

Cover Page

Order ID : Q2320

Project ID : EDGEW001 – Veterans Field Edgewater, NJ

Client : First Environment, Inc.

Lab Sample Number

Q2320-01

Client Sample Number

WC

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: 6/20/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q2320

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody

✓

Were the samples received within hold time

✓

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

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: PRADIP PRAJAPATI

Date: 06/20/2025

LAB CHRONICLE

OrderID: Q2320	OrderDate: 6/13/2025 12:11:26 PM
Client: First Environment, Inc.	Project: EDGEW001 – Veterans Field Edgewater, NJ
Contact: Ken Cwieka	Location: D41

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2320-01	WC	TCLP			06/13/25			06/13/25
			TCLP ICP Metals	6010D		06/17/25	06/19/25	
			TCLP Mercury	7470A		06/17/25	06/18/25	



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Hit Summary Sheet
SW-846

SDG No.: Q2320

Order ID: Q2320

Client: First Environment, Inc.

Project ID: EDGEW001 – Veterans Field Edgewater, N

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : WC								
Q2320-01	WC	TCLP	Barium	1390		72.8	500	ug/L
Q2320-01	WC	TCLP	Cadmium	6.71	J	2.50	30.0	ug/L
Q2320-01	WC	TCLP	Lead	66.4		11.5	60.0	ug/L
Q2320-01	WC	TCLP	Mercury	6.03		0.76	2.00	ug/L



SAMPLE DATA

Report of Analysis

Client:	First Environment, Inc.	Date Collected:	06/13/25
Project:	EDGEW001 – Veterans Field Edgewater, NJ	Date Received:	06/13/25
Client Sample ID:	WC	SDG No.:	Q2320
Lab Sample ID:	Q2320-01	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	25.6	U	1	25.6	100	ug/L	06/17/25 12:30	06/19/25 18:34	6010D	SW3050
7440-39-3	Barium	1390	N	1	72.8	500	ug/L	06/17/25 12:30	06/19/25 18:34	6010D	SW3050
7440-43-9	Cadmium	6.71	J	1	2.50	30.0	ug/L	06/17/25 12:30	06/19/25 18:34	6010D	SW3050
7440-47-3	Chromium	10.6	U	1	10.6	50.0	ug/L	06/17/25 12:30	06/19/25 18:34	6010D	SW3050
7439-92-1	Lead	66.4		1	11.5	60.0	ug/L	06/17/25 12:30	06/19/25 18:34	6010D	SW3050
7439-97-6	Mercury	6.03		1	0.76	2.00	ug/L	06/17/25 14:40	06/18/25 11:18	7470A	
7782-49-2	Selenium	48.2	U	1	48.2	100	ug/L	06/17/25 12:30	06/19/25 18:34	6010D	SW3050
7440-22-4	Silver	8.10	U	1	8.10	50.0	ug/L	06/17/25 12:30	06/19/25 18:34	6010D	SW3050

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

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

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



METAL CALIBRATION DATA

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320
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
ICV43	Mercury	3.75	4.0	94	90 - 110	CV	06/18/2025	10:37	LB136181

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320
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
CCV57	Mercury	4.55	5.0	91	90 - 110	CV	06/18/2025	10:42	LB136181
CCV58	Mercury	5.39	5.0	108	90 - 110	CV	06/18/2025	11:21	LB136181
CCV59	Mercury	4.71	5.0	94	90 - 110	CV	06/18/2025	11:57	LB136181
CCV60	Mercury	5.20	5.0	104	90 - 110	CV	06/18/2025	12:26	LB136181
CCV61	Mercury	5.01	5.0	100	90 - 110	CV	06/18/2025	12:49	LB136181

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Arsenic	3790	4000	95	90 - 110	P	06/19/2025	14:45	LB136210
	Barium	7870	8000	98	90 - 110	P	06/19/2025	14:45	LB136210
	Cadmium	1940	2000	97	90 - 110	P	06/19/2025	14:45	LB136210
	Chromium	809	800	101	90 - 110	P	06/19/2025	14:45	LB136210
	Lead	3830	4000	96	90 - 110	P	06/19/2025	14:45	LB136210
	Selenium	4020	4000	100	90 - 110	P	06/19/2025	14:45	LB136210
	Silver	949	1000	95	90 - 110	P	06/19/2025	14:45	LB136210



- 2a -

Client:	<u>First Environment, Inc.</u>	SDG No.:	<u>Q2320</u>	
Contract:	<u>FIRS02</u>	Lab Code:	<u>CHEM</u>	Case No.: <u>Q2320</u> SAS No.: <u>Q2320</u>
Initial Calibration Source:	<u>EPA</u>			
Continuing Calibration Source:	Inorganic Ventures			

