495705	.0871498	-.000288	-.000354	.000844	.8088272	.0193536

Sample Name: Q1398-06 Acquired: 3/4/2025 10:51:54 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.4437252	-.005120	.0855403
Stddev	.0044355	.000104	.0001786
%RSD	.9996175	2.039643	.2088401
#1	.4405038	-.005112	.0855083
#2	.4418875	-.005228	.0853797
#3	.4487842	-.005019	.0857327

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3351.499	73334.14	16298.72	3070.806	4347.387
Stddev	6.477	182.91	119.52	4.091	10.547
%RSD	.1932443	.2494164	.7332849	.1332252	.2426145
#1	3354.979	73222.33	16403.62	3069.886	4351.741
#2	3355.492	73234.88	16323.93	3075.279	4355.061
#3	3344.027	73545.22	16168.61	3067.253	4335.360

Sample Name: Q1398-07 Acquired: 3/4/2025 10:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.001640	-.005596	.0914348	.0010201	.0016833	.0235190	.4383987
Stddev	.001085	.001217	.0005198	.0037935	.0013424	.0032837	.0019191
%RSD	66.16962	21.75355	.5684879	371.8696	79.74908	13.96206	.4377426
#1	-.002314	-.006530	.0914933	-.002429	.0001889	.0269993	.4361855
#2	-.002216	-.004219	.0908883	.000406	.0020739	.0230819	.4394093
#3	-.000388	-.006038	.0919229	.005083	.0027871	.0204756	.4396012
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000001	.0009428	98.08882	-.000167	-.000254	.0282624	-.001214
Stddev	.000015	.0000868	.28406	.000159	.000181	.0003084	.003434
%RSD	1606.419	9.207227	.2895921	95.18745	71.28107	1.091337	282.8655
#1	.000002	.0008519	97.83013	-.000337	-.000103	.0279362	.001350
#2	-.000017	.0009517	98.04353	-.000024	-.000205	.0285493	-.005115
#3	.000012	.0010248	98.39281	-.000138	-.000455	.0283017	.000123
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1170378	3.503901	.0038907	.0000935	349.0814	.0000926	.2419568
Stddev	.0002364	.010079	.0001192	.0001892	.2507	.0011255	.0009879
%RSD	.2019738	.2876426	3.064223	202.4583	.0718079	1215.322	.4082888
#1	.1167984	3.499720	.0040140	.0003120	348.8761	-.001207	.2408520
#2	.1172711	3.496585	.0037760	-.000016	349.0073	.000717	.2427550
#3	.1170439	3.515397	.0038822	-.000016	349.3608	.000767	.2422635
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.509028	.0606283	.0001536	-.002087	-.001933	2.794303	.0336614
Stddev	.029116	.0003382	.0001073	.000776	.000121	.012615	.0018857
%RSD	1.160448	.5578220	69.83650	37.18978	6.239770	.4514693	5.601846
#1	2.477399	.0603523	.0000657	-.002339	-.001800	2.781285	.0317452
#2	2.534715	.0610055	.0002731	-.002706	-.001962	2.795153	.0355149
#3	2.514969	.0605271	.0001220	-.001216	-.002036	2.806473	.0337241

Sample Name: Q1398-07 Acquired: 3/4/2025 10:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	1.147618	-.018506	.6139051
Stddev	.008760	.001420	.0014375
%RSD	.7632987	7.672372	.2341653
#1	1.140033	-.018188	.6126002
#2	1.145615	-.020058	.6136691
#3	1.157205	-.017272	.6154461

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3266.581	71240.84	16119.59	2985.956	4217.802
Stddev	11.819	149.27	52.23	4.041	15.277
%RSD	.3618072	.2095311	.3239937	.1353449	.3622075
#1	3277.692	71316.87	16136.11	2990.100	4229.965
#2	3267.887	71336.78	16161.55	2982.026	4222.785
#3	3254.163	71068.85	16061.09	2985.741	4200.655

Sample Name: Q1453-01 Acquired: 3/4/2025 11:00:43 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0064246	-.006345	-.001451	.0010005	.0004408	.0430145	.2855456
Stddev	.0007078	.000814	.000885	.0003151	.0015257	.0027191	.0010775
%RSD	11.01651	12.82213	60.95225	31.49983	346.1565	6.321292	.3773546
#1	.0071757	-.005864	-.002427	.0013601	-.000827	.0454861	.2850633
#2	.0057701	-.005887	-.001227	.0008687	.000016	.0434554	.2847935
#3	.0063281	-.007284	-.000701	.0007726	.002134	.0401019	.2867801
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001878	.0004080	12.61711	.0001896	.0038039	.0015031	.0126755
Stddev	.0000171	.0000367	.03124	.0003421	.0000572	.0005918	.0014753
%RSD	9.098491	8.998266	.2475858	180.4697	1.503408	39.37038	11.63863
#1	.0001859	.0004099	12.62526	.0002665	.0038476	.0018411	.0110051
#2	.0002057	.0003703	12.58261	.0004867	.0038250	.0018484	.0138000
#3	.0001717	.0004437	12.64347	-.000184	.0037392	.0008198	.0132213
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1038473	3.361360	.0061231	-.000019	316.9786	-.000492	.3098208
Stddev	.0004897	.020049	.0001446	.000165	1.5965	.000462	.0015725
%RSD	.4715898	.5964563	2.361021	882.3497	.5036735	93.90561	.5075458
#1	.1043765	3.352435	.0059644	.000127	318.2593	-.000927	.3085574
#2	.1034101	3.347323	.0062472	-.000197	315.1899	-.000007	.3093231
#3	.1037555	3.384322	.0061578	.000014	317.4867	-.000543	.3115820
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.492961	.2293516	.0006580	.0003991	.0002986	4.697995	.0845329
Stddev	.028043	.0017444	.0001769	.0004072	.0003279	.009085	.0021743
%RSD	.4318978	.7605980	26.88011	102.0202	109.8047	.1933718	2.572179
#1	6.467089	.2312908	.0006006	.0007997	.0004847	4.694803	.0831799
#2	6.489033	.2279102	.0005170	.0004120	-.000080	4.690937	.0870410
#3	6.522761	.2288539	.0008565	-.000014	.000491	4.708245	.0833779

Sample Name: Q1453-01 Acquired: 3/4/2025 11:00:43 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	1.803305	.0003385	.1284665
Stddev	.005396	.0004065	.0000929
%RSD	.2992504	120.1124	.0723294
#1	1.797085	.0003770	.1285593
#2	1.806092	-.000086	.1284669
#3	1.806737	.000724	.1283734

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3305.266	72178.01	16534.40	3051.381	4305.159
Stddev	14.347	116.94	48.35	7.492	17.038
%RSD	.4340759	.1620167	.2924327	.2455417	.3957614
#1	3315.423	72310.02	16478.59	3043.813	4314.626
#2	3311.523	72136.59	16563.54	3051.536	4315.361
#3	3288.853	72087.41	16561.08	3058.795	4285.489

Sample Name: Q1454-03DLX5 Acquired: 3/4/2025 11:05:07 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.001340	-.001265	.0104734	-.000962	.0007634	.0034174	-.006139
Stddev	.001346	.000548	.0004988	.001544	.0014055	.0028898	.000368
%RSD	100.4843	43.31556	4.762328	160.4482	184.1204	84.55981	5.999784
#1	-.000009	-.001127	.0105057	-.000222	-.000789	.0004264	-.006473
#2	-.002701	-.000800	.0109552	.000072	.001950	.0036318	-.005744
#3	-.001308	-.001870	.0099592	-.002737	.001129	.0061941	-.006199
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000046	.0002068	.0702634	.0001689	-.000168	.0110225	.0048453
Stddev	.000010	.0000552	.0014728	.0004612	.000131	.0002781	.0022657
%RSD	22.22708	26.68520	2.096098	273.0531	77.91431	2.523058	46.76027
#1	-.000048	.0001905	.0685832	.0001300	-.000311	.0107049	.0074535
#2	-.000056	.0002683	.0708754	.0006483	-.000053	.0112223	.0033637
#3	-.000035	.0001617	.0713315	-.000272	-.000140	.0111403	.0037188
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025337	.0117909	-.000095	.0004211	.2293271	-.000947	.1642040
Stddev	.0000818	.0024076	.000071	.0003692	.0200177	.000968	.0006941
%RSD	3.227894	20.41902	75.28100	87.65552	8.728862	102.1803	.4227139
#1	.0026103	.0144704	-.000168	.0000052	.2481338	-.002055	.1636253
#2	.0025432	.0110927	-.000025	.0007099	.2315616	-.000519	.1649736
#3	.0024476	.0098096	-.000092	.0005483	.2082860	-.000268	.1640132
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0475165	-.000222	.0004879	-.000344	.0002912	.0089828	.0523926
Stddev	.0101400	.000440	.0001493	.000354	.0002114	.0078784	.0028018
%RSD	21.33997	197.7942	30.59273	102.8626	72.58778	87.70488	5.347759
#1	.0585039	-.000694	.0005352	-.000393	.0000653	.0178448	.0499135
#2	.0455267	-.000151	.0003207	.000032	.0003241	.0027719	.0518319
#3	.0385189	.000178	.0006077	-.000670	.0004842	.0063318	.0554323

Sample Name: Q1454-03DLX5 Acquired: 3/4/2025 11:05:07 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.3173051	.0088008	.0002737
Stddev	.0023788	.0022968	.0000137
%RSD	.7496762	26.09761	5.008875
#1	.3145799	.0110687	.0002590
#2	.3183697	.0088577	.0002861
#3	.3189656	.0064761	.0002759

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3619.581	80181.15	17134.89	3313.185	5163.604
Stddev	7.619	281.07	59.31	1.130	12.371
%RSD	.2105019	.3505466	.3461369	.0341092	.2395863
#1	3612.231	79909.39	17198.61	3314.011	5149.712
#2	3619.069	80163.37	17081.29	3313.646	5167.668
#3	3627.443	80470.69	17124.78	3311.897	5173.432

Sample Name: Q1458-01 Acquired: 3/4/2025 11:09:26 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0649977	-.000935	.3767297	-.029218	.0003752	55.04531
Stddev	.0033573	.001432	.0024592	.004191	.0009999	.09490
%RSD	5.165195	153.2639	.6527840	14.34545	266.5297	.1724092
#1	.0688482	-.002124	.3753150	-.033074	-.000348	55.08544
#2	.0626836	-.001336	.3795693	-.024757	.001516	55.11355
#3	.0634611	.000656	.3753046	-.029824	-.000042	54.93693
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3557356	.0026909	.0120032	107.8074	.1904160	.1190047
Stddev	.0015137	.0001252	.0001879	.5328	.0002734	.0003886
%RSD	.4255193	4.653394	1.565555	.4942361	.1435703	.3265365
#1	.3542581	.0025518	.0118624	107.5014	.1907117	.1194459
#2	.3572832	.0027263	.0119307	108.4227	.1903638	.1187133
#3	.3556656	.0027947	.0122166	107.4982	.1901724	.1188550
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4768573	226.8058	1.736159	62.56607	.1739897	.0026025
Stddev	.0011740	.8493	.007791	.33772	.0003993	.0003340
%RSD	.2461983	.3744792	.4487216	.5397838	.2294935	12.83411
#1	.4755408	227.6579	1.731070	62.44390	.1736843	.0029292
#2	.4777955	226.8005	1.745128	62.94788	.1738433	.0022617
#3	.4772356	225.9592	1.732280	62.30643	.1744416	.0026167
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.397418	.1959799	.4217606	21.51958	.3006597	.0178438
Stddev	.009199	.0005114	.0014201	.10339	.0028175	.0001051
%RSD	.6583012	.2609676	.3367177	.4804545	.9371028	.5892930
#1	1.407134	.1965269	.4233127	21.63284	.3037555	.0177452
#2	1.388842	.1958992	.4214428	21.49564	.2999781	.0179545
#3	1.396279	.1955136	.4205262	21.43026	.2982456	.0178316

Sample Name: Q1458-01 Acquired: 3/4/2025 11:09:26 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0261825	4.215433	4.661928	F 13.09268	8.170911	.1566660
Stddev	.0001358	.017039	.018333	.01432	.007153	.0010945
%RSD	.5186070	.4041988	.3932527	.1093657	.0875369	.6986203
#1	.0260838	4.210179	4.682707	13.08949	8.179120	.1569725
#2	.0261263	4.234480	4.648034	13.08023	8.167597	.1575746
#3	.0263374	4.201640	4.655043	13.10833	8.166017	.1554509

Elem	Sr4077
Units	ppm
Avg	.1543167
Stddev	.0003118
%RSD	.2020210
#1	.1546762
#2	.1541521
#3	.1541217

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4787.466	105656.6	23548.57	4381.603	4261.746
Stddev	11.007	198.2	132.22	6.151	7.986
%RSD	.2299083	.1875742	.5614907	.1403777	.1873778
#1	4777.570	105454.7	23636.35	4382.987	4253.161
#2	4785.507	105664.1	23396.49	4386.944	4263.123
#3	4799.321	105850.9	23612.86	4374.878	4268.953

Sample Name: Q1458-03 Acquired: 3/4/2025 11:13:29 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003948	-.006596	.0057372	.0015251	-.000260	.1323184	.1802231
Stddev	.001878	.001136	.0027525	.0010433	.000176	.0030550	.0003912
%RSD	47.55477	17.22745	47.97721	68.40910	67.57600	2.308854	.2170404

#1	-.001823	-.005981	.0039671	.0007690	-.000189	.1338654	.1797716
#2	-.004641	-.005900	.0043361	.0027153	-.000460	.1342905	.1804404
#3	-.005381	-.007907	.0089084	.0010909	-.000130	.1287993	.1804574

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000268	.0002039	41.75248	.0001815	.0167969	.0157972	.0425755
Stddev	.0000371	.0000160	.09433	.0003173	.0002295	.0005426	.0040728
%RSD	138.6636	7.851511	.2259208	174.7809	1.366501	3.434479	9.566042

#1	-.000013	.0001950	41.64735	-.000145	.0166005	.0162756	.0449913
#2	.000060	.0002224	41.78040	.000202	.0167408	.0159082	.0378733
#3	.000034	.0001942	41.82970	.000488	.0170492	.0152077	.0448621

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4921439	7.760236	.0113632	-.000107	349.1856	-.000956	.0727653
Stddev	.0011902	.052768	.0003168	.000169	1.2081	.000139	.0004521
%RSD	.2418299	.6799776	2.787948	157.9156	.3459816	14.51345	.6212832

#1	.4915166	7.748795	.0116409	-.000228	349.8058	-.000895	.0724609
#2	.4935164	7.714126	.0114307	.000086	347.7933	-.000858	.0732848
#3	.4913985	7.817785	.0110181	-.000178	349.9576	-.001114	.0725503

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.831477	.0075819	.0000004	-.001948	-.001347	1.045848	.0075160
Stddev	.038921	.0006688	.0000874	.000556	.000555	.006485	.0005013
%RSD	1.374589	8.821154	21888.03	28.54999	41.19811	.6201129	6.669752

#1	2.789970	.0075055	-.000097	-.001341	-.001017	1.038797	.0080533
#2	2.867155	.0069546	.000026	-.002072	-.001036	1.047190	.0070608
#3	2.837306	.0082857	.000072	-.002432	-.001988	1.051558	.0074339

Sample Name: Q1458-03 Acquired: 3/4/2025 11:13:29 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.3745911	-.009853	.0747206
Stddev	.0028573	.001021	.0000961
%RSD	.7627827	10.36313	.1286576
#1	.3775771	-.009684	.0746173
#2	.3743135	-.008927	.0747369
#3	.3718827	-.010948	.0748075

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3292.328	72152.38	16274.59	3032.325	4259.331
Stddev	2.437	262.48	79.55	15.247	4.403
%RSD	.0740295	.3637839	.4888173	.5028197	.1033743
#1	3294.192	71850.36	16214.14	3027.120	4258.829
#2	3293.223	72325.38	16364.71	3020.362	4263.963
#3	3289.570	72281.40	16244.92	3049.493	4255.200

Sample Name: Q1456-02 Acquired: 3/4/2025 11:17:54 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.006094	-.006828	.0074764	.0006929	.0020469	.0805620	.0086176
Stddev	.001725	.001232	.0008775	.0006450	.0012116	.0021586	.0007587
%RSD	28.30912	18.04183	11.73727	93.09340	59.19374	2.679387	8.804085
#1	-.007390	-.007546	.0071982	.0003690	.0022543	.0799032	.0078814
#2	-.004136	-.007532	.0067716	.0014357	.0031415	.0788096	.0093969
#3	-.006757	-.005405	.0084592	.0002740	.0007449	.0829732	.0085745
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000051	-.000053	23.68024	.0026432	.0006879	1.615002	1.202700
Stddev	.000029	.000022	.03206	.0000291	.0001312	.007146	.013103
%RSD	56.52453	41.88119	.1353872	1.102157	19.06990	.4424755	1.089436
#1	-.000020	-.000075	23.68194	.0026738	.0008379	1.612786	1.197221
#2	-.000076	-.000051	23.64736	.0026158	.0005947	1.609227	1.193226
#3	-.000056	-.000031	23.71141	.0026398	.0006310	1.622994	1.217653
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0635536	5.317227	.0037199	-.000058	45.96380	-.000120	.6184015
Stddev	.0005207	.006380	.0001038	.000222	.14411	.001139	.0031255
%RSD	.8192651	.1199915	2.791365	381.1654	.3135270	948.9931	.5054242
#1	.0631532	5.311528	.0037943	-.000216	45.84423	.000309	.6216923
#2	.0633654	5.316034	.0037640	.000196	45.92338	.000742	.6180393
#3	.0641422	5.324120	.0036012	-.000154	46.12381	-.001411	.6154728
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.34677	.0133366	.0001861	.0001902	.0007683	4.160984	1.840716
Stddev	.05874	.0004618	.0003014	.0007303	.0003961	.019478	.007101
%RSD	.5676923	3.463010	161.9422	383.8744	51.56299	.4681051	.3857670
#1	10.31907	.0135935	.0005336	-.000021	.0011882	4.161095	1.841417
#2	10.30701	.0128034	.0000287	.001003	.0007154	4.141450	1.833291
#3	10.41424	.0136128	-.000004	-.000411	.0004012	4.180405	1.847441

Sample Name: Q1456-02 Acquired: 3/4/2025 11:17:54 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	4.920730	-.007477	.0916576
Stddev	.027068	.001040	.0002238
%RSD	.5500763	13.90959	.2441476
#1	4.890800	-.008572	.0917227
#2	4.927897	-.006503	.0914085
#3	4.943493	-.007354	.0918416

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3400.560	75443.33	16415.04	3122.978	4675.546
Stddev	9.492	60.02	20.47	15.709	9.729
%RSD	.2791230	.0795527	.1246845	.5030294	.2080931
#1	3401.074	75424.51	16397.19	3106.103	4674.762
#2	3409.784	75510.50	16410.55	3137.179	4685.643
#3	3390.822	75394.97	16437.38	3125.652	4666.231

Sample Name: Q1383-01 Acquired: 3/4/2025 11:22:06 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0215664	-.016502	.0634894	-.089319	.0034363	183.8570
Stddev	.0019681	.003528	.0022394	.003189	.0026407	2.6118
%RSD	9.125792	21.37824	3.527202	3.570250	76.84479	1.420549
#1	.0194793	-.020567	.0624409	-.086777	.0006160	185.7045
#2	.0233888	-.014687	.0660606	-.088282	.0058501	184.9977
#3	.0218309	-.014251	.0619665	-.092897	.0038430	180.8690
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3288899	.0017665	.0233826	177.3556	.0273385	.3793660
Stddev	.0011601	.0001352	.0005277	.5311	.0007894	.0007235
%RSD	.3527387	7.651661	2.256785	.2994397	2.887424	.1907118
#1	.3299630	.0019226	.0227802	177.9366	.0264276	.3796206
#2	.3276589	.0016916	.0237629	177.2351	.0277652	.3785496
#3	.3290477	.0016854	.0236047	176.8951	.0278226	.3799278
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7230448	608.6767	4.482495	136.7882	.1920973	.0070884
Stddev	.0017553	2.1925	.017472	.3057	.0008178	.0005716
%RSD	.2427661	.3602070	.3897832	.2234572	.4256946	8.063412
#1	.7210270	610.9777	4.502172	137.0240	.1930402	.0071003
#2	.7242198	608.4408	4.476516	136.8978	.1915819	.0076540
#3	.7238875	606.6117	4.468798	136.4429	.1916698	.0065110
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.00966	1.565255	.6771181	3.049966	2.601905	.0029374
Stddev	.20156	.004265	.0007536	.030350	.010140	.0005921
%RSD	.5597430	.2724591	.1112941	.9951031	.3897186	20.15595
#1	36.19506	1.569045	.6768053	3.078820	2.604568	.0030092
#2	35.79511	1.566082	.6765712	3.018313	2.610448	.0023127
#3	36.03879	1.560637	.6779777	3.052766	2.590699	.0034903

Sample Name: Q1383-01 Acquired: 3/4/2025 11:22:06 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003867	9.898212	8.326998	F 10.91090	F 14.30177	.3466907
Stddev	.001269	.025925	.045321	.01738	.01393	.0016143
%RSD	32.80712	.2619208	.5442617	.1592729	.0973754	.4656365
#1	-.002408	9.928147	8.375563	10.89113	14.28661	.3482766
#2	-.004716	9.883525	8.285832	10.91782	14.30473	.3467461
#3	-.004476	9.882966	8.319599	10.92376	14.31398	.3450494

Elem	Sr4077
Units	ppm
Avg	.5179938
Stddev	.0004981
%RSD	.0961600
#1	.5181844
#2	.5174286
#3	.5183685

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3913.552	86880.97	20238.76	3617.514	3948.481
Stddev	11.338	223.69	49.33	6.609	2.630
%RSD	.2897223	.2574682	.2437375	.1826829	.0665997
#1	3917.083	86751.61	20284.81	3610.065	3951.142
#2	3900.868	87139.27	20186.70	3622.673	3945.884
#3	3922.705	86752.04	20244.77	3619.803	3948.417

Sample Name: Q1383-03 Acquired: 3/4/2025 11:26:27 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0303384	-.002858	.0666447	-.067988	.0014624	142.1448
Stddev	.0009089	.002552	.0021675	.001698	.0008077	.0727
%RSD	2.995929	89.30300	3.252326	2.497066	55.23096	.0511570
#1	.0303245	-.000441	.0664918	-.067686	.0015722	142.1402
#2	.0312542	-.002607	.0645576	-.069816	.0006055	142.2197
#3	.0294365	-.005526	.0688845	-.066461	.0022097	142.0745
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2325619	.0011784	.0102731	134.8718	.0224554	.3367912
Stddev	.0002159	.0000464	.0010825	.2284	.0003338	.0004108
%RSD	.0928384	3.935798	10.53703	.1693659	1.486478	.1219620
#1	.2326949	.0011249	.0111491	134.6181	.0226102	.3372264
#2	.2323128	.0012073	.0090630	134.9360	.0226836	.3364102
#3	.2326779	.0012030	.0106073	135.0612	.0220723	.3367371
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5898540	524.7331	3.920547	117.7123	.1425356	.0054876
Stddev	.0022973	4.5389	.007897	.1208	.0003177	.0006081
%RSD	.3894709	.8649950	.2014313	.1026268	.2228965	11.08085
#1	.5918159	522.4935	3.912389	117.5850	.1428839	.0050557
#2	.5873268	529.9565	3.921097	117.8253	.1422617	.0061830
#3	.5904193	521.7491	3.928154	117.7267	.1424613	.0052241
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.86580	1.133698	.5966856	2.075691	2.790338	.0030278
Stddev	.05528	.003054	.0022085	.025535	.008643	.0003733
%RSD	.2057479	.2694165	.3701271	1.230206	.3097589	12.32830
#1	26.89021	1.130675	.5965501	2.055898	2.785522	.0029012
#2	26.90466	1.133635	.5945479	2.066660	2.800316	.0027342
#3	26.80252	1.136783	.5989587	2.104514	2.785174	.0034479

Sample Name: Q1383-03 Acquired: 3/4/2025 11:26:27 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003571	7.177296	5.683065	9.434202	F 32.17195	.2973851
Stddev	.001320	.008422	.008735	.007305	.01407	.0021362
%RSD	36.97328	.1173416	.1536975	.0774294	.0437362	.7183383
#1	-.003574	7.171257	5.683414	9.438945	32.18414	.2957373
#2	-.002249	7.173713	5.691619	9.437872	32.15655	.2997987
#3	-.004889	7.186917	5.674160	9.425790	32.17515	.2966193

Elem	Sr4077
Units	ppm
Avg	.3556612
Stddev	.0005762
%RSD	.1620045
#1	.3557112
#2	.3562107
#3	.3550616

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3865.161	85435.97	19455.23	3550.586	4099.406
Stddev	10.976	90.07	29.59	14.954	6.074
%RSD	.2839667	.1054187	.1521125	.4211678	.1481616
#1	3860.074	85489.88	19485.27	3551.391	4096.570
#2	3857.652	85332.00	19454.32	3565.121	4095.270
#3	3877.758	85486.04	19426.11	3535.246	4106.379

Sample Name: Q1383-05 Acquired: 3/4/2025 11:30:40 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.1386462	-.006504	.1066888	-.095222	.0048968	192.3047
Stddev	.0026678	.005479	.0015492	.001543	.0011703	1.2442
%RSD	1.924166	84.24080	1.452089	1.620286	23.89950	.6470024
#1	.1369902	-.011186	.1055492	-.094116	.0035915	190.9137
#2	.1372248	-.000479	.1060643	-.096984	.0052466	193.3116
#3	.1417238	-.007846	.1084528	-.094565	.0058523	192.6887
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2858908	.0022344	.0260133	210.3497	.0302623	.4426623
Stddev	.0009325	.0000524	.0004852	.8061	.0005332	.0010918
%RSD	.3261566	2.345610	1.865356	.3832095	1.761751	.2466430
#1	.2858516	.0022409	.0260728	210.5934	.0301433	.4436905
#2	.2849786	.0021791	.0264661	209.4499	.0308449	.4415165
#3	.2868423	.0022833	.0255011	211.0058	.0297987	.4427799
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7380666	658.4357	5.035703	150.6640	.2069699	.0055205
Stddev	.0028596	3.1417	.018534	.5601	.0003062	.0008031
%RSD	.3874487	.4771440	.3680568	.3717599	.1479448	14.54816
#1	.7355086	658.2400	5.043007	150.8420	.2068696	.0051691
#2	.7411539	655.3965	5.014629	150.0365	.2073137	.0049530
#3	.7375372	661.6707	5.049472	151.1134	.2067265	.0064395
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.74893	1.540998	.7472916	2.871591	5.542690	.0037611
Stddev	.07460	.004892	.0016348	.014898	.011859	.0001370
%RSD	.2146935	.3174289	.2187688	.5188052	.2139585	3.641933
#1	34.82577	1.543547	.7456619	2.876557	5.536201	.0038886
#2	34.74423	1.535359	.7489315	2.883370	5.535491	.0037785
#3	34.67678	1.544089	.7472815	2.854844	5.556377	.0036163

Sample Name: Q1383-05 Acquired: 3/4/2025 11:30:40 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.004218	9.510320	8.808737	F 11.13429	F 45.29307	.3785610
Stddev	.001037	.022677	.037763	.04683	.12782	.0009759
%RSD	24.57501	.2384440	.4287010	.4206226	.2822007	.2577824
#1	-.005248	9.518987	8.850835	11.18831	45.39060	.3784991
#2	-.003175	9.484588	8.777847	11.10501	45.14837	.3776175
#3	-.004232	9.527386	8.797527	11.10956	45.34024	.3795662

Elem	Sr4077
Units	ppm
Avg	.5197513
Stddev	.0005370
%RSD	.1033237
#1	.5202243
#2	.5191675
#3	.5198620

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3930.655	87408.11	19682.04	3609.023	3956.138
Stddev	5.892	289.92	64.35	14.020	2.471
%RSD	.1499018	.3316848	.3269320	.3884738	.0624701
#1	3934.614	87081.06	19622.80	3597.191	3954.145
#2	3923.884	87633.53	19750.50	3605.370	3958.903
#3	3933.468	87509.74	19672.82	3624.508	3955.364

Sample Name: CCV02 Acquired: 3/4/2025 11:34:59 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	4.964163	5.114451	4.910581	4.985536	5.028026	9.876761	9.587644
Stddev	.009130	.039389	.003975	.010793	.005474	.019804	.201139
%RSD	.1839274	.7701518	.0809536	.2164827	.1088614	.2005089	2.097900
#1	4.970590	5.111470	4.906259	4.992974	5.021935	9.899514	9.759333
#2	4.953712	5.155245	4.911402	4.990477	5.032533	9.863407	9.637259
#3	4.968188	5.076637	4.914081	4.973158	5.029611	9.867362	9.366340
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2393917	2.453248	23.65323	1.008809	2.457975	1.260545	4.839627
Stddev	.0014287	.003640	.06810	.001420	.003783	.001541	.003061
%RSD	.5968147	.1483886	.2879129	.1407913	.1539143	.1222209	.0632557
#1	.2409840	2.450994	23.72719	1.010121	2.454882	1.259517	4.837750
#2	.2382217	2.451301	23.59312	1.007301	2.456849	1.259801	4.837972
#3	.2389694	2.457447	23.63938	1.009006	2.462193	1.262316	4.843160
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.344045	23.91270	2.452914	1.236987	25.07392	2.424845	2.516914
Stddev	.008113	.11225	.002302	.001008	.15842	.000896	.007635
%RSD	.3460956	.4694255	.0938400	.0815179	.6318105	.0369458	.3033369
#1	2.351914	24.04070	2.451373	1.237826	24.89161	2.424849	2.508348
#2	2.335709	23.83103	2.451809	1.235868	25.15201	2.423947	2.523003
#3	2.344512	23.86637	2.455560	1.237267	25.17813	2.425739	2.519390
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.38669	4.781482	5.023471	4.937724	4.779335	4.955615	4.891848
Stddev	.19629	.031754	.003000	.007310	.008434	.058100	.014502
%RSD	.8049025	.6640984	.0597224	.1480525	.1764594	1.172414	.2964527
#1	24.16823	4.818138	5.021658	4.932178	4.785134	4.898063	4.901122
#2	24.44363	4.762413	5.026934	4.934985	4.769660	4.954534	4.899286
#3	24.54822	4.763895	5.021821	4.946008	4.783210	5.014249	4.875136

Sample Name: CCV02 Acquired: 3/4/2025 11:34:59 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	4.852224	4.805614	5.178074		
Stddev	.011443	.006870	.097333		
%RSD	.2358388	.1429578	1.879723		
#1	4.859832	4.806550	5.281134		
#2	4.857775	4.798325	5.165374		
#3	4.839063	4.811969	5.087713		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3470.397	75181.45	15535.88	3196.009	4528.008
Stddev	2.311	52.38	92.77	13.016	2.391
%RSD	.0665976	.0696715	.5971318	.4072428	.0528012
#1	3470.993	75241.75	15428.96	3209.255	4529.599
#2	3467.846	75155.36	15583.64	3183.237	4525.258
#3	3472.352	75147.24	15595.04	3195.534	4529.166

Sample Name: CCB02 Acquired: 3/4/2025 11:39:11 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0000025	-.001749	-.000765	-.001436	-.000895	-.002523	-.004621
Stddev	.0009333	.000541	.001728	.001606	.000700	.002954	.000192
%RSD	37164.80	30.93608	226.0188	111.8434	78.25708	117.0816	4.154375
#1	.0005889	-.001126	.000957	-.001248	-.000146	.000001	-.004843
#2	.0004925	-.002094	-.002499	.000068	-.001005	-.001798	-.004499
#3	-.001074	-.002028	-.000752	-.003127	-.001533	-.005772	-.004522
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000040	.0000316	-.000283	.0000709	.0000599	.0000016	-.000839
Stddev	.000033	.0000424	.002168	.0001594	.0002474	.0000604	.001054
%RSD	83.05315	134.3453	766.5635	224.9290	413.1138	3746.199	125.5728
#1	-.000032	.0000597	-.002785	.0000134	.0002418	-.000062	-.001945
#2	-.000012	.0000521	.000895	-.000052	-.000222	.000058	-.000725
#3	-.000077	-.000017	.001042	.000251	.000160	.000008	.000153
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000935	.0046763	.0001026	.0001428	.0424336	-.000566	-.000537
Stddev	.0003793	.0128164	.0000710	.0001072	.0023799	.001082	.000238
%RSD	405.4970	274.0715	69.26636	75.04754	5.608399	191.2126	44.39614
#1	-.000079	-.008714	.0000239	.0000197	.0410256	-.000680	-.000459
#2	.000528	.016829	.0001216	.0002152	.0410939	.000568	-.000348
#3	-.000168	.005915	.0001621	.0001936	.0451814	-.001586	-.000805
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0970563	.0064863	-.000064	-.000045	.0011006	.0083290	.0019807
Stddev	.0222437	.0009020	.000066	.000163	.0002701	.0048824	.0020943
%RSD	22.91832	13.90681	103.2963	365.0672	24.54468	58.61903	105.7377
#1	.0721607	.0065216	.000011	.000103	.0013761	.0100559	.0043980
#2	.1149757	.0055671	-.000115	-.000018	.0008361	.0028179	.0007135
#3	.1040325	.0073701	-.000088	-.000219	.0010896	.0121132	.0008305

Sample Name: CCB02 Acquired: 3/4/2025 11:39:11 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.002482	.0008445	.0000648		
Stddev	.001650	.0008823	.0000073		
%RSD	66.48289	104.4758	11.25747		
#1	-.000895	.0006629	.0000564		
#2	-.002363	.0018035	.0000693		
#3	-.004189	.0000671	.0000687		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3604.337	77601.62	16245.67	3323.348	5067.180
Stddev	3.075	337.14	62.76	11.406	7.368
%RSD	.0853246	.4344435	.3863271	.3431949	.1454121
#1	3606.814	77394.07	16317.95	3320.106	5073.902
#2	3600.895	77990.62	16204.95	3313.913	5068.336
#3	3605.303	77420.18	16214.11	3336.023	5059.302

Sample Name: Q1383-07 Acquired: 3/4/2025 11:43:31 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0243680	-.017008	.0627151	-.093625	.0025517	187.2773
Stddev	.0034858	.003762	.0021503	.001514	.0014381	1.0117
%RSD	14.30469	22.12220	3.428647	1.616629	56.35868	.5401919
#1	.0216154	-.019333	.0640611	-.091944	.0009886	186.4448
#2	.0232012	-.019023	.0638490	-.094879	.0028478	188.4033
#3	.0282875	-.012667	.0602352	-.094053	.0038187	186.9839
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3139171	.0018224	.0242095	184.8174	.0265263	.3891354
Stddev	.0002285	.0000529	.0004192	.3178	.0002024	.0003948
%RSD	.0727938	2.903881	1.731485	.1719396	.7630380	.1014499
#1	.3140893	.0017685	.0244603	184.5246	.0263651	.3892420
#2	.3140042	.0018244	.0244425	185.1553	.0264604	.3886983
#3	.3136579	.0018743	.0237255	184.7723	.0267535	.3894660
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7089401	629.2624	4.819815	143.7539	.1795179	.0058026
Stddev	.0011324	2.1443	.005468	.3048	.0005906	.0005064
%RSD	.1597346	.3407604	.1134454	.2120067	.3289963	8.727524
#1	.7101635	627.2739	4.813651	143.4026	.1791581	.0052437
#2	.7079287	631.5342	4.824079	143.9122	.1791961	.0062311
#3	.7087280	628.9792	4.821716	143.9470	.1801995	.0059329
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.48040	1.620904	.7579031	2.847578	3.347991	.0035731
Stddev	.07845	.001595	.0008731	.019066	.007893	.0005060
%RSD	.2275151	.0983837	.1152029	.6695416	.2357560	14.16218
#1	34.50675	1.621988	.7587820	2.835205	3.340993	.0034668
#2	34.39216	1.619073	.7578913	2.837994	3.356547	.0031287
#3	34.54227	1.621652	.7570358	2.869534	3.346433	.0041238

Sample Name: Q1383-07 Acquired: 3/4/2025 11:43:31 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.004851	F 10.44898	8.248443	F 11.06164	F 11.72060	.3623550
Stddev	.000718	.00542	.006862	.01423	.01891	.0005682
%RSD	14.79135	.0518901	.0831926	.1286129	.1613594	.1568059
#1	-.004385	10.44422	8.242160	11.07654	11.73623	.3619216
#2	-.005677	10.45488	8.247402	11.06019	11.72600	.3621449
#3	-.004491	10.44783	8.255765	11.04819	11.69958	.3629983

Elem	Sr4077
Units	ppm
Avg	.4761913
Stddev	.0016590
%RSD	.3483976
#1	.4781031
#2	.4751305
#3	.4753402

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3903.818	86689.17	19819.38	3604.752	3940.822
Stddev	2.254	156.19	13.11	13.117	3.573
%RSD	.0577504	.1801753	.0661423	.3638867	.0906620
#1	3904.678	86703.07	19804.64	3592.595	3944.943
#2	3901.260	86837.95	19823.75	3618.655	3938.583
#3	3905.516	86526.49	19829.74	3603.005	3938.941

Sample Name: Q1383-09 Acquired: 3/4/2025 11:47:51 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0258160	-.007555	.0678339	-.098954	.0047210	193.2599
Stddev	.0042360	.001738	.0014655	.002416	.0024563	.9286
%RSD	16.40829	23.00237	2.160401	2.441425	52.02838	.4804769
#1	.0282907	-.008694	.0686551	-.096315	.0057349	193.4352
#2	.0209248	-.008416	.0661420	-.101056	.0065080	192.2562
#3	.0282324	-.005555	.0687047	-.099491	.0019201	194.0883
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2659707	.0021372	.0242892	179.4651	.0233083	.3936538
Stddev	.0007827	.0001561	.0004209	.1954	.0001688	.0014201
%RSD	.2942905	7.302753	1.732732	.1088707	.7241144	.3607399
#1	.2666699	.0021522	.0239324	179.5407	.0234276	.3926986
#2	.2651251	.0022853	.0247533	179.6114	.0231152	.3929771
#3	.2661172	.0019742	.0241820	179.2432	.0233821	.3952856
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6636841	663.4559	4.729659	168.6183	.1875527	.0032528
Stddev	.0014604	1.5593	.005151	.3891	.0010803	.0005035
%RSD	.2200478	.2350316	.1089155	.2307817	.5759713	15.47773
#1	.6633486	664.3497	4.730148	168.3739	.1881522	.0036950
#2	.6624207	661.6554	4.724281	169.0670	.1863056	.0033586
#3	.6652831	664.3627	4.734549	168.4139	.1882002	.0027049
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	35.29379	1.575927	.7057395	2.722619	2.414467	.0014783
Stddev	.09673	.001708	.0056973	.018889	.004805	.0005065
%RSD	.2740832	.1083950	.8072841	.6937884	.1990200	34.26404
#1	35.40062	1.574220	.7057957	2.708215	2.412592	.0015107
#2	35.21211	1.577636	.7000142	2.744006	2.410882	.0019678
#3	35.26865	1.575925	.7114085	2.715637	2.419927	.0009563

Sample Name: Q1383-09 Acquired: 3/4/2025 11:47:51 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003676	8.865895	7.612145	F 10.02619	9.669682	.3792649
Stddev	.001126	.004303	.023494	.02169	.026598	.0007464
%RSD	30.63486	.0485296	.3086325	.2163576	.2750709	.1968042
#1	-.002438	8.862938	7.627291	10.00568	9.664517	.3794669
#2	-.003951	8.870831	7.585081	10.02399	9.646045	.3784382
#3	-.004639	8.863915	7.624063	10.04890	9.698484	.3798895

Elem	Sr4077
Units	ppm
Avg	.6068103
Stddev	.0025700
%RSD	.4235180
#1	.6073979
#2	.6090356
#3	.6039975

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3853.000	86273.66	19248.06	3559.244	3961.899
Stddev	9.471	60.34	67.24	23.940	6.568
%RSD	.2458209	.0699360	.3493562	.6726180	.1657748
#1	3863.246	86275.82	19308.87	3547.640	3966.272
#2	3851.189	86332.88	19175.84	3586.775	3965.078
#3	3844.565	86212.27	19259.47	3543.318	3954.346

Sample Name: Q1383-11 Acquired: 3/4/2025 11:52:11 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0242202	-.006431	.0508587	-.075319	.0030293	165.1510
Stddev	.0042177	.003913	.0025156	.002257	.0013043	.0239
%RSD	17.41414	60.85037	4.946240	2.996554	43.05440	.0144975
#1	.0283025	-.010198	.0482381	-.075696	.0022840	165.1352
#2	.0198789	-.006710	.0510839	-.077364	.0045353	165.1786
#3	.0244791	-.002386	.0532541	-.072898	.0022686	165.1394
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3716814	.0014260	.0177330	167.5179	.0236303	.3549155
Stddev	.0010694	.0002023	.0002009	.3757	.0005320	.0009874
%RSD	.2877300	14.18527	1.132765	.2242834	2.251526	.2782108
#1	.3728089	.0016590	.0179534	167.9515	.0238685	.3560484
#2	.3715536	.0012956	.0176853	167.2892	.0230208	.3542375
#3	.3706815	.0013233	.0175602	167.3129	.0240016	.3544608
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6253485	562.5731	4.654159	128.5705	.1650333	.0051937
Stddev	.0006442	1.2018	.013334	.3229	.0001385	.0006365
%RSD	.1030190	.2136301	.2865028	.2511155	.0839187	12.25435
#1	.6255914	561.1912	4.669333	128.8701	.1650302	.0044627
#2	.6246181	563.3745	4.644309	128.2285	.1648964	.0056242
#3	.6258359	563.1535	4.648837	128.6129	.1651733	.0054943
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.99907	1.292157	.6408082	2.484264	2.199239	.0016230
Stddev	.22177	.002769	.0003710	.020187	.007585	.0000389
%RSD	.7392412	.2143106	.0578928	.8126084	.3448736	2.395303
#1	29.81063	1.293542	.6410966	2.467195	2.205510	.0016343
#2	30.24345	1.288969	.6403897	2.506547	2.190809	.0016550
#3	29.94313	1.293961	.6409384	2.479049	2.201398	.0015797

Sample Name: Q1383-11 Acquired: 3/4/2025 11:52:11 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.005661	8.335863	7.627976	F 10.28170	9.762559	.3232582
Stddev	.000637	.005528	.045204	.01696	.018540	.0005462
%RSD	11.25341	.0663162	.5926083	.1649542	.1899105	.1689840
#1	-.006268	8.342034	7.592955	10.29823	9.783287	.3226388
#2	-.005716	8.331364	7.679006	10.26434	9.747558	.3236711
#3	-.004998	8.334190	7.611968	10.28255	9.756832	.3234647