Sample ID	Analyte	Result	True Value	%	Acceptance	M	Analysis Date	Analysis Time	Run Number
		ug/L		Recovery	Window (%R)				
LLICV01	Arsenic	17.7	20.0	88	80 - 120	P	06/19/2025	14:57	LB136210
	Barium	97.3	100	97	80 - 120	P	06/19/2025	14:57	LB136210
	Cadmium	5.53	6.0	92	80 - 120	P	06/19/2025	14:57	LB136210
	Chromium	9.21	10.0	92	80 - 120	P	06/19/2025	14:57	LB136210
	Lead	10.8	12.0	90	80 - 120	P	06/19/2025	14:57	LB136210
	Selenium	21.8	20.0	109	80 - 120	P	06/19/2025	14:57	LB136210
	Silver	9.40	10.0	94	80 - 120	P	06/19/2025	14:57	LB136210

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2320

Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Arsenic	4860	5000	97	90 - 110	P	06/19/2025	15:33	LB136210
	Barium	10000	10000	100	90 - 110	P	06/19/2025	15:33	LB136210
	Cadmium	2470	2500	99	90 - 110	P	06/19/2025	15:33	LB136210
	Chromium	1000	1000	100	90 - 110	P	06/19/2025	15:33	LB136210
	Lead	4880	5000	98	90 - 110	P	06/19/2025	15:33	LB136210
	Selenium	4990	5000	100	90 - 110	P	06/19/2025	15:33	LB136210
	Silver	1250	1250	100	90 - 110	P	06/19/2025	15:33	LB136210
CCV02	Arsenic	4870	5000	98	90 - 110	P	06/19/2025	16:31	LB136210
	Barium	10700	10000	107	90 - 110	P	06/19/2025	16:31	LB136210
	Cadmium	2480	2500	99	90 - 110	P	06/19/2025	16:31	LB136210
	Chromium	1020	1000	102	90 - 110	P	06/19/2025	16:31	LB136210
	Lead	4910	5000	98	90 - 110	P	06/19/2025	16:31	LB136210
	Selenium	5020	5000	100	90 - 110	P	06/19/2025	16:31	LB136210
	Silver	1280	1250	102	90 - 110	P	06/19/2025	16:31	LB136210
CCV03	Arsenic	5010	5000	100	90 - 110	P	06/19/2025	16:44	LB136210
	Barium	10300	10000	103	90 - 110	P	06/19/2025	16:44	LB136210
	Cadmium	2540	2500	102	90 - 110	P	06/19/2025	16:44	LB136210
	Chromium	1030	1000	103	90 - 110	P	06/19/2025	16:44	LB136210
	Lead	5040	5000	101	90 - 110	P	06/19/2025	16:44	LB136210
	Selenium	5160	5000	103	90 - 110	P	06/19/2025	16:44	LB136210
	Silver	1280	1250	103	90 - 110	P	06/19/2025	16:44	LB136210
CCV04	Arsenic	4860	5000	97	90 - 110	P	06/19/2025	17:32	LB136210
	Barium	9970	10000	100	90 - 110	P	06/19/2025	17:32	LB136210
	Cadmium	2460	2500	98	90 - 110	P	06/19/2025	17:32	LB136210
	Chromium	997	1000	100	90 - 110	P	06/19/2025	17:32	LB136210
	Lead	4900	5000	98	90 - 110	P	06/19/2025	17:32	LB136210
	Selenium	5010	5000	100	90 - 110	P	06/19/2025	17:32	LB136210
	Silver	1240	1250	100	90 - 110	P	06/19/2025	17:32	LB136210
CCV05	Arsenic	4900	5000	98	90 - 110	P	06/19/2025	18:25	LB136210
	Barium	10100	10000	101	90 - 110	P	06/19/2025	18:25	LB136210
	Cadmium	2470	2500	99	90 - 110	P	06/19/2025	18:25	LB136210
	Chromium	1010	1000	101	90 - 110	P	06/19/2025	18:25	LB136210
	Lead	4920	5000	98	90 - 110	P	06/19/2025	18:25	LB136210
	Selenium	5040	5000	101	90 - 110	P	06/19/2025	18:25	LB136210

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc. **SDG No.:** Q2320

Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV05	Silver	1250	1250	100	90 - 110	P	06/19/2025	18:25	LB136210
CCV06	Arsenic	4860	5000	97	90 - 110	P	06/19/2025	19:19	LB136210
	Barium	10200	10000	102	90 - 110	P	06/19/2025	19:19	LB136210
	Cadmium	2440	2500	98	90 - 110	P	06/19/2025	19:19	LB136210
	Chromium	1000	1000	100	90 - 110	P	06/19/2025	19:19	LB136210
	Lead	4900	5000	98	90 - 110	P	06/19/2025	19:19	LB136210
	Selenium	5000	5000	100	90 - 110	P	06/19/2025	19:19	LB136210
	Silver	1240	1250	100	90 - 110	P	06/19/2025	19:19	LB136210
CCV07	Arsenic	4860	5000	97	90 - 110	P	06/19/2025	19:53	LB136210
	Barium	10200	10000	102	90 - 110	P	06/19/2025	19:53	LB136210
	Cadmium	2430	2500	97	90 - 110	P	06/19/2025	19:53	LB136210
	Chromium	1000	1000	100	90 - 110	P	06/19/2025	19:53	LB136210
	Lead	4900	5000	98	90 - 110	P	06/19/2025	19:53	LB136210
	Selenium	4990	5000	100	90 - 110	P	06/19/2025	19:53	LB136210
	Silver	1250	1250	100	90 - 110	P	06/19/2025	19:53	LB136210



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Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: First Environment, Inc. **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320
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	103	70 - 130	CV	06/18/2025	10:46	LB136181
CRI01	Arsenic	19.0	20.0	95	65 - 135	P	06/19/2025	15:06	LB136210
	Barium	97.8	100	98	65 - 135	P	06/19/2025	15:06	LB136210
	Cadmium	5.58	6.0	93	65 - 135	P	06/19/2025	15:06	LB136210
	Chromium	9.17	10.0	92	65 - 135	P	06/19/2025	15:06	LB136210
	Lead	10.2	12.0	85	65 - 135	P	06/19/2025	15:06	LB136210
	Selenium	22.0	20.0	110	65 - 135	P	06/19/2025	15:06	LB136210
	Silver	8.80	10.0	88	65 - 135	P	06/19/2025	15:06	LB136210



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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client:	First Environment, Inc.				SDG No.:	Q2320				
Contract:	FIRS02	Lab Code:	CHEM		Case No.:	Q2320	SAS No.:	Q2320		
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number	
ICB43	Mercury	0.076	+/-0.2	U	0.20	CV	06/18/2025	10:39	LB136181	

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB57	Mercury	0.076	+/-0.2	U	0.20	CV	06/18/2025	10:44	LB136181
CCB58	Mercury	0.076	+/-0.2	U	0.20	CV	06/18/2025	11:23	LB136181
CCB59	Mercury	0.076	+/-0.2	U	0.20	CV	06/18/2025	12:00	LB136181
CCB60	Mercury	0.076	+/-0.2	U	0.20	CV	06/18/2025	12:28	LB136181
CCB61	Mercury	0.076	+/-0.2	U	0.20	CV	06/18/2025	12:51	LB136181

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	15:01	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	15:01	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	15:01	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	15:01	LB136210
	Lead	2.30	+/-6	U	12.0	P	06/19/2025	15:01	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	15:01	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	15:01	LB136210

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	15:43	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	15:43	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	15:43	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	15:43	LB136210
	Lead	2.30	+/-6	U	12.0	P	06/19/2025	15:43	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	15:43	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	15:43	LB136210
CCB02	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	16:35	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	16:35	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	16:35	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	16:35	LB136210
	Lead	2.30	+/-6	U	12.0	P	06/19/2025	16:35	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	16:35	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	16:35	LB136210
CCB03	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	16:48	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	16:48	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	16:48	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	16:48	LB136210
	Lead	2.30	+/-6	U	12.0	P	06/19/2025	16:48	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	16:48	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	16:48	LB136210
CCB04	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	17:36	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	17:36	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	17:36	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	17:36	LB136210
	Lead	2.30	+/-6	U	12.0	P	06/19/2025	17:36	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	17:36	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	17:36	LB136210
CCB05	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	18:29	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	18:29	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	18:29	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	18:29	LB136210
	Lead	2.30	+/-6	U	12.0	P	06/19/2025	18:29	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	18:29	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	18:29	LB136210
CCB06	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	19:23	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	19:23	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	19:23	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	19:23	LB136210

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Lead	2.30	+/-6	U	12.0	P	06/19/2025	19:23	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	19:23	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	19:23	LB136210
CCB07	Arsenic	5.12	+/-10	U	20.0	P	06/19/2025	19:58	LB136210
	Barium	14.6	+/-50	U	100	P	06/19/2025	19:58	LB136210
	Cadmium	0.50	+/-3	U	6.00	P	06/19/2025	19:58	LB136210
	Chromium	2.12	+/-5	U	10.0	P	06/19/2025	19:58	LB136210
	Lead	2.30	+/-6	U	12.0	P	06/19/2025	19:58	LB136210
	Selenium	9.64	+/-10	U	20.0	P	06/19/2025	19:58	LB136210
	Silver	1.62	+/-5	U	10.0	P	06/19/2025	19:58	LB136210