Elem	Sr4077
Units	ppm
Avg	.4596157
Stddev	.0005768
%RSD	.1254949
#1	.4590179
#2	.4596604
#3	.4601689

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3885.824	86489.17	19439.88	3603.443	4002.900
Stddev	10.837	277.39	86.98	2.890	4.331
%RSD	.2788817	.3207213	.4474429	.0801925	.1082078
#1	3898.153	86555.16	19346.03	3606.576	4007.065
#2	3881.512	86184.74	19517.78	3602.869	4003.216
#3	3877.807	86727.62	19455.84	3600.883	3998.419

Sample Name: Q1383-13 Acquired: 3/4/2025 11:56:22 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0239183	-.008124	.0530999	-.078168	.0014129	164.9651
Stddev	.0012876	.002966	.0025076	.004629	.0019208	.4396
%RSD	5.383417	36.51236	4.722356	5.922216	135.9469	.2665099
#1	.0244649	-.005974	.0508148	-.077113	-.000804	164.4753
#2	.0224475	-.006890	.0557824	-.074157	.002469	165.0941
#3	.0248424	-.011509	.0527024	-.083234	.002574	165.3257
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2773939	.0012383	.0167216	157.8166	.0225024	.3467303
Stddev	.0010626	.0000265	.0006469	1.0086	.0006939	.0018515
%RSD	.3830563	2.137785	3.868920	.6391125	3.083567	.5339805
#1	.2763770	.0012078	.0160783	158.6035	.0226555	.3450414
#2	.2773078	.0012527	.0167143	158.1669	.0231070	.3464396
#3	.2784969	.0012546	.0173721	156.6796	.0217448	.3487099
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6724554	563.4719	4.236647	130.2627	.1649235	.0064380
Stddev	.0022922	2.7692	.025832	1.1922	.0008086	.0001167
%RSD	.3408667	.4914493	.6097380	.9152517	.4903111	1.812159
#1	.6703495	566.6310	4.260675	131.3014	.1643053	.0064724
#2	.6721196	562.3207	4.239941	130.5258	.1646266	.0065337
#3	.6748969	561.4640	4.209326	128.9609	.1658387	.0063081
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.44551	1.322955	.6257044	2.492226	1.988701	.0020310
Stddev	.17058	.006235	.0021905	.041709	.012247	.0002369
%RSD	.5424483	.4713105	.3500779	1.673579	.6158228	11.66352
#1	31.24855	1.328663	.6247539	2.448486	2.002250	.0017677
#2	31.54361	1.323902	.6282096	2.531554	1.985435	.0020985
#3	31.54438	1.316301	.6241499	2.496637	1.978418	.0022269

Sample Name: Q1383-13 Acquired: 3/4/2025 11:56:22 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003627	8.276169	6.701824	9.925247	F 12.85769	.3201701
Stddev	.000538	.011694	.024408	.034899	.04322	.0008123
%RSD	14.82936	.1412977	.3641923	.3516189	.3361621	.2537040
#1	-.003308	8.289556	6.704048	9.910569	12.83282	.3209470
#2	-.003326	8.271009	6.725044	9.900084	12.83266	.3193265
#3	-.004248	8.267942	6.676381	9.965087	12.90760	.3202368

Elem	Sr4077
Units	ppm
Avg	.4842557
Stddev	.0015829
%RSD	.3268636
#1	.4826659
#2	.4842697
#3	.4858316

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3836.757	84599.33	19540.90	3542.644	3990.449
Stddev	11.148	81.71	67.35	12.572	13.557
%RSD	.2905545	.0965900	.3446547	.3548810	.3397477
#1	3848.158	84508.91	19473.55	3556.922	4001.500
#2	3836.233	84667.89	19608.25	3533.233	3994.525
#3	3825.881	84621.19	19540.91	3537.777	3975.321

Sample Name: Q1383-13DUP Acquired: 3/4/2025 12:00:34 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0240136	-.011844	.0528123	-.077044	.0032287	173.6419
Stddev	.0044991	.002467	.0021782	.000936	.0006526	.3409
%RSD	18.73553	20.82448	4.124389	1.214805	20.21325	.1963141
#1	.0192682	-.013076	.0518914	-.076580	.0026681	173.9271
#2	.0282172	-.013452	.0552997	-.076431	.0030729	173.2644
#3	.0245555	-.009005	.0512459	-.078121	.0039452	173.7341
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2839847	.0012837	.0181623	163.0073	.0236296	.3552354
Stddev	.0010938	.0000578	.0004880	.1925	.0002778	.0011587
%RSD	.3851575	4.503585	2.686691	.1180954	1.175627	.3261898
#1	.2848751	.0012311	.0183584	162.8972	.0233429	.3551683
#2	.2827638	.0013456	.0185217	163.2296	.0236485	.3541118
#3	.2843151	.0012744	.0176068	162.8952	.0238975	.3564263
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6852543	572.2857	4.331052	132.8429	.1691695	.0061586
Stddev	.0013011	3.0723	.003531	.1414	.0008482	.0004507
%RSD	.1898700	.5368430	.0815366	.1064344	.5013793	7.318288
#1	.6838038	572.7854	4.334986	132.7027	.1681954	.0065818
#2	.6856405	568.9942	4.330012	132.9855	.1695682	.0056847
#3	.6863186	575.0775	4.328157	132.8406	.1697449	.0062094
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.82835	1.370384	.6400000	2.548552	2.004848	.0020160
Stddev	.11077	.002601	.0010870	.008836	.004327	.0004261
%RSD	.3374183	.1897779	.1698378	.3466929	.2158406	21.13515
#1	32.90395	1.372404	.6388650	2.558754	2.007945	.0019940
#2	32.70120	1.367450	.6401034	2.543575	1.999904	.0024527
#3	32.87990	1.371298	.6410315	2.543327	2.006695	.0016014

Sample Name: Q1383-13DUP Acquired: 3/4/2025 12:00:34 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.004793	8.754927	8.130017	F 10.15112	F 13.08882	.3259479
Stddev	.001016	.008218	.005165	.01997	.00629	.0018792
%RSD	21.20529	.0938699	.0635305	.1966993	.0480333	.5765229
#1	-.005754	8.762372	8.134123	10.13187	13.08222	.3271164
#2	-.003729	8.746109	8.124218	10.14975	13.09473	.3237802
#3	-.004894	8.756300	8.131711	10.17174	13.08951	.3269471

Elem	Sr4077
Units	ppm
Avg	.5053780
Stddev	.0011822
%RSD	.2339141
#1	.5063722
#2	.5040709
#3	.5056909

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3809.334	84219.80	19444.24	3520.320	3936.459
Stddev	5.202	214.99	39.04	4.378	5.097
%RSD	.1365680	.2552712	.2007925	.1243516	.1294740
#1	3803.734	84456.89	19486.90	3522.656	3937.773
#2	3814.017	84164.96	19435.54	3515.270	3940.770
#3	3810.250	84037.54	19410.28	3523.034	3930.834

Sample Name: Q1383-13LX5 Acquired: 3/4/2025 12:04:47 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0042394	-.000663	.0123450	-.016910	-.000208	38.86146	.0638513
Stddev	.0018295	.002291	.0012919	.002514	.000807	.06019	.0001463
%RSD	43.15425	345.5930	10.46530	14.86685	387.4617	.1548927	.2291462
#1	.0053715	-.002100	.0130493	-.016481	-.000254	38.90253	.0637817
#2	.0052180	-.001867	.0131317	-.014638	-.000992	38.88949	.0640194
#3	.0021288	.001979	.0108539	-.019611	.000620	38.79236	.0637527
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000167	-.004040	38.95918	.0059238	.0721061	.1704922	139.0887
Stddev	.000063	.000109	.02544	.0001950	.0002210	.0007449	.0657
%RSD	37.62683	2.694223	.0652927	3.291680	.3065096	.4369065	.0472298
#1	-.000112	-.003991	38.98716	.0060062	.0723333	.1704181	139.0129
#2	-.000235	-.003963	38.95292	.0060641	.0720933	.1697872	139.1246
#3	-.000154	-.004164	38.93745	.0057012	.0718918	.1712714	139.1286
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.060353	31.39998	.0351149	.0023144	6.788898	.3267850	.1461658
Stddev	.002537	.05430	.0000695	.0001389	.004643	.0012031	.0010356
%RSD	.2392622	.1729143	.1980662	6.000706	.0683856	.3681509	.7085230
#1	1.062561	31.35721	.0350701	.0021656	6.793279	.3280745	.1463997
#2	1.057582	31.46107	.0351950	.0023370	6.789383	.3265876	.1450333
#3	1.060918	31.38167	.0350796	.0024406	6.784032	.3256928	.1470645
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5256198	.5204048	.0000829	-.002676	2.042079	1.633246	2.030344
Stddev	.0144926	.0010542	.0002877	.001057	.002998	.005701	.001039
%RSD	2.757231	.2025768	346.8920	39.51400	.1468071	.3490861	.0511899
#1	.5173065	.5196735	.0004111	-.003245	2.044454	1.634299	2.029213
#2	.5171987	.5216132	-.000036	-.003327	2.038710	1.627091	2.031258
#3	.5423542	.5199278	-.000126	-.001456	2.043071	1.638347	2.030560

Sample Name: Q1383-13LX5 Acquired: 3/4/2025 12:04:47 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	2.550114	.0762505	.1156563
Stddev	.004645	.0009841	.0003113
%RSD	.1821401	1.290667	.2691586
#1	2.545889	.0766192	.1157642
#2	2.555088	.0769971	.1158994
#3	2.549365	.0751353	.1153054

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3634.349	78523.57	16853.17	3335.955	4556.361
Stddev	4.574	274.92	46.04	3.595	3.261
%RSD	.1258450	.3501164	.2731892	.1077574	.0715681
#1	3639.168	78347.77	16809.04	3339.719	4559.997
#2	3630.068	78382.55	16849.54	3335.589	4555.391
#3	3633.812	78840.39	16900.91	3332.558	4553.695

Sample Name: Q1383-13MS Acquired: 3/4/2025 12:08:57 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.6898434	1.759740	.9714027	1.350579	.2239253	201.7689
Stddev	.0009413	.011734	.0013168	.008169	.0009434	.7030
%RSD	.1364536	.6668292	.1355547	.6048655	.4212937	.3484266
#1	.6897325	1.760103	.9729226	1.344160	.2232110	202.3496
#2	.6908352	1.747828	.9706779	1.347803	.2235702	201.9697
#3	.6889624	1.771289	.9706075	1.359775	.2249947	200.9873
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4697699	.1404944	.2099854	181.0244	.3294411	.6050288
Stddev	.0009976	.0000756	.0005040	.2865	.0014139	.0007226
%RSD	.2123490	.0538061	.2400120	.1582508	.4291783	.1194267
#1	.4693690	.1405507	.2098655	181.1683	.3302854	.6055635
#2	.4690353	.1404084	.2105386	180.6945	.3278088	.6053163
#3	.4709056	.1405240	.2095523	181.2103	.3302291	.6042068
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9736373	657.6429	5.096316	148.5340	.6447271	.0681137
Stddev	.0025709	2.7596	.011614	.2938	.0018364	.0008547
%RSD	.2640564	.4196204	.2278947	.1977703	.2848400	1.254811
#1	.9761682	656.6784	5.099088	148.8494	.6430084	.0675840
#2	.9710281	655.4951	5.083567	148.2682	.6466621	.0676574
#3	.9737155	660.7553	5.106295	148.4842	.6445109	.0690997
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.79090	1.892058	.8568629	11.69817	2.862256	.3106168
Stddev	.09590	.004572	.0019890	.02025	.008988	.0004346
%RSD	.2410157	.2416355	.2321290	.1730665	.3140234	.1398998
#1	39.68034	1.897238	.8548776	11.69304	2.862847	.3102043
#2	39.85164	1.888584	.8568556	11.68099	2.852987	.3105758
#3	39.84071	1.890354	.8588556	11.72049	2.870934	.3110705

Sample Name: Q1383-13MS Acquired: 3/4/2025 12:08:57 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.6192611	F 11.34981	8.862493	F 17.31745	F 30.32810	.5324453
Stddev	.0015820	.01656	.011781	.03035	.04147	.0011148
%RSD	.2554599	.1458765	.1329305	.1752742	.1367430	.2093714
#1	.6185578	11.35567	8.853863	17.29125	30.29660	.5313875
#2	.6181528	11.33112	8.875915	17.31039	30.31262	.5323389
#3	.6210728	11.36264	8.857701	17.35071	30.37509	.5336094
Elem	Sr4077					
Units	ppm					
Avg	.6460805					
Stddev	.0008018					
%RSD	.1240963					
#1	.6468544					
#2	.6461336					
#3	.6452535					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3930.453	86764.26	19595.86	3589.336	3919.418	
Stddev	7.267	231.47	92.20	8.805	6.147	
%RSD	.1848923	.2667853	.4704851	.2453074	.1568291	
#1	3936.698	86659.23	19529.77	3597.271	3926.246	
#2	3932.184	87029.63	19701.18	3579.864	3917.680	
#3	3922.477	86603.93	19556.63	3590.874	3914.327	

Sample Name: Q1383-13MSD Acquired: 3/4/2025 12:13:12 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.6954127	1.767043	.9729264	1.379648	.2228184	205.8439
Stddev	.0060700	.012916	.0012067	.003924	.0025845	.3868
%RSD	.8728611	.7309579	.1240317	.2843882	1.159898	.1879158

#1	.6933853	1.752975	.9741362	1.378974	.2199420	206.1622
#2	.6906160	1.769788	.9729202	1.376106	.2235680	205.9560
#3	.7022370	1.778366	.9717227	1.383866	.2249452	205.4134

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4717647	.1394514	.2134430	181.4666	.3285773	.6078467
Stddev	.0019751	.0013711	.0007428	.3392	.0015701	.0010914
%RSD	.4186712	.9832215	.3480256	.1869125	.4778530	.1795462

#1	.4700728	.1378725	.2131822	181.1695	.3303898	.6082826
#2	.4739351	.1403420	.2128657	181.8362	.3277089	.6066047
#3	.4712860	.1401398	.2142811	181.3943	.3276333	.6086527

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9791589	655.7296	5.052571	147.3883	.6492903	.0681990
Stddev	.0020048	.9311	.018999	.2678	.0013414	.0009763
%RSD	.2047424	.1419987	.3760269	.1817015	.2065885	1.431544

#1	.9794723	654.7427	5.038800	147.0792	.6483078	.0670742
#2	.9809886	656.5925	5.074246	147.5351	.6487447	.0688274
#3	.9770160	655.8535	5.044666	147.5506	.6508185	.0686953

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.52136	1.895246	.8555236	11.71345	2.829581	.3111827
Stddev	.29446	.003078	.0018573	.09526	.011956	.0005888
%RSD	.7266684	.1624067	.2170973	.8132429	.4225291	.1892159

#1	40.84500	1.893546	.8576646	11.80687	2.816758	.3105237
#2	40.44977	1.893393	.8545617	11.71705	2.840423	.3113672
#3	40.26929	1.898799	.8543445	11.61645	2.831561	.3116571

Sample Name: Q1383-13MSD Acquired: 3/4/2025 12:13:12 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.6206865	F 11.52518	9.318723	F 17.30177	F 30.46503	.5333501
Stddev	.0015767	.03317	.061522	.03231	.09042	.0015416
%RSD	.2540195	.2877915	.6602018	.1867485	.2968086	.2890449
#1	.6189399	11.50101	9.389182	17.27632	30.44958	.5330503
#2	.6211150	11.56300	9.291347	17.29087	30.38332	.5350196
#3	.6220047	11.51154	9.275640	17.33812	30.56218	.5319804
Elem	Sr4077					
Units	ppm					
Avg	.6591307					
Stddev	.0011067					
%RSD	.1679078					
#1	.6579125					
#2	.6594052					
#3	.6600743					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3890.821	87280.06	19781.19	3611.448	3885.528	
Stddev	4.697	415.62	65.37	.123	2.078	
%RSD	.1207230	.4761876	.3304499	.0034058	.0534737	
#1	3888.093	86802.37	19854.15	3611.346	3883.863	
#2	3888.125	87558.91	19761.42	3611.585	3887.856	
#3	3896.245	87478.88	19727.98	3611.415	3884.863	

Sample Name: Q1383-13A Acquired: 3/4/2025 12:17:27 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.6564403	1.720287	.9556394	1.341191	.2122250	231.9147
Stddev	.0054745	.013735	.0042367	.008555	.0018910	1.9435
%RSD	.8339610	.7984178	.4433333	.6378396	.8910269	.8380218
#1	.6511464	1.714417	.9549600	1.331370	.2106697	231.9446
#2	.6620790	1.710463	.9517835	1.345184	.2116755	229.9564
#3	.6560956	1.735982	.9601747	1.347019	.2143299	233.8430
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5169599	.1380410	.2203148	234.3785	.3232107	.6417511
Stddev	.0015164	.0005464	.0014847	.7643	.0017646	.0013700
%RSD	.2933204	.3958320	.6739193	.3261038	.5459489	.2134724
#1	.5171483	.1383399	.2192489	233.7751	.3246451	.6411655
#2	.5183733	.1383727	.2196849	234.1224	.3237468	.6407713
#3	.5153581	.1374103	.2220107	235.2380	.3212403	.6433165
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.026103	710.3697	5.739915	175.6902	.6843061	.0668226
Stddev	.005591	1.3678	.006251	.3435	.0019304	.0006437
%RSD	.5448774	.1925497	.1089108	.1955125	.2820912	.9633217
#1	1.022108	710.2336	5.740001	175.5562	.6850199	.0662455
#2	1.023708	711.8005	5.746122	175.4339	.6821205	.0675168
#3	1.032492	709.0750	5.733620	176.0805	.6857779	.0667054
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.63197	1.872039	.9378662	11.83654	4.152637	.3011602
Stddev	.34844	.002156	.0031890	.07148	.008073	.0012239
%RSD	.7472087	.1151467	.3400285	.6038548	.1943979	.4063829
#1	46.77506	1.870049	.9399905	11.84773	4.158958	.3006710
#2	46.88609	1.871738	.9394089	11.90175	4.143543	.3002567
#3	46.23477	1.874329	.9341992	11.76012	4.155409	.3025530

Sample Name: Q1383-13A Acquired: 3/4/2025 12:17:27 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.6122617	F 10.04443	8.810858	F 18.10047	F 12.29769	.5615467
Stddev	.0026145	.01333	.032796	.06250	.05518	.0024609
%RSD	.4270208	.1327178	.3722279	.3452797	.4487301	.4382341
#1	.6122118	10.05211	8.814244	18.04289	12.28440	.5624189
#2	.6096725	10.05213	8.841830	18.09158	12.25036	.5634526
#3	.6149008	10.02903	8.776500	18.16693	12.35830	.5587685

Elem	Sr4077
Units	ppm
Avg	.7896132
Stddev	.0004983
%RSD	.0631024
#1	.7901624
#2	.7891900
#3	.7894871

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3804.349	86600.28	19773.76	3557.459	3740.158
Stddev	17.312	143.29	65.96	10.198	15.919
%RSD	.4550702	.1654588	.3335899	.2866554	.4256189
#1	3818.084	86470.10	19755.44	3563.246	3751.943
#2	3810.060	86576.93	19846.94	3545.684	3746.483
#3	3784.902	86753.81	19718.88	3563.447	3722.049

Sample Name: Q1383-15 Acquired: 3/4/2025 12:21:50 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0180521	-.016391	.0575520	-.081701	.0032309	165.4630
Stddev	.0013455	.000458	.0024488	.006154	.0012973	.5267
%RSD	7.453316	2.795549	4.254913	7.532238	40.15263	.3183236
#1	.0166907	-.016682	.0557841	-.075489	.0042309	165.8931
#2	.0193811	-.015863	.0603471	-.081820	.0036967	165.6203
#3	.0180844	-.016628	.0565249	-.087795	.0017650	164.8756
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3382791	.0016855	.0202204	150.2608	.0223957	.3660707
Stddev	.0017768	.0000362	.0012305	.3193	.0002314	.0015388
%RSD	.5252409	2.150050	6.085359	.2125186	1.033278	.4203655
#1	.3397983	.0016756	.0193809	150.5192	.0225934	.3644250
#2	.3387136	.0016552	.0196475	150.3594	.0221412	.3663131
#3	.3363253	.0017256	.0216329	149.9038	.0224525	.3674739
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7189085	583.4343	4.803345	133.1247	.1588089	.0056500
Stddev	.0024283	5.0593	.015967	.0962	.0006035	.0008260
%RSD	.3377792	.8671534	.3324096	.0722503	.3800251	14.61871
#1	.7170013	588.1915	4.813846	133.1484	.1584450	.0060693
#2	.7180820	583.9921	4.811219	133.2068	.1584762	.0061823
#3	.7216422	578.1192	4.784971	133.0189	.1595056	.0046985
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.17783	1.456025	.6959013	2.422944	1.814107	.0028052
Stddev	.13298	.001662	.0018253	.028783	.012276	.0005273
%RSD	.4265059	.1141240	.2622875	1.187954	.6766695	18.79763
#1	31.31354	1.457729	.6947232	2.435171	1.825341	.0022128
#2	31.17218	1.455937	.6949768	2.443595	1.815977	.0029796
#3	31.04777	1.454409	.6980038	2.390065	1.801004	.0032233

Sample Name: Q1383-15 Acquired: 3/4/2025 12:21:50 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003954	8.855327	7.528586	F 10.76897	9.472548	.3307210
Stddev	.000135	.028727	.031850	.03018	.030484	.0030753
%RSD	3.414448	.3244083	.4230541	.2802951	.3218096	.9298758
#1	-.003811	8.875845	7.561060	10.75537	9.449756	.3336297
#2	-.003971	8.867640	7.527299	10.74798	9.460714	.3310306
#3	-.004079	8.822495	7.497399	10.80356	9.507174	.3275026
Elem	Sr4077					
Units	ppm					
Avg	.4838619					
Stddev	.0014858					
%RSD	.3070675					
#1	.4846835					
#2	.4847554					
#3	.4821468					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3878.950	86397.93	19671.80	3579.497	3954.963	
Stddev	6.161	118.89	17.77	11.006	5.001	
%RSD	.1588382	.1376089	.0903269	.3074846	.1264365	
#1	3886.044	86260.94	19675.21	3568.771	3959.939	
#2	3875.865	86458.78	19652.57	3590.764	3955.012	
#3	3874.940	86474.09	19687.62	3578.955	3949.938	

Sample Name: CCV03 Acquired: 3/4/2025 12:26:01 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.982690	5.186694	4.940746	5.008956	5.033916	9.840856	9.747426
Stddev	.015266	.022458	.016801	.011394	.017373	.032875	.030617
%RSD	.3063766	.4329832	.3400437	.2274785	.3451273	.3340665	.3141040
#1	4.982895	5.204135	4.927393	5.010182	5.025332	9.867050	9.770223
#2	4.967322	5.161355	4.935234	4.996999	5.022505	9.803965	9.712626
#3	4.997852	5.194594	4.959610	5.019689	5.053911	9.851554	9.759428
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2378107	2.470659	23.95199	1.010039	2.482494	1.267870	5.009780
Stddev	.0007115	.006981	.05811	.000625	.008563	.004807	.017917
%RSD	.2991924	.2825376	.2426267	.0619108	.3449308	.3791210	.3576464
#1	.2386146	2.467779	23.97688	1.009526	2.477721	1.265445	4.998614
#2	.2375558	2.465579	23.88557	1.010736	2.477380	1.264760	5.000280
#3	.2372619	2.478619	23.99351	1.009856	2.492379	1.273407	5.030447
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.404978	24.24767	2.467141	1.251703	25.42799	2.464042	2.529873
Stddev	.007314	.04652	.008098	.001686	.06983	.006292	.003222
%RSD	.3041033	.1918639	.3282342	.1347124	.2746209	.2553338	.1273711
#1	2.400423	24.29946	2.463720	1.249955	25.35107	2.467349	2.529056
#2	2.401096	24.20942	2.461314	1.251833	25.44552	2.456787	2.527138
#3	2.413414	24.23414	2.476388	1.253320	25.48739	2.467991	2.533425
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.84296	4.798163	5.074246	4.984185	4.884425	5.004846	5.047851
Stddev	.14767	.012557	.017262	.017425	.012404	.013088	.018790
%RSD	.5943943	.2616993	.3401823	.3496080	.2539423	.2615066	.3722311
#1	24.69022	4.811495	5.064950	4.976194	4.881138	4.999542	5.042465
#2	24.85371	4.786560	5.063624	4.972188	4.873997	4.995243	5.032342
#3	24.98496	4.796435	5.094163	5.004172	4.898142	5.019754	5.068745

Sample Name: CCV03 Acquired: 3/4/2025 12:26:01 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.941675	4.845121	5.129623
Stddev	.022891	.014791	.115085
%RSD	.4632284	.3052781	2.243542
#1	4.927916	4.832530	5.176775
#2	4.929009	4.841422	4.998451
#3	4.968100	4.861410	5.213645

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3482.238	75148.47	15601.37	3160.677	4545.457
Stddev	13.314	152.73	54.03	4.049	19.713
%RSD	.3823377	.2032434	.3463048	.1280978	.4336759
#1	3490.439	75286.29	15558.48	3163.199	4554.621
#2	3489.400	75174.86	15662.05	3156.007	4558.920
#3	3466.876	74984.26	15583.59	3162.827	4522.831

Sample Name: CCB03 Acquired: 3/4/2025 12:30:12 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0002673	-.000513	.0000466	-.002144	-.000511	-.002064	-.004280
Stddev	.0005192	.000865	.0003948	.001634	.001451	.002104	.000289
%RSD	194.2816	168.5247	847.8809	76.22734	284.0103	101.9579	6.761216
#1	.0006865	-.001222	-.000364	-.000409	-.001451	-.001345	-.004477
#2	-.000314	.000450	.000081	-.002369	-.001242	-.000413	-.004416
#3	.000429	-.000767	.000423	-.003654	.001160	-.004433	-.003948
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000012	.0000577	.0014927	.0003371	.0000636	.0001026	.0021729
Stddev	.000027	.0000355	.0047768	.0000570	.0002093	.0001190	.0034365
%RSD	229.4947	61.51397	320.0022	16.90211	328.8585	116.0160	158.1555
#1	.000012	.0000172	-.002851	.0002993	.0002183	.0000649	-.000728
#2	-.000005	.0000724	.006609	.0003093	-.000175	.0000070	.005968
#3	-.000042	.0000835	.000720	.0004026	.000147	.0002358	.001278
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000112	.0017627	.0002717	-.000160	.0137939	-.000689	-.000531
Stddev	.000110	.0071401	.0003572	.000186	.0025474	.000583	.000075
%RSD	98.63092	405.0734	131.4758	115.7720	18.46737	84.66297	14.05503
#1	-.000124	-.006454	.0006525	.000018	.0129672	-.000768	-.000522
#2	-.000216	.005288	-.000056	-.000353	.0117626	-.000070	-.000462
#3	.000004	.006455	.000218	-.000146	.0166520	-.001228	-.000610
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0389540	.0068030	-.000059	.0001250	.0006696	.0045792	.0028635
Stddev	.0305269	.0008699	.000207	.0001765	.0003487	.0040967	.0013698
%RSD	78.36669	12.78684	351.7515	141.1865	52.07795	89.46241	47.83671
#1	.0060570	.0075885	.000176	-.000079	.0006857	.0058338	.0014724
#2	.0444371	.0069524	-.000138	.000233	.0010099	.0000019	.0042110
#3	.0663678	.0058681	-.000214	.000220	.0003131	.0079018	.0029071

Sample Name: CCB03 Acquired: 3/4/2025 12:30:12 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.003270	-.001607	.0000778
Stddev	.000767	.000921	.0000492
%RSD	23.45684	57.28890	63.21541
#1	-.002716	-.002670	.0001300
#2	-.004145	-.001091	.0000708
#3	-.002949	-.001060	.0000324

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3654.200	78778.19	16221.25	3303.785	5205.726
Stddev	12.557	156.14	17.50	4.990	16.350
%RSD	.3436389	.1982001	.1078541	.1510466	.3140795
#1	3659.369	78949.99	16240.29	3300.983	5222.579
#2	3663.348	78644.92	16217.57	3300.825	5204.667
#3	3639.884	78739.67	16205.89	3309.546	5189.931

Sample Name: Q1383-17 Acquired: 3/4/2025 12:34:31 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	1
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	2
Avg	.0196542	-.015957	.0507728	-.084010	.0038531	185.7268	.2960499	3
Stddev	.0016975	.001704	.0010798	.006973	.0018712	.1689	.0001322	4
%RSD	8.636646	10.67631	2.126754	8.299984	48.56475	.0909496	.0446508	5
#1	.0189921	-.015179	.0520094	-.090378	.0041985	185.5436	.2959579	7
#2	.0183876	-.014781	.0502931	-.076559	.0055275	185.7606	.2962014	8
#3	.0215830	-.017911	.0500160	-.085092	.0018332	185.8763	.2959904	9
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	10
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	11
Avg	.0018204	.0225145	173.4208	.0276303	.3596253	.6590393	562.6960	12
Stddev	.0001358	.0006018	.3536	.0003848	.0020174	.0018755	.5593	13
%RSD	7.457463	2.672834	.2039156	1.392818	.5609845	.2845863	.0994036	14
#1	.0019718	.0219108	173.5406	.0280726	.3582002	.6572925	563.3404	15
#2	.0017094	.0225184	173.0228	.0274454	.3587420	.6588040	562.3360	16
#3	.0017802	.0231143	173.6989	.0273727	.3619337	.6610213	562.4115	17
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138	18
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	4.320736	143.0528	.1777025	.0051181	33.50745	1.438525	.6716445	
Stddev	.008809	.4282	.0006787	.0003407	.03584	.003594	.0007598	
%RSD	.2038657	.2993122	.3819421	6.656278	.1069475	.2498511	.1131258	
#1	4.323107	142.9080	.1770076	.0051284	33.47089	1.438898	.6709725	
#2	4.310984	142.7158	.1777360	.0047724	33.54251	1.434759	.6724689	
#3	4.328116	143.5346	.1783638	.0054535	33.50897	1.441918	.6714920	
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774	
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	2.622606	3.547371	.0026271	-.004959	9.846181	7.983757	9.992480	
Stddev	.025078	.002250	.0001210	.002196	.013100	.015249	.006053	
%RSD	.9562142	.0634233	4.605595	44.27639	.1330491	.1909946	.0605749	
#1	2.650953	3.548240	.0026797	-.002589	9.848382	7.995394	9.998303	
#2	2.613552	3.549056	.0024887	-.005366	9.832120	7.966495	9.992916	
#3	2.603312	3.544816	.0027129	-.006923	9.858042	7.989382	9.986221	

Sample Name: Q1383-17 Acquired: 3/4/2025 12:34:31 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	8.055648	.3384550	.4682446
Stddev	.022654	.0011399	.0006437
%RSD	.2812186	.3368057	.1374652
#1	8.031049	.3397165	.4675085
#2	8.060243	.3381500	.4685236
#3	8.075652	.3374986	.4687017

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3801.221	86000.16	18797.15	3539.915	3912.745
Stddev	9.810	73.93	21.27	8.691	12.497
%RSD	.2580626	.0859682	.1131600	.2455048	.3194035
#1	3808.883	85966.83	18783.25	3548.657	3924.115
#2	3804.614	86084.89	18821.63	3539.812	3914.757
#3	3790.165	85948.77	18786.55	3531.277	3899.364

Sample Name: Q1383-19 Acquired: 3/4/2025 12:38:44 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0227831	-.019347	.0777997	-.092438	.0029581	180.1921
Stddev	.0020975	.003418	.0013900	.001390	.0021368	.7334
%RSD	9.206587	17.66469	1.786609	1.503494	72.23402	.4070215
#1	.0251512	-.020915	.0763939	-.090961	.0006789	180.7009
#2	.0211589	-.015427	.0791733	-.093720	.0049160	180.5240
#3	.0220390	-.021699	.0778319	-.092632	.0032795	179.3514
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4474951	.0019166	.0235020	179.5575	.0227972	.3897064
Stddev	.0014815	.0000553	.0006230	.1853	.0001494	.0006036
%RSD	.3310628	2.883692	2.650930	.1031934	.6552573	.1548990
#1	.4465448	.0019758	.0231615	179.5269	.0228899	.3890426
#2	.4467383	.0019076	.0231235	179.7562	.0226249	.3902225
#3	.4492021	.0018663	.0242211	179.3894	.0228769	.3898540
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7071688	636.4610	5.007295	136.5124	.1758291	.0082862
Stddev	.0009634	.7042	.002959	.2931	.0009345	.0005518
%RSD	.1362337	.1106403	.0591036	.2146715	.5314841	6.659696
#1	.7066051	635.6930	5.004996	136.5880	.1759279	.0076951
#2	.7066200	636.6139	5.006255	136.7602	.1748491	.0083755
#3	.7082812	637.0763	5.010634	136.1889	.1767102	.0087879
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.26219	1.622629	.7157566	2.909464	3.601579	.0027882
Stddev	.07173	.003619	.0025840	.012181	.009029	.0003161
%RSD	.2093471	.2230595	.3610115	.4186617	.2506839	11.33534
#1	34.22205	1.618629	.7151500	2.899206	3.611780	.0028748
#2	34.21952	1.623582	.7135298	2.906259	3.598342	.0024379
#3	34.34500	1.625677	.7185898	2.922927	3.594615	.0030519

Sample Name: Q1383-19 Acquired: 3/4/2025 12:38:44 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.005249	F 11.17271	8.887931	F 10.48873	F 16.89183	.3575299
Stddev	.001749	.00316	.022342	.04309	.03385	.0006993
%RSD	33.32653	.0282666	.2513788	.4107819	.2003693	.1956038
#1	-.006601	11.17211	8.873329	10.46978	16.87423	.3579031
#2	-.005872	11.17612	8.876813	10.45837	16.87040	.3567231
#3	-.003273	11.16989	8.913652	10.53805	16.93085	.3579635
Elem	Sr4077					
Units	ppm					
Avg	.5197583					
Stddev	.0008208					
%RSD	.1579205					
#1	.5206806					
#2	.5191081					
#3	.5194862					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3840.658	86017.26	19888.59	3528.503	3926.427	
Stddev	10.250	105.21	61.83	22.991	9.366	
%RSD	.2668823	.1223131	.3108581	.6515917	.2385502	
#1	3844.818	85944.83	19836.23	3517.759	3933.494	
#2	3848.174	85969.01	19872.75	3554.900	3929.984	
#3	3828.982	86137.94	19956.80	3512.851	3915.803	

Sample Name: Q1383-21 Acquired: 3/4/2025 12:43:00 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0139289	.0038282	.0442919	-.064828	.0016245	168.8992	.0819398
Stddev	.0013030	.0009992	.0016745	.003434	.0008724	.0407	.0005861
%RSD	9.354409	26.10224	3.780571	5.297735	53.70141	.0241105	.7152698
#1	.0125238	.0049781	.0456154	-.065417	.0024878	168.9454	.0824345
#2	.0141656	.0031717	.0448508	-.067930	.0007432	168.8685	.0812925
#3	.0150973	.0033347	.0424094	-.061137	.0016426	168.8836	.0820923
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004686	.0038852	117.6588	.0420003	.3112065	.6019639	486.5675
Stddev	.0002622	.0007223	.1758	.0003404	.0007559	.0009033	1.9721
%RSD	55.95651	18.58992	.1494530	.8104358	.2428924	.1500641	.4053160
#1	.0007539	.0035789	117.7868	.0416072	.3104831	.6009216	486.3465
#2	.0004135	.0033665	117.4583	.0421920	.3111453	.6024504	488.6408
#3	.0002383	.0047101	117.7313	.0422015	.3119912	.6025197	484.7152
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.638246	165.8594	.2409779	.0057579	39.43522	1.101418	.4787836
Stddev	.002777	.3596	.0007860	.0005987	.16684	.004640	.0032661
%RSD	.1052546	.2168129	.3261762	10.39770	.4230849	.4212741	.6821696
#1	2.640982	166.2061	.2408862	.0057303	39.59953	1.101466	.4818693
#2	2.635430	165.4881	.2402417	.0063699	39.44018	1.096755	.4791186
#3	2.638325	165.8841	.2418057	.0051735	39.26595	1.106035	.4753629
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.228215	1.635755	.0015837	-.002875	5.785402	7.860629	7.774109
Stddev	.012436	.003813	.0008427	.000427	.007574	.021864	.043901
%RSD	.5581277	.2330937	53.21475	14.83820	.1309135	.2781498	.5647081
#1	2.225712	1.636589	.0007051	-.003354	5.793961	7.885821	7.751276
#2	2.217221	1.639081	.0023854	-.002534	5.782677	7.846585	7.746331
#3	2.241713	1.631594	.0016605	-.002739	5.779567	7.849482	7.824721

Sample Name: Q1383-21 Acquired: 3/4/2025 12:43:00 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	4.354118	.3131205	.3655503
Stddev	.019010	.0005909	.0003144
%RSD	.4365991	.1887011	.0860084
#1	4.342204	.3128291	.3659114
#2	4.344109	.3138004	.3653373
#3	4.376042	.3127318	.3654023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3614.381	79437.32	17769.90	3313.157	4052.626
Stddev	3.959	109.46	42.06	13.839	5.632
%RSD	.1095253	.1377891	.2366885	.4177002	.1389819
#1	3618.854	79317.91	17809.02	3301.028	4054.014
#2	3612.958	79461.14	17775.26	3310.212	4057.434
#3	3611.330	79532.90	17725.42	3328.232	4046.429

Sample Name: PB166768BL Acquired: 3/4/2025 12:52:04 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	1
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	2
Avg	.0002358	-.001460	-.000380	-.002265	.0003194	-.005234	-.004787	3
Stddev	.0008970	.000846	.000207	.001855	.0004610	.002646	.000817	4
%RSD	380.3282	57.90378	54.49647	81.88681	144.3242	50.54931	17.07175	5
#1	.0011169	-.000501	-.000376	-.000861	.0004097	-.008224	-.003845	7
#2	.0002669	-.002097	-.000175	-.004367	-.000180	-.003194	-.005208	8
#3	-.000676	-.001783	-.000590	-.001567	.000729	-.004285	-.005308	9
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	10
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	11
Avg	-.000068	.0000031	-.011335	.0003742	.0001702	-.000027	-.003799	12
Stddev	.000020	.0000630	.003127	.0001300	.0000931	.000300	.000299	13
%RSD	28.52347	2010.319	27.58831	34.74613	54.66950	1105.997	7.880535	14
#1	-.000064	.0000532	-.013034	.0003587	.0001340	-.000108	-.004062	15
#2	-.000090	-.000068	-.013245	.0005113	.0002760	-.000279	-.003474	16
#3	-.000052	.000024	-.007726	.0002526	.0001008	.000305	-.003862	17
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138	18
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	-.000155	.0014200	.0000483	.0001534	-.011165	-.000900	-.001143	
Stddev	.000023	.0020372	.0002274	.0002921	.006797	.000400	.000120	
%RSD	14.79210	143.4632	470.9417	190.4269	60.87249	44.44536	10.45920	
#1	-.000152	.0007973	-.000212	-.000143	-.016168	-.000653	-.001225	
#2	-.000133	-.000233	.000210	.000441	-.013901	-.001362	-.001198	
#3	-.000179	.003696	.000147	.000163	-.003427	-.000686	-.001006	
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774	
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Avg	.0126207	-.000561	-.000210	.0000877	.0003193	-.002567	.0001311	
Stddev	.0085980	.000563	.000202	.0004825	.0003194	.001976	.0014975	
%RSD	68.12621	100.3883	96.52598	550.2286	100.0298	76.98744	1142.080	
#1	.0216505	.000089	-.000238	.0004435	.0000805	-.000388	.0013669	
#2	.0045319	-.000896	-.000396	-.000462	.0006821	-.004243	-.001534	
#3	.0116797	-.000876	.000006	.000281	.0001952	-.003069	.000561	

Sample Name: PB166768BL Acquired: 3/4/2025 12:52:04 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.005048	-.001936	-.000023
Stddev	.002182	.000592	.000035
%RSD	43.21186	30.58881	154.0993
#1	-.005212	-.001275	.000002
#2	-.007144	-.002115	-.000062
#3	-.002790	-.002419	-.000007

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3605.411	78105.87	16022.81	3290.387	5099.198
Stddev	10.461	268.03	33.74	8.559	15.044
%RSD	.2901552	.3431653	.2105869	.2601062	.2950195
#1	3617.035	78076.72	16002.74	3283.983	5113.765
#2	3602.445	78387.28	16003.92	3287.070	5100.110
#3	3596.753	77853.60	16061.77	3300.108	5083.719

Sample Name: PB166768BS Acquired: 3/4/2025 12:56:23 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.7005073	1.749014	.8408370	1.660434	.7094449	1.774937
Stddev	.0033221	.012820	.0018526	.002348	.0004666	.003061
%RSD	.4742467	.7330039	.2203290	.1414164	.0657653	.1724300
#1	.6982622	1.762738	.8390381	1.662654	.7089389	1.776645
#2	.6989361	1.737345	.8407338	1.657976	.7095378	1.776763
#3	.7043236	1.746958	.8427390	1.660673	.7098580	1.771404
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1661993	F .1658730	.1653250	.9011152	.3698536	.1730118
Stddev	.0001046	.0005788	.0006285	.0051259	.0018425	.0006454
%RSD	.0629212	.3489638	.3801831	.5688345	.4981800	.3730339
#1	.1663197	.1654575	.1650224	.8985951	.3677823	.1726132
#2	.1661317	.1665342	.1649051	.8977372	.3704682	.1726657
#3	.1661464	.1656274	.1660476	.9070132	.3713103	.1737564
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2745085	2.774234	.1740197	1.715139	.4345626	.0657835
Stddev	.0008174	.026745	.0013456	.016114	.0020191	.0000791
%RSD	.2977667	.9640579	.7732168	.9395263	.4646337	.1202545
#1	.2741439	2.767050	.1744996	1.722594	.4331815	.0657147
#2	.2739369	2.751815	.1725000	1.696647	.4336264	.0657658
#3	.2754448	2.803837	.1750595	1.726176	.4368799	.0658699
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.687055	.2628687	.1819677	8.556482	F .2393859	.3796148
Stddev	.014871	.0007849	.0000534	.044214	.0010429	.0012192
%RSD	.5534330	.2985782	.0293756	.5167344	.4356468	.3211676
#1	2.671182	.2619958	.1819694	8.594836	.2381893	.3794804
#2	2.689318	.2635162	.1819134	8.508122	.2401018	.3784684
#3	2.700664	.2630942	.1820202	8.566488	.2398665	.3808957

Sample Name: PB166768BS Acquired: 3/4/2025 12:56:23 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.5910374	.1736637	.7597937	F 4.755114	F -.001923	.1743585
Stddev	.0024820	.0006570	.0122581	.011195	.002180	.0008220
%RSD	.4199371	.3783252	1.613345	.2354202	113.3936	.4714613
#1	.5893023	.1736923	.7566376	4.767813	.000594	.1747572
#2	.5899296	.1729929	.7494223	4.750855	-.003217	.1749051
#3	.5938804	.1743060	.7733213	4.746674	-.003145	.1734131

Elem	Sr4077
Units	ppm
Avg	.1869199
Stddev	.0000958
%RSD	.0512516
#1	.1870282
#2	.1868853
#3	.1868461

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3558.360	77676.19	16177.07	3220.149	4988.388
Stddev	6.533	200.88	36.72	6.461	11.683
%RSD	.1835965	.2586154	.2270084	.2006395	.2341989
#1	3564.473	77893.88	16193.92	3212.866	4996.157
#2	3559.131	77636.71	16134.95	3222.392	4994.054
#3	3551.475	77497.98	16202.35	3225.190	4974.952

Sample Name: Q1381-01 Acquired: 3/4/2025 13:00:26 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.002542	-.006773	.0506319	-.001274	.0033360	4.329120	.0588147
Stddev	.000489	.000601	.0008519	.001371	.0004185	.004176	.0004743
%RSD	19.25138	8.869403	1.682439	107.6165	12.54462	.0964711	.8063405
#1	-.002861	-.006090	.0515861	-.000644	.0028934	4.325452	.0593060
#2	-.001979	-.007012	.0499479	-.002847	.0033892	4.328244	.0583595
#3	-.002787	-.007217	.0503616	-.000332	.0037253	4.333665	.0587787
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001849	.0005267	28.08571	.0116327	.0006118	.1382497	2.141756
Stddev	.0000253	.0000626	.09248	.0001717	.0000535	.0003637	.017103
%RSD	13.66195	11.88406	.3292793	1.475562	8.741373	.2630979	.7985525
#1	.0002065	.0005920	28.10671	.0114477	.0005840	.1378339	2.153408
#2	.0001571	.0005207	27.98453	.0116635	.0006734	.1384062	2.122121
#3	.0001911	.0004673	28.16587	.0117868	.0005779	.1385090	2.149738
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0599687	5.247698	.0093892	-.000158	4.348288	.0076040	.6966921
Stddev	.0001756	.033298	.0000606	.000119	.021631	.0003328	.0029776
%RSD	.2928820	.6345243	.6453845	75.18035	.4974600	4.377125	.4273894
#1	.0600906	5.243478	.0094097	-.000216	4.372289	.0078090	.6988641
#2	.0600481	5.216712	.0093210	-.000236	4.342279	.0077831	.6932979
#3	.0597673	5.282905	.0094368	-.000021	4.330298	.0072200	.6979142
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.793179	.1149371	.0658429	-.000899	.0316890	5.736877	.4236775
Stddev	.017086	.0004601	.0004071	.000604	.0006686	.021268	.0033596
%RSD	.4504310	.4003132	.6182922	67.18554	2.109758	.3707221	.7929491
#1	3.799095	.1148798	.0653776	-.000440	.0315567	5.758506	.4198379
#2	3.806520	.1145083	.0661337	-.001584	.0324138	5.715990	.4260765
#3	3.773922	.1154232	.0660173	-.000674	.0310965	5.736134	.4251182

Sample Name: Q1381-01 Acquired: 3/4/2025 13:00:26 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	2.301186	-.001630	.0455800
Stddev	.002808	.000371	.0001658
%RSD	.1220166	22.74395	.3636875
#1	2.298308	-.001321	.0456067
#2	2.303918	-.001527	.0457307
#3	2.301332	-.002041	.0454025

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3481.310	77486.22	16740.59	3185.873	4857.960
Stddev	5.200	163.70	32.65	20.566	4.692
%RSD	.1493596	.2112672	.1950642	.6455232	.0965813
#1	3477.416	77344.09	16756.91	3166.013	4852.777
#2	3479.300	77665.21	16761.87	3207.078	4861.918
#3	3487.215	77449.37	16702.99	3184.527	4859.184

Sample Name: Q1381-02 Acquired: 3/4/2025 13:04:40 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0070468	-.007040	.0643177	-.003823	.0042525	16.29385
Stddev	.0003186	.001264	.0007248	.001833	.0009706	.02030
%RSD	4.520805	17.94849	1.126948	47.93975	22.82503	.1245822
#1	.0073915	-.006116	.0637911	-.005747	.0042913	16.27078
#2	.0069855	-.008480	.0640176	-.002098	.0052032	16.30899
#3	.0067633	-.006524	.0651444	-.003623	.0032631	16.30176
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3407198	.0006090	.0005025	208.1070	.0730928	.0141697
Stddev	.0012665	.0000019	.0001078	.3959	.0004034	.0003379
%RSD	.3717138	.3191073	21.45669	.1902464	.5518496	2.384362
#1	.3413508	.0006100	.0005610	208.5523	.0726296	.0139801
#2	.3415469	.0006068	.0005684	207.7947	.0732823	.0139693
#3	.3392618	.0006103	.0003781	207.9740	.0733665	.0145598
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1194351	11.30176	.3046619	8.836462	.0328829	.0002827
Stddev	.0004201	.05170	.0010532	.036319	.0002856	.0001572
%RSD	.3517739	.4574527	.3456772	.4110186	.8686441	55.61791
#1	.1190344	11.29530	.3048956	8.872763	.0329715	.0003636
#2	.1198723	11.25359	.3055786	8.800124	.0325634	.0001015
#3	.1193986	11.35639	.3035115	8.836498	.0331137	.0003830
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.114121	.0379810	.6471331	5.720260	.1273195	.0436197
Stddev	.036830	.0006809	.0019017	.006530	.0002011	.0000349
%RSD	.7201544	1.792817	.2938648	.1141643	.1579137	.0799948
#1	5.071658	.0386061	.6493273	5.712860	.1275439	.0436462
#2	5.133341	.0372555	.6459598	5.722706	.1272588	.0435801
#3	5.137365	.0380815	.6461123	5.725214	.1271558	.0436326

Sample Name: Q1381-02 Acquired: 3/4/2025 13:04:40 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.001423	.4491181	F 34.58432	.7635109	4.576146	-.019578
Stddev	.001142	.0019085	.13169	.0022201	.002105	.000107
%RSD	80.26695	.4249493	.3807930	.2907780	.0460076	.5450650
#1	-.000327	.4485950	34.46137	.7632059	4.576977	-.019632
#2	-.002606	.4475256	34.56829	.7658678	4.573752	-.019646
#3	-.001335	.4512336	34.72329	.7614591	4.577709	-.019455

Elem	Sr4077
Units	ppm
Avg	.3710254
Stddev	.0002125
%RSD	.0572711
#1	.3708007
#2	.3710522
#3	.3712231

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3390.014	74343.37	16492.15	3046.505	4490.761
Stddev	10.102	180.71	55.47	8.397	9.705
%RSD	.2979793	.2430700	.3363583	.2756437	.2161197
#1	3396.550	74548.82	16441.22	3037.004	4499.475
#2	3378.379	74209.05	16483.98	3052.932	4480.301
#3	3395.112	74272.24	16551.26	3049.579	4492.505

Sample Name: Q1381-02DUP Acquired: 3/4/2025 13:08:51 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0042944	-.006373	.0641136	-.005116	.0029213	16.28278
Stddev	.0021523	.001139	.0007533	.000892	.0008939	.01399
%RSD	50.11717	17.87598	1.174955	17.42813	30.59773	.0859139

#1	.0048641	-.007310	.0646220	-.005995	.0028792	16.29559
#2	.0019146	-.006703	.0632482	-.004212	.0038355	16.28490
#3	.0061045	-.005105	.0644707	-.005141	.0020493	16.26785

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3507975	.0006418	.0004129	212.4403	.0536265	.0134113
Stddev	.0014680	.0000594	.0000447	.9402	.0004827	.0001263
%RSD	.4184617	9.254658	10.81341	.4425872	.9001101	.9416645

#1	.3502138	.0006187	.0003925	212.1827	.0533635	.0132833
#2	.3524676	.0007093	.0003822	213.4825	.0533325	.0134148
#3	.3497112	.0005974	.0004642	211.6557	.0541836	.0135358

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1207764	11.35427	.3104741	8.978465	.0243995	.0000968
Stddev	.0001873	.12112	.0015810	.029182	.0003131	.0002020
%RSD	.1551165	1.066715	.5092189	.3250249	1.283162	208.6456

#1	.1209888	11.24367	.3102761	8.973396	.0241083	-.000072
#2	.1207062	11.48370	.3121448	9.009850	.0243596	.000321
#3	.1206344	11.33545	.3090014	8.952150	.0247306	.000042

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.129757	.0377090	.6521210	5.727014	.1292183	.0437672
Stddev	.051883	.0004114	.0005453	.060907	.0017391	.0000423
%RSD	1.011409	1.091028	.0836248	1.063503	1.345895	.0965767

#1	5.072101	.0381550	.6527393	5.657326	.1303883	.0438120
#2	5.172679	.0376279	.6517085	5.770065	.1272198	.0437280
#3	5.144492	.0373442	.6519151	5.753650	.1300468	.0437615

Sample Name: Q1381-02DUP Acquired: 3/4/2025 13:08:51 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.001474	.4514306	F 34.45581	.7820547	4.637708	-.020477
Stddev	.000559	.0011361	.31265	.0033970	.004328	.000739
%RSD	37.89397	.2516716	.9073999	.4343685	.0933143	3.610090
#1	-.002103	.4522144	34.14853	.7781876	4.632728	-.020368
#2	-.001038	.4519497	34.77357	.7834192	4.639841	-.021264
#3	-.001280	.4501276	34.44532	.7845573	4.640555	-.019798
Elem	Sr4077					
Units	ppm					
Avg	.3719171					
Stddev	.0006827					
%RSD	.1835585					
#1	.3717499					
#2	.3713336					
#3	.3726679					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3357.343	73910.56	16317.39	3001.283	4451.662	
Stddev	.871	620.66	110.69	59.100	4.219	
%RSD	.0259474	.8397479	.6783731	1.969144	.0947801	
#1	3357.122	74339.73	16244.75	3034.845	4449.032	
#2	3356.603	73198.90	16262.63	2933.044	4449.426	
#3	3358.303	74193.05	16444.79	3035.960	4456.529	

Sample Name: Q1381-02LX5 Acquired: 3/4/2025 13:13:02 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.0000031	-.003551	.0132477	-.002491	-.000022	3.534296	.0671987
Stddev	.0009128	.001363	.0005807	.001951	.000884	.013729	.0004681
%RSD	29269.98	38.38095	4.383800	78.31201	4000.363	.3884602	.6965824
#1	.0007759	-.003633	.0127297	-.001013	-.000991	3.547591	.0669145
#2	-.001004	-.004870	.0131379	-.001759	.000743	3.535127	.0677390
#3	.000237	-.002148	.0138755	-.004703	.000182	3.520170	.0669426
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001090	.0000829	43.64805	.0113545	.0029593	.0255588	2.285503
Stddev	.0000604	.0000426	.00367	.0004220	.0000542	.0004331	.013576
%RSD	55.41466	51.39300	.0084174	3.716288	1.833031	1.694717	.5939941
#1	.0000398	.0000338	43.64650	.0117168	.0029097	.0257726	2.273418
#2	.0001514	.0001043	43.65225	.0114555	.0029510	.0250603	2.282899
#3	.0001356	.0001105	43.64541	.0108912	.0030172	.0258435	2.300192
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0644593	1.894163	.0052902	.0001002	.9810021	.0069961	.1473518
Stddev	.0001814	.004135	.0001977	.0003434	.0189623	.0009873	.0004023
%RSD	.2814395	.2182954	3.737883	342.7996	1.932955	14.11263	.2730469
#1	.0643925	1.893115	.0050679	-.000288	.9741148	.0066515	.1473443
#2	.0643208	1.890653	.0054465	.000225	.9664459	.0081095	.1469533
#3	.0646646	1.898721	.0053562	.000364	1.002446	.0062272	.1477578
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.037532	.0243764	.0087661	-.001163	.0921026	6.885048	.1593990
Stddev	.037627	.0005151	.0002794	.001079	.0007830	.054485	.0012625
%RSD	3.626631	2.113198	3.186909	92.78708	.8501650	.7913559	.7920196
#1	1.030696	.0249684	.0087131	.000076	.0911993	6.851615	.1584184
#2	1.003791	.0240303	.0090681	-.001896	.0925878	6.855609	.1608235
#3	1.078108	.0241305	.0085170	-.001671	.0925208	6.947920	.1589552

Sample Name: Q1381-02LX5 Acquired: 3/4/2025 13:13:02 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.9526742	-.005205	.0774530
Stddev	.0022314	.000201	.0001148
%RSD	.2342261	3.870579	.1482280
#1	.9552369	-.005179	.0775380
#2	.9516237	-.005017	.0773224
#3	.9511619	-.005418	.0774986

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3526.548	76505.47	16361.00	3202.221	4802.368
Stddev	2.509	171.63	96.56	10.511	6.371
%RSD	.0711322	.2243312	.5901689	.3282541	.1326684
#1	3528.061	76679.48	16298.49	3202.057	4801.798
#2	3523.652	76500.59	16312.29	3212.813	4796.302
#3	3527.930	76336.33	16472.21	3191.792	4809.006

Sample Name: Q1381-02MS Acquired: 3/4/2025 13:17:17 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.8402180	1.932994	1.011667	1.947672	.7627113	20.61823
Stddev	.0076848	.030461	.002033	.014936	.0053795	.02141
%RSD	.9146235	1.575863	.2009997	.7668885	.7053175	.1038517
#1	.8428381	1.952800	1.013988	1.956848	.7669385	20.63628
#2	.8462502	1.948264	1.010819	1.955731	.7645395	20.59457
#3	.8315658	1.897917	1.010195	1.930437	.7566559	20.62384
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5553700	.1884836	.1927059	220.8671	.4731985	.2091939
Stddev	.0005738	.0004957	.0004756	.8155	.0016637	.0002818
%RSD	.1033171	.2629793	.2467903	.3692226	.3515802	.1347047
#1	.5552887	.1890328	.1931038	220.2686	.4748881	.2095039
#2	.5559802	.1883487	.1928346	220.5368	.4715621	.2091244
#3	.5548412	.1880694	.1921792	221.7959	.4731452	.2089533
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4296699	15.03206	.5039951	11.25184	.5224125	.0764472
Stddev	.0015545	.05544	.0028296	.09123	.0012733	.0001757
%RSD	.3617996	.3688380	.5614420	.8107864	.2437404	.2298981
#1	.4302703	15.04846	.5034195	11.17766	.5234060	.0763854
#2	.4308346	14.97026	.5014976	11.22414	.5228544	.0766455
#3	.4279046	15.07745	.5070683	11.35370	.5209771	.0763107
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.683279	.3302612	.8872216	16.78049	.3885413	.4803478
Stddev	.046358	.0040254	.0012489	.05256	.0013158	.0026161
%RSD	.5338818	1.218859	.1407639	.3132325	.3386586	.5446182
#1	8.734003	.3256184	.8867381	16.83940	.3877910	.4823986
#2	8.672728	.3323898	.8886399	16.76368	.3900606	.4812432
#3	8.643105	.3327755	.8862868	16.73839	.3877722	.4774016

Sample Name: Q1381-02MS Acquired: 3/4/2025 13:17:17 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	.5936548	.6754907	F 39.15227	6.750527	4.901753	.1864243
Stddev	.0018924	.0006198	.15905	.044853	.034047	.0004877
%RSD	.3187779	.0917527	.4062426	.6644372	.6945793	.2616225
#1	.5950158	.6750083	39.28485	6.780523	4.929823	.1867207
#2	.5944548	.6752740	38.97592	6.772093	4.911556	.1866907
#3	.5914937	.6761897	39.19606	6.698965	4.863881	.1858614

Elem	Sr4077
Units	ppm
Avg	.6112841
Stddev	.0014444
%RSD	.2362981
#1	.6127981
#2	.6111332
#3	.6099210

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3278.251	72627.37	16188.72	3008.905	4311.100
Stddev	14.352	264.72	67.54	4.398	12.870
%RSD	.4377797	.3644872	.4172205	.1461602	.2985401
#1	3271.653	72481.41	16232.06	3013.939	4302.380
#2	3268.385	72932.93	16223.20	3005.811	4305.038
#3	3294.715	72467.75	16110.89	3006.965	4325.882

Sample Name: CCV04 Acquired: 3/4/2025 13:27:12 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.841579	5.066141	4.820382	4.875343	4.895862	9.652421	9.621229
Stddev	.001097	.013903	.006655	.012518	.006418	.021516	.012722
%RSD	.0226572	.2744260	.1380580	.2567621	.1310861	.2229027	.1322291

#1	4.841033	5.076578	4.815091	4.888151	4.900175	9.636704	9.619260
#2	4.840862	5.050359	4.827853	4.863137	4.888486	9.643616	9.609606
#3	4.842842	5.071487	4.818200	4.874742	4.898924	9.676942	9.634820

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2399597	2.402904	23.58937	.9842817	2.411590	1.232411	4.812311
Stddev	.0008987	.002379	.05962	.0007448	.001405	.001855	.012103
%RSD	.3745038	.0990129	.2527560	.0756720	.0582642	.1505567	.2514942

#1	.2390261	2.400199	23.52587	.9838011	2.409993	1.232599	4.803496
#2	.2408188	2.403842	23.59810	.9851397	2.412139	1.230469	4.826110
#3	.2400342	2.404671	23.64415	.9839044	2.412638	1.234166	4.807329

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.368822	23.76080	2.406818	1.218448	24.31389	2.415639	2.471207
Stddev	.006675	.12639	.001855	.001838	.03598	.000994	.003973
%RSD	.2818011	.5319207	.0770771	.1508379	.1479690	.0411370	.1607744

#1	2.362125	23.63653	2.405379	1.216649	24.35536	2.414493	2.467934
#2	2.368865	23.75665	2.408911	1.220323	24.29527	2.416148	2.475627
#3	2.375476	23.88921	2.406162	1.218371	24.29103	2.416274	2.470059

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.87639	4.790483	4.934262	4.852872	4.789490	4.870106	4.911303
Stddev	.05300	.021506	.010750	.002041	.008416	.009868	.016849
%RSD	.2219707	.4489276	.2178563	.0420473	.1757146	.2026170	.3430557

#1	23.89803	4.766454	4.938061	4.854969	4.780531	4.873590	4.930641
#2	23.91514	4.807926	4.922129	4.852752	4.790709	4.877759	4.903480
#3	23.81599	4.797067	4.942596	4.850893	4.797230	4.858969	4.899788

Sample Name: CCV04 Acquired: 3/4/2025 13:27:12 Type: Unk
Method: NON EPA-6010-200.7(v2765) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.801549	4.762118	5.042000
Stddev	.001530	.007465	.019119
%RSD	.0318552	.1567568	.3791917
#1	4.802591	4.768267	5.064026
#2	4.799793	4.753812	5.032272
#3	4.802264	4.764276	5.029700

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3489.117	75378.99	15363.06	3161.014	4554.783
Stddev	9.489	129.32	24.33	12.163	5.744
%RSD	.2719518	.1715552	.1583807	.3847882	.1261184
#1	3483.863	75381.49	15389.73	3172.547	4553.202
#2	3500.071	75248.44	15342.06	3148.306	4561.153
#3	3483.417	75507.04	15357.40	3162.190	4549.995

Sample Name: CCB04 Acquired: 3/4/2025 13:31:22 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.000976	-.000209	-.000497	-.003426	-.000988	-.006530	-.004261
Stddev	.001053	.001044	.000410	.000804	.000646	.002778	.000386
%RSD	107.8290	499.9592	82.63834	23.45526	65.42142	42.53666	9.063638

#1	-.001550	-.001196	-.000102	-.004304	-.001461	-.003793	-.004706
#2	.000239	-.000315	-.000467	-.003248	-.000252	-.006451	-.004026
#3	-.001618	.000884	-.000921	-.002726	-.001250	-.009346	-.004050

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000016	.0000878	-.010008	.0002882	.0001678	.0003760	-.003782
Stddev	.000080	.0000383	.005354	.0002426	.0001997	.0005449	.003702
%RSD	488.5472	43.67678	53.50278	84.19362	118.9943	144.9139	97.87362

#1	.000041	.0000533	-.010666	.0005493	.0001100	.0006549	-.006279
#2	-.000107	.0000810	-.015003	.0000697	.0003899	.0007250	.000471
#3	.000018	.0001290	-.004355	.0002455	.0000034	-.000252	-.005538

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001431	.0047728	.0000027	-.000023	-.007599	-.000314	-.001041
Stddev	.0000897	.0059739	.0002396	.000165	.014839	.000231	.000195
%RSD	62.73720	125.1650	8721.898	732.7118	195.2908	73.58637	18.68695

#1	.0000466	.0091707	.0001536	-.000040	-.021667	-.000391	-.001266
#2	.0002241	.0071762	.0001282	.000150	.007907	-.000054	-.000942
#3	.0001584	-.002028	-.000274	-.000178	-.009035	-.000496	-.000916

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0469739	.0017971	.0001300	-.000179	.0007458	.0058373	.0007945
Stddev	.0123461	.0006346	.0002446	.000096	.0003489	.0085267	.0008995
%RSD	26.28288	35.31038	188.1214	53.57586	46.78286	146.0721	113.2100

#1	.0437829	.0020426	.0003506	-.000166	.0008646	.0022555	-.000131
#2	.0365365	.0010765	-.000133	-.000091	.0003530	-.000314	.001666
#3	.0606022	.0022723	.000172	-.000282	.0010199	.015571	.000849

Sample Name: CCB04 Acquired: 3/4/2025 13:31:22 Type: Unk
Method: NON EPA-6010-200.7(v2765) 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	-.001495	-.001008	.0000252
Stddev	.002640	.000613	.0000507
%RSD	176.5366	60.86443	201.2440
#1	-.003146	-.001405	.0000743
#2	-.002889	-.000301	-.000027
#3	.001549	-.001316	.000028

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3631.605	80644.68	16189.01	3360.907	5160.433
Stddev	11.575	97.60	66.81	3.103	14.363
%RSD	.3187200	.1210220	.4126900	.0923209	.2783303
#1	3637.998	80689.36	16139.45	3357.336	5168.963
#2	3638.572	80711.95	16162.59	3362.433	5168.486
#3	3618.244	80532.74	16264.99	3362.951	5143.851

Sample Name: PB166777BL Acquired: 3/4/2025 13:44:44 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	.0001389	-.000867	-.000334	-.001273	-.000391	-.004912	-.007248
Stddev	.0017851	.002004	.000913	.001777	.000482	.000524	.000610
%RSD	1284.986	231.0771	273.4029	139.5560	123.4645	10.67409	8.418890

#1	-.001922	.000976	.000714	.000734	.000139	-.004322	-.006613
#2	.001176	-.003000	-.000959	-.002646	-.000507	-.005323	-.007299
#3	.001163	-.000578	-.000756	-.001907	-.000804	-.005092	-.007830

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000005	.0000442	-.013085	.0003469	-.000084	-.000147	-.004415
Stddev	.000031	.0000177	.002600	.0002597	.000122	.000055	.003161
%RSD	594.3892	39.95968	19.86938	74.85138	144.6765	37.53785	71.60240

#1	.000030	.0000282	-.013551	.0000482	-.000192	-.000190	-.000782
#2	-.000020	.0000412	-.010283	.0004739	.000047	-.000166	-.006535
#3	-.000026	.0000632	-.015420	.0005186	-.000107	-.000085	-.005927

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000026	.0095274	.0000005	-.000056	-.040217	-.000064	-.001019
Stddev	.000101	.0094192	.0001143	.000060	.006061	.000763	.000184
%RSD	392.7542	98.86429	21725.00	108.1897	15.07142	1192.965	18.10806

#1	-.000131	.0012078	-.000100	-.000123	-.039796	-.000898	-.001122
#2	.000071	.0197544	-.000023	-.000036	-.046478	.000597	-.001128
#3	-.000018	.0076201	.000125	-.000007	-.034377	.000109	-.000806

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.030436	-.003878	.0000784	-.000501	.0008037	-.002122	-.001279
Stddev	.020606	.000246	.0000180	.000087	.0004999	.005190	.001645
%RSD	67.70388	6.341415	22.95902	17.43872	62.20185	244.6018	128.6110

#1	-.025686	-.003618	.0000991	-.000564	.0003312	.003542	-.002246
#2	-.053003	-.003908	.0000666	-.000538	.0007528	-.003256	.000620
#3	-.012620	-.004107	.0000695	-.000401	.0013271	-.006651	-.002212

Sample Name: PB166777BL Acquired: 3/4/2025 13:44:44 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	-.002587	-.002128	-.000049		
Stddev	.000978	.000616	.000023		
%RSD	37.79314	28.92362	46.52431		
#1	-.003382	-.001532	-.000023		
#2	-.001495	-.002761	-.000062		
#3	-.002885	-.002092	-.000063		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3622.439	79095.24	16166.15	3298.166	5126.310
Stddev	2.344	370.59	79.75	7.789	11.722
%RSD	.0647159	.4685388	.4932885	.2361693	.2286621
#1	3619.792	79340.48	16094.80	3301.691	5139.786
#2	3624.252	78668.92	16151.42	3289.238	5118.471
#3	3623.274	79276.31	16252.24	3303.570	5120.674

Sample Name: LR1 Acquired: 3/4/2025 13:49:03 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	.0033600	.0761681	.0438044	-.236832	-.003219	2162.833	.0113076
Stddev	.0048652	.0091851	.0090034	.005263	.006160	30.679	.0011274
%RSD	144.7981	12.05903	20.55374	2.222041	191.3687	1.418480	9.970468
#1	.0052228	.0861041	.0436102	-.231457	.003863	2185.143	.0124960
#2	.0070185	.0679872	.0529034	-.241974	-.007332	2175.508	.0111735
#3	-.002161	.0744128	.0348997	-.237065	-.006187	2127.847	.0102531
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088431	.0937174	1701.744	.0122054	.0376490	-.027488	914.6126
Stddev	.0001484	.0025361	10.169	.0003084	.0004244	.001534	4.7953
%RSD	1.678254	2.706070	.5975497	2.526798	1.127180	5.580808	.5242973
#1	.0087361	.0929490	1713.471	.0124660	.0379037	-.026791	915.2931
#2	.0090125	.0916543	1695.368	.0118649	.0378841	-.029247	919.0313
#3	.0087806	.0965487	1696.392	.0122853	.0371591	-.026426	909.5134
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.120922	1785.061	.0229790	-.057078	2073.089	.0167725	.1350884
Stddev	.000112	7.338	.0002560	.001259	14.209	.0008750	.0018641
%RSD	.0929586	.4110838	1.114016	2.205353	.6853981	5.216727	1.379931
#1	-.120859	1792.136	.0230506	-.058335	2065.010	.0157913	.1371124
#2	-.121052	1785.563	.0231916	-.055818	2089.495	.0174718	.1347109
#3	-.120855	1777.486	.0226949	-.057081	2064.760	.0170544	.1334419
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1346.569	.6974887	.0023469	.0053507	-.043918	.1556827	.0857584
Stddev	3.099	.0122123	.0009510	.0040547	.000223	.0053093	.0037855
%RSD	.2301243	1.750896	40.52292	75.77824	.5081279	3.410324	4.414203
#1	1348.104	.7033096	.0012671	.0020187	-.043665	.1560105	.0867175
#2	1343.002	.7057015	.0030598	.0041682	-.044087	.1608205	.0889722
#3	1348.601	.6834549	.0027138	.0098651	-.044001	.1502171	.0815856

Sample Name: LR1 Acquired: 3/4/2025 13:49:03 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	-.185476	.1079731	.0137300		
Stddev	.021423	.0021899	.0000420		
%RSD	11.55028	2.028232	.3055267		
#1	-.200292	.1064394	.0136819		
#2	-.195224	.1104811	.0137491		
#3	-.160913	.1069988	.0137590		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2322.646	51081.80	12707.98	2096.278	2621.477
Stddev	18.952	145.15	19.25	8.839	10.913
%RSD	.8159789	.2841489	.1514449	.4216643	.4163098
#1	2336.264	50938.61	12686.68	2094.786	2629.055
#2	2330.674	51077.96	12713.15	2088.280	2626.408
#3	2301.001	51228.83	12724.12	2105.769	2608.968

Sample Name: LR2 Acquired: 3/4/2025 13:53:59 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	.0074858	-.013771	229.1466	.0023740	-.005123	.1812658
Stddev	.0018977	.000649	.7885	.0019436	.001617	.0050228
%RSD	25.35096	4.714486	.3441186	81.86908	31.56963	2.770945
#1	.0072190	-.014507	228.6000	.0016844	-.006032	.1818887
#2	.0095027	-.013528	228.7893	.0008693	-.006082	.1859481
#3	.0057355	-.013279	230.0506	.0045684	-.003256	.1759607
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	^F *****	-.002025	-.004554	.2753090	.0125442	-.000263
Stddev	-----	.000057	.000091	.0031560	.0004583	.000185
%RSD	-----	2.796787	1.989707	1.146347	3.653287	70.06159
#1	^ -----	-.002035	-.004550	.2781446	.0130703	-.000059
#2	^ -----	-.002076	-.004466	.2758736	.0122319	-.000417
#3	^ -----	-.001964	-.004647	.2719088	.0123305	-.000314
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	255.9703	.0099171	41.05578	-.025779	46.02095	.0023564
Stddev	1.0907	.0048955	.29397	.011892	.16796	.0004011
%RSD	.4261142	49.36382	.7160160	46.13081	.3649606	17.02340
#1	254.8885	.0148150	41.37292	-.038883	45.92946	.0028113
#2	255.9527	.0099122	40.79242	-.022780	45.91860	.0020535
#3	257.0697	.0050241	41.00200	-.015673	46.21479	.0022045
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2789854	-.011157	F 23.25657	.3488279	-.008013	-.008357
Stddev	.0264783	.000570	.03455	.0425698	.000568	.000349
%RSD	9.490919	5.113190	.1485517	12.20367	7.092061	4.171576
#1	.3048156	-.010768	23.21977	.3901778	-.007909	-.008599
#2	.2802371	-.011812	23.28831	.3511711	-.008626	-.007957
#3	.2519034	-.010890	23.26164	.3051349	-.007504	-.008515

Sample Name: LR2 Acquired: 3/4/2025 13:53:59 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	-.005276	-.040341	-.012855	-.109527	-.013957	.0025406
Stddev	.000770	.000787	.004891	.002938	.004373	.0006316
%RSD	14.59661	1.950780	38.04488	2.682452	31.33006	24.86003
#1	-.004394	-.039432	-.016893	-.106134	-.014238	.0032678
#2	-.005815	-.040815	-.014256	-.111220	-.009451	.0021284
#3	-.005619	-.040774	-.007417	-.111226	-.018183	.0022257
Elem	Sr4077					
Units	ppm					
Avg	.0016748					
Stddev	.0000394					
%RSD	2.355609					
#1	.0016940					
#2	.0017009					
#3	.0016294					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3202.555	76569.12	16276.77	3079.682	4625.587	
Stddev	12.623	66.52	55.17	5.721	16.478	
%RSD	.3941628	.0868788	.3389558	.1857799	.3562328	
#1	3214.608	76635.29	16213.27	3080.798	4641.893	
#2	3203.627	76502.25	16313.01	3084.764	4625.927	
#3	3189.430	76569.80	16304.01	3073.485	4608.942	

Sample Name: Q1381-02MSD Acquired: 3/4/2025 13:58:34 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	.8377779	1.853961	1.005368	1.945379	.7651901	20.71256
Stddev	.0026377	.013066	.000981	.009931	.0051997	.01492
%RSD	.3148471	.7047441	.0976234	.5105020	.6795265	.0720478
#1	.8347327	1.856240	1.006501	1.949182	.7653548	20.71406
#2	.8393530	1.865738	1.004816	1.952846	.7703054	20.72668
#3	.8392479	1.839906	1.004787	1.934108	.7599100	20.69695
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5481118	.1794552	.1919714	219.5398	.4680912	.2082192
Stddev	.0010500	.0011144	.0004485	.2553	.0009156	.0004749
%RSD	.1915644	.6210069	.2336365	.1162890	.1956072	.2280823
#1	.5471420	.1791617	.1921014	219.6351	.4691222	.2086100
#2	.5492268	.1785169	.1923406	219.2505	.4677782	.2083569
#3	.5479665	.1806870	.1914723	219.7336	.4673731	.2076906
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4321213	11.62030	.5030688	11.08782	.5202999	.0754989
Stddev	.0004458	.02826	.0011814	.03884	.0008175	.0001840
%RSD	.1031671	.2431788	.2348344	.3502679	.1571153	.2437014
#1	.4321242	11.62325	.5037844	11.13183	.5210826	.0756051
#2	.4325656	11.64696	.5017052	11.05838	.5203653	.0752864
#3	.4316740	11.59068	.5037168	11.07324	.5194516	.0756051
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.752227	.3304076	.8839796	16.89526	.3759266	.4833765
Stddev	.078436	.0007930	.0014783	.13817	.0028852	.0018011
%RSD	.8961851	.2400067	.1672343	.8177942	.7674867	.3726075
#1	8.766595	.3306738	.8856593	16.90779	.3758871	.4845031
#2	8.822485	.3310333	.8834028	17.02674	.3730613	.4843272
#3	8.667600	.3295158	.8828766	16.75126	.3788313	.4812993

Sample Name: Q1381-02MSD Acquired: 3/4/2025 13:58:34 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	.5887320	.6791879	F 39.24650	6.722341	4.854864	.1845516
Stddev	.0014002	.0017636	.22499	.015465	.018810	.0013842
%RSD	.2378342	.2596586	.5732787	.2300602	.3874402	.7500214
#1	.5900752	.6779624	39.37026	6.710730	4.852100	.1838302
#2	.5872810	.6783922	39.38243	6.739897	4.874902	.1861474
#3	.5888398	.6812091	38.98679	6.716396	4.837589	.1836771
Elem	Sr4077					
Units	ppm					
Avg	.6129027					
Stddev	.0001158					
%RSD	.0188940					
#1	.6128126					
#2	.6130333					
#3	.6128622					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3276.051	72922.19	16344.62	2983.927	4324.531	
Stddev	9.320	192.93	76.19	15.545	7.550	
%RSD	.2844912	.2645661	.4661613	.5209421	.1745927	
#1	3270.654	72745.56	16333.21	2979.502	4318.000	
#2	3270.686	72892.94	16425.88	2971.076	4322.796	
#3	3286.813	73128.07	16274.78	3001.205	4332.798	

Sample Name: Q1381-02A Acquired: 3/4/2025 14:02:33 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	.7881865	1.815879	.9516844	1.825540	.7126703	19.44218
Stddev	.0071184	.020239	.0025910	.008303	.0054956	.02683
%RSD	.9031338	1.114534	.2722580	.4548051	.7711245	.1379871
#1	.7913405	1.805912	.9540949	1.835127	.7174903	19.46957
#2	.7931830	1.802557	.9520141	1.820806	.7138347	19.44102
#3	.7800360	1.839168	.9489443	1.820687	.7066858	19.41596
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5124797	.1756238	.1816806	206.4467	.4334315	.1969507
Stddev	.0015208	.0013886	.0000883	.6377	.0016512	.0001094
%RSD	.2967599	.7906511	.0486138	.3088836	.3809545	.0555570
#1	.5141730	.1767379	.1817283	206.9890	.4352519	.1968484
#2	.5112299	.1760655	.1815787	206.6068	.4330123	.1969377
#3	.5120361	.1740682	.1817348	205.7442	.4320303	.1970661
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4071719	10.85260	.4804360	10.49483	.4854540	.0712745
Stddev	.0017418	.02454	.0019163	.07446	.0006897	.0002340
%RSD	.4277735	.2261417	.3988618	.7095094	.1420781	.3283044
#1	.4090161	10.83947	.4814522	10.47301	.4858584	.0715287
#2	.4069450	10.83741	.4816302	10.57777	.4858461	.0710681
#3	.4055548	10.88091	.4782257	10.43372	.4846577	.0712268
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.060673	.3121681	.8305069	15.64197	.3596142	.4497331
Stddev	.049623	.0009234	.0042760	.10225	.0031099	.0020729
%RSD	.6156175	.2958037	.5148673	.6536975	.8647893	.4609236
#1	8.018239	.3125439	.8354190	15.65006	.3620944	.4517373
#2	8.048545	.3111161	.8284844	15.53592	.3606230	.4498643
#3	8.115236	.3128444	.8276174	15.73994	.3561251	.4475977

Sample Name: Q1381-02A Acquired: 3/4/2025 14:02:33 Type: Unk
Method: NON EPA-6010-200.7(v2764) 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	.5604503	.6376319	F 36.66850	6.368848	4.629578	.1743575
Stddev	.0006788	.0012904	.06667	.003750	.013456	.0012265
%RSD	.1211157	.2023731	.1818137	.0588738	.2906469	.7034372
#1	.5596667	.6369453	36.62057	6.365666	4.637893	.1755448
#2	.5608599	.6391204	36.64030	6.372982	4.614054	.1730952
#3	.5608242	.6368299	36.74463	6.367896	4.636787	.1744324

Elem	Sr4077
Units	ppm
Avg	.5677448
Stddev	.0003305
%RSD	.0582092
#1	.5678353
#2	.5680207
#3	.5673785

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3317.955	73934.52	16246.17	3032.388	4385.614
Stddev	15.467	105.31	99.38	6.006	7.799
%RSD	.4661611	.1424307	.6117061	.1980550	.1778358
#1	3309.135	73833.60	16167.86	3026.049	4378.441
#2	3308.916	73926.24	16212.68	3033.123	4384.486
#3	3335.814	74043.72	16357.97	3037.993	4393.916

Sample Name: CCV05 Acquired: 3/4/2025 14:08:07 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.680857	4.843127	4.625920	4.712763	4.751007	9.279980	9.154839
Stddev	.007353	.036025	.010098	.021170	.015172	.021766	.169883
%RSD	.1570837	.7438424	.2182972	.4492001	.3193415	.2345487	1.855667
#1	4.683869	4.816728	4.628222	4.698296	4.742632	9.287098	9.320019
#2	4.672477	4.828485	4.614869	4.702932	4.741868	9.297296	8.980614
#3	4.686226	4.884168	4.634668	4.737061	4.768520	9.255546	9.163885
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2283162	2.303550	22.67393	.9384755	2.316621	1.193187	4.572174
Stddev	.0006323	.005212	.13672	.0034768	.004781	.002641	.012686
%RSD	.2769595	.2262507	.6029663	.3704774	.2063591	.2213627	.2774603
#1	.2289367	2.302611	22.74005	.9351542	2.316657	1.194216	4.559371
#2	.2283392	2.298872	22.76501	.9381829	2.311823	1.190186	4.584739
#3	.2276726	2.309168	22.51672	.9420894	2.321384	1.195159	4.572412
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.279482	22.77155	2.315442	1.162026	23.06213	2.323386	2.343154
Stddev	.014165	.13806	.005154	.001453	.03861	.008118	.004671
%RSD	.6214252	.6063028	.2226087	.1250557	.1674289	.3493853	.1993568
#1	2.283773	22.67876	2.313719	1.160607	23.05069	2.329356	2.339223
#2	2.291005	22.93022	2.311370	1.163511	23.03053	2.326659	2.348318
#3	2.263667	22.70568	2.321237	1.161960	23.10517	2.314143	2.341921
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.68856	4.598108	4.766623	4.643616	4.604993	4.587568	4.696519
Stddev	.03521	.015169	.013550	.008719	.016883	.016149	.009915
%RSD	.1552088	.3299063	.2842675	.1877715	.3666307	.3520106	.2111183
#1	22.72298	4.604798	4.760531	4.635508	4.618227	4.570199	4.688948
#2	22.69009	4.608782	4.757190	4.642501	4.610772	4.590377	4.692866
#3	22.65260	4.580743	4.782150	4.652839	4.585978	4.602127	4.707743

Sample Name: CCV05 Acquired: 3/4/2025 14:08:07 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077		
Units	ppm	ppm	ppm		
Avg	4.600796	4.557253	4.849425		
Stddev	.005986	.021239	.026306		
%RSD	.1301059	.4660461	.5424459		
#1	4.593965	4.579014	4.867082		
#2	4.603303	4.556166	4.819192		
#3	4.605122	4.536579	4.862001		
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3479.898	77094.49	15512.65	3188.331	4572.214
Stddev	5.134	187.00	45.07	3.837	5.478
%RSD	.1475260	.2425618	.2905665	.1203449	.1198034
#1	3476.509	77304.06	15503.41	3184.978	4570.978
#2	3485.805	76944.67	15472.91	3187.500	4578.204
#3	3477.381	77034.73	15561.62	3192.516	4567.459

Sample Name: CCB05 Acquired: 3/4/2025 14:12:18 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000012	-.001310	-.000084	-.001886	-.000408	-.004697	-.008701
Stddev	.001659	.000819	.001328	.001584	.000738	.004040	.000660
%RSD	14163.69	62.48358	1573.521	83.96875	181.0792	86.01387	7.590467
#1	.000403	-.000380	-.000907	-.003432	-.000334	-.002699	-.007938
#2	.001400	-.001923	.001447	-.000266	-.001180	-.009347	-.009091
#3	-.001839	-.001627	-.000793	-.001961	.000291	-.002045	-.009073
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000007	.0000119	-.012961	.0004077	-.000121	.0001347	-.004003
Stddev	.000015	.0000140	.003752	.0001490	.000229	.0000753	.004168
%RSD	207.7233	118.1686	28.95079	36.55775	188.9762	55.87901	104.1290
#1	-.000015	.0000029	-.008990	.0004669	.000115	.0001551	.000288
#2	-.000016	.0000280	-.013446	.0005181	-.000136	.0000514	-.004261
#3	.000010	.0000046	-.016448	.0002382	-.000343	.0001977	-.008036
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000226	.0030848	.0000186	.0001699	.0820142	-.000585	-.001148
Stddev	.000203	.0156005	.0002804	.0002018	.0111681	.000983	.000237
%RSD	90.02799	505.7148	1510.293	118.7735	13.61728	168.1677	20.68125
#1	-.000448	.0048177	.0002781	.0002260	.0697646	-.001627	-.001135
#2	-.000048	-.013310	-.000279	.0003377	.0846479	-.000454	-.001392
#3	-.000182	.017747	.000056	-.000054	.0916300	.000326	-.000918
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0793599	-.002743	.0001578	.0001614	.0004667	.0063961	.0009541
Stddev	.0042107	.001184	.0000576	.0003495	.0002877	.0021783	.0016358
%RSD	5.305838	43.15828	36.47812	216.5766	61.63237	34.05637	171.4402
#1	.0842193	-.002535	.0001407	.0005557	.0005802	.0072266	-.000138
#2	.0770702	-.001677	.0001107	.0000388	.0006803	.0080369	.002835
#3	.0767903	-.004017	.0002219	-.000110	.0001396	.0039247	.000166