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2320

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB168497TB		WATER		Batch Number:	PB168519		Prep Date:	06/17/2025	
	Mercury	0.76	<2	U	2.00	CV	06/18/2025	12:10	LB136181
Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB168519BL		WATER		Batch Number:	PB168519		Prep Date:	06/17/2025	
	Mercury	0.076	<0.2	U	0.20	CV	06/18/2025	10:53	LB136181

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2320

Instrument: P5

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB168497TB		WATER		Batch Number:	PB168518		Prep Date:	06/17/2025	
	Arsenic	25.6	<50	U	100	P	06/19/2025	19:05	LB136210
	Barium	72.8	<250	U	500	P	06/19/2025	19:05	LB136210
	Cadmium	2.50	<15	U	30.0	P	06/19/2025	19:05	LB136210
	Chromium	10.6	<25	U	50.0	P	06/19/2025	19:05	LB136210
	Lead	11.5	<30	U	60.0	P	06/19/2025	19:05	LB136210
	Selenium	48.2	<50	U	100	P	06/19/2025	19:05	LB136210
	Silver	8.10	<25	U	50.0	P	06/19/2025	19:05	LB136210
Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB168518BL		WATER		Batch Number:	PB168518		Prep Date:	06/17/2025	
	Arsenic	25.6	<50	U	100	P	06/19/2025	18:07	LB136210
	Barium	72.8	<250	U	500	P	06/19/2025	18:07	LB136210
	Cadmium	2.50	<15	U	30.0	P	06/19/2025	18:07	LB136210
	Chromium	10.6	<25	U	50.0	P	06/19/2025	18:07	LB136210
	Lead	11.5	<30	U	60.0	P	06/19/2025	18:07	LB136210
	Selenium	48.2	<50	U	100	P	06/19/2025	18:07	LB136210
	Silver	8.10	<25	U	50.0	P	06/19/2025	18:07	LB136210

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: <u>First Environment, Inc.</u>	SDG No.: <u>Q2320</u>
Contract: <u>FIRS02</u>	Lab Code: <u>CHEM</u>
ICS Source: <u>EPA</u>	Case No.: <u>Q2320</u>
	SAS No.: <u>Q2320</u>
	Instrument ID: <u>P5</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
ICSA01	Arsenic	5.22			-20	20	06/19/2025	15:10	LB136210
	Barium	7.66	6.0	128	-94	106	06/19/2025	15:10	LB136210
	Cadmium	-0.083	1.0	8	-5	7	06/19/2025	15:10	LB136210
	Chromium	49.3	52.0	95	42	62	06/19/2025	15:10	LB136210
	Lead	6.98			-12	12	06/19/2025	15:10	LB136210
	Selenium	5.31			-20	20	06/19/2025	15:10	LB136210
	Silver	6.66			-10	10	06/19/2025	15:10	LB136210
ICSAB01	Arsenic	93.7	100	94	88.4	120	06/19/2025	15:16	LB136210
	Barium	516	540	96	437	637	06/19/2025	15:16	LB136210
	Cadmium	995	970	103	826	1120	06/19/2025	15:16	LB136210
	Chromium	562	540	104	460	624	06/19/2025	15:16	LB136210
	Lead	51.1	49.0	104	37	61	06/19/2025	15:16	LB136210
	Selenium	50.4	46.0	110	26	66	06/19/2025	15:16	LB136210
	Silver	222	200	111	170	232	06/19/2025	15:16	LB136210