Sample Name: CCB05 Acquired: 3/4/2025 14:12:18 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003864	.0005577	.0000768
Stddev	.002200	.0002884	.0000117
%RSD	56.94428	51.72051	15.28630
#1	-.006331	.0005841	.0000700
#2	-.003155	.0002570	.0000701
#3	-.002105	.0008321	.0000904

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3638.659	78861.49	16152.83	3307.402	5177.663
Stddev	13.176	291.56	28.25	11.904	18.188
%RSD	.3621156	.3697071	.1749091	.3599153	.3512808
#1	3649.339	78538.41	16153.63	3318.366	5195.313
#2	3642.703	79105.01	16124.19	3309.099	5178.696
#3	3623.935	78941.05	16180.68	3294.740	5158.980

Sample Name: PB166777BS Acquired: 3/4/2025 14:16:38 Type: Unk
Method: NON EPA-6010-200.7(v2750) 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	.7482690	1.824513	.8771848	1.761183	.7740617	1.853283
Stddev	.0014007	.008620	.0025557	.002950	.0022868	.002997
%RSD	.1871944	.4724329	.2913485	.1674971	.2954259	.1617148
#1	.7472491	1.825759	.8785825	1.761145	.7717969	1.849847
#2	.7498661	1.832442	.8742351	1.758253	.7740185	1.855357
#3	.7476918	1.815338	.8787368	1.764153	.7763698	1.854645
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1688313	.1686950	.1733950	.9028247	.4130201	.1821526
Stddev	.0006992	.0004990	.0001667	.0049839	.0001258	.0002103
%RSD	.4141359	.2958037	.0961357	.5520355	.0304535	.1154373
#1	.1692252	.1692549	.1735683	.9037439	.4131439	.1823878
#2	.1680240	.1682972	.1733808	.8974452	.4128924	.1819829
#3	.1692447	.1685330	.1732358	.9072851	.4130240	.1820870
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2946426	2.860175	.1830764	1.784171	.4600497	.0683704
Stddev	.0009620	.016978	.0003551	.014810	.0006097	.0002228
%RSD	.3265064	.5935836	.1939396	.8300841	.1325225	.3259026
#1	.2953270	2.850017	.1827516	1.801183	.4606623	.0684844
#2	.2935426	2.879774	.1834555	1.777185	.4594430	.0681136
#3	.2950581	2.850733	.1830222	1.774147	.4600438	.0685132
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.795203	.2770651	.2001332	8.929373	F .2355684	.4163737
Stddev	.009201	.0021001	.0002715	.031862	.0006618	.0005142
%RSD	.3291741	.7579958	.1356456	.3568168	.2809192	.1235008
#1	2.788068	.2793378	.2001380	8.898373	.2362821	.4157818
#2	2.805588	.2766615	.1998593	8.962031	.2354477	.4166301
#3	2.791953	.2751961	.2004022	8.927716	.2349752	.4167094

Sample Name: PB166777BS Acquired: 3/4/2025 14:16:38 Type: Unk
Method: NON EPA-6010-200.7(v2750) 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	.6277550	.1843709	.7843205	4.934299	F -.003604	.1802277
Stddev	.0022690	.0003433	.0091843	.004562	.000870	.0005947
%RSD	.3614528	.1861961	1.170989	.0924454	24.12841	.3299839
#1	.6296320	.1839887	.7795318	4.939474	-.002604	.1804847
#2	.6252334	.1846531	.7949095	4.932560	-.004186	.1795477
#3	.6283998	.1844709	.7785202	4.930863	-.004021	.1806507

Elem	Sr4077
Units	ppm
Avg	.1999334
Stddev	.0002049
%RSD	.1024942
#1	.2000291
#2	.1996982
#3	.2000731

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3526.214	79707.48	16485.06	3277.152	4977.784
Stddev	6.110	158.82	96.81	8.916	8.265
%RSD	.1732630	.1992534	.5872757	.2720755	.1660331
#1	3530.767	79542.15	16374.90	3271.141	4976.444
#2	3528.604	79721.41	16556.59	3287.396	4986.638
#3	3519.271	79858.87	16523.69	3272.917	4970.272

Sample Name: Q1454-03 Acquired: 3/4/2025 14:20:41 Type: Unk
Method: NON EPA-6010-200.7(v2750) 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	-.003704	-.003756	.0487168	.0014389	-.000350	.0270561	-.006367
Stddev	.001571	.001403	.0005855	.0021572	.000435	.0024585	.000418
%RSD	42.42162	37.35581	1.201853	149.9256	124.1435	9.086802	6.561208
#1	-.003217	-.002843	.0480438	.0039110	-.000271	.0242908	-.006536
#2	-.005461	-.005372	.0489972	-.000062	.000039	.0278827	-.006674
#3	-.002434	-.003053	.0491094	.000468	-.000820	.0289948	-.005891
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000043	.0010696	.3939692	.0000003	-.000224	.0555303	.0364194
Stddev	.000023	.0000128	.0034548	.0004269	.000256	.0004589	.0017744
%RSD	53.16410	1.198478	.8769248	145887.1	114.1366	.8263854	4.872282
#1	-.000053	.0010609	.3979456	.0003340	-.000152	.0555863	.0384665
#2	-.000017	.0010843	.3917034	-.000481	-.000509	.0550459	.0354707
#3	-.000059	.0010635	.3922586	.000148	-.000012	.0559586	.0353209
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0131855	.0339727	.0000916	-.000025	.3341521	-.000727	.8018413
Stddev	.0000242	.0101550	.0002906	.000367	.0035850	.000376	.0001907
%RSD	.1831724	29.89158	317.1382	1493.359	1.072877	51.66993	.0237774
#1	.0131585	.0238253	-.000244	-.000240	.3382234	-.000354	.8016920
#2	.0132051	.0339575	.000267	-.000233	.3327650	-.000721	.8017759
#3	.0131929	.0441352	.000252	.000399	.3314678	-.001105	.8020561
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0193162	.0287965	.0031469	-.000011	.0010005	.0254609	.2361018
Stddev	.0121527	.0003579	.0000913	.000535	.0004188	.0028164	.0012581
%RSD	62.91450	1.242757	2.901973	4877.992	41.85913	11.06154	.5328606
#1	.0243278	.0292098	.0031642	-.000470	.0006570	.0240978	.2375044
#2	.0281617	.0285871	.0030482	-.000140	.0014670	.0235854	.2357283
#3	.0054592	.0285928	.0032284	.000577	.0008773	.0286995	.2350729

Sample Name: Q1454-03 Acquired: 3/4/2025 14:20:41 Type: Unk
Method: NON EPA-6010-200.7(v2750) 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	1.485258	-.005537	.0014294
Stddev	.004503	.000087	.0000039
%RSD	.3031932	1.562444	.2732532
#1	1.484027	-.005619	.0014337
#2	1.490248	-.005447	.0014284
#3	1.481498	-.005545	.0014260

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3621.375	81388.23	17289.37	3322.140	5229.664
Stddev	12.974	121.52	80.27	7.527	13.968
%RSD	.3582745	.1493128	.4642732	.2265687	.2670973
#1	3606.546	81260.85	17237.09	3330.324	5217.105
#2	3626.941	81502.90	17381.79	3320.580	5227.177
#3	3630.637	81400.94	17249.22	3315.515	5244.708

Sample Name: CCV06 Acquired: 3/4/2025 14:30:29 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.893846	4.998705	4.849794	4.905572	4.954508	9.664208	9.527078
Stddev	.010634	.029542	.008519	.017164	.018513	.016220	.093322
%RSD	.2173029	.5909846	.1756550	.3498878	.3736622	.1678398	.9795397
#1	4.884935	5.022199	4.859553	4.895647	4.936433	9.672676	9.606965
#2	4.890984	4.965540	4.843843	4.895677	4.953660	9.674442	9.549765
#3	4.905619	5.008375	4.845987	4.925391	4.973430	9.645506	9.424505
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2412774	2.418916	23.31791	.9923343	2.436620	1.248982	4.838622
Stddev	.0010252	.006038	.09134	.0006257	.004989	.002839	.026527
%RSD	.4248841	.2496319	.3917353	.0630496	.2047477	.2273437	.5482370
#1	.2416324	2.425276	23.36251	.9924193	2.442105	1.249173	4.851540
#2	.2420779	2.418212	23.37838	.9916704	2.435403	1.246051	4.856216
#3	.2401220	2.413261	23.21283	.9929131	2.432352	1.251720	4.808110
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.352203	23.71781	2.417037	1.238847	24.66672	2.414168	2.500355
Stddev	.013210	.06001	.004618	.001858	.05190	.013552	.005298
%RSD	.5616139	.2530149	.1910552	.1499827	.2104036	.5613411	.2118766
#1	2.360400	23.78390	2.422284	1.236741	24.72651	2.423200	2.494267
#2	2.359245	23.70279	2.415236	1.239544	24.63330	2.420718	2.503913
#3	2.336964	23.66673	2.413590	1.240255	24.64034	2.398585	2.502886
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.04350	4.786304	4.927314	4.876127	4.778408	4.911070	4.861515
Stddev	.08130	.022859	.013395	.008322	.021283	.030571	.011816
%RSD	.3381486	.4775852	.2718585	.1706693	.4453938	.6224974	.2430502
#1	24.12514	4.772464	4.926163	4.885736	4.793411	4.881379	4.869371
#2	24.04284	4.812688	4.914531	4.871395	4.787763	4.909380	4.847927
#3	23.96253	4.773759	4.941248	4.871250	4.754050	4.942452	4.867248

Sample Name: CCV06 Acquired: 3/4/2025 14:30:29 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.814812	4.726194	5.083844
Stddev	.009025	.019602	.079652
%RSD	.1874436	.4147563	1.566760
#1	4.805247	4.734520	5.151708
#2	4.816013	4.740258	5.103674
#3	4.823177	4.703803	4.996151

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3486.006	75017.07	15456.27	3139.888	4556.931
Stddev	6.617	175.03	59.36	2.124	3.250
%RSD	.1898043	.2333137	.3840664	.0676608	.0713121
#1	3490.221	74822.97	15410.38	3142.043	4553.334
#2	3489.417	75162.88	15435.12	3137.795	4559.654
#3	3478.380	75065.37	15523.31	3139.825	4557.805

Sample Name: CCB06 Acquired: 3/4/2025 14:34:40 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003403	-.000489	-.000120	-.003417	.0008793	-.003162	-.008566
Stddev	.0010587	.000807	.000280	.002085	.0007928	.003992	.000613
%RSD	311.0772	165.2807	232.7642	61.03432	90.15661	126.2420	7.157873

#1	.0011313	-.001051	-.000343	-.005152	.0017092	-.005056	-.009271
#2	.0007522	-.000851	.000195	-.003996	.0007990	-.005855	-.008164
#3	-.000862	.000437	-.000213	-.001103	.0001298	.001424	-.008261

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000130	.0000408	-.015660	.0002718	-.000036	-.000049	-.006052
Stddev	.0000213	.0000226	.002359	.0004199	.000118	.000314	.001814
%RSD	163.5493	55.47880	15.06113	154.4736	332.0191	646.8256	29.97909

#1	-.000009	.0000575	-.012943	.0006622	-.000095	-.000332	-.007034
#2	.000033	.0000499	-.017180	-.000172	.000101	.000289	-.003958
#3	.000015	.0000150	-.016856	.000326	-.000112	-.000103	-.007163

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000049	-.008290	.0000380	.0002162	.0281411	-.002130	-.000958
Stddev	.000301	.004471	.0000372	.0002408	.0064414	.001045	.000037
%RSD	612.2256	53.93629	97.77748	111.4010	22.88953	49.07975	3.817414

#1	-.000086	-.003149	.0000122	.0000059	.0213595	-.001711	-.000990
#2	.000268	-.011277	.0000806	.0001638	.0341774	-.003320	-.000918
#3	-.000329	-.010443	.0000212	.0004789	.0288864	-.001359	-.000964

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0152976	.0005693	.0002164	.0000570	.0006490	.0065270	.0022594
Stddev	.0172383	.0003039	.0001008	.0006722	.0005405	.0016631	.0011114
%RSD	112.6859	53.37662	46.59714	1179.397	83.28874	25.48034	49.18890

#1	.0186483	.0006103	.0001418	-.000260	.0008581	.0069228	.0017891
#2	-.003370	.0008506	.0001763	.000829	.0010537	.0079565	.0014606
#3	.030615	.0002470	.0003311	-.000398	.0000351	.0047017	.0035287

Sample Name: CCB06 Acquired: 3/4/2025 14:34:40 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000600	-.001891	.0000598
Stddev	.003707	.000641	.0000228
%RSD	617.5339	33.88407	38.11287

#1	-.004696	-.002595	.0000439
#2	.002523	-.001734	.0000859
#3	.000372	-.001343	.0000496

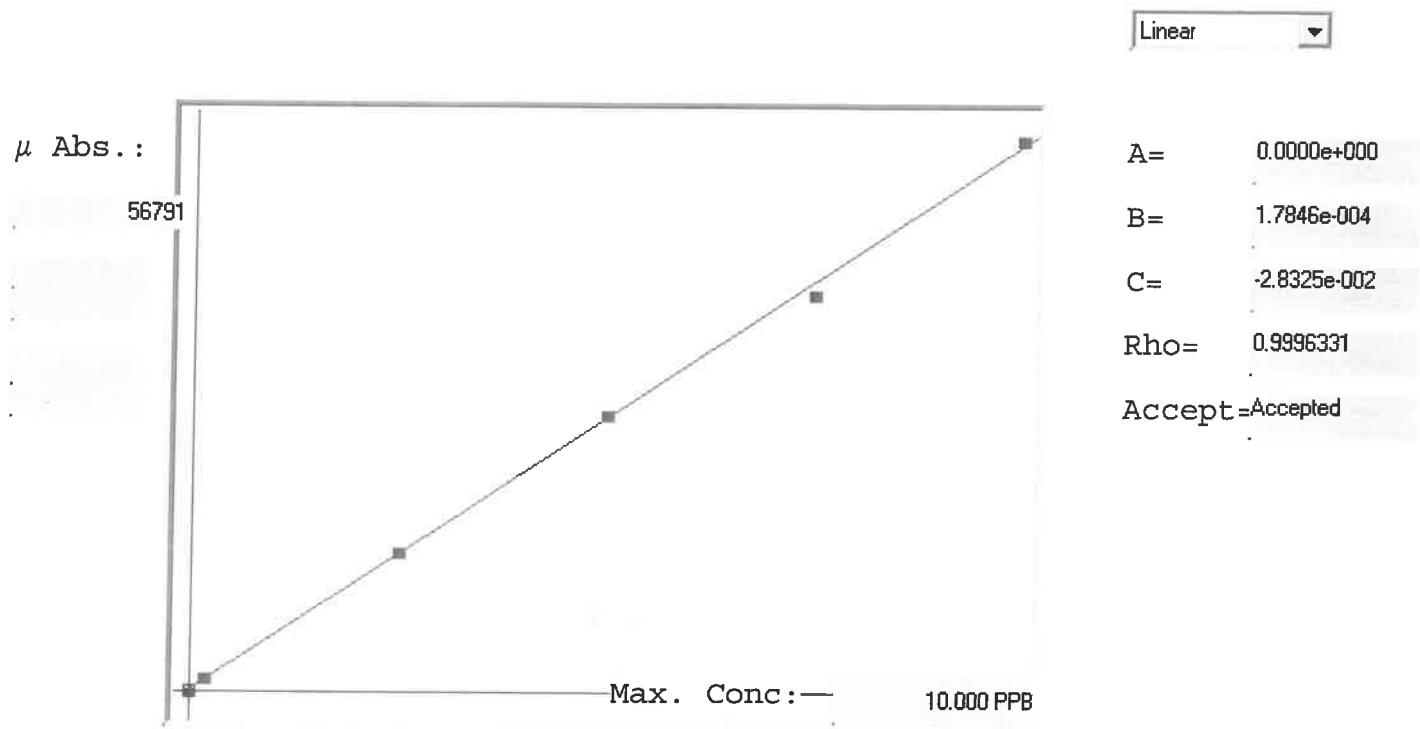
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3640.783	78332.10	16362.02	3307.584	5155.676
Stddev	2.453	63.92	18.50	6.636	3.173
%RSD	.0673816	.0816069	.1130625	.2006365	.0615493

#1	3643.384	78363.06	16342.64	3300.200	5152.179
#2	3638.510	78374.64	16363.91	3309.503	5158.372
#3	3640.456	78258.59	16379.50	3313.049	5156.478

LB134771

7471B

INSTRUMENT ID: CV1



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	0.13
0.0	0.000	-0.028	-0.028	0	0.000	0					
0.2	0.200	0.224	0.024	1415	0.0 %	1415					
2.5	2.500	2.543	0.043	14409	0.0 %	14409					
5.0	5.000	5.059	0.059	28505	0.0 %	28505					
7.5	7.500	7.295	-0.205	41038	0.0 %	41038					
10.0	10.000	10.107	0.107	56791	0.0 %	56791					

LB134771 INSTRUMENT ID : CV1

Method: 7471B

Operator: Admin

Date of Analysis: 21 Feb 2025 12:17:22

Sample ID	Extended ID	µ Abs	Conc	Std Conc	Method	Units	Date	Type	Type
0.0 - 1	50	0	-	0.0000	7471B	PPB	21 Feb 2025 12:29:59	S	Std
0.2 - 1	50.2	1415	-	0.2000	7471B	PPB	21 Feb 2025 12:32:16	S	Std
2.5 - 1	52.5	14409	-	2.5000	7471B	PPB	21 Feb 2025 12:34:33	S	Std
5.0 - 1	55	28505	-	5.0000	7471B	PPB	21 Feb 2025 12:36:50	S	Std
7.5 - 1	57.5	41038	-	7.5000	7471B	PPB	21 Feb 2025 12:39:09	S	Std
10.0 - 1	57.8	56791	-	10.0000	7471B	PPB	21 Feb 2025 12:41:28	S	Std
ICV13 - 1	ICV13	22577	4.0008	-	7471B	PPB	21 Feb 2025 12:52:03	U	SMPL
ICB13 - 1	ICB13	-319	-0.0853	-	7471B	PPB	21 Feb 2025 12:54:19	U	SMPL
CCV01 - 1	CCV01	26683	4.7336	-	7471B	PPB	21 Feb 2025 12:56:37	U	SMPL
CCB01 - 1	CCB01	1	-0.0281	-	7471B	PPB	21 Feb 2025 13:01:50	U	SMPL
CRA - 1	CRA	1331	0.2092	-	7471B	PPB	21 Feb 2025 13:04:04	U	SMPL
HighStd - 1	HighStd	56305	10.0200	-	7471B	PPB	21 Feb 2025 13:06:19	U	SMPL
ChkStd - 1	ChkStd	37085	6.5900	-	7471B	PPB	21 Feb 2025 13:08:34	U	SMPL
PB166828BL - 1	PB166828BL	-2	-0.0287	-	7471B	PPB	21 Feb 2025 13:13:49	U	SMPL
PB166828BS - 1	PB166828BS	21230	3.7604	-	7471B	PPB	21 Feb 2025 13:16:05	U	SMPL
Q1383-01 - 1	OU4-PCS-TC-11-021725	1448	0.2301	-	7471B	PPB	21 Feb 2025 13:18:21	U	SMPL
Q1383-03 - 1	OU4-PCS-TC-12-021725	954	0.1419	-	7471B	PPB	21 Feb 2025 13:20:40	U	SMPL
Q1383-05 - 1	OU4-PCS-TC-13-021725	327	0.0300	-	7471B	PPB	21 Feb 2025 13:23:00	U	SMPL
Q1383-07 - 1	OU4-PCS-TC-14-021725	258	0.0177	-	7471B	PPB	21 Feb 2025 13:25:18	U	SMPL
Q1383-09 - 1	OU4-PCS-TC-15-021725	178	0.0034	-	7471B	PPB	21 Feb 2025 13:27:34	U	SMPL
CCV02 - 1	CCV02	26314	4.6678	-	7471B	PPB	21 Feb 2025 13:29:49	U	SMPL
CCB02 - 1	CCB02	-351	-0.0910	-	7471B	PPB	21 Feb 2025 13:32:05	U	SMPL
Q1383-11 - 1	OU4-PCS-TC-16-021725	791	0.1128	-	7471B	PPB	21 Feb 2025 13:34:24	U	SMPL
Q1383-13 - 1	OU4-PCS-TC-17-021725	230	0.0127	-	7471B	PPB	21 Feb 2025 13:36:39	U	SMPL
Q1383-15 - 1	OU4-PCS-TC-18-021725	188	0.0052	-	7471B	PPB	21 Feb 2025 13:38:55	U	SMPL
Q1383-17 - 1	OU4-PCS-TC-19-021725	223	0.0115	-	7471B	PPB	21 Feb 2025 13:41:11	U	SMPL
Q1383-19 - 1	OU4-PCS-TC-20-021725	192	0.0059	-	7471B	PPB	21 Feb 2025 13:43:27	U	SMPL
Q1383-21 - 1	OU4-CF-15-021725	216	0.0102	-	7471B	PPB	21 Feb 2025 13:45:43	U	SMPL
Q1397-01 - 1	STOCK-PILE	4561	0.7856	-	7471B	PPB	21 Feb 2025 13:47:59	U	SMPL
Q1397-03 - 1	TP7	4983	0.8610	-	7471B	PPB	21 Feb 2025 13:50:16	U	SMPL
Q1397-05 - 1	TP8	6093	1.0591	-	7471B	PPB	21 Feb 2025 13:52:34	U	SMPL
Q1397-05DUP - 1	TP8DUP	7472	1.3052	-	7471B	PPB	21 Feb 2025 13:54:51	U	SMPL
CCV03 - 1	CCV03	27762	4.9262	-	7471B	PPB	21 Feb 2025 13:57:08	U	SMPL
CCB03 - 1	CCB03	6	-0.0273	-	7471B	PPB	21 Feb 2025 14:02:17	U	SMPL
Q1397-05MSD - 1	TP8MSD	25766	4.5700	-	7471B	PPB	21 Feb 2025 14:07:16	U	SMPL
Q1397-05MS - 1	TP8MS	26569	4.7133	-	7471B	PPB	21 Feb 2025 14:10:08	U	SMPL
PB166830BL - 1	PB166830BL	-84	-0.0433	-	7471B	PPB	21 Feb 2025 14:12:51	U	SMPL
PB166830BS - 1	PB166830BS	21443	3.7985	-	7471B	PPB	21 Feb 2025 14:15:08	U	SMPL
Q1382-01 - 1	OU4-PCS-TC-01-021725	1203	0.1864	-	7471B	PPB	21 Feb 2025 14:17:25	U	SMPL
Q1382-03 - 1	OU4-PCS-TC-02-021725	323	0.0293	-	7471B	PPB	21 Feb 2025 14:19:44	U	SMPL
Q1382-05 - 1	OU4-PCS-TC-03-021725	87	-0.0128	-	7471B	PPB	21 Feb 2025 14:22:01	U	SMPL
Q1382-07 - 1	OU4-PCS-TC-04-021725	164	0.0009	-	7471B	PPB	21 Feb 2025 14:24:18	U	SMPL
Q1382-09 - 1	OU4-PCS-TC-05-021725	272	0.0202	-	7471B	PPB	21 Feb 2025 14:26:36	U	SMPL
Q1382-11 - 1	OU4-PCS-TC-06-021725	256	0.0174	-	7471B	PPB	21 Feb 2025 14:28:51	U	SMPL
CCV04 - 1	CCV04	27876	4.9465	-	7471B	PPB	21 Feb 2025 14:31:06	U	SMPL
CCB04 - 1	CCB04	-346	-0.0901	-	7471B	PPB	21 Feb 2025 14:33:22	U	SMPL
Q1382-13 - 1	OU4-PCS-TC-07-021725	310	0.0270	-	7471B	PPB	21 Feb 2025 14:35:41	U	SMPL
Q1382-15 - 1	OU4-PCS-TC-08-021725	183	0.0043	-	7471B	PPB	21 Feb 2025 14:37:57	U	SMPL
Q1382-17 - 1	OU4-PCS-TC-09-021725	159	0.0001	-	7471B	PPB	21 Feb 2025 14:40:13	U	SMPL
Q1382-19 - 1	OU4-PCS-TC-10-021725	188	0.0052	-	7471B	PPB	21 Feb 2025 14:42:29	U	SMPL
Q1384-01 - 1	OR-03-021823025	1986	0.3261	-	7471B	PPB	21 Feb 2025 14:44:45	U	SMPL
Q1385-01 - 1	ST-1	235	0.0136	-	7471B	PPB	21 Feb 2025 14:47:01	U	SMPL
Q1388-01 - 1	72-12016	1339	0.2106	-	7471B	PPB	21 Feb 2025 14:49:18	U	SMPL
Q1388-01DUP - 1	72-12016DUP	1277	0.1996	-	7471B	PPB	21 Feb 2025 14:54:24	U	SMPL
Q1388-01MS - 1	72-12016MS	20796	3.6830	-	7471B	PPB	21 Feb 2025 14:56:40	U	SMPL
Q1388-01MSD - 1	72-12016MSD	23287	4.1275	-	7471B	PPB	21 Feb 2025 14:58:56	U	SMPL
CCV05 - 1	CCV05	30505	5.4157	-	7471B	PPB	21 Feb 2025 15:01:14	U	SMPL
CCB05 - 1	CCB05	3	-0.0278	-	7471B	PPB	21 Feb 2025 15:06:22	U	SMPL
Q1393-01 - 1	SOIL-COMP	401	0.0432	-	7471B	PPB	21 Feb 2025 15:08:37	U	SMPL
Q1393-03 - 1	OD-281	620	0.0823	-	7471B	PPB	21 Feb 2025 15:10:53	U	SMPL
Q1397-05LX5 - 1		1500	0.2394	-	7471B	PPB	21 Feb 2025 15:13:08	U	SMPL
Q1397-05A - 1		26387	4.6808	-	7471B	PPB	21 Feb 2025 15:15:24	U	SMPL
Q1388-01LX5 - 1		-290	-0.0801	-	7471B	PPB	21 Feb 2025 15:17:40	U	SMPL
Q1388-01A - 1		23245	4.1200	-	7471B	PPB	21 Feb 2025 15:20:01	U	SMPL
CCV06 - 1	CCV06	27456	4.8716	-	7471B	PPB	21 Feb 2025 15:22:20	U	SMPL
CCB06 - 1	CCB06	-401	-0.0999	-	7471B	PPB	21 Feb 2025 15:24:39	U	SMPL
Q1388-01DUP - 1	72-12016DUP	2143	0.3541	-	7471B	PPB	21 Feb 2025 14:51:35	U	SMPL

SOP ID : M3050B-Digestion-20
 SDG No : N/A
 Matrix : SOIL
 Pipette ID: ICP A
 Balance ID : M SC-2
 Filter paper ID : N/A
 pH Strip ID : N/A
 Hood ID : #3
 Block ID: 1. HOT BLOCK #2 2. N/A

Start Digest Date: 02/18/2025 Time : 14:30 Temp : 96 °C
 End Digest Date: 02/18/2025 Time : 16:35 Temp : 96 °C
 Digestion tube ID: M6054
 Block thermometer ID: MET-DIG. #2
 Dig Technician Signature: S/L23.
 Supervisor Signature: [Signature]
 Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6002
LCS-2	1.00	M6011
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
1:1 HNO3	10.00	MP84041
Conc. HNO3	5.00	M6126
30% H2O2	3.00	M6125
Conc. HCL	10.00	M6121
PTFE Boiling Stones	N/A	M5585
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK # 2CELL 35 Temp :96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/18/25 17:35	S/L23. met. dig.	AB - metal lab
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
PB166768BL	PBS768	N/A	2.05	100	Colorless	Colorless	Fine	N/A	N/A	1
PB166768BS	LCS768	N/A	2.24	100	Colorless	Colorless	Fine	N/A	M6002,M6011	2
Q1383-01	OU4-PCS-TC-11-021725	N/A	2.35	100	Black	Yellow	Medium	N/A	N/A	3
Q1383-03	OU4-PCS-TC-12-021725	N/A	2.08	100	Black	Yellow	Medium	N/A	N/A	4
Q1383-05	OU4-PCS-TC-13-021725	N/A	2.34	100	Black	Yellow	Medium	N/A	N/A	5
Q1383-07	OU4-PCS-TC-14-021725	N/A	2.29	100	Black	Yellow	Medium	N/A	N/A	6
Q1383-09	OU4-PCS-TC-15-021725	N/A	2.32	100	Black	Yellow	Medium	N/A	N/A	7
Q1383-11	OU4-PCS-TC-16-021725	N/A	2.13	100	Black	Yellow	Medium	N/A	N/A	8
Q1383-13	OU4-PCS-TC-17-021725	N/A	2.39	100	Black	Yellow	Medium	N/A	N/A	9
Q1383-13MS	OU4-PCS-TC-17-021725MS	N/A	2.21	100	Black	Yellow	Medium	N/A	M6002,M6011	10
Q1383-13MSD	OU4-PCS-TC-17-021725MS	N/A	2.32	100	Black	Yellow	Medium	N/A	M6002,M6011	11
Q1383-13DUP	OU4-PCS-TC-17-021725DUP	N/A	2.20	100	Black	Yellow	Medium	N/A	N/A	12
Q1383-15	OU4-PCS-TC-18-021725	N/A	2.14	100	Black	Yellow	Medium	N/A	N/A	13
Q1383-17	OU4-PCS-TC-19-021725	N/A	2.18	100	Black	Yellow	Medium	N/A	N/A	14
Q1383-19	OU4-PCS-TC-20-021725	N/A	2.21	100	Black	Yellow	Medium	N/A	N/A	15
Q1383-21	OU4-CF-15-021725	N/A	2.11	100	Black	Yellow	Medium	N/A	N/A	16

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB166768

Worklist ID : 187755

Department : Digestion

Date : 02-18-2025 13:50:07

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1383-01	OU4-PCS-T-C-11-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-03	OU4-PCS-T-C-12-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-05	OU4-PCS-T-C-13-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-07	OU4-PCS-T-C-14-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-09	OU4-PCS-T-C-15-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-11	OU4-PCS-T-C-16-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-13	OU4-PCS-T-C-17-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-15	OU4-PCS-T-C-18-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-17	OU4-PCS-T-C-19-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-19	OU4-PCS-T-C-20-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1383-21	OU4-CF-15-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D

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Date/Time 02/18/25 14:15

Raw Sample Received by: S183.mch.dig

Raw Sample Relinquished by: S183.mch.dig

Date/Time 02/18/25 16:25

Raw Sample Received by: S183.mch.dig

Raw Sample Relinquished by: S183.mch.dig

Q1383-METALS

SOP ID : M7471B-Mercury-18

SDG No : NA

Matrix : SOIL

Pipette ID : HG A

Balance ID : M SC-3

Filter paper ID : NA

pH Strip ID : NA

Hood ID : #1

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

Start Digest Date: 02/20/2025 Time : 15:15 Temp : 95 °C

End Digest Date: 02/20/2025 Time : 15:45 Temp : 94 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature:

Supervisor Signature:

Temp : 1. 95°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP84591
CCV	30mL	MP84593
CRA	30mL	MP84595
Blank Spike	0.48mL	MP84584
Matrix Spike	0.48mL	MP84584

Chemical Used	ML/SAMPLE USED	Lot Number
AQUA REGIA	1.5mL	MP84597
KMnO4 (5%)	4.5mL	MP84564
Hydroxylamine HCL (12%)	2.0mL	MP84566
PTFE Boiling Stones	-----	M4583
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

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP84585
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP84586
2.5 ppb	S2.5	30mL	MP84587
5.0 ppb	S5.0	30mL	MP84588
7.5 ppb	S7.5	30mL	MP84589
10.0 ppb	S10.0	30mL	MP84590
ICV	ICV	30mL	MP84591
ICB	ICB	30mL	MP84592
CCV	CCV	30mL	MP84593
CCB	CCB	30mL	MP84594
CRI	CRI	30mL	MP84595
CHK STD	CHK STD	30mL	MP84596

Extraction Conformance/Non-Conformance Comments:

N/A		
Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
2/20/25 @ 16:20	MB - JIS, Lab	MB - JIS, Lab
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Comment	Preparation Position
PB166828BL	PBS828	0.50	35	NA	N/A	3-21
PB166828BS	LCS828	0.52	35	NA	MP84584	22
Q1383-01	OU4-PCS-TC-11-021725	0.57	35	NA	N/A	23
Q1383-03	OU4-PCS-TC-12-021725	0.51	35	NA	N/A	24
Q1383-05	OU4-PCS-TC-13-021725	0.57	35	NA	N/A	25
Q1383-07	OU4-PCS-TC-14-021725	0.57	35	NA	N/A	26
Q1383-09	OU4-PCS-TC-15-021725	0.53	35	NA	N/A	27
Q1383-11	OU4-PCS-TC-16-021725	0.58	35	NA	N/A	28
Q1383-13	OU4-PCS-TC-17-021725	0.56	35	NA	N/A	29
Q1383-15	OU4-PCS-TC-18-021725	0.50	35	NA	N/A	30
Q1383-17	OU4-PCS-TC-19-021725	0.56	35	NA	N/A	31
Q1383-19	OU4-PCS-TC-20-021725	0.59	35	NA	N/A	32
Q1383-21	OU4-CF-15-021725	0.57	35	NA	N/A	33
Q1397-01	STOCK-PILE	0.54	35	NA	N/A	34
Q1397-03	TP7	0.57	35	NA	N/A	35
Q1397-05	TP8	0.57	35	NA	N/A	36
Q1397-05DUP	TP8DUP	0.58	35	NA	N/A	37
Q1397-05MS	TP8MS	0.56	35	NA	MP84584	38
Q1397-05MSD	TP8MSD	0.55	35	NA	MP84584	39

WORKLIST(Hardcopy Internal Chain)

WorkList Name : 022025_7471B

WorkList ID : 187805

Department : Digestion

Date : 02-20-2025 15:43:04

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1383-01	OU4-PCS-TC-11-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-03	OU4-PCS-TC-12-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-05	OU4-PCS-TC-13-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-07	OU4-PCS-TC-14-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-09	OU4-PCS-TC-15-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-11	OU4-PCS-TC-16-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-13	OU4-PCS-TC-17-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-15	OU4-PCS-TC-18-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-17	OU4-PCS-TC-19-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-19	OU4-PCS-TC-20-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1383-21	OU4-CF-15-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1397-01	STOCK-PILE	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1397-03	TP7	Solid	Mercury	Cool 4 deg C	PSEG03	H31	02/20/2025	7471B
Q1397-05	TP8	Solid	Mercury	Cool 4 deg C	PSEG03	H31	02/20/2025	7471B

Date/Time 2/20/25 @ 14:40
 Raw Sample Received by: AB-DRG-Lake
 Raw Sample Relinquished by: AB-DRG-Lake

Date/Time 2/20/25 @ 15:30
 Raw Sample Received by: AB-DRG-Lake
 Raw Sample Relinquished by: AB-DRG-Lake

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 2/19/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 16:40
In Date: 02/18/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:11
Out Date: 02/19/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB134739

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q1380-06	BP-VPB-192-GW-725-727	1	1.15	8.48	9.63	1.78	7.4	SLUDGE SAMPLE
Q1380-07	Q1380-06MS	2	1.15	8.48	9.63	1.78	7.4	SLUDGE SAMPLE
Q1380-08	Q1380-06MSD	3	1.15	8.48	9.63	1.78	7.4	SLUDGE SAMPLE
Q1382-01	OU4-PCS-TC-01-021725	4	1.15	8.56	9.71	9.02	91.9	
Q1382-03	OU4-PCS-TC-02-021725	5	1.15	8.59	9.74	9.03	91.7	
Q1382-05	OU4-PCS-TC-03-021725	6	1.15	8.56	9.71	9.06	92.4	
Q1382-07	OU4-PCS-TC-04-021725	7	1.16	8.80	9.96	9.3	92.5	
Q1382-09	OU4-PCS-TC-05-021725	8	1.16	8.65	9.81	9.12	92.0	
Q1382-11	OU4-PCS-TC-06-021725	9	1.12	8.76	9.88	9.2	92.2	
Q1382-13	OU4-PCS-TC-07-021725	10	1.11	8.67	9.78	9.1	92.2	
Q1382-15	OU4-PCS-TC-08-021725	11	1.19	8.61	9.8	9.16	92.6	
Q1382-17	OU4-PCS-TC-09-021725	12	1.14	8.66	9.8	9.16	92.6	
Q1382-19	OU4-PCS-TC-10-021725	13	1.14	8.84	9.98	9.4	93.4	
Q1383-01	OU4-PCS-TC-11-021725	14	1.17	8.74	9.91	9.26	92.6	
Q1383-03	OU4-PCS-TC-12-021725	15	1.15	8.73	9.88	9.2	92.2	
Q1383-05	OU4-PCS-TC-13-021725	16	1.12	8.76	9.88	9.22	92.5	
Q1383-07	OU4-PCS-TC-14-021725	17	1.18	8.58	9.76	9.08	92.1	
Q1383-09	OU4-PCS-TC-15-021725	18	1.13	8.77	9.9	9.24	92.5	
Q1383-11	OU4-PCS-TC-16-021725	19	1.16	8.61	9.77	9.09	92.1	
Q1383-13	OU4-PCS-TC-17-021725	20	1.19	8.58	9.77	9.03	91.4	
Q1383-15	OU4-PCS-TC-18-021725	21	1.15	8.60	9.75	9.05	91.9	
Q1383-17	OU4-PCS-TC-19-021725	22	1.15	8.84	9.99	9.29	92.1	
Q1383-19	OU4-PCS-TC-20-021725	23	1.13	8.67	9.8	9.12	92.2	
Q1383-21	OU4-CF-15-021725	24	1.16	8.50	9.66	9.02	92.5	
Q1384-01	OR-03-021823025	25	1.15	8.81	9.96	8.96	88.6	
Q1384-02	OR-03-021823025-E2	26	1.17	8.82	9.99	9.04	89.2	
Q1385-01	ST-1	27	1.00	1.00	2.00	2.00	100.0	CONCRETE sample
Q1385-02	ST-1-E2	28	1.00	1.00	2.00	2.00	100.0	CONCRETE sample

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-021825 WorkList ID : 187742 Department : Wet-Chemistry Date : 02-18-2025 08:35:18

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1380-06	BP-VPB-192-GW-725-727	Solid	Percent Solids	Cool 4 deg C	TETR06	H31	02/10/2025	Chemtech -SO
Q1380-07	Q1380-06MS	Solid	Percent Solids	Cool 4 deg C	TETR06	H31	02/10/2025	Chemtech -SO
Q1380-08	Q1380-06MSD	Solid	Percent Solids	Cool 4 deg C	TETR06	H31	02/10/2025	Chemtech -SO
Q1382-01	OU4-PCS-TC-01-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-03	OU4-PCS-TC-02-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-05	OU4-PCS-TC-03-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-07	OU4-PCS-TC-04-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-09	OU4-PCS-TC-05-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-11	OU4-PCS-TC-06-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-13	OU4-PCS-TC-07-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-15	OU4-PCS-TC-08-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-17	OU4-PCS-TC-09-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-19	OU4-PCS-TC-10-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-01	OU4-PCS-TC-11-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-03	OU4-PCS-TC-12-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-05	OU4-PCS-TC-13-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-07	OU4-PCS-TC-14-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-09	OU4-PCS-TC-15-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-11	OU4-PCS-TC-16-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-13	OU4-PCS-TC-17-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-15	OU4-PCS-TC-18-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO

Date/Time 02/18/25 15:00
 Raw Sample Received by: *TH Weller*
 Raw Sample Relinquished by: *OP*
 Date/Time 02/18/25 15:00
 Raw Sample Received by: *OP*
 Raw Sample Relinquished by: *OP*

WORKLIST(Hardcopy Internal Chain)

8134439

WorkList Name : %1-021825 WorkList ID : 187742 Department : Wet-Chemistry Date : 02-18-2025 08:35:18

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1383-17	OU4-PCS-TC-19-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-19	OU4-PCS-TC-20-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-21	OU4-CF-15-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1384-01	OR-03-021823025	Solid	Percent Solids	Cool 4 deg C	PSEG05	N41	02/18/2025	Chemtech -SO
Q1384-02	OR-03-021823025-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	N41	02/18/2025	Chemtech -SO
Q1385-01	ST-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	H21	02/18/2025	Chemtech -SO
Q1385-02	ST-1-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	H21	02/18/2025	Chemtech -SO

Date/Time 02/18/25 15:00
 Raw Sample Received by: SP WCE
 Raw Sample Relinquished by: SP

Date/Time 02/18/25 17:00
 Raw Sample Received by: CP SR
 Raw Sample Relinquished by: SP WCE

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB134771

Review By	Mohan	Review On	2/26/2025 2:07:31 PM
Supervise By	jaswal	Supervise On	3/3/2025 10:58:57 PM

STD. NAME	STD REF.#
ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	02/21/25 12:29		Mohan	OK
2	S0.2	S0.2	CAL2	02/21/25 12:32		Mohan	OK
3	S2.5	S2.5	CAL3	02/21/25 12:34		Mohan	OK
4	S5	S5	CAL4	02/21/25 12:36		Mohan	OK
5	S7.5	S7.5	CAL5	02/21/25 12:39		Mohan	OK
6	S10	S10	CAL6	02/21/25 12:41		Mohan	OK
7	ICV13	ICV13	ICV	02/21/25 12:52		Mohan	OK
8	ICB13	ICB13	ICB	02/21/25 12:54		Mohan	OK
9	CCV01	CCV01	CCV	02/21/25 12:56		Mohan	OK
10	CCB01	CCB01	CCB	02/21/25 13:01		Mohan	OK
11	CRA	CRA	CRDL	02/21/25 13:04		Mohan	OK
12	HighStd	HighStd	HIGH STD	02/21/25 13:06		Mohan	OK
13	ChkStd	ChkStd	SAM	02/21/25 13:08		Mohan	OK
14	PB166828BL	PB166828BL	MB	02/21/25 13:13		Mohan	OK
15	PB166828BS	PB166828BS	LCS	02/21/25 13:16		Mohan	OK
16	Q1383-01	OU4-PCS-TC-11-021	SAM	02/21/25 13:18		Mohan	OK
17	Q1383-03	OU4-PCS-TC-12-021	SAM	02/21/25 13:20		Mohan	OK
18	Q1383-05	OU4-PCS-TC-13-021	SAM	02/21/25 13:23		Mohan	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB134771

Review By	Mohan	Review On	2/26/2025 2:07:31 PM
Supervise By	jaswal	Supervise On	3/3/2025 10:58:57 PM

STD. NAME	STD REF.#
ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

19	Q1383-07	OU4-PCS-TC-14-021	SAM	02/21/25 13:25		Mohan	OK
20	Q1383-09	OU4-PCS-TC-15-021	SAM	02/21/25 13:27		Mohan	OK
21	CCV02	CCV02	CCV	02/21/25 13:29		Mohan	OK
22	CCB02	CCB02	CCB	02/21/25 13:32		Mohan	OK
23	Q1383-11	OU4-PCS-TC-16-021	SAM	02/21/25 13:34		Mohan	OK
24	Q1383-13	OU4-PCS-TC-17-021	SAM	02/21/25 13:36		Mohan	OK
25	Q1383-15	OU4-PCS-TC-18-021	SAM	02/21/25 13:38		Mohan	OK
26	Q1383-17	OU4-PCS-TC-19-021	SAM	02/21/25 13:41		Mohan	OK
27	Q1383-19	OU4-PCS-TC-20-021	SAM	02/21/25 13:43		Mohan	OK
28	Q1383-21	OU4-CF-15-021725	SAM	02/21/25 13:45		Mohan	OK
29	Q1397-01	STOCK-PILE	SAM	02/21/25 13:47		Mohan	OK
30	Q1397-03	TP7	SAM	02/21/25 13:50		Mohan	OK
31	Q1397-05	TP8	SAM	02/21/25 13:52		Mohan	OK
32	Q1397-05DUP	TP8DUP	DUP	02/21/25 13:54		Mohan	OK
33	CCV03	CCV03	CCV	02/21/25 13:57		Mohan	OK
34	CCB03	CCB03	CCB	02/21/25 14:02		Mohan	OK
35	Q1397-05MSD	TP8MSD	MSD	02/21/25 14:07		Mohan	OK
36	Q1397-05MS	TP8MS	MS	02/21/25 14:10		Mohan	OK
37	PB166830BL	PB166830BL	MB	02/21/25 14:12		Mohan	OK
38	PB166830BS	PB166830BS	LCS	02/21/25 14:15		Mohan	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB134771

Review By	Mohan	Review On	2/26/2025 2:07:31 PM
Supervise By	jaswal	Supervise On	3/3/2025 10:58:57 PM

STD. NAME	STD REF.#
ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

39	Q1382-01	OU4-PCS-TC-01-021	SAM	02/21/25 14:17		Mohan	OK
40	Q1382-03	OU4-PCS-TC-02-021	SAM	02/21/25 14:19		Mohan	OK
41	Q1382-05	OU4-PCS-TC-03-021	SAM	02/21/25 14:22		Mohan	OK
42	Q1382-07	OU4-PCS-TC-04-021	SAM	02/21/25 14:24		Mohan	OK
43	Q1382-09	OU4-PCS-TC-05-021	SAM	02/21/25 14:26		Mohan	OK
44	Q1382-11	OU4-PCS-TC-06-021	SAM	02/21/25 14:28		Mohan	OK
45	CCV04	CCV04	CCV	02/21/25 14:31		Mohan	OK
46	CCB04	CCB04	CCB	02/21/25 14:33		Mohan	OK
47	Q1382-13	OU4-PCS-TC-07-021	SAM	02/21/25 14:35		Mohan	OK
48	Q1382-15	OU4-PCS-TC-08-021	SAM	02/21/25 14:37		Mohan	OK
49	Q1382-17	OU4-PCS-TC-09-021	SAM	02/21/25 14:40		Mohan	OK
50	Q1382-19	OU4-PCS-TC-10-021	SAM	02/21/25 14:42		Mohan	OK
51	Q1384-01	OR-03-021823025	SAM	02/21/25 14:44		Mohan	OK
52	Q1385-01	ST-1	SAM	02/21/25 14:47		Mohan	OK
53	Q1388-01	72-12016	SAM	02/21/25 14:49		Mohan	OK
54	Q1388-01DUP	72-12016DUP	DUP	02/21/25 14:54		Mohan	OK
55	Q1388-01MS	72-12016MS	MS	02/21/25 14:56		Mohan	OK
56	Q1388-01MSD	72-12016MSD	MSD	02/21/25 14:58		Mohan	OK
57	CCV05	CCV05	CCV	02/21/25 15:01		Mohan	OK
58	CCB05	CCB05	CCB	02/21/25 15:06		Mohan	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB134771

Review By	Mohan	Review On	2/26/2025 2:07:31 PM
Supervise By	jaswal	Supervise On	3/3/2025 10:58:57 PM

STD. NAME	STD REF.#
ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

59	Q1393-01	SOIL-COMP	SAM	02/21/25 15:08		Mohan	OK
60	Q1393-03	OD-281	SAM	02/21/25 15:10		Mohan	OK
61	Q1397-05L	TP8L	SD	02/21/25 15:13		Mohan	OK
62	Q1397-05A	TP8A	PS	02/21/25 15:15		Mohan	OK
63	Q1388-01L	72-12016L	SD	02/21/25 15:17		Mohan	OK
64	Q1388-01A	72-12016A	PS	02/21/25 15:20		Mohan	OK
65	CCV06	CCV06	CCV	02/21/25 15:22		Mohan	OK
66	CCB06	CCB06	CCB	02/21/25 15:24		Mohan	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134892

Review By	jaswal	Review On	3/5/2025 8:49:15 AM
Supervise By	JANVI	Supervise On	3/5/2025 8:55:47 AM
STD. NAME	STD REF.#		
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642		
ICV Standard	MP84643		
CCV Standard	MP84646		
ICSA Standard	MP84644,MP84721		
CRI Standard	MP84642		
LCS Standard			
Chk Standard	MP84649,MP84650		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	03/04/25 09:42		Kareem	OK
2	S1	S1	CAL2	03/04/25 09:46		Kareem	OK
3	S2	S2	CAL3	03/04/25 09:51		Kareem	OK
4	S3	S3	CAL4	03/04/25 09:55		Kareem	OK
5	S4	S4	CAL5	03/04/25 09:59		Kareem	OK
6	S5	S5	CAL6	03/04/25 10:03		Kareem	OK
7	ICV01	ICV01	ICV	03/04/25 10:07	ICV Fail for Ba, K, and Na, (200.7)	Kareem	OK
8	LLICV01	LLICV01	LLICV	03/04/25 10:13		Kareem	OK
9	ICB01	ICB01	ICB	03/04/25 10:17		Kareem	OK
10	CRI01	CRI01	CRDL	03/04/25 10:22		Kareem	OK
11	ICSA01	ICSA01	ICSA	03/04/25 10:26		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	03/04/25 10:30		Kareem	OK
13	ICSADL	ICSADL	ICSA	03/04/25 10:34		Kareem	OK
14	ICSABDL	ICSABDL	ICSAB	03/04/25 10:39		Kareem	OK
15	CCV01	CCV01	CCV	03/04/25 10:43		Kareem	OK
16	CCB01	CCB01	CCB	03/04/25 10:47		Kareem	OK
17	Q1398-06	BUS-DISCONNECT	SAM	03/04/25 10:51		Kareem	OK
18	Q1398-07	HANDHOLD	SAM	03/04/25 10:56		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134892

Review By	jaswal	Review On	3/5/2025 8:49:15 AM
Supervise By	JANVI	Supervise On	3/5/2025 8:55:47 AM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642
ICV Standard	MP84643
CCV Standard	MP84646
ICSA Standard	MP84644,MP84721
CRI Standard	MP84642
LCS Standard	
Chk Standard	MP84649,MP84650

19	Q1453-01	MOO-25-0061	SAM	03/04/25 11:00		Kareem	OK
20	Q1454-03DL	LAW-25-0043DL	SAM	03/04/25 11:05	Not required	Kareem	Not Ok
21	Q1458-01	SP-SOIL	SAM	03/04/25 11:09		Kareem	OK
22	Q1458-03	SP-SOIL	SAM	03/04/25 11:13		Kareem	OK
23	Q1456-02	EFF-WASTE WATER	SAM	03/04/25 11:17		Kareem	OK
24	Q1383-01	OU4-PCS-TC-11-021	SAM	03/04/25 11:22		Kareem	OK
25	Q1383-03	OU4-PCS-TC-12-021	SAM	03/04/25 11:26		Kareem	OK
26	Q1383-05	OU4-PCS-TC-13-021	SAM	03/04/25 11:30		Kareem	OK
27	CCV02	CCV02	CCV	03/04/25 11:34		Kareem	OK
28	CCB02	CCB02	CCB	03/04/25 11:39		Kareem	OK
29	Q1383-07	OU4-PCS-TC-14-021	SAM	03/04/25 11:43		Kareem	OK
30	Q1383-09	OU4-PCS-TC-15-021	SAM	03/04/25 11:47		Kareem	OK
31	Q1383-11	OU4-PCS-TC-16-021	SAM	03/04/25 11:52		Kareem	OK
32	Q1383-13	OU4-PCS-TC-17-021	SAM	03/04/25 11:56		Kareem	OK
33	Q1383-13DUP	OU4-PCS-TC-17-021	DUP	03/04/25 12:00		Kareem	OK
34	Q1383-13L	OU4-PCS-TC-17-021	SD	03/04/25 12:04		Kareem	OK
35	Q1383-13MS	OU4-PCS-TC-17-021	MS	03/04/25 12:08	0.1ML EACH M6003, M6011	Kareem	OK
36	Q1383-13MSD	OU4-PCS-TC-17-021	MSD	03/04/25 12:13	0.1ML EACH M6003, M6011	Kareem	OK
37	Q1383-13A	OU4-PCS-TC-17-021	PS	03/04/25 12:17	0.1ML EACH M6003, M6011	Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134892

Review By	jaswal	Review On	3/5/2025 8:49:15 AM
Supervise By	JANVI	Supervise On	3/5/2025 8:55:47 AM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642
ICV Standard	MP84643
CCV Standard	MP84646
ICSA Standard	MP84644,MP84721
CRI Standard	MP84642
LCS Standard	
Chk Standard	MP84649,MP84650

38	Q1383-15	OU4-PCS-TC-18-021	SAM	03/04/25 12:21		Kareem	OK
39	CCV03	CCV03	CCV	03/04/25 12:26		Kareem	OK
40	CCB03	CCB03	CCB	03/04/25 12:30		Kareem	OK
41	Q1383-17	OU4-PCS-TC-19-021	SAM	03/04/25 12:34		Kareem	OK
42	Q1383-19	OU4-PCS-TC-20-021	SAM	03/04/25 12:38		Kareem	OK
43	Q1383-21	OU4-CF-15-021725	SAM	03/04/25 12:43		Kareem	OK
44	PB166768BL	PB166768BL	MB	03/04/25 12:52		Kareem	OK
45	PB166768BS	PB166768BS	LCS	03/04/25 12:56		Kareem	OK
46	Q1381-01	OUTFALL-001	SAM	03/04/25 13:00		Kareem	OK
47	Q1381-02	OUTFALL-002	SAM	03/04/25 13:04		Kareem	OK
48	Q1381-02DUP	OUTFALL-002DUP	DUP	03/04/25 13:08		Kareem	OK
49	Q1381-02L	OUTFALL-002L	SD	03/04/25 13:13		Kareem	OK
50	Q1381-02MS	OUTFALL-002MS	MS	03/04/25 13:17	0.1ML EACH M6003, M6011	Kareem	OK
51	CCV04	CCV04	CCV	03/04/25 13:27		Kareem	OK
52	CCB04	CCB04	CCB	03/04/25 13:31		Kareem	OK
53	PB166777BL	PB166777BL	MB	03/04/25 13:44		Kareem	OK
54	LR1	LR1	HIGH STD	03/04/25 13:49		Kareem	OK
55	LR2	LR2	HIGH STD	03/04/25 13:53		Kareem	OK
56	Q1381-02MSD	OUTFALL-002MSD	MSD	03/04/25 13:58	0.1ML EACH M6003, M6011	Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134892

Review By	jaswal	Review On	3/5/2025 8:49:15 AM
Supervise By	JANVI	Supervise On	3/5/2025 8:55:47 AM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642
ICV Standard	MP84643
CCV Standard	MP84646
ICSA Standard	MP84644,MP84721
CRI Standard	MP84642
LCS Standard	
Chk Standard	MP84649,MP84650

57	Q1381-02A	OUTFALL-002A	PS	03/04/25 14:02	0.1ML EACH M6003, M6011	Kareem	OK
58	CCV05	CCV05	CCV	03/04/25 14:08		Kareem	OK
59	CCB05	CCB05	CCB	03/04/25 14:12		Kareem	OK
60	PB166777BS	PB166777BS	LCS	03/04/25 14:16		Kareem	OK
61	Q1454-03	LAW-25-0043	SAM	03/04/25 14:20		Kareem	OK
62	CCV06	CCV06	CCV	03/04/25 14:30		Kareem	OK
63	CCB06	CCB06	CCB	03/04/25 14:34		Kareem	OK

Prep Standard - Chemical Standard Summary

Order ID : Q1383
Test : Mercury, Metals ICP-TAL
Prepbatch ID : PB166768, PB166828,
Sequence ID/Qc Batch ID: LB134771, LB134892,

Standard ID :
MP84041, MP84584, MP84585, MP84586, MP84587, MP84588, MP84589, MP84590, MP84591, MP84592, MP84593, MP84594, MP84595, MP84596, MP84601, MP84636, MP84637, MP84638, MP84639, MP84640, MP84641, MP84642, MP84643, MP84644, MP84646, MP84649, MP84650, MP84721,

Chemical ID :
M4884, M5062, M5192, M5218, M5288, M5296, M5395, M5429, M5467, M5472, M5496, M5497, M5532, M5585, M5658, M5747, M5748, M5751, M5789, M5792, M5798, M5799, M5800, M5801, M5811, M5814, M5815, M5816, M5817, M5820, M5875, M5882, M5959, M5962, M5970, M5978, M5985, M6002, M6011, M6021, M6023, M6028, M6030, M6032, M6077, M6121, M6125, M6126, M6127, M6128, M6144, M6145, M6146, M6150, M6151, M6152, M6155, W3112,

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
169	1:1HNO3	MP84041	01/14/2025	07/14/2025	Eman Mughal	None	None	Sarabjit Jaswal
								01/16/2025

FROM 1250.00000ml of M6126 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP84584	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel
								02/20/2025

FROM 1.00000ml of M6126 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1340	Hg 0.00 PPB STD	MP84585	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1341	Hg 0.2 PPB STD	MP84586	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP84584 = Final Quantity: 250.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1342	Hg 2.5 PPB STD	MP84587	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025
FROM 2.50000ml of M6126 + 245.00000ml of W3112 + 2.50000ml of MP84584 = Final Quantity: 250.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1343	Hg 5.0 PPB STD	MP84588	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025
FROM 2.50000ml of M6126 + 242.50000ml of W3112 + 5.00000ml of MP84584 = Final Quantity: 250.000 ml								

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1344	Hg 7.5 PPB STD	MP84589	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 240.00000ml of W3112 + 7.50000ml of MP84584 = Final Quantity: 250.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1345	Hg 10.0 PPB STD	MP84590	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 237.50000ml of W3112 + 10.00000ml of MP84584 = Final Quantity: 250.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1346	Hg ICV SOLUTION	MP84591	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Janvi Patel 02/20/2025

FROM 2.50000ml of M5532 + 2.50000ml of M6126 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1351	ICB (Hg 0.00 PPB SOLUTION)	MP84592	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1358	CCV (Hg 5.0 PPB SOLUTION)	MP84593	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025
FROM 485.00000ml of W3112 + 5.00000ml of M6126 + 10.00000ml of MP84584 = Final Quantity: 500.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1352	CCB (Hg 0.00 PPB SOLUTION)	MP84594	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025
FROM 495.00000ml of W3112 + 5.00000ml of M6126 = Final Quantity: 500.000 ml								

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP84595	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025
FROM 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP84584 = Final Quantity: 250.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP84596	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025
FROM 2.50000ml of M6126 + 240.50000ml of W3112 + 7.00000ml of MP84584 = Final Quantity: 250.000 ml								

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
68	STANNOUS CHLORIDE SOLUTION	MP84601	02/21/2025	02/22/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 02/28/2025

FROM 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6151 = Final Quantity: 500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP84636	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 125.00000ml of M5792 + 2350.00000ml of W3112 + 25.00000ml of M5789 = Final Quantity: 2500.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
907	ICP AES STD S (S5)	MP84637	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 5.00000ml of M5395 + 5.00000ml of M5467 + 5.00000ml of M5472 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M6077 + 5.00000ml of M6146 + 455.00000ml of MP84636 = Final Quantity: 500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
910	ICP AES STD S4	MP84638	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 50.00000ml of MP84636 + 50.00000ml of MP84637 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
909	ICP AES STD S3	MP84639	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 25.00000ml of MP84637 + 75.00000ml of MP84636 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3913	ICP AES STD S2	MP84640	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 16.00000ml of MP84637 + 184.00000ml of MP84636 = Final Quantity: 200.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2950	ICP AES S1/CRI STOCK STD	MP84641	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 0.00200ml of M5816 + 0.00400ml of M5978 + 0.03000ml of M6028 + 0.04000ml of M4884 + 0.05000ml of M5496 + 0.05000ml of M5658 + 0.05000ml of M5811 + 0.05000ml of M6030 + 0.06000ml of M5747 + 0.10000ml of M5472 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5798 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M6127 + 1.00000ml of M6144 + 77.68000ml of MP84636 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2951	ICP AES S1/CRI WORK STD	MP84642	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 2.00000ml of MP84641 + 98.00000ml of MP84636 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
912	ICP AES ICV SOLN	MP84643	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 0.02500ml of M5429 + 0.02500ml of M5815 + 0.02500ml of M5817 + 0.10000ml of M5467 + 0.25000ml of M5218 + 0.25000ml of M5472 + 10.00000ml of M6150 + 89.77500ml of MP84636 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
904	ICP AES ICSA SOLN	MP84644	02/24/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 25.00000ml of M6152 + 225.00000ml of MP84636 = Final Quantity: 250.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
911	ICP AES CCV SOLN	MP84646	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 50.00000ml of MP84636 + 50.00000ml of MP84637 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
919	ICP AES INTERNAL STD	MP84649	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 1.00000ml of M5959 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M5789 = Final Quantity: 2000.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
513	RINSE SOLN	MP84650	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 200.00000ml of M5789 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3494	ICP AES ICSAB SOLN-1	MP84721	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
02/28/2025								

FROM 0.01000ml of M5815 + 0.01000ml of M5817 + 0.10000ml of M5296 + 0.10000ml of M5472 + 0.10000ml of M5970 + 10.00000ml of M6152 + 10.00000ml of M6155 + 79.50000ml of MP84636 = Final Quantity: 100.000 ml

CHEMICAL RECEIPT LOG BOOK

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	030921	03/09/2025	08/06/2021 / jaswal	08/05/2021 / jaswal	M4884

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	S2-HG709270	09/22/2026	05/28/2022 / mohan	01/27/2022 / mohan	M5062

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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 #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	S2-MEB711674	11/02/2026	07/01/2022 / bin	09/10/2021 / bin	M5218

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
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 #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	S2-MEB711673	11/02/2026	09/19/2022 / jaswal	08/20/2022 / jaswal	M5296

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB714159	01/13/2027	01/30/2024 / bin	09/19/2022 / bin	M5395

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57103 / Li, 10000 PPM, 125 ml	070622	07/06/2025	01/30/2023 / bin	01/26/2023 / bin	M5429

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	020623	02/06/2026	03/06/2023 / bin	03/01/2023 / bin	M5467

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	082922	08/29/2025	01/14/2025 / Jaswal	03/16/2023 / jaswal	M5472

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011623	01/16/2026	08/15/2023 / jaswal	03/17/2023 / bin	M5496

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

CHEMICAL RECEIPT LOG BOOK

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	03/15/2025	01/02/2025 / mohan	03/30/2023 / mohan	M5532

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	03/31/2025	01/20/2024 / jaswal	06/12/2023 / jaswal	M5585

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	071723	07/17/2026	10/01/2024 / Jaswal	08/25/2023 / jaswal	M5751

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	23G1262003	07/30/2025	02/08/2024 / Al-Terek	06/26/2023 / Al-Terek	M5789

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)	22D1462006	08/05/2025	02/05/2024 / Al-Terek	02/24/2022 / Al-Terek	M5792

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57004 / Be, 1000 PPM, 125 ml	102523	10/25/2026	02/09/2024 / bin	02/09/2024 / bin	M5798

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57050 / Sn, 1000 PPM, 125 ml	071123	07/11/2026	02/09/2024 / bin	02/09/2024 / bin	M5799

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57027 / CO, 1000 PPM, 125 ml	091923	09/19/2026	05/31/2024 / bin	02/09/2024 / bin	M5800

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57033 / As, 1000 PPM, 125 ml	111323	11/13/2026	02/09/2024 / bin	02/09/2024 / bin	M5801

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	051523	05/15/2026	02/06/2025 / kareem	01/03/2024 / jaswal	M5811

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57115 / P, 10000 PPM, 125 ml	041723	04/17/2026	05/21/2024 / Jaswal	02/09/2024 / jaswal	M5815

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57116 / S, 10000 PPM, 125 ml	071123	07/11/2026	03/01/2024 / jaswal	02/09/2024 / jaswal	M5817

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57015 / P, 1000 PPM, 125 ml	091123	09/11/2026	05/01/2024 / jaswal	02/09/2024 / jaswal	M5820

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	T2-MEB714417	01/27/2027	04/19/2024 / jaswal	02/22/2024 / jaswal	M5875

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3980-01 / Stannous Chloride (cs/4x500g)	232820	08/31/2028	04/30/2024 / mohan	04/25/2024 / mohan	M5882

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	07/01/2024 / Jaswal	06/14/2024 / Jaswal	M5959

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57034 / Se, 1000 PPM, 125 ml	060624	06/06/2027	07/02/2024 / Jaswal	06/14/2024 / Jaswal	M5962

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5978

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	T2-MEB723367	07/14/2025	01/14/2025 / Eman	05/14/2024 / Jaswal	M6002

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	U2-MEB731108	07/14/2025	01/14/2025 / Eman	05/14/2024 / Jaswal	M6011

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57023 / V, 1000 PPM, 125 ml	062424	06/24/2027	09/28/2024 / jaswal	08/05/2024 / Jaswal	M6021

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57081 / TI, 1000 PPM, 125 ml	0624724	06/27/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6023

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57048 / Cd, 1000 PPM, 125 ml	070124	07/01/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6028

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57047 / Ag, 1000 PPM, 125 ml	122823	12/28/2026	08/05/2024 / kareem	08/05/2024 / Jaswal	M6030

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57056 / Ba, 1000 PPM, 125 ml	010924	01/09/2027	01/14/2025 / Jaswal	08/05/2024 / Jaswal	M6032

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	V2-MEB746762	09/06/2029	01/23/2025 / kareem	09/19/2024 / kareem	M6077

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	0000275677	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6121

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1403 / Hydrogen Peroxide, 30% 1 gal	820803	05/25/2025	11/26/2024 / Eman	11/22/2024 / Eman	M6125

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	06/03/2025	12/03/2024 / Janvi	11/12/2024 / Janvi	M6126

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	112124	11/21/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6127

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58025 / Mn, 1000 PPM, 500 ml	101124	10/11/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6128

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58111 / Na, 10000 PPM, 500 ml	072424	07/24/2027	01/23/2025 / kareem	01/13/2025 / Jaswal	M6144

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58030 / Zinc, Zn, 500 ml, 1000 PPM	121724	12/17/2027	02/04/2025 / jaswal	01/13/2025 / Jaswal	M6145

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	01/31/2025 / kareem	10/18/2024 / kareem	M6146

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV1-1014	07/07/2025	02/07/2025 / JANVI	04/20/2021 / JANVI	M6150

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	08/18/2025	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN		08/24/2025	02/24/2025 / kareem	04/20/2021 / kareem	M6152

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	06/20/2025	02/10/2025 / kareem	02/09/2024 / kareem	M6155

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

M5882
 M3

Certificate of Analysis

1 Reagent Lane
 Fair Lawn, NJ 07410
 201.796.7100 tel
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120633

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	T142	Quality Test / Release Date	08/17/2023
Lot Number	232820		
Description	STANNOUS CHLORIDE, DIHYDRATE CERTIFIED ACS (Suitable for Mercury Determination)		
Country of Origin	United States	Suggested Retest Date	Aug/2028
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear crystals
ASSAY	%	Inclusive Between 98 - 103	100.65
CALCIUM	%	<= 0.005	0.0017
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	%	<= 0.003	0.0011
LEAD (Pb)	%	<= 0.01	0.0006
MERCURY (Hg)	ppm	<= 0.05	<0.05
POTASSIUM (K)	%	<= 0.005	0.0001
SODIUM (Na)	%	<= 0.01	<0.01
SOLUBILITY IN HCL	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	PASS/FAIL	= P.T. (ABOUT 0.003%)	P.T. (ABOUT 0.003%)



Harout Sahagian - Quality Control Supervisor - Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57056
010924
Barium (Ba)

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

010927
Ambient (20 °C)
1000
6UTB
2%
40.0 (mL)
Nitric Acid

Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Giovanni Caporaso</i>	
Formulated By:	Giovanni Esposito
	010924
Reviewed By:	Pedro L. Renteria
	010924

Compound

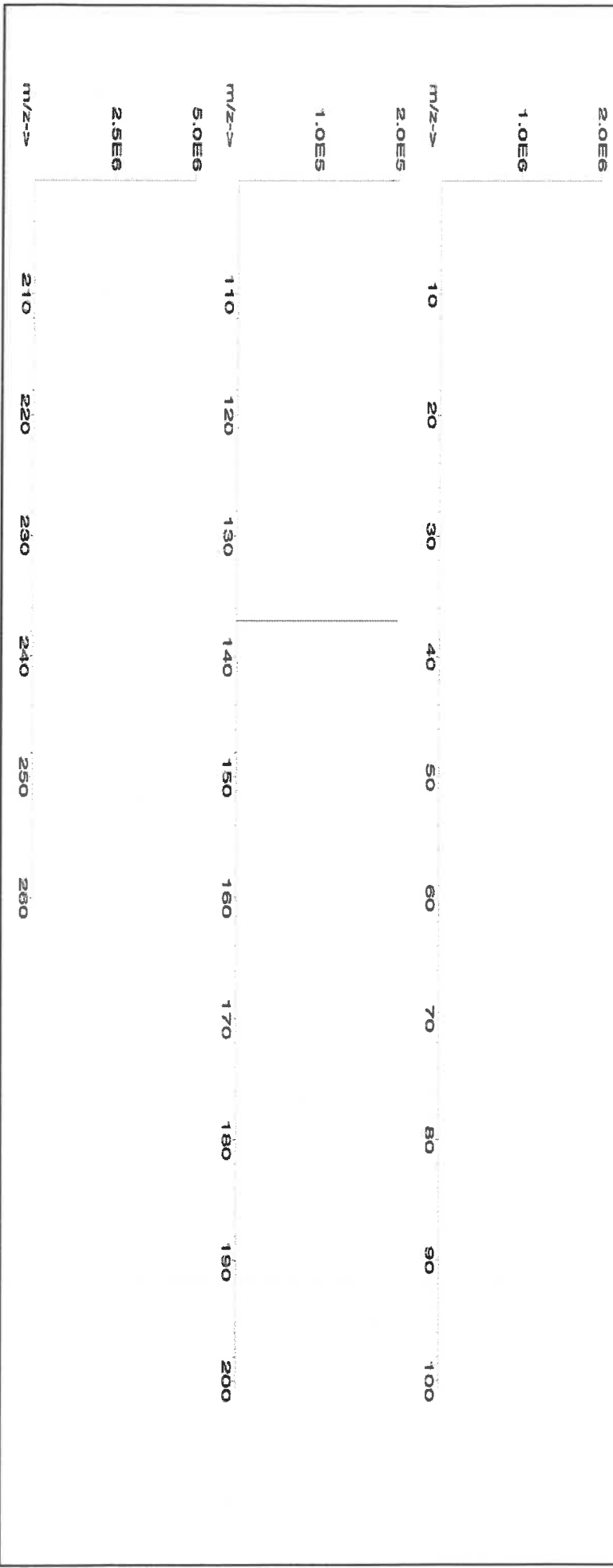
Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
------------	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

SDS Information

(Solvent Safety Info. On Attached pg.)

1. Barium nitrate (Ba) IN023 BA0022019A1 1000 99.999 0.10 52.3 3.82417 3.82441 1000.1 2.0 10022-31-8 0.5 mg/m3 or-hat 355 mg/kg 3104a

[1] Spectrum No.1 [12.514 sec]:58156.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	T	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57048
070124
Cadmium (Cd)

Lot #
Solvent: 24002546 Nitric Acid

2% 40.0 (mL) Nitric Acid

Expiration Date: 070127

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.07 0.100 Flask Uncertainty

<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
070124	

Compound

Lot
Number

Nominal
Conc. (µg/mL)

Purity
(%)

Uncertainty
(%)

Assay
(%)

Target
Weight (g)

Actual
Weight (g)

Actual
Conc. (µg/mL)

Expanded
Uncertainty
+/- (µg/mL)

CAS#

OSHA PEL (TWA)

LD50

NIST
SRM

SDS Information

1. Cadmium nitrate tetrahydrate (Cd)

IN024 CDM09221A1

1000

99.999

0.10

36.5

5.4797

5.4804

1000.1

2.0

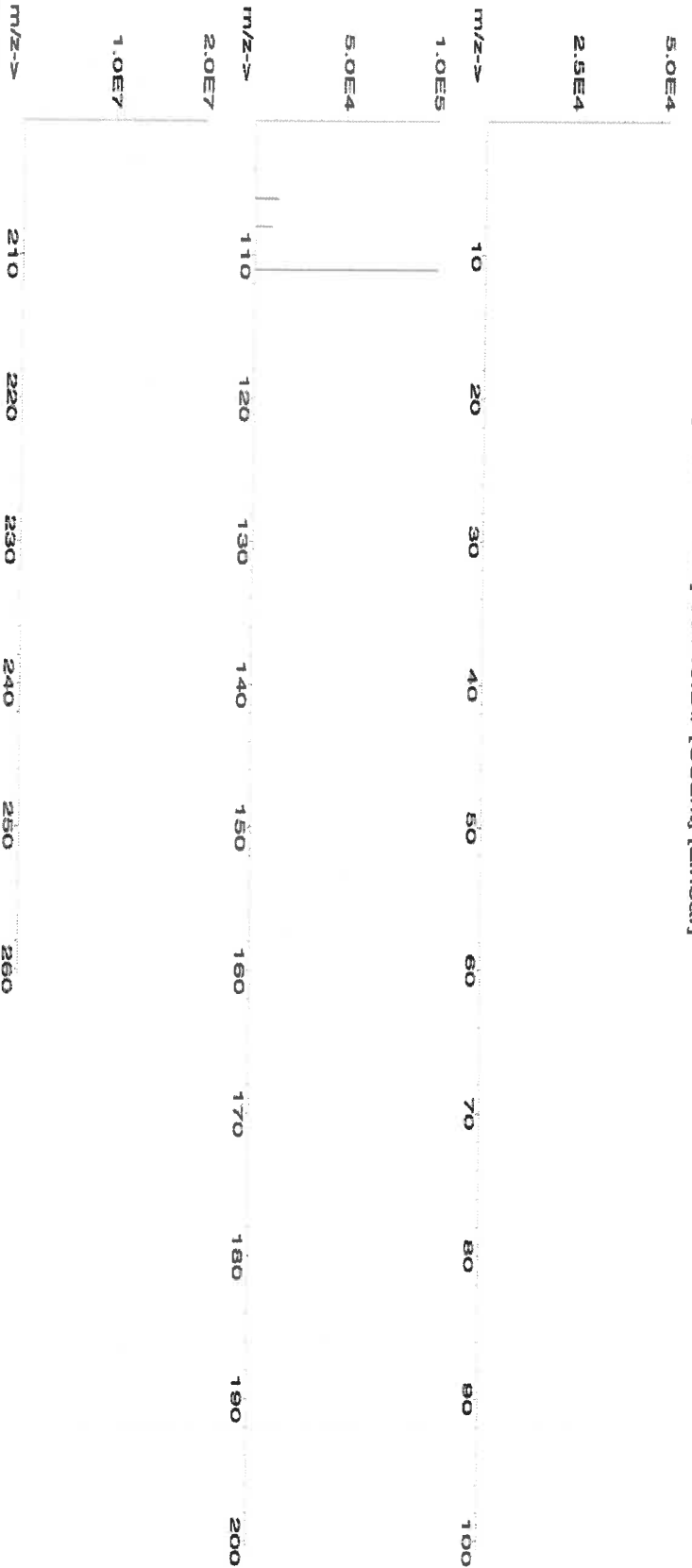
10022-68-1

0.01 mg/m3

or-rat 60.2mg/kg

3108

[T1 Spectrum No.1 [12.514 sec]:\$8148.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.2	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<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	Ba	<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	Cd	<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	Pr	<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 certified (+/-) 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).



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).



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 °C)

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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = 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





Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
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P: 800-669-6799/540-585-3030
F: 540-585-3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	CLPP-CAL-1	
Lot Number:	T2-MEB714417	
Matrix:	5% (v/v) HNO ₃	
Value / Analyte(s):	5 000 µg/mL ea:	Potassium, Sodium,
	Calcium, Magnesium,	
	2 000 µg/mL ea:	Barium,
	Aluminum,	
	1 000 µg/mL ea:	
	Iron,	
	500 µg/mL ea:	Vanadium, Cobalt,
	Nickel,	
	Zinc,	
	Manganese,	
	250 µg/mL ea:	Copper,
	Silver,	
	200 µg/mL ea:	
	Chromium,	
	50 µg/mL ea:	
	Beryllium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.00 ± 0.26 µg/mL	Calcium, Ca	5 000 ± 22 µg/mL
Chromium, Cr	200.0 ± 1.0 µg/mL	Cobalt, Co	500.0 ± 2.4 µg/mL
Copper, Cu	250.0 ± 1.0 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 20 µg/mL	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Potassium, K	5 000 ± 19 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 18 µg/mL
Vanadium, V	499.7 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.118 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = 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"

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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





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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 °C)

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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

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Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

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X_a = mean of Assay Method A with

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k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = 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.

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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.

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- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

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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.

11.2 Lot Expiration Date

- January 13, 2027

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 051523
Description: Iron (Fe)

Solvent: 21110221 Nitric Acid

Lot #

Expiration Date: 051526

5.0% 250.0 (mL) Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

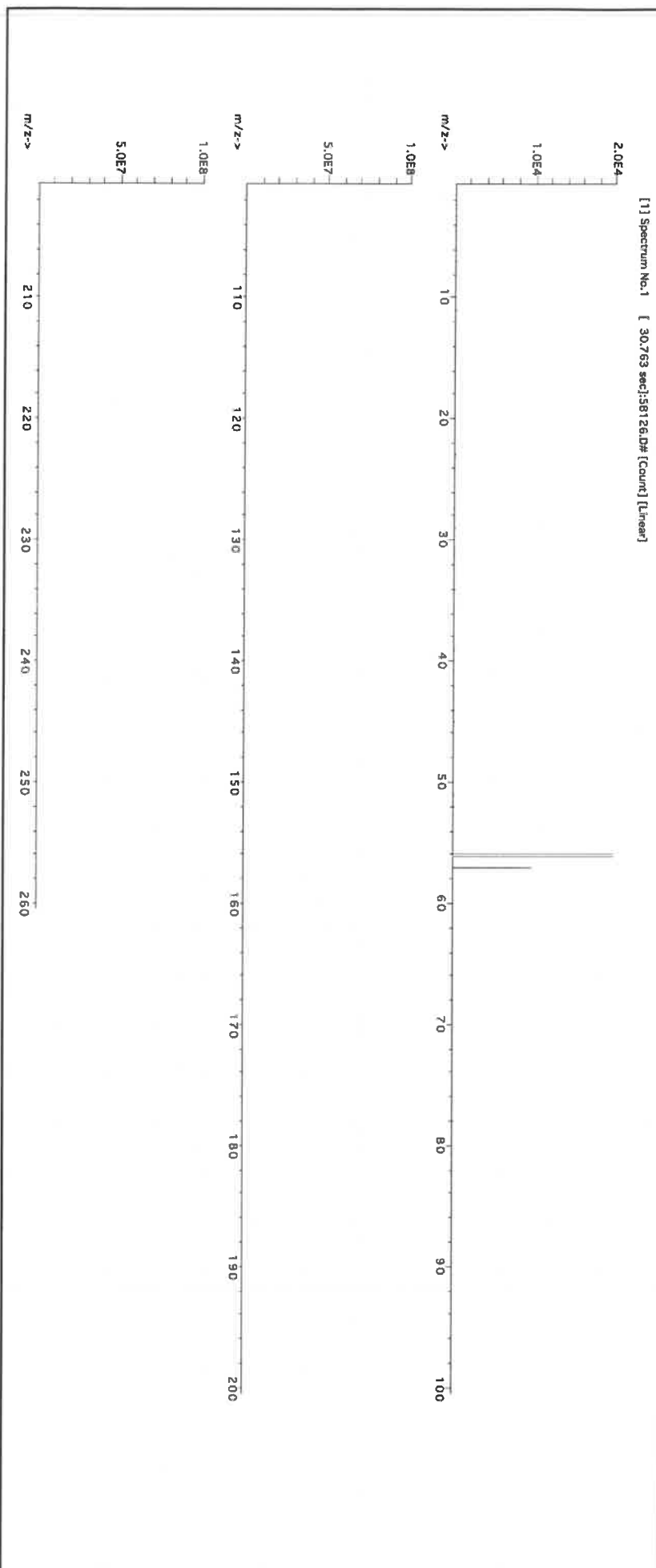
Weight shown below was diluted to (mL): 5000.1 **0.12 Flask Uncertainty**

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	051523
<i>Pedro L. Renias</i>	
Reviewed By:	Pedro L. Renias
	051523

SDS Information

Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Uncertainty	(Solvent Safety Info. On Attached pg.)	NIST	
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)			CAS#

1. Iron (Fe)	IN346	2302010-500	10000	99.995	0.10	100.0	50.0034	50.0111	10001.5	20.0	7439-89-6	5 mg/m3	or-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	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ce	<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	Rb	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.10	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.05	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.10	Ge	<0.10	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.10
B	<0.02	Cu	<0.10	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<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 certified (+/-) 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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RD:05/14/2024

Certificate of Analysis

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Christiansburg, VA 24073 USA
inorganicventures.com

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1.0 ACCREDITATION / REGISTRATION

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2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-1
Lot Number:	T2-MEB723367
Matrix:	5% (v/v) HNO ₃

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,	Aluminum,
	Cerium,	Selenium,
	Thallium,	
	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,	Boron,
	Vanadium,	
	20 µg/mL ea:	
	Zinc,	Strontium,
	Barium,	Beryllium,
	Cadmium,	Cobalt,
	Manganese,	Lithium,
	7.5 µg/mL ea:	
	Silver	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	200.0 ± 0.7 µg/mL	Arsenic, As	80.0 ± 0.7 µg/mL
Barium, Ba	20.00 ± 0.09 µg/mL	Beryllium, Be	20.00 ± 0.13 µg/mL
Boron, B	30.00 ± 0.18 µg/mL	Cadmium, Cd	20.00 ± 0.09 µg/mL
Calcium, Ca	100.0 ± 0.4 µg/mL	Cerium, Ce	200.0 ± 0.8 µg/mL
Chromium, Cr	40.00 ± 0.30 µg/mL	Cobalt, Co	20.00 ± 0.10 µg/mL
Copper, Cu	30.00 ± 0.13 µg/mL	Iron, Fe	300.0 ± 1.3 µg/mL
Lead, Pb	100.0 ± 0.4 µg/mL	Lithium, Li	20.00 ± 0.08 µg/mL
Magnesium, Mg	200.0 ± 0.8 µg/mL	Manganese, Mn	20.00 ± 0.08 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.00 ± 0.22 µg/mL
Phosphorus, P	600.0 ± 2.7 µg/mL	Potassium, K	1 000 ± 4 µg/mL
Selenium, Se	200.0 ± 1.3 µg/mL	Silver, Ag	7.50 ± 0.03 µg/mL
Sodium, Na	300.0 ± 1.4 µg/mL	Strontium, Sr	20.01 ± 0.08 µg/mL
Thallium, Tl	200.0 ± 1.4 µg/mL	Vanadium, V	30.00 ± 0.13 µg/mL
Zinc, Zn	20.00 ± 0.09 µg/mL		

Density: 1.034 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	Traceable to 3152A	S2-NA700842
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Tl	ICP Assay	3158	151215
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum (1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty (z)} = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{ts}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum ((w_i)^2 (u_{\text{char } i})^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a) (u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty (z)} = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{ts}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = 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

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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





Refine your results. Redefine your industry.

RD:05/14/2024

Certificate of Analysis

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: WW-LFS-2
Lot Number: U2-MEB731108
Matrix: 5% (v/v) HNO₃
tr. HF
Value / Analyte(s):
200 µg/mL ea:
Silica,
80 µg/mL ea:
Antimony,
70 µg/mL ea:
Tin,
40 µg/mL ea:
Molybdenum,
20 µg/mL ea:
Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	80.1 ± 0.6 µg/mL	Molybdenum, Mo	40.03 ± 0.18 µg/mL
Silica, SiO ₂	200.2 ± 1.3 µg/mL	Tin, Sn	70.0 ± 0.4 µg/mL
Titanium, Ti	20.01 ± 0.13 µg/mL		

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
SiO ₂	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i})^2 / (\sum (1/u_{\text{char } i})^2)$$

$$\text{CRM/RM Expanded Uncertainty } (z) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{ITS}}^2 + u_{\text{TS}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum (w_i)^2 (u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ITS} = long term stability standard uncertainty (storage)

u_{TS} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a) (u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (z) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{ITS}}^2 + u_{\text{TS}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ITS} = long term stability standard uncertainty (storage)

u_{TS} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures [Terms and Conditions of Sale](https://www.inorganicventures.com/terms-and-conditions-sale). <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; info@inorganicventures.com;

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 17, 2023

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 17, 2028**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57014
Lot Number: 030921
Description: Silicon (Si)

Lot # 19410105
Solvent: Nitric Acid

Expiration Date: 030924

2.0% 60.0 (mL) Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

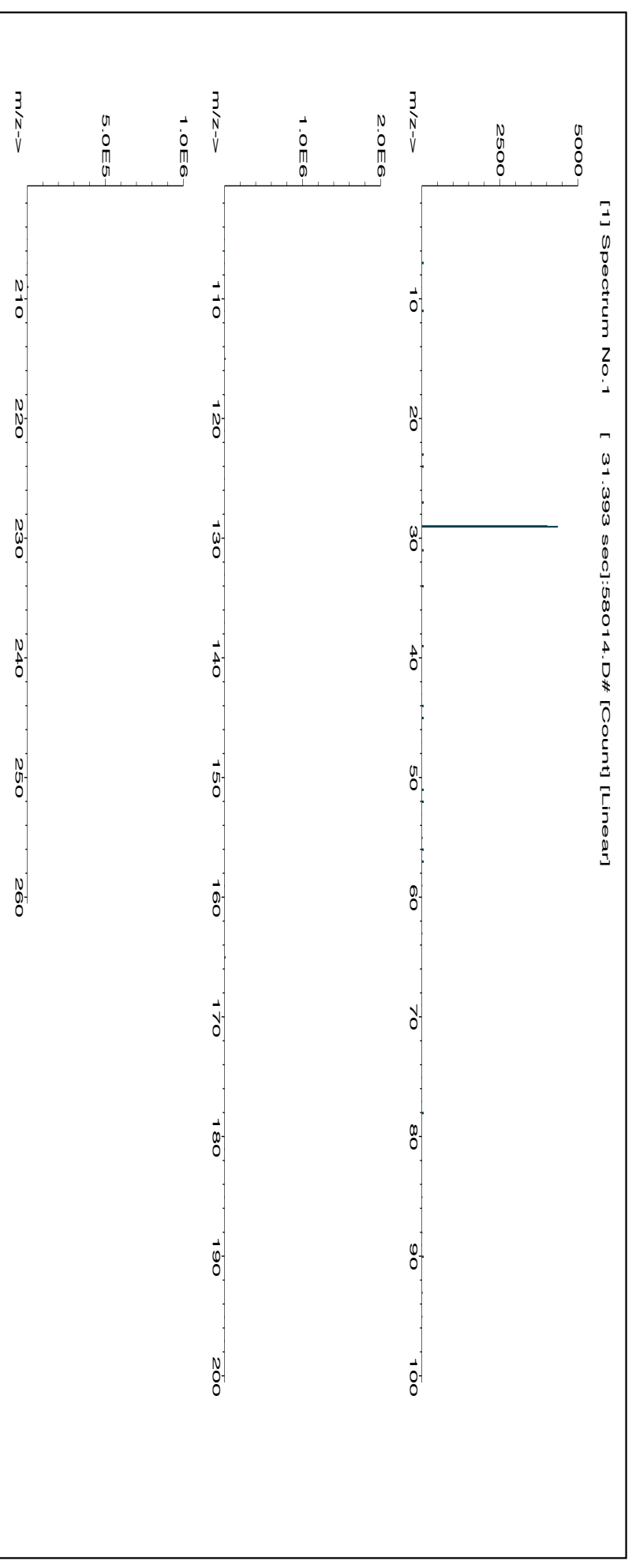
5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 3000.41 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
	030921
Reviewed By:	Pedro L. Rentas
	030921

SDS Information									
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)
1. Ammonium hexafluorosilicate (Si)	58114	070120	0.1000	300.0	0.084	1000	10000.0	1000.0	2.1

1. Ammonium hexafluorosilicate (Si) 58114 070120 0.1000 300.0 0.084 1000 10000.0 1000.0 2.1 16919-19-0 2.50 mg/m3 orl-rat 70 mg/kg NA





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

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<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 certified (+/-) 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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MS062
MS063
MB

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: 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:

$$X_{CRM/RM} = \sum (w_i) (X_i)$$

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.

$$w_i = (1/u_{char i}^2) / (\sum (1/(u_{char i}^2)))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum ((w_i)^2 (u_{char i}^2))]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

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





Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57042
Lot Number: 051722
Description: Molybdenum (Mo)

Lot # M5192
Solvent: R: 06/17/22

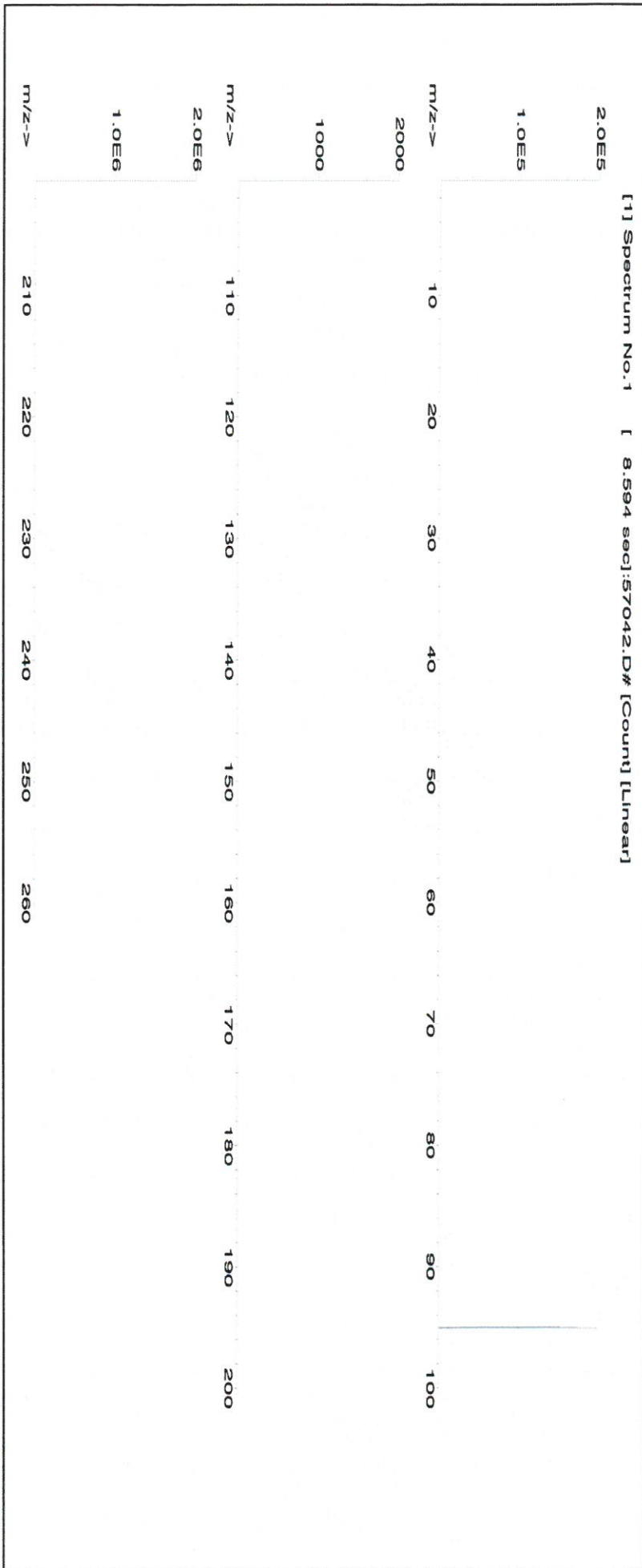
Expiration Date: 051725
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 3000.41

Balance Uncertainty: 0.058
Flask Uncertainty: 0.084

Formulated By:	Lawrence Barry	051722
Reviewed By:	Pedro L. Rendas	051722

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (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.)	NIST SRM
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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 or-rat 333 mg/kg 3134





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	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	T	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 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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 info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: CHEM-QC-4
 Lot Number: S2-MEB711674
 Matrix: 3% (v/v) HNO₃
 3% (v/v) HF
 Value / Analyte(s): 1 000 µg/mL ea:
 Boron, Molybdenum,
 Silicon, Tin,
 Titanium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 7 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 001 ± 6 µg/mL		

Density: 1.032 g/mL (measured at 20 ± 4 °C)

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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = 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





Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

Lot #

Solvent: 20510011 Nitric Acid

Part Number: **58119**
Lot Number: **071122**
Description: **Potassium (K)**

Expiration Date:

071125

2%

40.0 (mL) Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

10000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL):

2000.02

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
	071122
Reviewed By:	Pedro L. Rentas
	071122

SDS Information

Expanded Uncertainty: **20.0** (µg/mL)
CAS#: **7757-79-1**
OSHA PEL (TWA): **5 mg/m3**
(Solvent Safety Info. On Attached pg.)
LD50: **3141a**
NIST SRM

1. Potassium nitrate (K)

IN034 KD022021A1

10000

99.999

0.10

37.6

53.1925

53.1934

10000.2

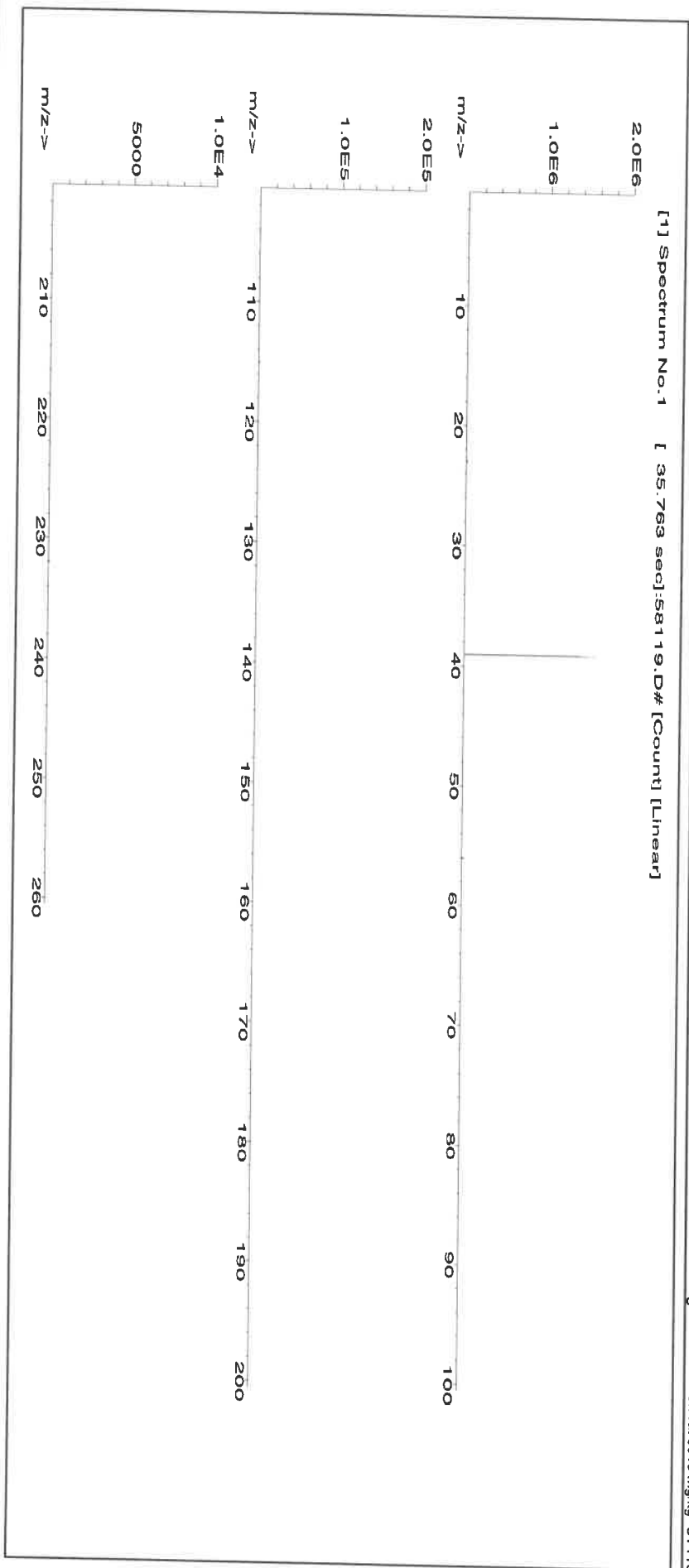
20.0

7757-79-1

5 mg/m3

3141a

[1] Spectrum No. 1 [35.763 sec]:58119.D# [Count] [Linear]





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	Bu	<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

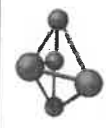
Physical Characterization:

(T) = Target analyte

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 certified (+/-) 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).



M5429 R1 0126/23 (B)

CERTIFIED WEIGHT REPORT:

Part Number: 57103
Lot Number: 070622
Description: Lithium (Li)

Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1000.12

Solvent: 20510011 Nitric Acid

2% 20.0 (mL)

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

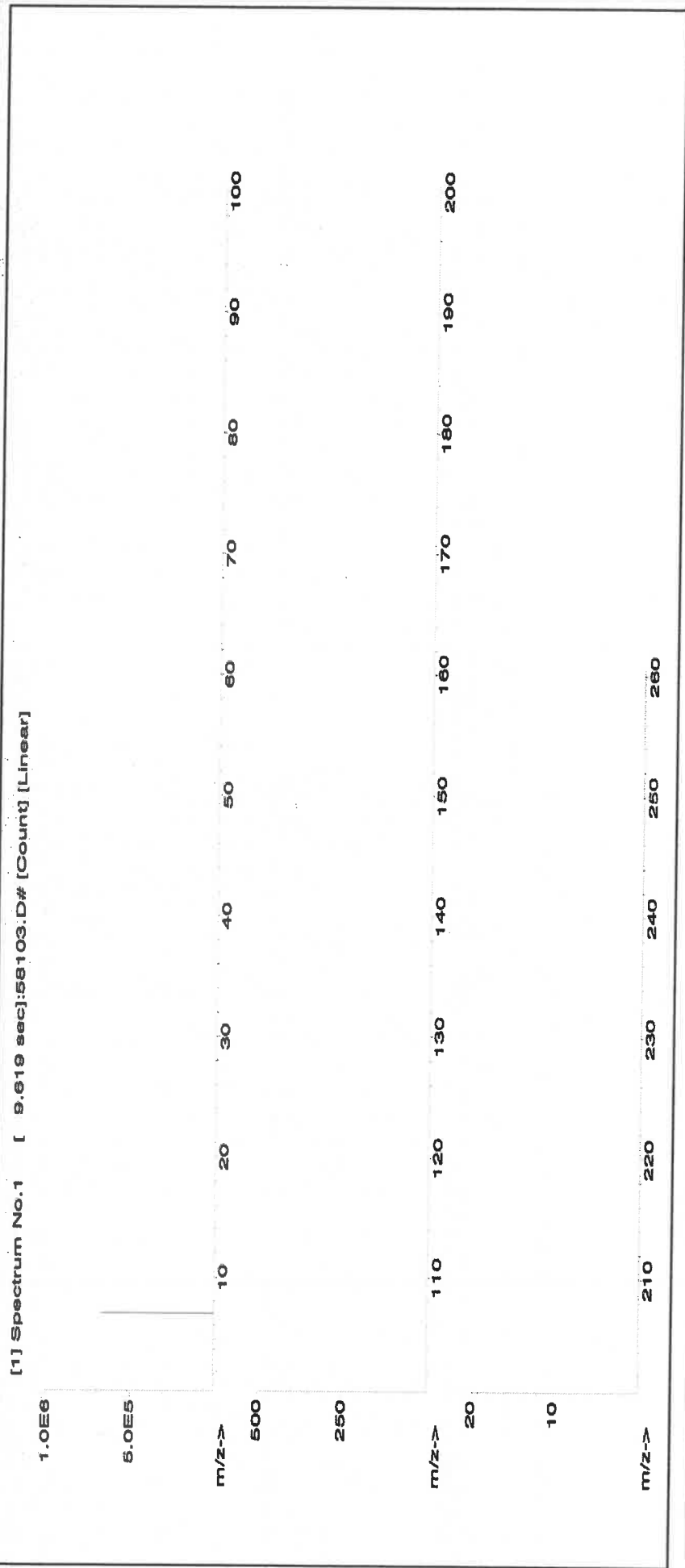
Formulated By: Lawrence Barry
Reviewed By: Pedro L. Rentas

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty			NIST SRM
										+/- (µg/mL)	CAS#	LD50	
1. Lithium nitrate (Li)	IN019	L2042019A1	10000	99.999	0.10	10.0	100.0134	100.0173	10000.4	20.0	7790-69-4	5 mg/m3	of-rat 1426 mg/kg NA

SDS Information

(Solvent Safety Info. On Attached pg.)
CAS# OSHA PEL (TWA) LD50

[1] Spectrum No.1 [9.619 sec]:58103.D# [Count] [Linear]





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	La	<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:

[Signature]

- * 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 certified (+/-) 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).



Certified Reference Material CRM



M5467 R: 03/01/23 (14)

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57058
020623
Cerium (Ce)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

020626
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

1000.12 **0.058** **Balance Uncertainty**
Flask Uncertainty

Lot #

Solvent: 21110221 Nitric Acid

2% **20.0** **Nitric Acid**
(mL)

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

Expanded
Uncertainty
+/- (µg/mL)

SDS Information

(Solvent Safety Info. On Attached pg.)
LD50:
CAS#
OSHA PEL (TWA)

2.0

1000.0

3.04921

3.04919

32.8

0.10

99.999

1000

IN146

Z512CEB1

Ce

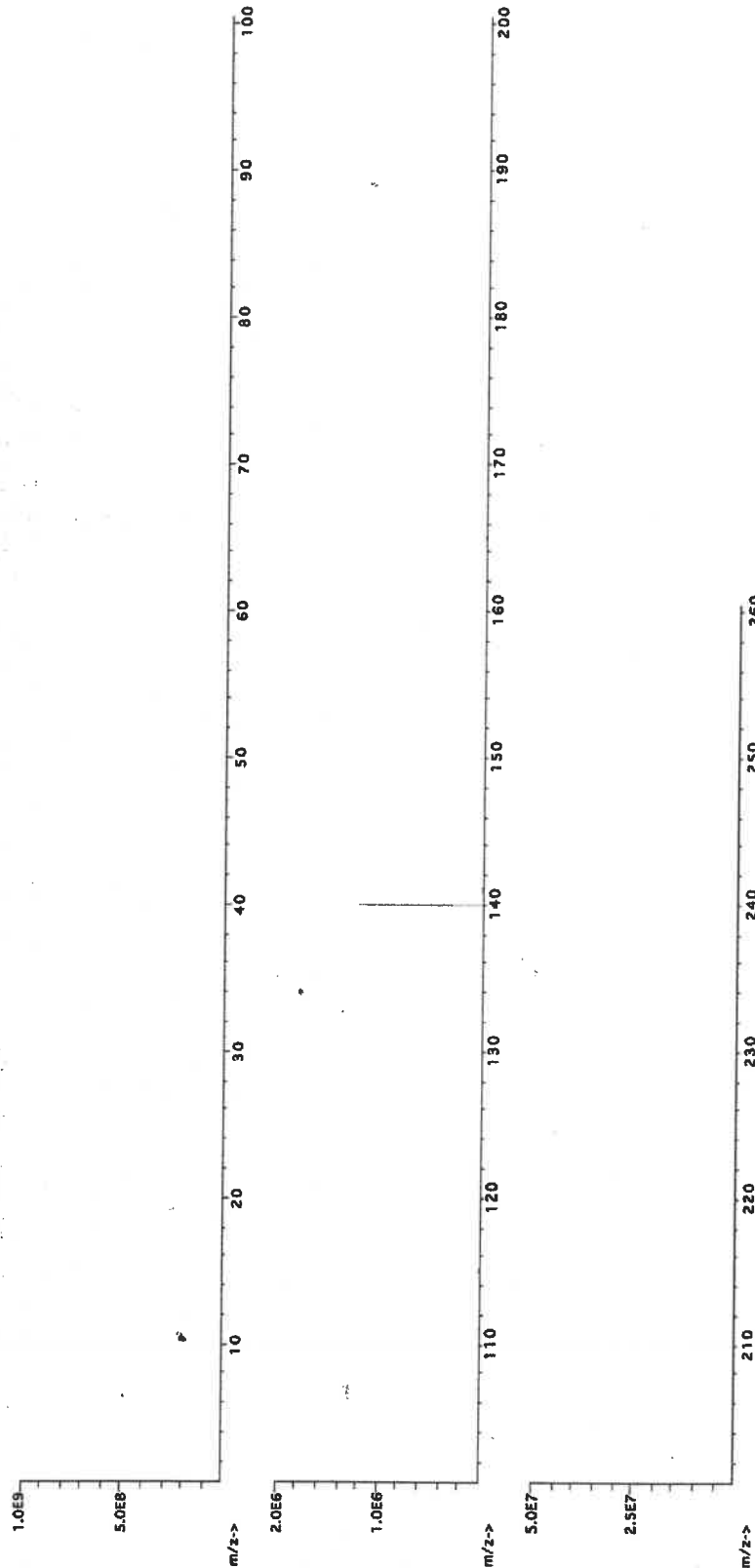
1000.12

0.058

Balance Uncertainty
Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	1000.0	2.0	10294-41-4	NA	NA	NA

[1] Spectrum No.1 [43.472 sec]58158.D# [Count] [Linear]





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	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	T	Eu	<0.02	In	<0.02	Mg	<0.02	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	<0.02	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 certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number: **58113**

Lot Number: **011623**

Description: **Aluminum (Al)**

Solvent: **20510011 Nitric Acid**

Lot #

MS496 R 17/20/23

Expiration Date: **011626**

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **10000**

NIST Test Number: **6UTB**

Weight shown below was diluted to (mL): **2000.02** **5E-05 Balance Uncertainty** **0.058 Flask Uncertainty**

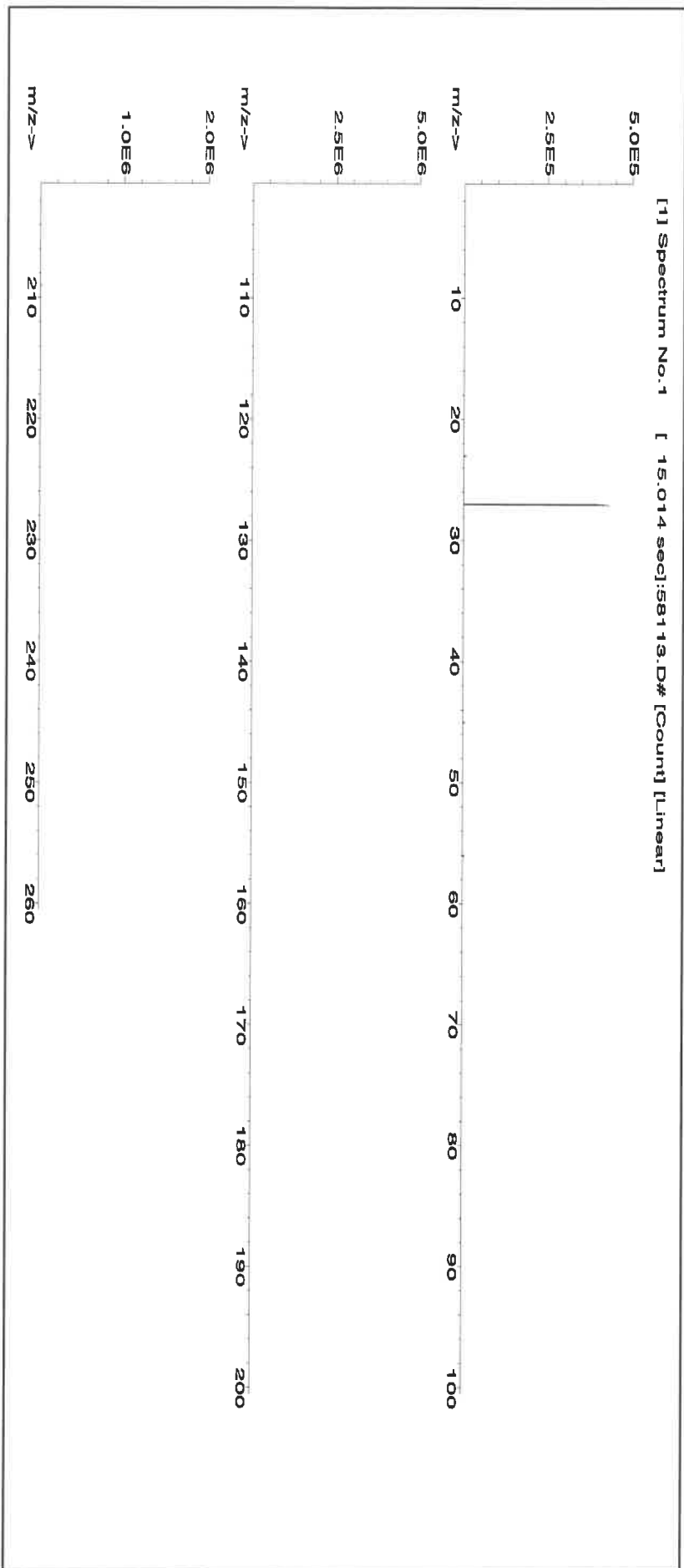
Giovanni Esposito
Formulated By: **Giovanni Esposito** **011623**

Pedro L. Rentas
Reviewed By: **Pedro L. Rentas** **011623**

SDS Information

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Aluminum nitrate nonahydrate (Al)	IN022 ALM112021A1	10000	99.999	0.10	7.30	273.9779	274.0078	10001.1	20.0	7784-27-2	2 mg/m3	or-hat 3671 mg/kg	3101a

[1] Spectrum No. 1 [15.014 sec]:58113.D# [Count] [Linear]





N5497-10548 R203/17/23(2)

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

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Weight shown below was diluted to (mL):

3000.41

Lot #

Solvent: 21110221 Nitric Acid

2% Nitric Acid

60.0

(mL)

Compound

Lot
NumberNominal
Conc. (µg/mL)Purity
(%)Uncertainty
Purity (%)Assay
(%)Target
Weight (g)Actual
Weight (g)Actual
Conc. (µg/mL)Expanded
Uncertainty
+/- (µg/mL)

CAS#

OSHA PEL (TWA)

LD50

NIST
SRMSDS Information
(Solvent Safety Info. On Attached pg.)

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

or-rat >2000mg/kg

3109a

[1] Spectrum No.1 [12.514 sec]:58120.D# [Count] [Linear]

2.0E4

1.0E4

m/z-->

5.0E4

2.5E4

m/z-->

1.0E5

5.0E4

m/z-->

210 220 230 240 250 260

170 180 190 200



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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02
Sb	<0.02	Ca	<0.02	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Ti	<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
Be	<0.01	Cr	<0.02	Ga	<0.2	Fe	<0.02	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<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
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<0.02
																W	<0.02
																U	<0.02
																V	<0.02
																Yb	<0.02
																Y	<0.02
																Zn	<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 certified (+/-) 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).



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

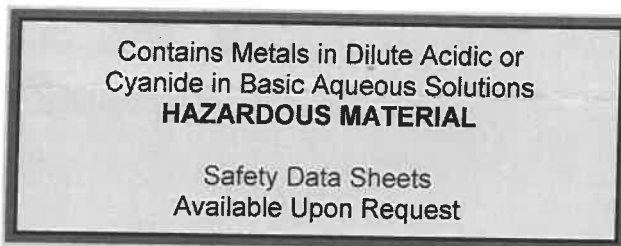
Instructions for QATS Reference Material: *Inorganic ICV Solutions*

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.



(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 $\mu\text{g/L}$ (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.





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

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) K₂Cr₂O₇ 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 K₃Fe(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



MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER: PCI SCIENTIFIC SUPPLY, INC

PURCHASE ORDER NO. 6054931

CATALOG NO. BOI5021-450L

PRODUCT DESCRIPTION: BOILING STONES, TFE, 454GMS

QUANTITY: 10 EACH

LOT NO. W126678

SPECIFICATION (S): Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.



Laura Valencia
Quality Assurance Inspector

F:\J:\A\CF\PCISCI\COC-55118-BOI5021-061223



CERTIFIED WEIGHT REPORT:

Part Number: 58024
Lot Number: 060523
Description: Chromium (Cr)

Lot # 21110221
Solvent: Nitric Acid

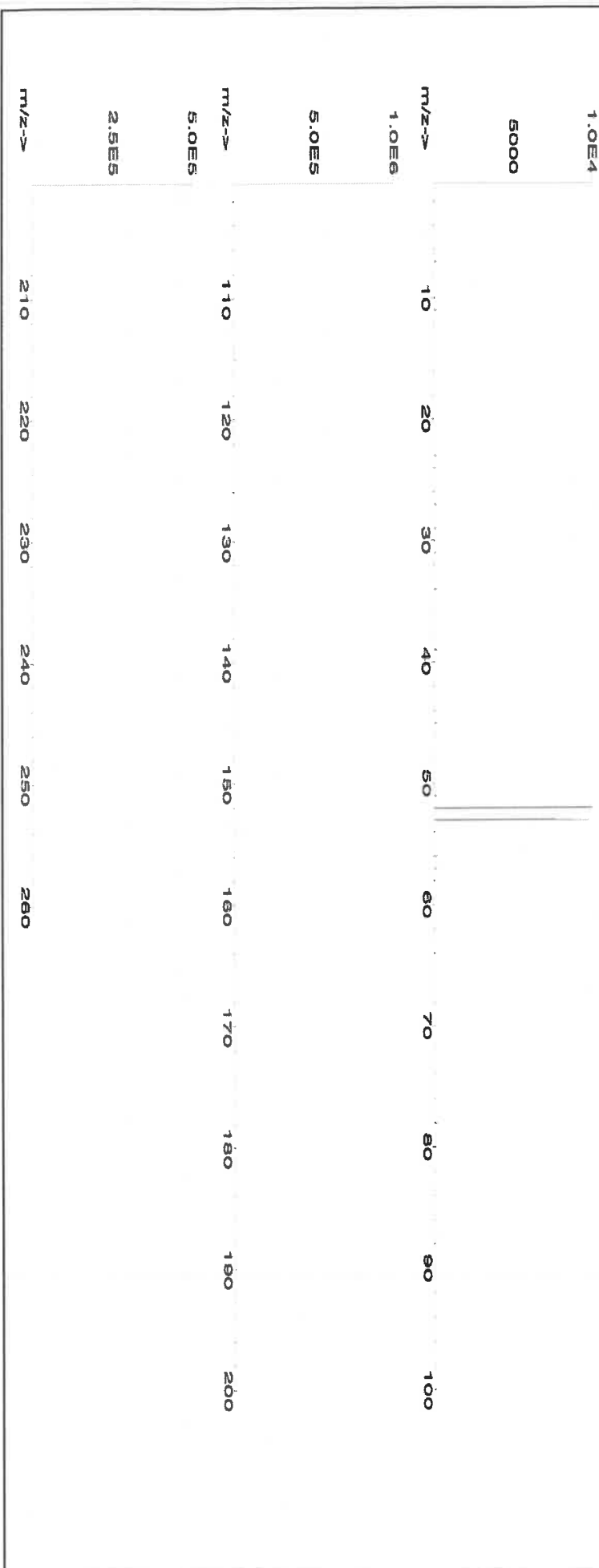
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

Expiration Date: 060526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.02 0.058 Balance Uncertainty
Flask Uncertainty

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	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 or rat 3250 mg/kg 3112a

[1] Spectrum No.1 [31.393 sec]:57024.D# [Count] [Linear]





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:

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.
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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).



Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number: **57082**
Lot Number: **100923**
Description: **Lead (Pb)**

Solvent: **24002546 Nitric Acid**

Lot #

R: 12/20/23 MS747

Formulated By:	Lawrence Barry
100923	
Reviewed By:	Pedro L. Rentes
100923	

Expiration Date: **100926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **3000.41**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

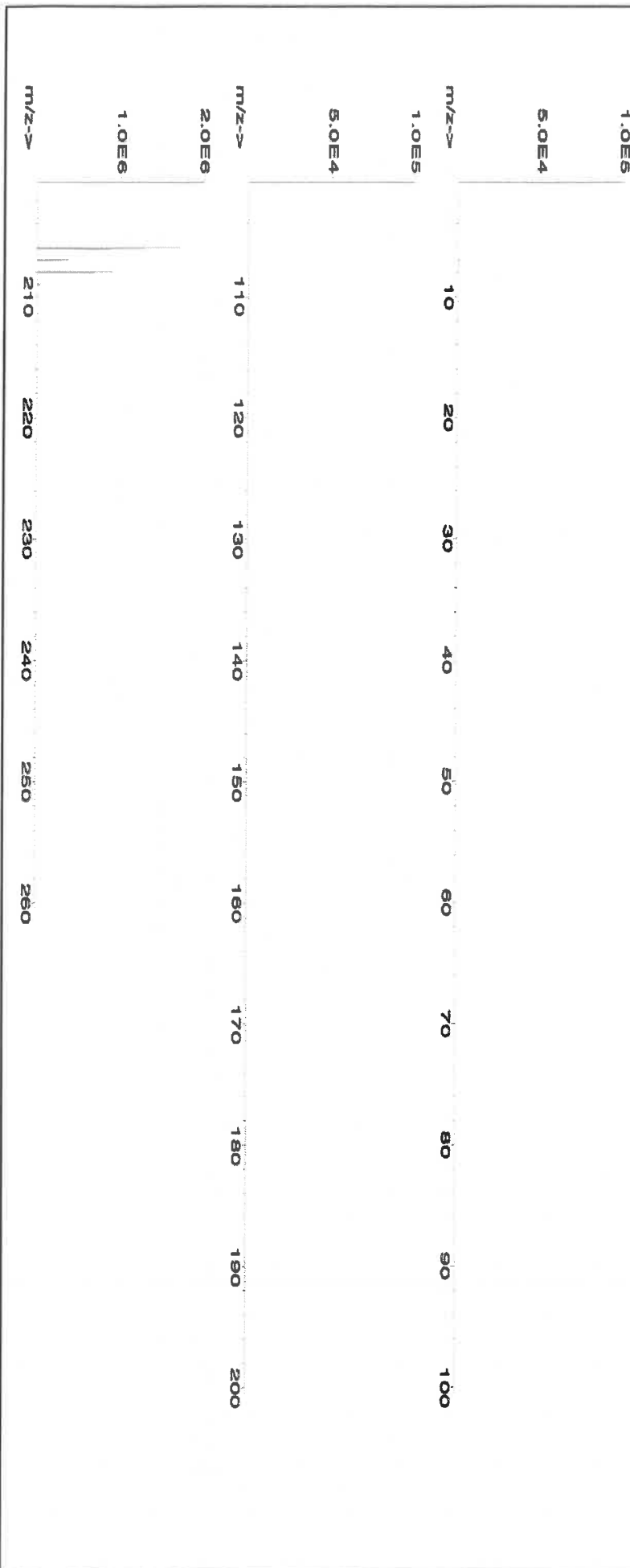
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded		NIST
										Uncertainty	+/- (µg/mL)	

SDS Information

(Solvent Safety Info. On Attached pg.)
CAS# **7440-14-2** OSHA PEL (TWA) **0.05 mg/m³** LD50 **3128**

1. Lead(II) nitrate (Pb) IN029 Pb0122016A1 1000 99.999 0.10 62.5 4.80071 4.80077 1000.0 2.0 10099-74-8 0.05 mg/m³ Intvms-ret 89 mg/kg 3128

[1] Spectrum No. 1 [14.144 sec]:58082.D# [Count] [Linear]





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 ($\mu\text{g}/\text{mL}$)

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	St	<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

Physical Characterization:

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

(T) = Target analyte

Certified by:

Mar. 10

- * 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 certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number: **57028**
Lot Number: **091223**
Description: **Nickel (NI)**

Lot # **24002546**
Solvent: **Nitric Acid**

Expiration Date: **091226**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6U7B**

2.0% **40.0** **Nitric Acid**
(mL)

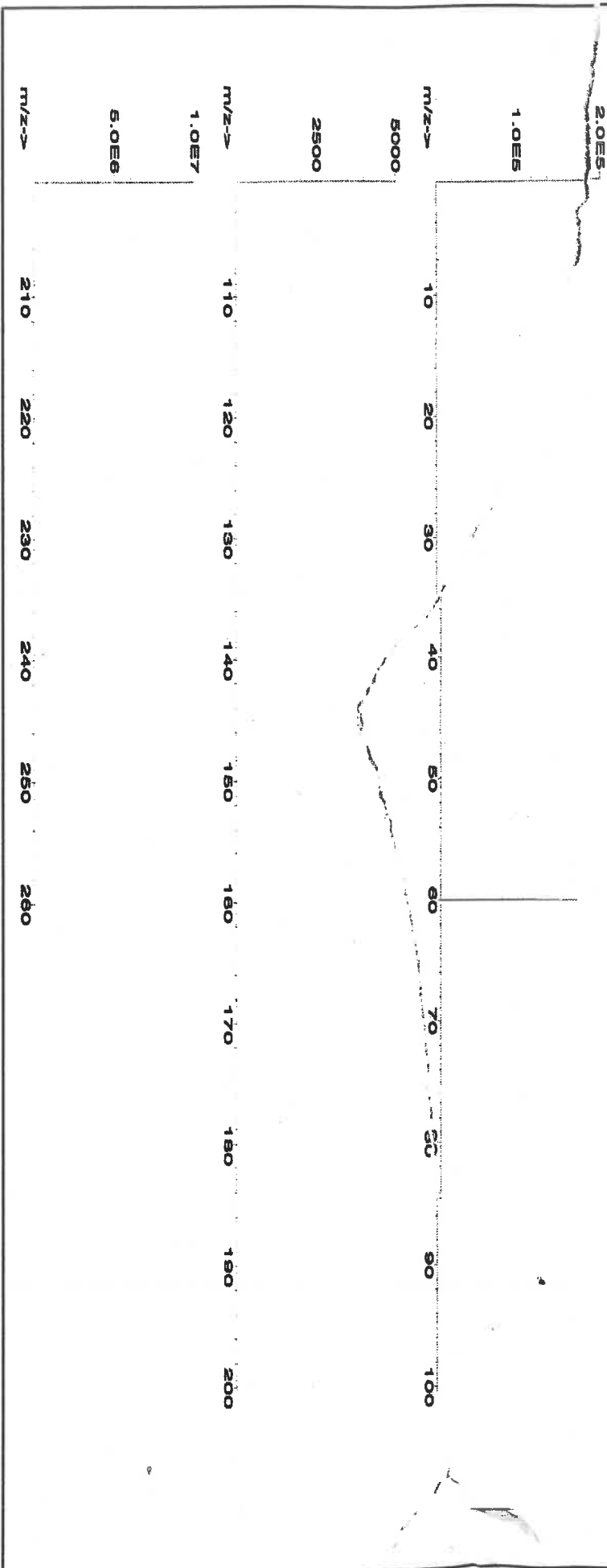
Volume shown below was diluted to (mL): **2000.02** **5E-05** **Balance Uncertainty**
0.056 **Flask Uncertainty**

Formulated By:	<i>Lawrence Barry</i>	091223
Reviewed By:	<i>Pedro L. Renteria</i>	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)	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 or-rel 1620 mg/kg 3136

[1] Spectrum No.1 [9.135 sec]:56028.D# [Count] [Linear]





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	Tb	<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 certified (+/-) 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).



Certified Reference Material CRM

R: 8/25/23 M5751



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58029
071723
Copper (Cu)

Lot #
21110221

Solvent:
Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):

071726
Ambient (20 °C)
1000

2.0%
40.0 (mL)
Nitric Acid

NIST Test Number:
Volume shown below was diluted to (mL):

6UTB
2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	071723
Reviewed By:	Pedro L. Ruelas	071723

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (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.)	NIST SRM
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1. Copper(II) nitrate trihydrate (Cu) 58129 022723 0.1000 200.0 0.084 1000 10000.5 1000.0 2.2 10031-43-3 1 mg/m3 or rat 794 mg/kg 3114

[1] Spectrum No. 1 [33.422 sec]: 58029.D# [Count] [Linear]

1.0E6	m/z-->	10	20	30	40	50	60	70	80	90	100
5.0E5											
5.0E7	m/z-->	110	120	130	140	150	160	170	180	190	200
2.0E7											
2.5E7											
1.0E7	m/z-->	210	220	230	240	250	260				

Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://AbsoluteStandards.com>

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

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<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	Ru	<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	Sr	<0.02	S	<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	Ta	<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			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 certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number: 57004
Lot Number: 102523
Description: Beryllium (Be)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date:

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.02

Balance Uncertainty: 5E-05

Flask Uncertainty: 0.058

2.0%

40.0 (mL)

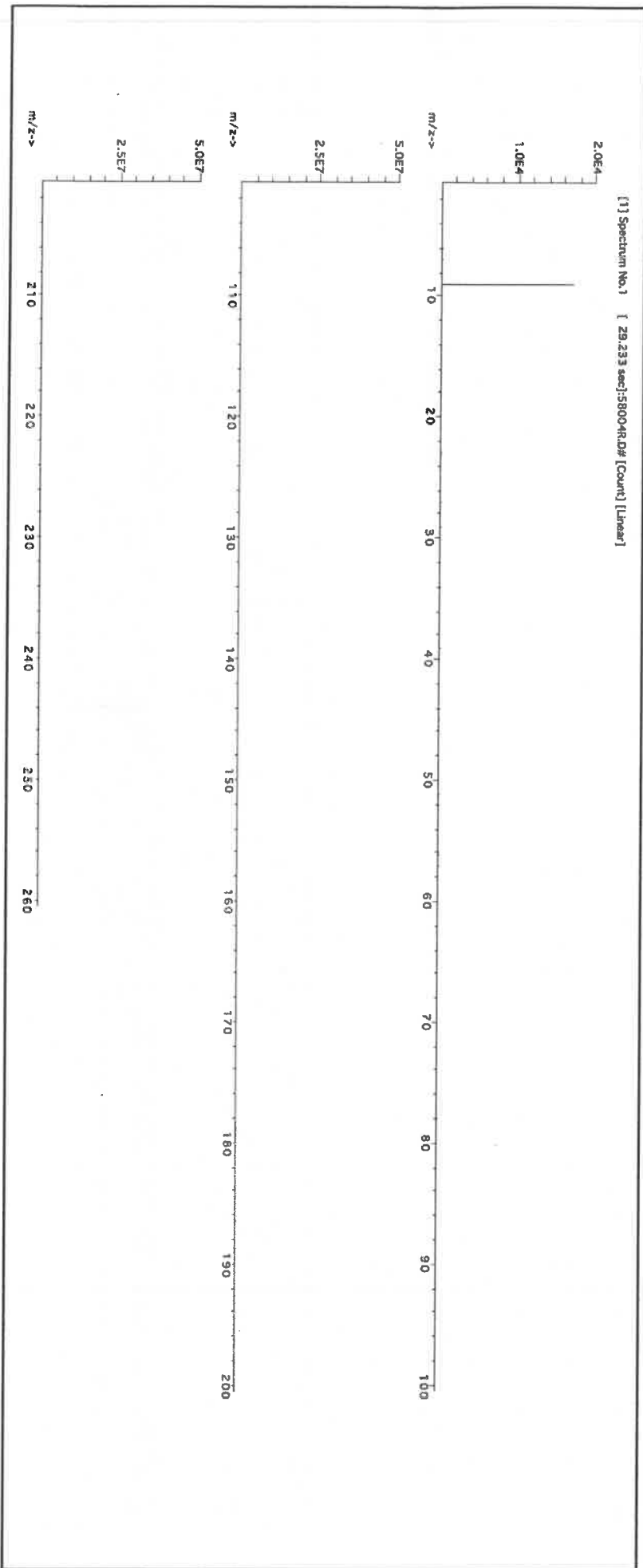
Nitric Acid

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

SDS Information

Compound	Part Number	Lot	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597-99-4	0.2µg/m3	intrinsc-rat 3.16mg/kg	NA
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<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	Tc	<0.02	U	<0.02
As	<0.02	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<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	Ta	<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	Tl	<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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- * All standard containers are meticulously cleaned prior to use.
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- * Standards are certified (+/-) 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).



Certified Reference Material CRM

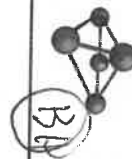
CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot #

15.02509124
M599



Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2% 10.0 Nitric Acid
6% 30.0 Hydrochloric acid
(mL)

Weight shown below was diluted to (mL): 499.93

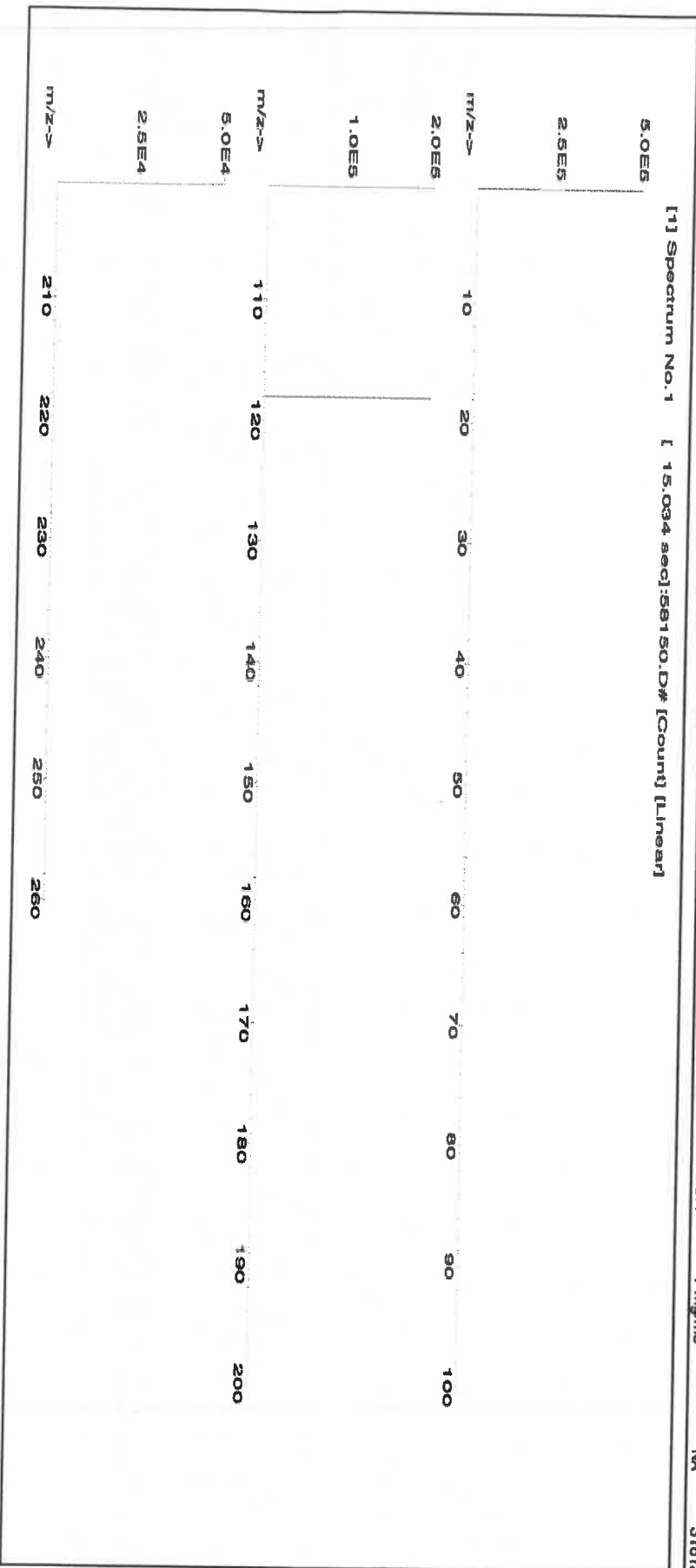
5E-05 Balance Uncertainty
0.0058 Flask Uncertainty

<i>[Signature]</i>	
Formulated By:	Benson Chan
	071123
Reviewed By:	Pedro L. Rentas
	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information		
											(Solvent Safety Info. On Attached pg.)	OSHA PEL (TWA)	NIST SRM

1. Ammonium hexafluoroantimonate(V) (Sn) INO10 SMD042023A1 1000 99.999 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a

[1] Spectrum No. 1 [15.034 sec]:56150.D# [Count] [Linear]





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	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 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: 02/09/24 115800 (54)

CERTIFIED WEIGHT REPORT:

Part Number: 57027
Lot Number: 091923
Description: Cobalt (Co)

Expiration Date: 091926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Lot # 24002546
Solvent: Nitric Acid

2.0% Nitric Acid
40.0 (mL)

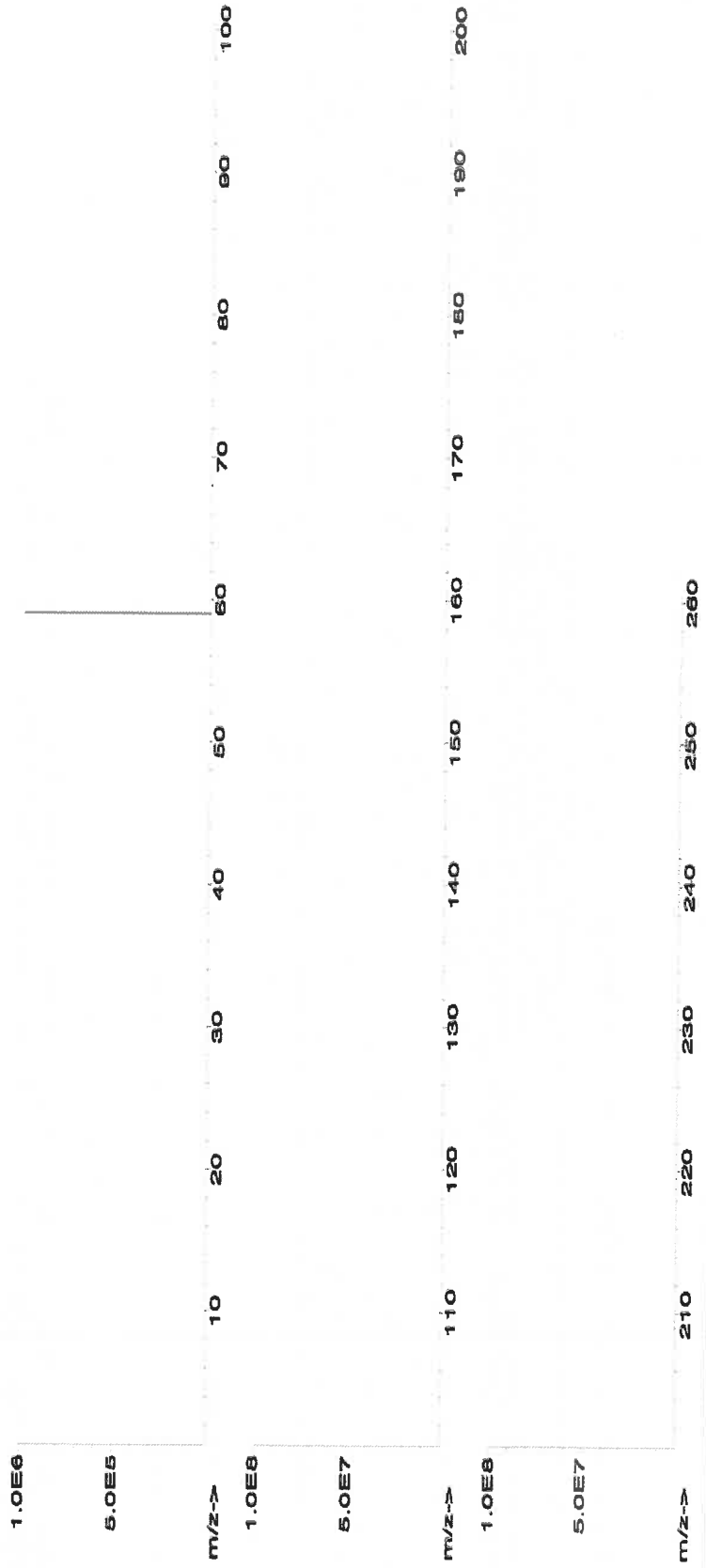
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty
(Solvent Safety Info. On Attached pg.)
NIST SRM
CAS# OSHA PEL (TWA) LD50

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

[1] Spectrum No.1 [34.243 sec]:58027.D# [Count] [Linear]





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
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
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.2	Na	<0.02	Th	<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
Bi	<0.02	Co	T	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<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

(T)= Target analyte

Physical Characterization:

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

Certified by:

[Signature]

- * The certified value is the concentration calculated from gravimetric and volumetric measurements 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).



Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

Part Number: 57033
Lot Number: 111323
Description: Arsenic (As)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date: 111326
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6LUTB
Volume shown below was diluted to (mL): 4000.0

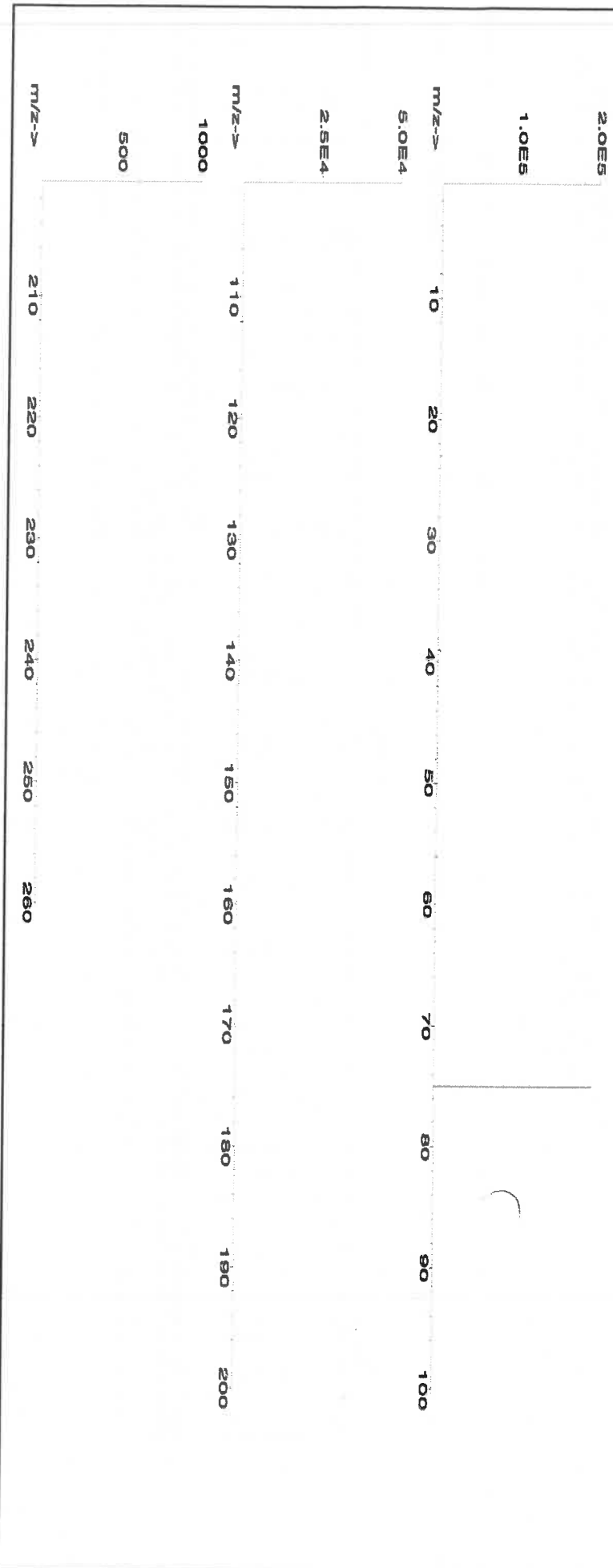
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.06

Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rendas	111323

SDS Information									
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)

1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	1000.0	2.0
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[1] Spectrum No.1 [34.433 sec]:57033.D# [Count] [Linear]





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	Pt	<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	Tc	<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	Ti	<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
Bc	<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	Pr	<0.02	Sm	<0.02	S	<0.02	Sa	<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	Tl	<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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- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
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- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57005**
Lot Number: **071123**
Description: **Boron (B)**

Solvent: MKB0857V Ammonium hydroxide

Lot #

AI: 021009124 M5814

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

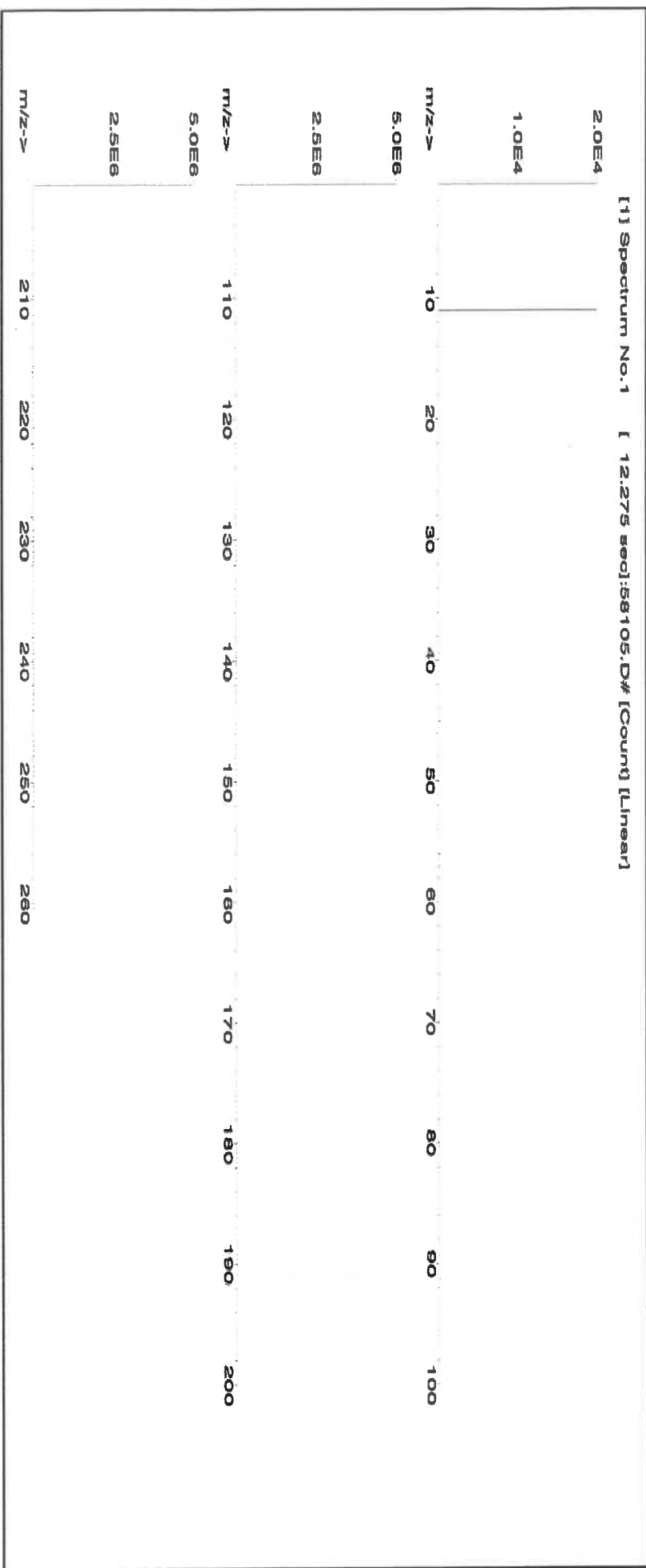
2.0% 40.0 Ammonium hydroxide (mL)

Weight shown below was diluted to (mL): 1999.48 0.058 Balance Uncertainty Flask Uncertainty

Formulated By:	Benson Chan
071123	
Reviewed By:	Pedro L. Rientas
071123	

SDS Information									
Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)
									(Solvent Safety Info. On Attached pg.)
									LD50
									NIST SRM

1. Boric acid (B)	IN018	BV082018A1	1000	99.999	0.10	17.3	11.55772	11.56201	1000.4	2.0	10043-35-3	2 mg/m3	ort-nat 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	Pt	<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:

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 certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number: **57115**
Lot Number: **041723**
Description: **Phosphorous (P)**

Solvent: 21110221 Nitric Acid

Lot #

Expiration Date: 041726
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

2% 40.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 2000.02 0.056 Balance Uncertainty Flask Uncertainty

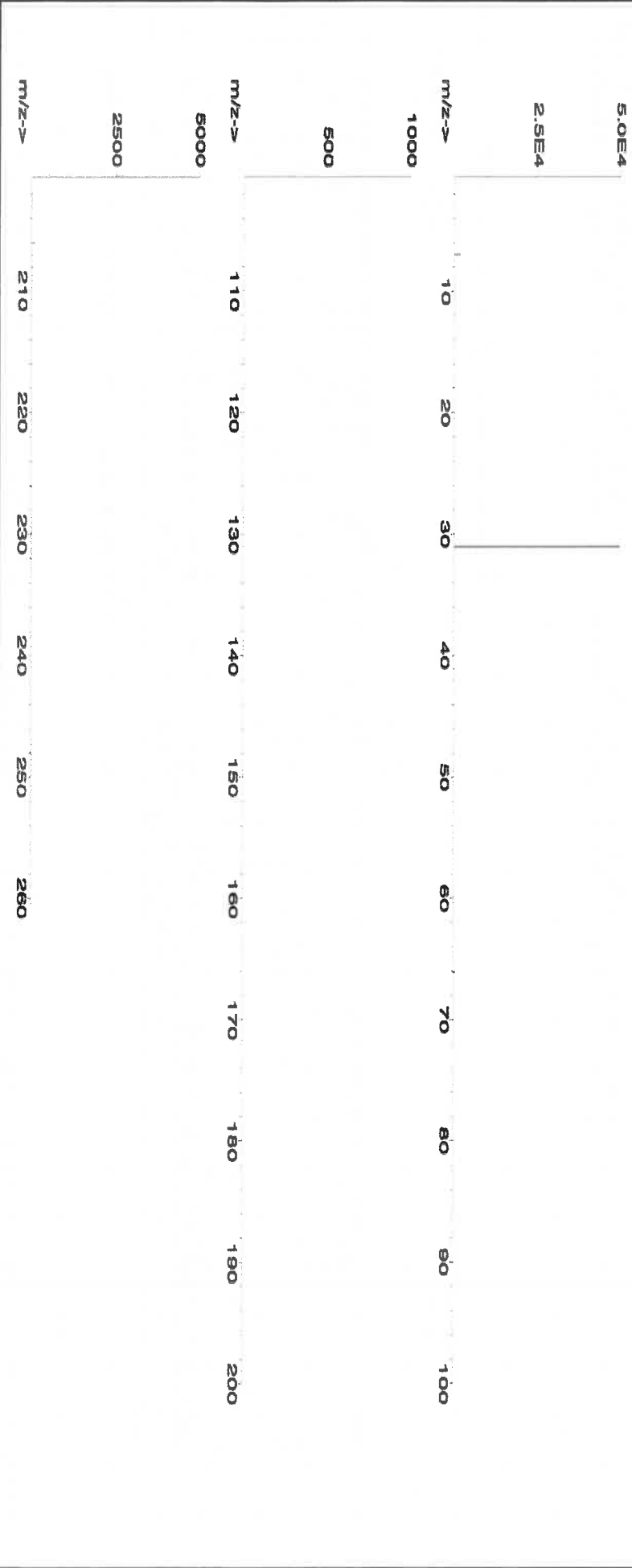
Formulated By:	Lawrence Barry
	041723
Reviewed By:	Pedro L. Rentas
	041723

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium dihydrogen phosphate (P) IN008 PVR2019A1 10000 99.999 0.10 27.5 72.7287 72.7289 10000.0 20.0 7722-76-1 5 mg/m3 or-hal >2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





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	Pt	<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:

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 certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number: 57016
Lot Number: 122923
Description: Sulfur (S)

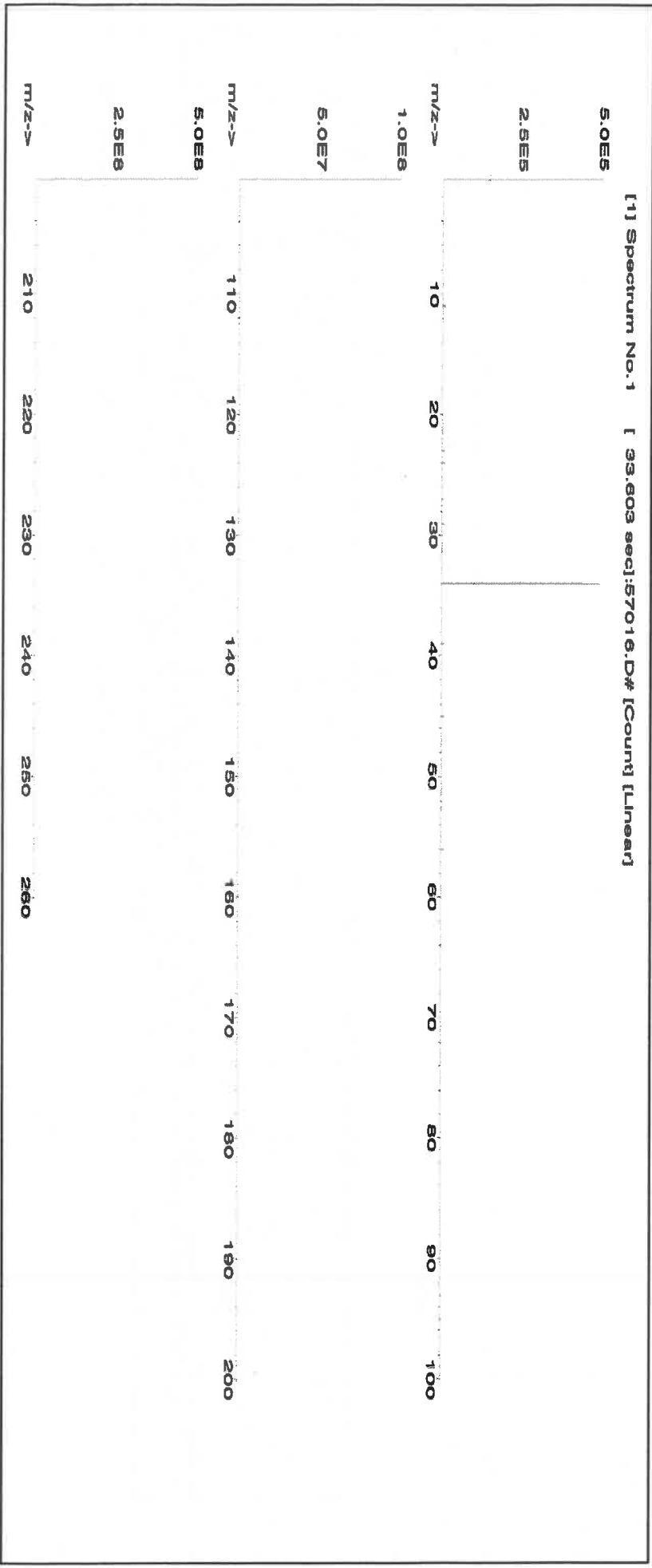
Solvent: 122923
ASTM Type 1 Water

Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rentas

Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6L7B
Weight shown below was diluted to (mL): 4000.0
SE-05 Balance Uncertainty
0.06 Flask Uncertainty

Compound	SDS Information											
	Expanded (Solvent Safety Info. On Attached pg.)											
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)	CAS#	OSHA PEL (TWA)	LD50
												NIST SRM

1. Ammonium sulfate (S) IN117 SLBR225V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA or-rel 4250mg/kg 3181





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	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<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	Ru	<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	Sr	<0.02	S	<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	Ta	<0.02	Ti	<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 certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number: **57116**
Lot Number: **071123**
Description: **Sulfur (S)**

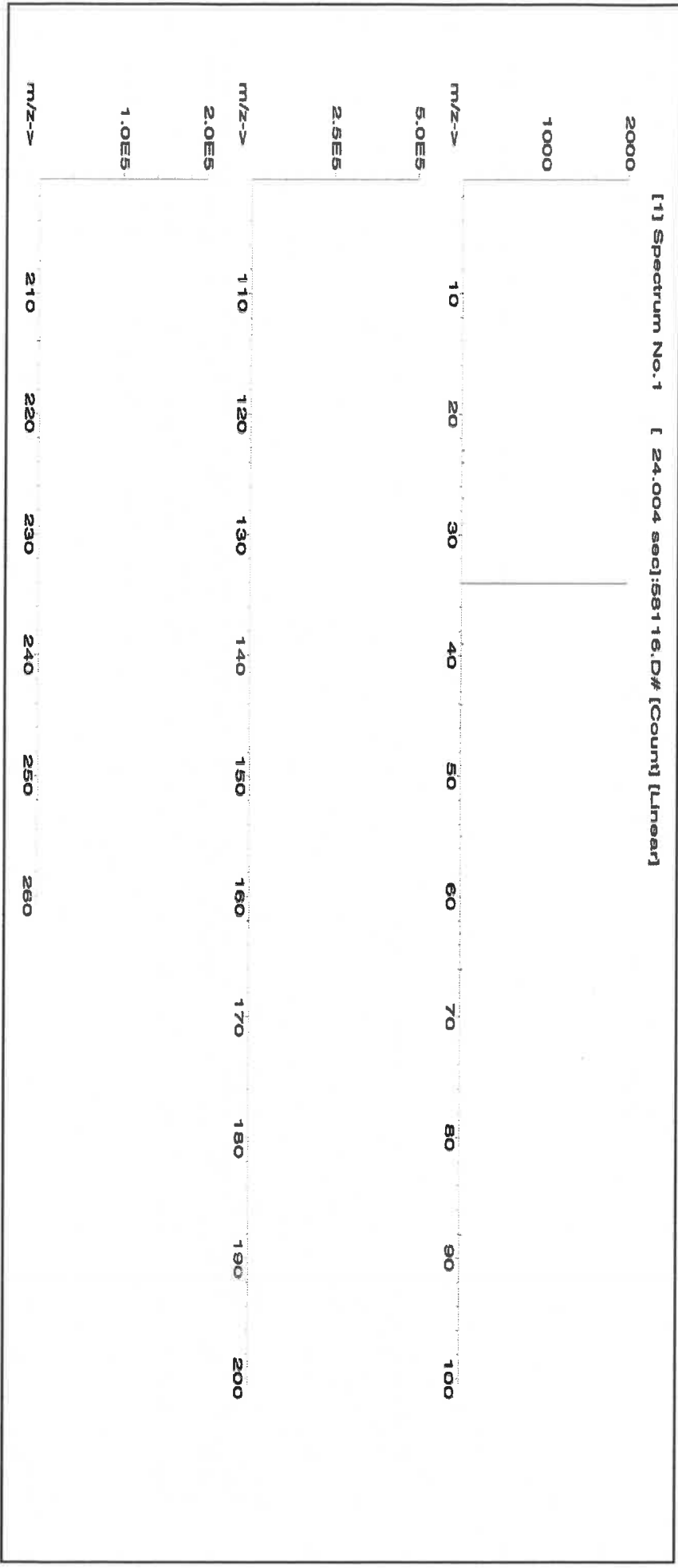
Solvent: **071123** Lot #
ASTM Type 1 Water

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas
071123	

Expiration Date: **071126**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **10000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **1999.48**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

SDS Information									
Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)
									CAS# OSHA PEL (TWA) LD50 SRM

1. Ammonium sulfate (S)	IN117	SLBR725V	10000	99.9	0.10	24.3	82.4675	82.4692	10000.1	20.0	7783-20-2	NA	oral 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	Pt	<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	Ti	<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

Physical Characterization:

(T)= Target analyte

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 certified (+/-) 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).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57015
Lot Number: 091123
Description: Phosphorous (P)

Solvent: 24002546 Nitric Acid

Lot #

Formulated By:	Lawrence Barry	091123
Reviewed By:	Pedro L. Rentas	091123

Expiration Date: 091126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6LUTB

2% 40.0 (mL) Nitric Acid

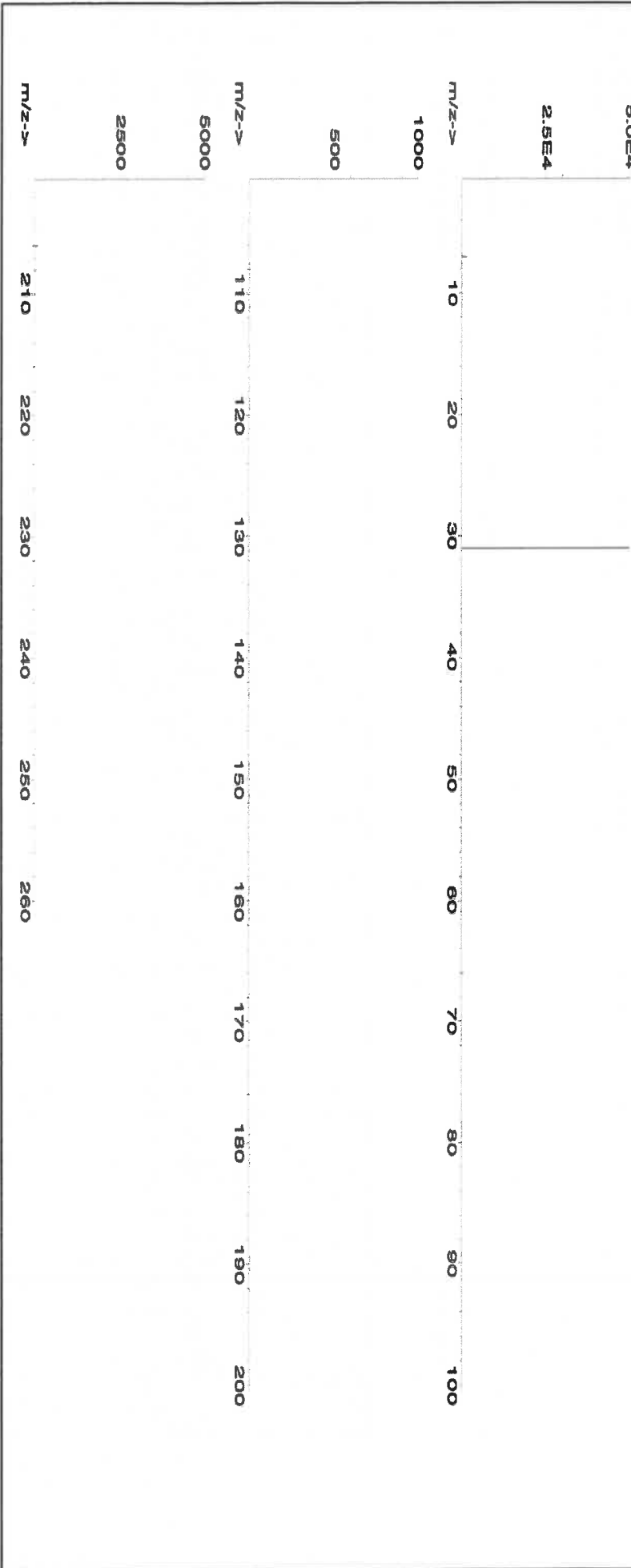
Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

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)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium dihydrogen phosphate (P) IN008 PY062019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/m3 xH-rat >2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





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	Tc	<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	Sa	<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 certified (+/-) 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).

M5959 R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



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:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

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:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2(u_{char i}^2)]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.004600	M Eu	0.009037	M Na	0.086360	M Se <	0.005200	M Zn	0.030125
M Al	0.014862	O Fe	0.002410	M Nb <	0.000570	O Si	0.024100	O Zr <	0.002600
M As <	0.003500	M Ga <	0.000570	M Nd	0.000923	M Sm	0.000461		
M Au <	0.001700	M Gd <	0.003500	M Ni <	0.005700	M Sn <	0.002300		
O B	0.002209	M Ge <	0.005200	M Os <	0.001200	M Sr <	0.004600		
O Ba <	0.002500	M Hf <	0.000570	n P <		M Ta <	0.000570		
O Be <	0.001400	M Hg <	0.000570	M Pb	0.005020	M Tb	0.001044		
M Bi <	0.003500	M Ho	0.009037	M Pd <	0.005100	M Te <	0.002300		
O Ca	0.009841	M In <	0.002300	M Pr <	0.002300	M Th <	0.000570		
M Cd <	0.000570	M Ir <	0.000570	M Pt <	0.000570	M Ti <	0.003500		
M Ce <	0.002300	O K	0.018677	M Rb <	0.000570	M Tl <	0.000570		
M Co <	0.000570	M La	0.000461	M Re <	0.000570	M Tm <	0.003500		
M Cr <	0.004000	O Li <	0.009300	M Rh <	0.008000	M U <	0.000570		
M Cs <	0.000570	M Lu	0.000582	M Ru <	0.000570	M V	0.001265		
M Cu	0.002610	O Mg	0.001486	n S <		M W <	0.002300		
M Dy	0.003815	M Mn	0.000582	M Sb	0.005422	s Y <			
M Er	0.003615	M Mo <	0.005700	M Sc <	0.001200	M Yb	0.001827		

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 88.91 +3 6 Y(OH)(H₂O)_{x+2}

Chemical Compatibility -Soluble in HCl, H₂SO₄ and HNO₃. Avoid HF, H₃PO₄ and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride.

Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H₂O / HNO₃); Ores (Carbonate fusion in PtO 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

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://AbsoluteStandards.com>

CERTIFIED WEIGHT REPORT:

Part Number:

57034

Lot Number:

060624

Description:

Selenium (Se)

Lot #

24002546

Solvent:

Nitric Acid

2.0%

40.0

(mL)

Nitric Acid

(mL)

Formulated By:

Benson Chan

060624

Expiration Date:

060627

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

2000.07

SE-05 Balance Uncertainty

0.100 Flask Uncertainty

Reviewed By:

Pedro L. Rantas

060624

SDS Information

Compound

Part Number

Lot Number

Dilution Factor

Initial Vol. (mL)

Pipette (mL)

Uncertainty

Nominal Conc. (µg/mL)

Initial Conc. (µg/mL)

Final Conc. (µg/mL)

Expanded Uncertainty

± (µg/mL)

(Solvent Safety Info. On Attached pg.)

CAS#

OSHA PEL (TWA)

LDSO

NIST SRM

1. Selenium (Se)

58134

071223

0.1000

200.0

0.084

1000

10002.5

1000.0

2.2

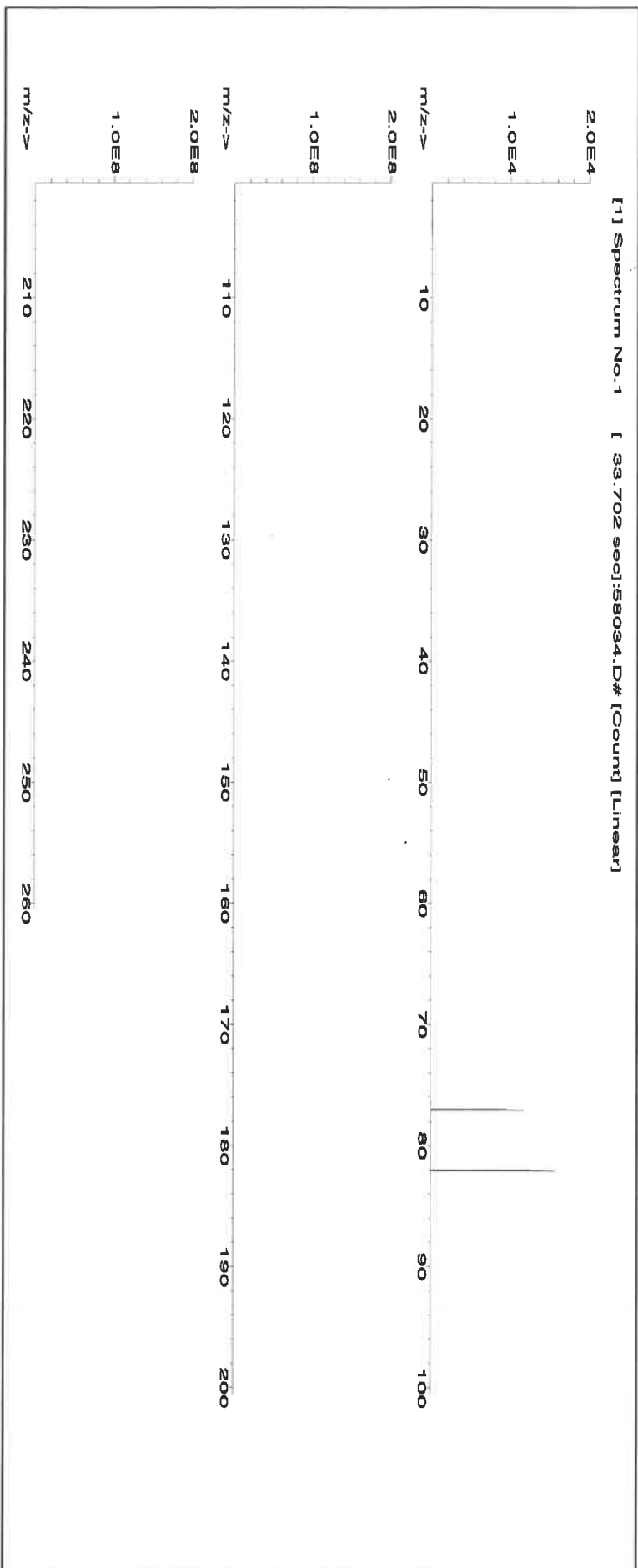
7782-49-2

0.2 mg/m3

or-tral 6700 mg/kg

3149

[1] Spectrum No.1 [33.702 sec]:58034.D# [Count] [Linear]





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	Pt	<0.02	Se	T	Tb	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	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	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	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	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	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	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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Absolute Standards, Inc.
800-368-1131
www.absolute-standards.com



Certified Reference Material CRM
M5970 M5971 R1 710124



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

CERTIFIED WEIGHT REPORT:

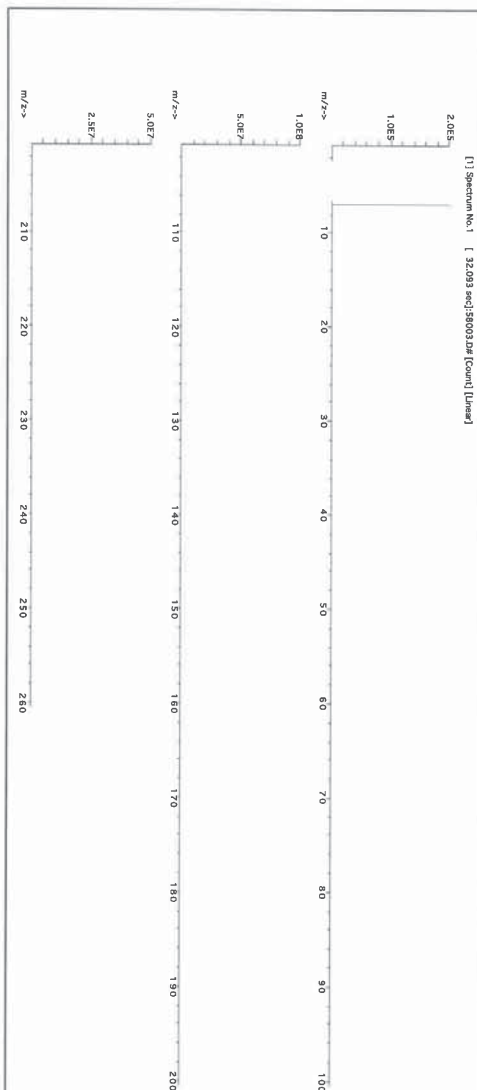
Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 06/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11

Lot # 24002546
Solvent: Nitric Acid
Conc. (µg/mL) 2.0%
Initial 5.0 (mL)
Final Nitric Acid
SE-05 Balance Uncertainty 0.016
Fisk Uncertainty

Microvite Capable	
Formulated By:	062124
Reviewed By: <i>[Signature]</i>	
Petro L. Parias	

Compound		SDS Information												Expanded (Solvent Safety Info. On Attachment pg.)		CAS# OSHA PEL (TWA) LD50		NEST SM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		Part	Lot	Dilution	Initial	Uncertainty	Nominal	Initial	Final	Uncertainty	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)							Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Number	Factor	Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. 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(µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg

1. Lithium nitrate (Li) 58103 070622 0.1000 25.0 0.004 1000 10000.4 1000.0 2.0 7790-68-4 5 mg/m3 or-hal 1428 mg/kg NA



Part # 57003 Lot # 062124

1 of 2

Printed: 6/24/2024, 11:20:08 PM



Redefine your results. Redefine your industry.

Certificate of Analysis

MS978, MS979

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com



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).

1.0 ACCREDITATION / REGISTRATION

2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution

Catalog Number: CGT1

Lot Number: T2-T1719972

Matrix: 2% (v/v) HNO₃

Value / Analyte(s): tr. HF

Starting Material: 1 000 µg/mL ea.

Starting Material: 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 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:

$X_{CRM/RM} = (X_p / U_{CRM})$
 X_p = mean of Assay Method A with
 U_{CRM} = the standard uncertainty of characterization Method A

$U_{CRM} = (U_{CRM}^2)^{1/2}$
 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
the variance

$U_{CRM} = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
the variance

$U_{CRM} = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
the variance

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 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
the variance

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 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
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 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
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the variance

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 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
the variance

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 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
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the variance

$U_{CRM} = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
 $U_{CRM}^2 = (U_{CRM}^2)^{1/2} / (C_p / C_{CRM})^2$
the variance

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-MS and ICP-OES. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an UHPA-filtered Clean Room. An UHPA-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
M	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	<	0.00096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr	<	0.00096				
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	Td	<	0.001341				
O	Ca	<	0.00676	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	<	0.006976	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				

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

- 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: 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); K₂SiO₃ - no KF if silica not present); Organic Matrices (Dry ash at 450°C in P10 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 crystaline 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 / 0.00028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	1	W, Mo, Co

HAZARDOUS INFORMATION
HF Note: This standard should not be prepared or stored in glass.

8.0

HOMOGENEITY

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0

QUALITY STANDARD DOCUMENTATION

- 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

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"

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY
Inorganic Ventures, 300 Technology Drive, Chesapeake, VA 24073, USA; Telephone: 800.868.6786; 540.565.3030; Fax: 540.565.3012; info@inorganicventures.com
- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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 aluminumized 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.

Certificate Approved By:

Thomas Kozlikowski
Manager, Quality Control

TD978L

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Paul R. Gaines

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

M5985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGIN10
Lot Number: U2-IN729349
Matrix: 5% (v/v) HNO₃
Value / Analyte(s): 10 000 µg/mL ea:
Indium
Starting Material: Indium Metal
Starting Material Lot#: 2511
Starting Material Purity: 99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL
Density: 1.044 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	10021 ± 56 µg/mL ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	10035 ± 25 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	10001 ± 33 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

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:

$$w_i = (1/u_{char\ i}^2) / (\sum(1/u_{char\ i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2(u_{char\ i}^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = 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

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char\ a}^2 + u_{bb}^2 + u_{Its}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000760	M	Eu	<	0.000760	O	Na	0.012771	M	Se	<	0.023000	M	Zn	<	0.006100
M	Al	0.003385	O	Fe	0.004462	M	Nb	<	0.000760	O	Si	0.024619	M	Zr	<	0.000760		
M	As	<	0.004600	M	Ga	<	0.000760	M	Nd	<	0.000760	M	Sm	<	0.000760			
M	Au	<	0.002300	M	Gd	<	0.000760	O	Ni	<	0.005100	M	Sn	<	0.000760			
O	B	0.003692	M	Ge	<	0.001600	M	Os	<	0.000760	O	Sr	<	0.000610				
M	Ba	<	0.001600	M	Hf	<	0.000760	n	P	<		M	Ta	<	0.000760			
O	Be	<	0.000130	M	Hg	<	0.003100	M	Pb	0.001400	M	Tb	<	0.000760				
M	Bi	<	0.000760	M	Ho	<	0.000760	M	Pd	<	0.001600	M	Te	<	0.000760			
O	Ca	0.004616	s	In	<			M	Pr	<	0.000760	M	Th	<	0.000760			
M	Cd	<	0.000760	M	Ir	<	0.000760	M	Pt	<	0.000760	O	Ti	<	0.001100			
M	Ce	<	0.000760	O	K	0.007078	M	Rb	<	0.000760	M	Tl	<	0.000760				
M	Co	<	0.000760	M	La	<	0.000760	M	Re	<	0.000760	M	Tm	<	0.000760			
O	Cr	<	0.001300	O	Li	<	0.000130	M	Rh	<	0.000760	M	U	<	0.000760			
M	Cs	<	0.000760	M	Lu	<	0.000760	M	Ru	<	0.000760	M	V	<	0.001600			
M	Cu	<	0.003800	O	Mg	0.000707	n	S	<		M	W	<	0.001600				
M	Dy	<	0.000760	O	Mn	0.000149	M	Sb	<	0.000760	M	Y	<	0.000760				
M	Er	<	0.000760	M	Mo	<	0.002300	M	Sc	<	0.000760	M	Yb	<	0.000760			

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale. <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 114.82 +3 6 In(H₂O)₆+3

Chemical Compatibility -Soluble in HCl, HNO₃, and H₂SO₄. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO₃); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; Info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 21, 2023

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 21, 2028

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

M6074
M6075
M6076
M6077

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

EXP: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CHEM-CLP-4
Lot Number: V2-MEB746762
Matrix: 3% (v/v) HNO₃
3% (v/v) HF
Value / Analyte(s): 1 000 µg/mL ea:
Boron, Molybdenum,
Silicon, Tin,
Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale. <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 06, 2029

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis



R → 16/13/24
Met dig

M 6121

Material No.: 9530-33
Batch No.: 0000275677
Manufactured Date: 2020/12/16
Retest Date: 2025/12/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.6
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.190
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	1
ACS - Free Chlorine (as Cl ₂)	<= 0.5 ppm	< 0.5
Phosphate (PO ₄)	<= 0.05 ppm	< 0.03
Sulfate (SO ₄)	<= 0.5 ppm	< 0.3
Sulfite (SO ₃)	<= 0.8 ppm	0.3
Ammonium (NH ₄)	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Test	Specification	Result
Trace Impurities – Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities – Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities – Iron (Fe)	<= 15.0 ppb	< 1
Trace Impurities – Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities – Lithium (Li)	<= 1.0 ppb	0.2
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities – Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities – Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities – Selenium (Se), For Information Only	ppb	1.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities – Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities – Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities – Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities – Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities – Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities – Titanium (Ti)	<= 1.0 ppb	0.2
Trace Impurities – Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities – Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities – Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

M612 S

Receive → 11/22/24

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

Office and Plant
299 Cedar Lane
Fairless Hills, PA 19030

Phone: 215-295-5006
Fax: 215-295-0781

Hydrogen Peroxide 30%, ACS Reagent Grade

SPECIFICATION

MAXIMUM LIMITS

Appearance	Colorless and free from suspended matter or sediment
Assay	29-32%
Color (APHA)	10
Residue after Evaporation	0.002%
Titratable Acid	0.0006 meq/g
Chloride (Cl)	3 ppm
Nitrate (NO ₃)	2 ppm
Phosphate	2 ppm
Sulfate (SO ₄)	5 ppm
Ammonium (NH ₄)	5 ppm
Heavy Metals (as Pb)	1 ppm
Iron (Fe)	0.5 ppm

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

Nitric Acid 69%
CMOS

avantor™



R → 11/12/24

M6126

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>





CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 112124
Description: Magnesium (Mg)
Lot # R-1113125
Solvent: 24012496 Nitric Acid

Expiration Date: 112127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6LUB
Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

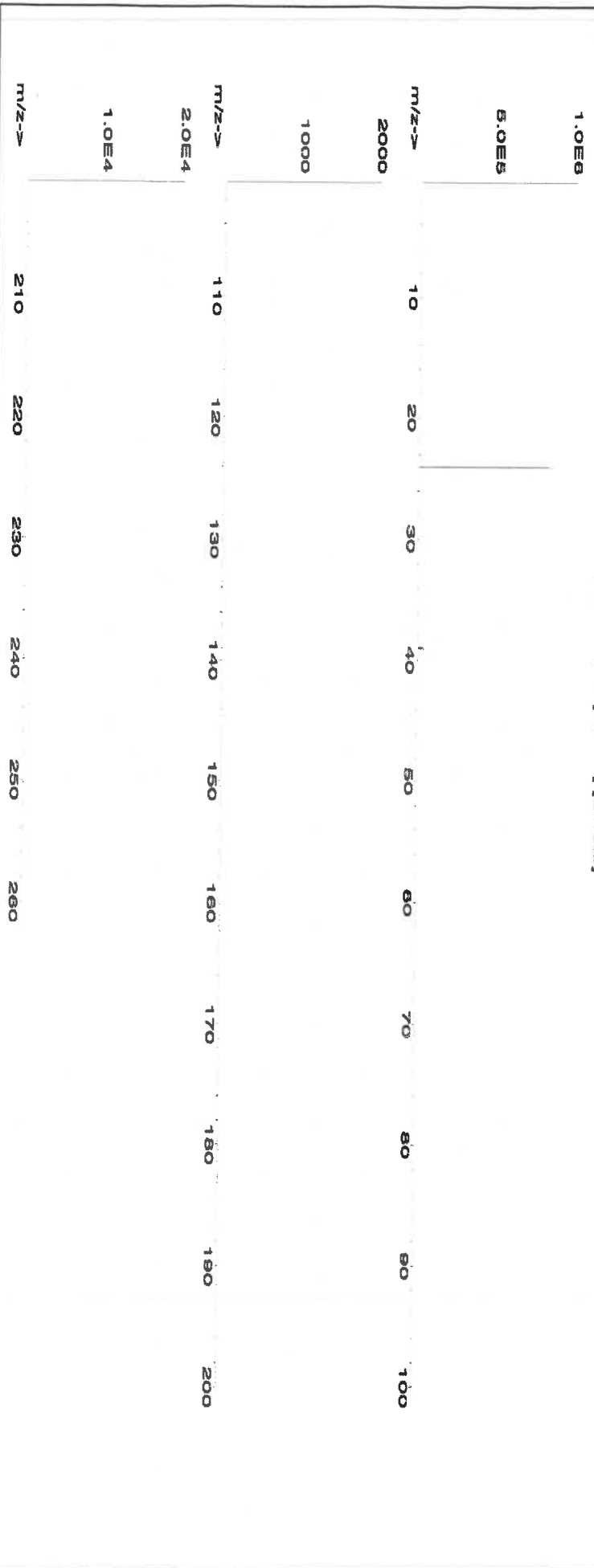
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	112124

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Magnesium nitrate hexahydrate (Mg) IN030 MG000023A1 10000 99.999 0.10 8.51 234.9183 234.9459 10001.2 20.0 13446-18-9 NA off-rat 5440 mg/kg 3131a

[1] Spectrum No. 1 [19.823 sec]:58112.D# [Count] [Linear]





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	Pt	<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	Rc	<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	Rb	<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	Ru	<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	Sm	<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	Sc	<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			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 certified (+/-) 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).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58025
101124
Manganese (Mn)

Lot #
Solvent: Nitric Acid

24002546
2% 80.0 (mL) Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

101127
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

4000.2 0.10 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	101124

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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SDS Information

Expanded Uncertainty (Solvent Safety Info. On Attached pg.)													
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1. Manganese(II) nitrate hydrate (Mn) IN031 MNM02020A1 1000 99.999 0.10 20.8 19.2322 19.2344 1000.1 2.0 15710-66-4 5 mg/m3 or-trt >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]

5.0E6													
2.5E6													
m/z->	10	20	30	40	50	60	70	80	90	100			
1.0E6													
5.0E7													
m/z->	110	120	130	140	150	160	170	180	190	200			
1.0E6													
5.0E7													
m/z->	210	220	230	240	250	260							



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

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	T	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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 certified (+/-) 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).



CERTIFIED WEIGHT REPORT:

Part Number: **58111** Lot # **R-1113125**
Lot Number: **072424** Solvent: **24002546 Nitric Acid**
Description: **Sodium (Na)**

Expiration Date: **072427** 2% 80.0 Nitric Acid (mL)

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **10000**

NIST Test Number: **6UTB**

Weight shown below was diluted to (mL): **4000.2** 5E-05 Balance Uncertainty
0.10 Flask Uncertainty

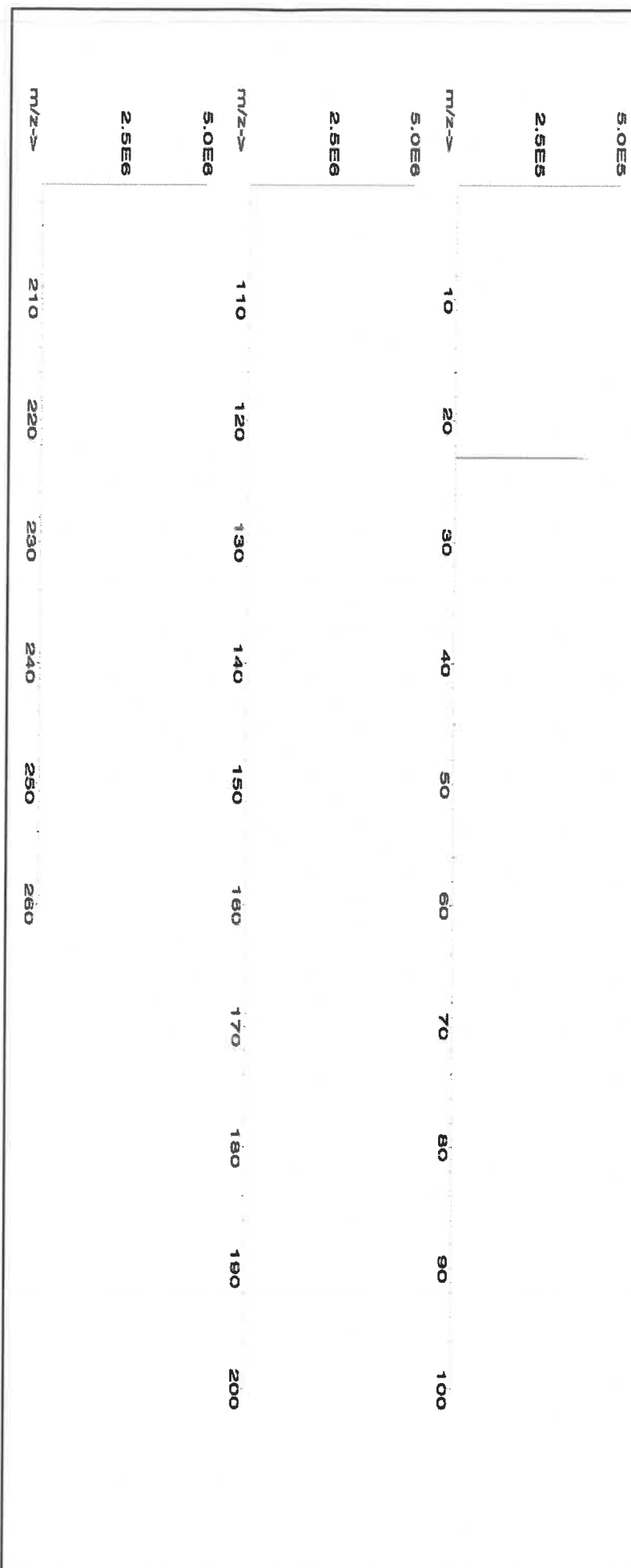
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Sodium nitrate (Na) IN036 NAV01201511 10000 99.999 0.10 26.9 148.7096 ##### 10000.0 20.0 7631-99-4 5 mg/m3 orl-rat 3430 mg/kg 3152a

[1] Spectrum No. 1 [8.935 sec]: 58111.D# [Count] [Linear]





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	Pt	<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	<0.02	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 certified (+/-) 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).



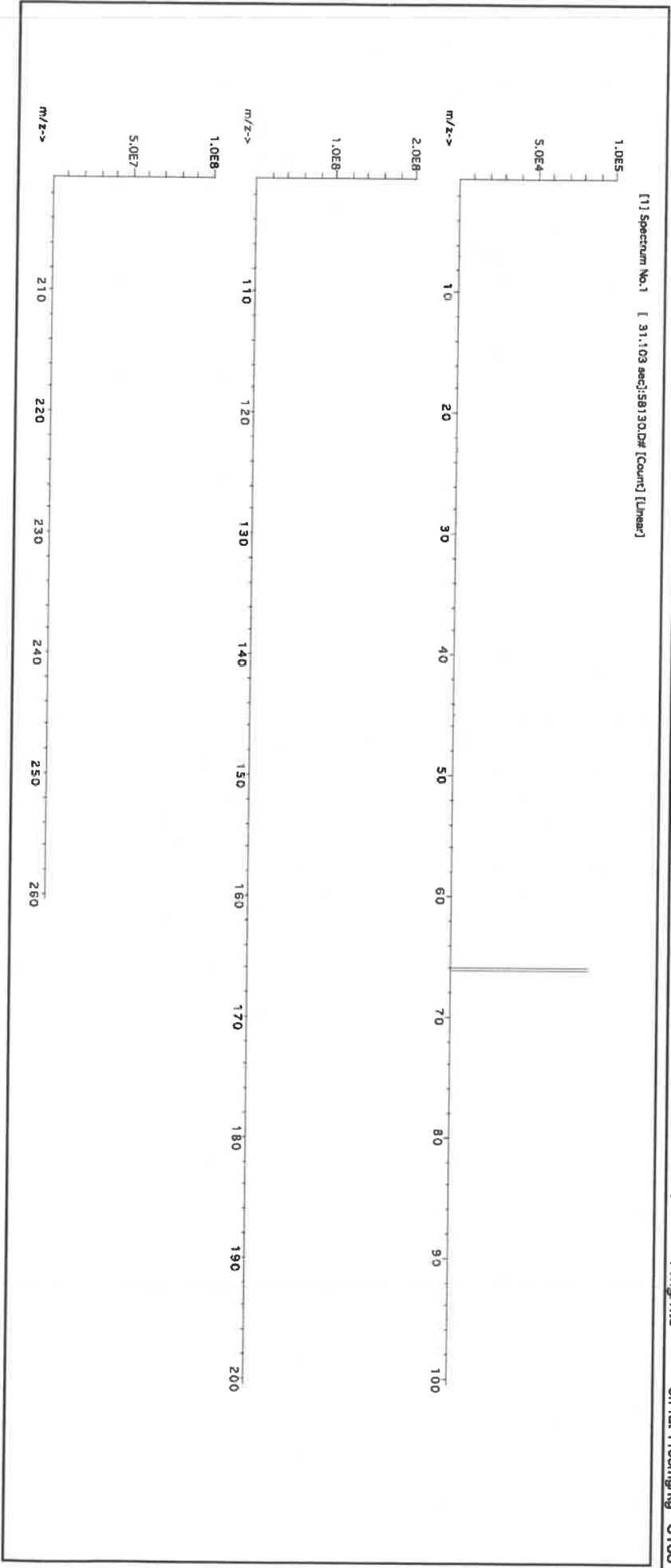
CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)
Expiration Date: 121727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.1
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.10

Lot # 24012496
Solvent: Nitric Acid
2% 40.0 (mL)
Nitric Acid

Aleah O'Brady
Formulated By: Aleah O'Brady
Reviewed By: Pedro L. Rentias
121724

SDS Information									
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)
1. Zinc nitrate hexahydrate (Zn)	IN016	ZNE032021A1	1000	99.999	0.10	24.3	8.2308	8.2311	1000.0
							2.0	10196-18-6	1 mg/m3
									or-rat 1190mg/kg 3168





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	Pt	<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	Bu	<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 certified (+/-) 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).



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

R: 4/20/21

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INITIAL CALIBRATION VERIFICATION SOLUTIONS
(ICV1, ICV5, AND ICV6)

MG150

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

(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.





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

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) K₂Cr₂O₇ 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 K₃Fe(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

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™



M6151

R → 11/15/25

Material No.: 9530-33
Batch No.: 22G2862015
Manufactured Date: 2022-06-15
Retest Date: 2027-06-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.9 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.191
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl ₂)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO ₄)	≤ 0.05 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO ₃)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH ₄)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	1.3 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	163.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.7 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	0.6 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	6 ppb

>>> Continued on page 2 >>>

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™



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™**

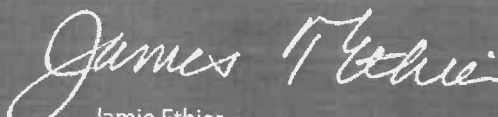


Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
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For Laboratory, Research, or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality



Certified Reference Material CRM

M6030



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://absolutestandards.com>

CERTIFIED WEIGHT REPORT:

Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:

122826

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL):

4000.30

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

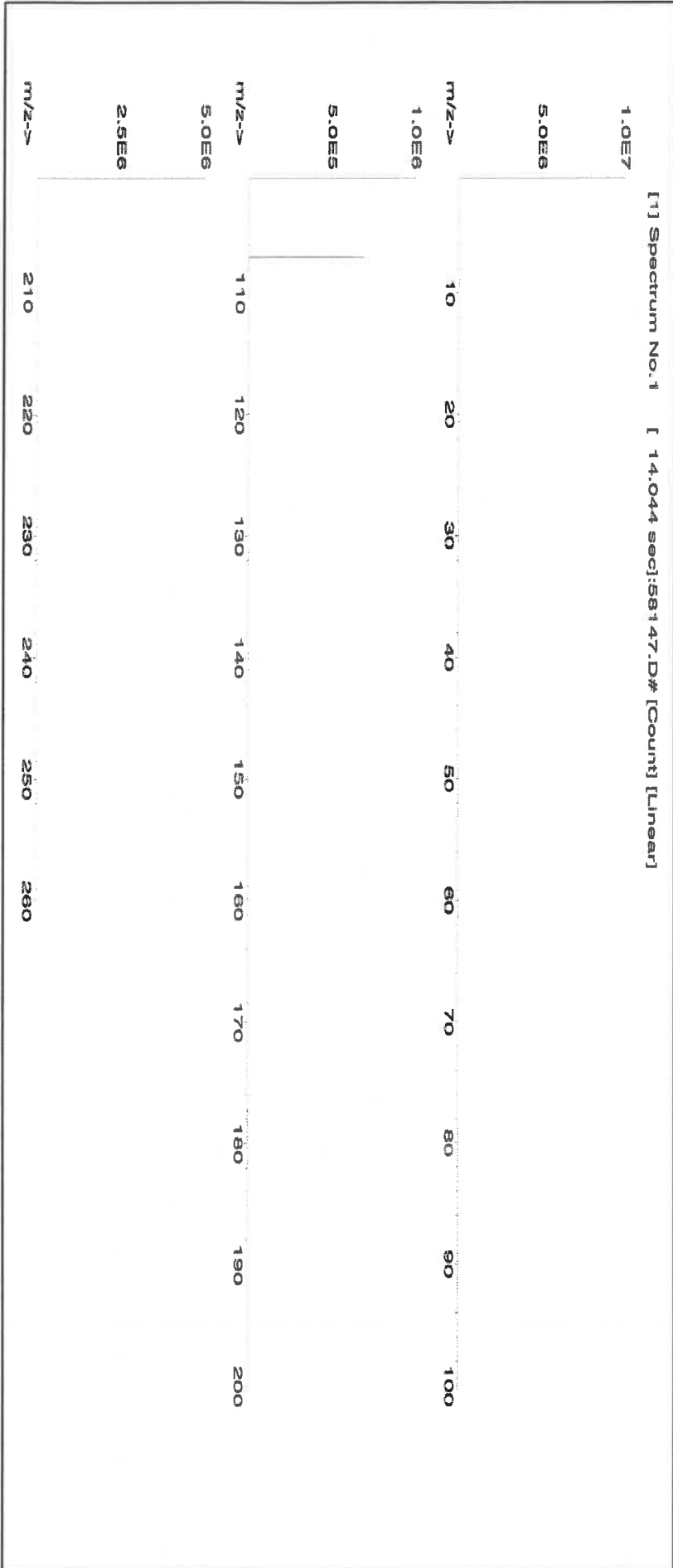
Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rentas
122823	

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Silver nitrate (Ag) IN035 J0612AGA1 1000.0 99.999 0.10 63.7 6.27992 6.27998 1000.0 2.0 7761-88-8 10 µg/m³ NA 3151

[1] Spectrum No. 1 [14.044 sec]:58147.D# [Count] [Linear]





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	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	T	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 meqohm 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 certified (+/-) 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: 10/18/24
Certified Reference Material CRMANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number:

57051

Lot # 24002546

Solvent: Nitric Acid

Lot Number:

071724

Description: Antimony (Sb)

Expiration Date:

071727

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UJB

Volume shown below was diluted to (mL):

2000.26

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Formulated By:

Giovanni Esposito

071724

Reviewed By:

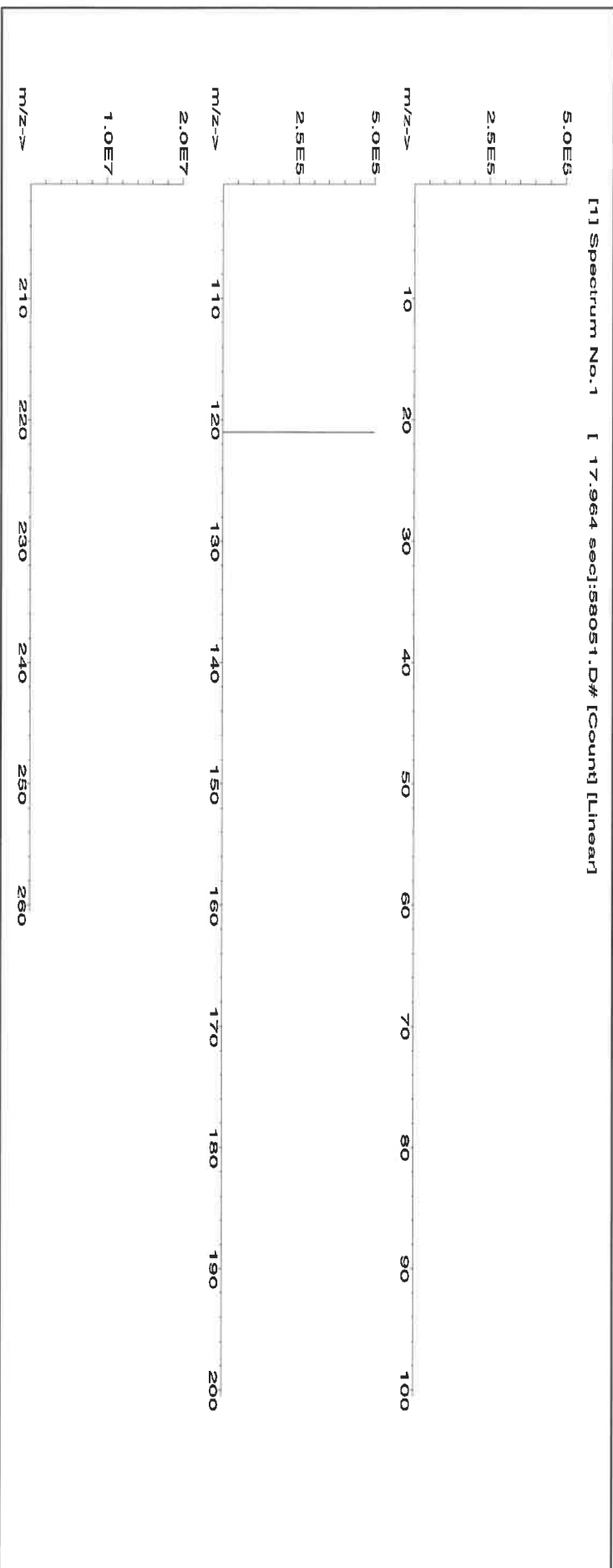
Pedro L. Rentas

071724

SDS Information

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)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Antimony (Sb)	58151	060324	0.1000	200.0	0.084	1000	10001.4	1000.0	2.2	7440-36-0	0.5 mg/m3	or-rat 7000 mg/kg	3102a
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	T	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<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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- * 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).



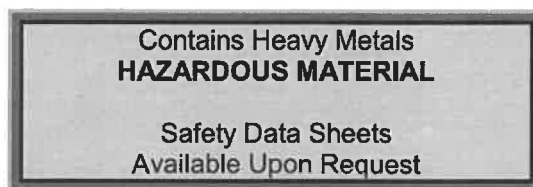
Instructions for QATS Reference Material: ICP-AES ICS

**QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)**

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



M6152

(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,





Instructions for QATS Reference Material: ICP-AES ICS

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 HNO₃. 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 HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

R: 04/20/21

Instructions for QATS Reference Material: ICP-AES ICS

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



M6155

(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,





APTIM

Instructions for QATS Reference Material: ICP-AES ICS

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 HNO₃. 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 HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

R: 8/5/24

M6019

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.comP: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com**1.0 ACCREDITATION / REGISTRATION**

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSR1
Lot Number: U2-SR730227
Matrix: 0.1% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Strontium
Starting Material: SrCO₃
Starting Material Lot#: M2-2192
Starting Material Purity: 99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	998 ± 4 µg/mL ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	1001 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1001 ± 2 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

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:

$$w_i = (1/u_{char\ i})^2 / (\sum(1/u_{char\ i})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2(u_{char\ i})^2]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char\ a})$$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001980	M	Eu	<	0.000495	O	Na	0.000200	M	Se	<	0.013862	O	Zn	0.000143	
O	Al	0.000370	O	Fe	0.000410	M	Nb	<	0.000495	i	Si	<			M	Zr	<	0.000495
M	As	<	0.000495	M	Ga	<	0.000495	M	Nd	<	0.000495	M	Sm	<	0.000495			
M	Au	<	0.000989	M	Gd	<	0.000495	O	Ni	<	0.007631	M	Sn	<	0.000990			
M	B	<	0.039606	M	Ge	<	0.000495	M	Os	<	0.000494	s	Sr	<				
M	Ba	0.006486	M	Hf	<	0.000495	i	P	<			M	Ta	<	0.000495			
M	Be	<	0.000990	M	Hg	<	0.000989	M	Pb	<	0.002970	M	Tb	<	0.000495			
M	Bi	<	0.000495	M	Ho	<	0.000495	M	Pd	<	0.003957	M	Te	<	0.027724			
O	Ca	0.004255	M	In	<	0.000495	M	Pr	<	0.000495	M	Th	<	0.000990				
M	Cd	0.001339	M	Ir	<	0.000494	M	Pt	<	0.002970	M	Ti	<	0.005940				
M	Ce	<	0.004950	O	K	<	0.008184	M	Rb	<	0.002970	M	Tl	<	0.000495			
M	Co	<	0.000495	M	La	<	0.000495	M	Re	<	0.000495	M	Tm	<	0.000495			
O	Cr	<	0.003207	O	Li	<	0.000884	O	Rh	<	0.012829	M	U	<	0.001485			
M	Cs	<	0.000990	M	Lu	<	0.002970	M	Ru	<	0.000989	M	V	<	0.001980			
M	Cu	0.000099	O	Mg	0.000064	i	S	<				M	W	<	0.003960			
M	Dy	<	0.000495	O	Mn	0.000066	M	Sb	<	0.014852	O	Y	<	0.000995				
M	Er	<	0.000495	M	Mo	<	0.001980	M	Sc	<	0.001980	M	Yb	<	0.000495			

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2, 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 03, 2023

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 03, 2028

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM

M6023



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

CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Solvent: 24002546 Nitric Acid

Lot #

2% 40.0 Nitric Acid (mL)

Expiration Date:

062727

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL): 2000.1 0.10 Balance Uncertainty Flask Uncertainty

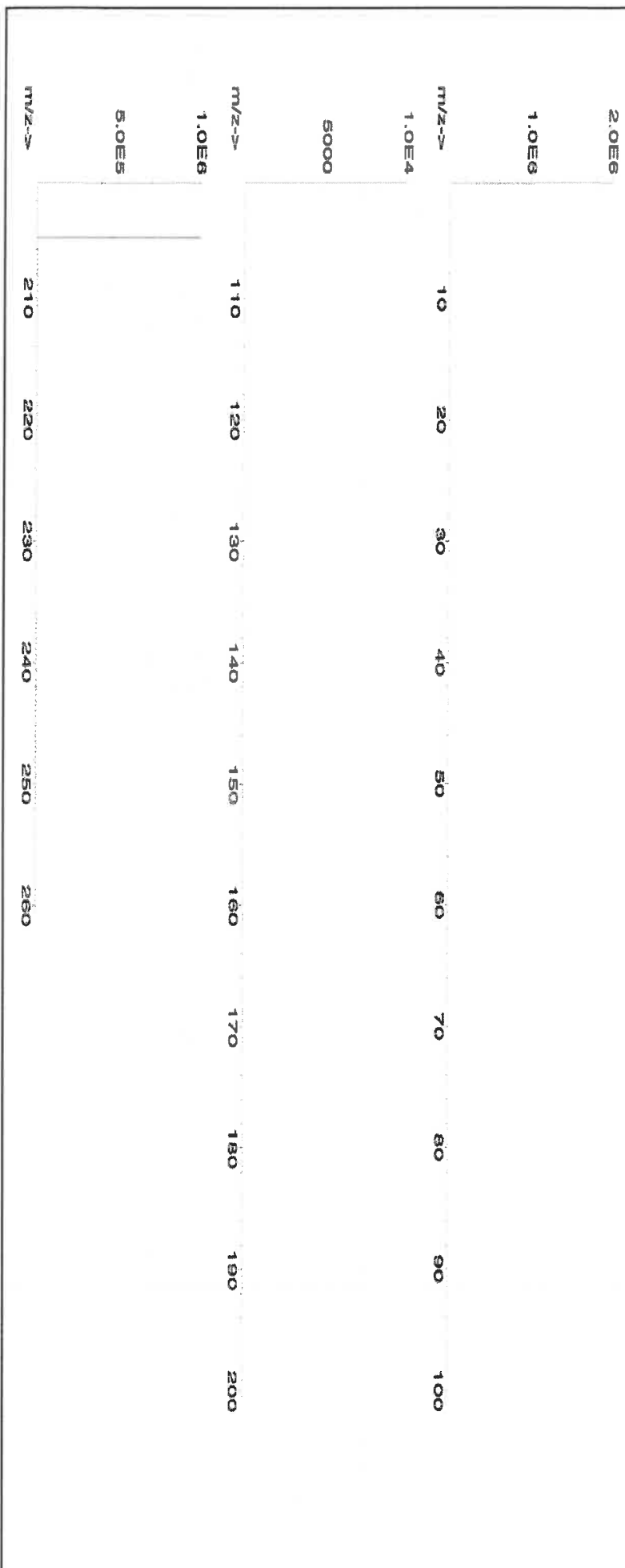
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	062724
Reviewed By:	<i>Pedro L. Renias</i>
	Pedro L. Renias
	062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 or-mus 15mg/kg 3158

[1] Spectrum No.1 [14.044 sec]:57081.D# [Count] [Linear]





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	Pt	<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	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	Tm	<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	Sn	<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	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<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 certified (+/-) 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).



Certified Reference Material CRM

M6021



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://absolutestandards.com>

CERTIFIED WEIGHT REPORT:

Part Number: **57023**
Lot Number: **062424**
Description: **Vanadium (V)**

Lot # **24002546**
Solvent: **Nitric Acid**

<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	Pedro L. Rantas
	062424

Expiration Date: **062427**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**

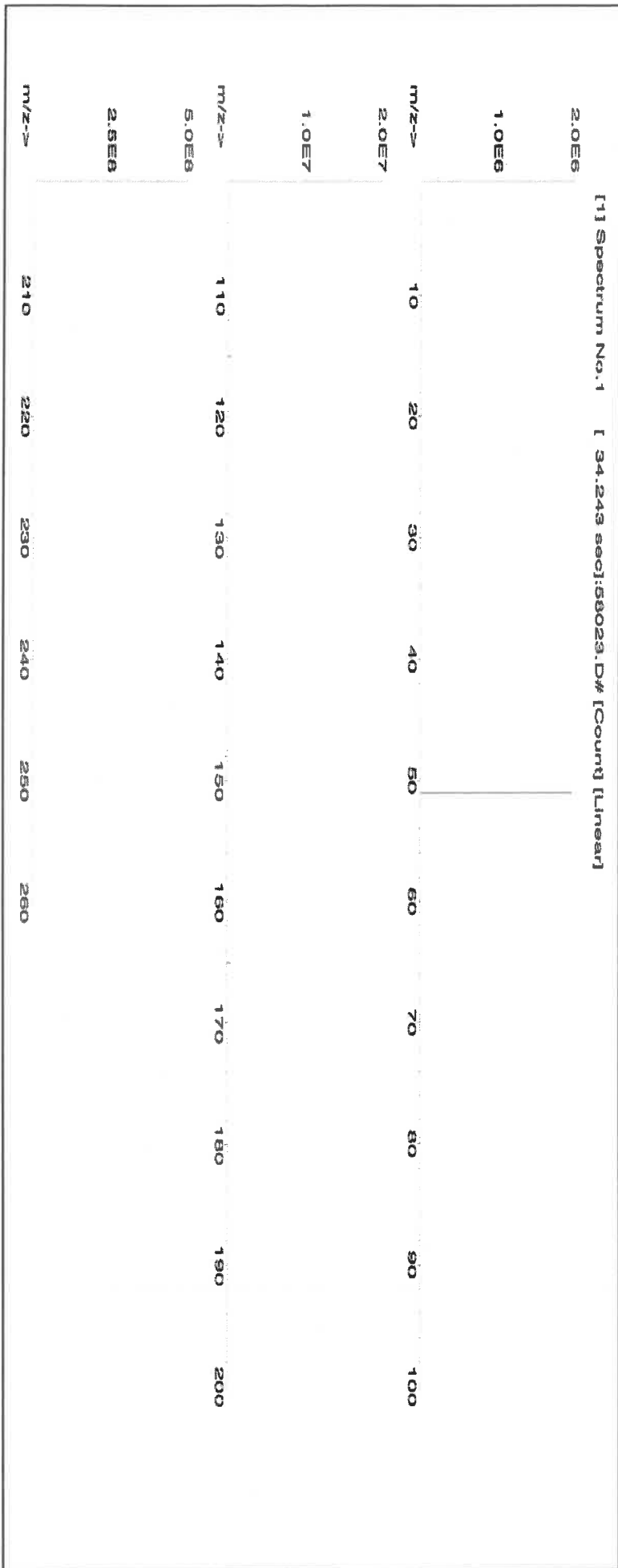
2.0%
40.0 (mL)
Nitric Acid

Volume shown below was diluted to (mL): **2000.3**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

SDS Information									
Formulated By: Aleah O'Brady									
Reviewed By: Pedro L. Rantas									
Expanded Uncertainty (µg/mL) +/- (µg/mL)									
(Solvent Safety Info. On Attached pg.)									
CAS# OSHA PEL (TWA) LD50									
NIST SRM									

1. Ammonium metavanadate (V) 58123 021224 0.1000 200.0 0.084 1000 10000.3 1000.0 2.2 7803-55-6 0.05 mg/m3 3165

[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



SHIPPING DOCUMENTS

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Chemtech

Phone: (908) 789-8900
 Fax: (908) 789-8922
 284 Sheffield Street, Mountinside, NJ 07092

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
 East Longmeadow, MA 01028

Doc # 381 Rev 4_01/08/2020

ANALYSIS REQUESTED

Page 2 of 2

Q1383

Company Name: Nobis Group		Address: 55 Technology Dr Suite 101, Lowell, MA 01851		Phone: 978-703-6014		Fax: 978-703-6014		Project Name: Raymark		Project Location: Stratford, CT		Project Number: 95700		Project Manager: Adam Roy		Con-Test Quote Name/Number:		Invoice Recipient:		Sampled By:		A. Brittingham	
Requested Turnaround Time		5-Day ☐ 10-Day ☒		Rush-Approval Required ☐		Format: PDF ☒ EXCEL ☒		CLP Like Data Pkg Required: ☐ No		Email To: aroy@nobis-group.com		Fax To #:		SOXHLET ☒		NON SOXHLET ☐		PCB ONLY					
Dissolved Metals Samples		Field Filtered ☐		Lab to Filter ☐		Orthophosphate Samples		Field Filtered ☐		Lab to Filter ☐													
RCP VOCs		M/O		I		I		I		I		I		I		I		I		I		I	
% Solids		I		I		I		I		I		I		I		I		I		I		I	
PAHs		I		I		I		I		I		I		I		I		I		I		I	
Herbicides		I		I		I		I		I		I		I		I		I		I		I	
Pesticides		I		I		I		I		I		I		I		I		I		I		I	
PCBs		I		I		I		I		I		I		I		I		I		I		I	
Metals ICP + Hg - 6010		I		I		I		I		I		I		I		I		I		I		I	
Cyanide		I		I		I		I		I		I		I		I		I		I		I	
SPLP RCP Metals - 6020		I		I		I		I		I		I		I		I		I		I		I	
Total Number Of:		VIALS		GLASS		PLASTIC		BACTERIA		ENCORE													
Glassware in the fridge?		Y / N																					
Glassware in freezer? Y / N																							
Prepackaged Cooler? Y / N																							
*Contest is not responsible for missing samples from prepacked coolers																							
1 Matrix Codes:																							
GW = Ground Water																							
WW = Waste Water																							
DW = Drinking Water																							
A = Air																							
S = Soil																							
SL = Sludge																							
SOL = Solid																							
O = Other (please define)																							
2 Preservation Codes:																							
I = Iced																							
H = HCL																							
M = Methanol																							
N = Nitric Acid																							
S = Sulfuric Acid																							
B = Sodium Bisulfate																							
X = Sodium Hydroxide																							
T = Sodium Thiosulfate																							
O = Other (please define)																							
Retinguished by: (signature)		Date/Time: 2/17/25 12:06		Detection Limit Requirements		Special Requirements		MA MCP Required		MCP Certification Form Required		CT RCP Required		RCP Certification Form Required		MA State DW Required		Please use the following codes to indicate possible sample concentration within the Conc Code column above:					
Retinguished by: (signature)		Date/Time: 2-18-25 10:25		MA														H - High; M - Medium; L - Low; C - Clean; U - Unknown					
Retinguished by: (signature)		Date/Time:		MA																			
Retinguished by: (signature)		Date/Time:		MA																			
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Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q1383	NOBI03	Order Date : 2/18/2025 11:19:00 AM	Project Mgr :
Client Name : Nobis Group		Project Name : Raymark Superfund Site	Report Type : Level 4
Client Contact : Adam Roy		Receive DateTime : 2/18/2025 10:25:00 AM	EDD Type : EQUIS
Invoice Name : Nobis Group		Purchase Order :	Hard Copy Date :
Invoice Contact : Adam Roy			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q1383-01	OU4-PCS-TC-11-021725	Solid	02/17/2025	09:20					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-03	OU4-PCS-TC-12-021725	Solid	02/17/2025	09:25					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-05	OU4-PCS-TC-13-021725	Solid	02/17/2025	09:30					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-07	OU4-PCS-TC-14-021725	Solid	02/17/2025	09:35					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-09	OU4-PCS-TC-15-021725	Solid	02/17/2025	09:40					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-11	OU4-PCS-TC-16-021725	Solid	02/17/2025	09:45					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-13	OU4-PCS-TC-17-021725	Solid	02/17/2025	09:50					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-15	OU4-PCS-TC-18-021725	Solid	02/17/2025	09:55					

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q1383	NOBI03	Order Date : 2/18/2025 11:19:00 AM	Project Mgr :
Client Name : Nobis Group		Project Name : Raymark Superfund Site	Report Type : Level 4
Client Contact : Adam Roy		Receive DateTime : 2/18/2025 10:25:00 AM	EDD Type : EQUIS
Invoice Name : Nobis Group		Purchase Order :	Hard Copy Date :
Invoice Contact : Adam Roy			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-17	OU4-PCS-TC-19-021725	Solid	02/17/2025	10:00					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-19	OU4-PCS-TC-20-021725	Solid	02/17/2025	10:05					
					VOCMS Group3		8260D	10 Bus. Days	
Q1383-21	OU4-PCS-TC-21-021725	Solid	02/17/2025	08:15					
	OU4-EF-15				VOCMS Group3		8260D	10 Bus. Days	

Relinquished By :

Date / Time : 2-18-25 1245

Received By :

Date / Time : 02/18/25

Storage Area : VOA Refridgerator Room