METAL QC DATA

metals
- 5a -
MATRIX SPIKE SUMMARY

client: First Environment, Inc. **level:** low **sdg no.:** Q2320
contract: FIRS02 **lab code:** CHEM **case no.:** Q2320 **sas no.:** Q2320
matrix: Water **sample id:** Q2325-04 **client id:** TP-8MS
Percent Solids for Sample: NA **Spiked ID:** Q2325-04MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	4320		100	U	4000	108		P
Barium	ug/L	75 - 125	3990		2720		1000	127	N	P
Cadmium	ug/L	75 - 125	1080		30.0	U	1000	108		P
Chromium	ug/L	75 - 125	2170		50.0	U	2000	108		P
Lead	ug/L	75 - 125	5410		295		5000	102		P
Mercury	ug/L	75 - 125	40.8		1.70	J	40.0	98		CV
Selenium	ug/L	75 - 125	10500		100	U	10000	105		P
Silver	ug/L	75 - 125	385		50.0	U	380	103		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: First Environment, Inc. **level:** low **sdg no.:** Q2320
contract: FIRS02 **lab code:** CHEM **case no.:** Q2320 **sas no.:** Q2320
matrix: Water **sample id:** Q2325-04 **client id:** TP-8MSD
Percent Solids for Sample: NA **Spiked ID:** Q2325-04MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3990		100	U	4000	100		P
Barium	ug/L	75 - 125	3260		2720		1000	54	N	P
Cadmium	ug/L	75 - 125	1010		30.0	U	1000	101		P
Chromium	ug/L	75 - 125	2030		50.0	U	2000	102		P
Lead	ug/L	75 - 125	5010		295		5000	94		P
Mercury	ug/L	75 - 125	39.8		1.70	J	40.0	95		CV
Selenium	ug/L	75 - 125	9800		100	U	10000	98		P
Silver	ug/L	75 - 125	359		50.0	U	380	96		P

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320
Matrix: Water **Level:** LOW **Client ID:** TP-8A
Sample ID: Q2325-04 **Spiked ID:** Q2325-04A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Barium	ug/L	75 - 125	3490		2720		1000	76		P

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: First Environment, Inc. **Level:** LOW **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320
Matrix: Water **Sample ID:** Q2325-04 **Client ID:** TP-8DUP
Percent Solids for Sample: NA **Duplicate ID** Q2325-04DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	100	U	100	U			P
Barium	ug/L	20	2720		2320		16		P
Cadmium	ug/L	20	30.0	U	30.0	U			P
Chromium	ug/L	20	50.0	U	50.0	U			P
Lead	ug/L	20	295		251		16		P
Mercury	ug/L	20	1.70	J	1.43	J	17		CV
Selenium	ug/L	20	100	U	100	U			P
Silver	ug/L	20	50.0	U	50.0	U			P

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: First Environment, Inc. **Level:** LOW **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320
Matrix: Water **Sample ID:** Q2325-04MS **Client ID:** TP-8MSD
Percent Solids for Sample: NA **Duplicate ID** Q2325-04MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	4320		3990		8		P
Barium	ug/L	20	3990		3260		20		P
Cadmium	ug/L	20	1080		1010		7		P
Chromium	ug/L	20	2170		2030		7		P
Lead	ug/L	20	5410		5010		8		P
Mercury	ug/L	20	40.8		39.8		2		CV
Selenium	ug/L	20	10500		9800		7		P
Silver	ug/L	20	385		359		7		P

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2320
Contract: FIRS02 **Lab Code:** CHEM **Case No.:** Q2320 **SAS No.:** Q2320

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB168518BS							
Arsenic	ug/L	4000	3560		89	80 - 120	P
Barium	ug/L	1000	1020		102	80 - 120	P
Cadmium	ug/L	1000	939		94	80 - 120	P
Chromium	ug/L	2000	2010		100	80 - 120	P
Lead	ug/L	5000	4700		94	80 - 120	P
Selenium	ug/L	10000	9960		100	80 - 120	P
Silver	ug/L	380	368		97	80 - 120	P

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB168519BS Mercury	ug/L	4.0	3.66		92	80 - 120	CV

Metals
-9 -
ICP SERIAL DILUTIONS

SAMPLE NO.

TP-8L

Lab Name: Chemtech Consulting Group

Contract: FIRS02

Lab Code: CHEM **Lb No.:** lb136210

Lab Sample ID : Q2325-04L **SDG No.:** Q2320

Matrix (soil/water): Water

Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Differ-ence		Q	M
		C		C				
Arsenic	100	U	500	U				P
Barium	2720		2570		6			P
Cadmium	30.0	U	150	U				P
Chromium	50.0	U	250	U				P
Lead	295		278	J	6			P
Mercury	1.70	J	10.0	U	100.0			CV
Selenium	100	U	500	U				P
Silver	50.0	U	250	U				P



METAL PREPARATION & INSTRUMENT DATA

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Al	Ca	Fe	Mg	Ag
Arsenic	193.759	0.0000000	0.0000000	-0.0000440	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000930	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000920	0.0000000	0.0000380	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	-0.0001440	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	-0.0001490	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		As	Ba	Be	Cd	Co
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0002870
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0003170	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	-0.0003570
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Cr	Cu	K	Mn	Mo
Arsenic	193.759	-0.0029000	0.0000000	0.0000000	0.0000000	0.0004900
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000070	0.0002200	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0001400	-0.0008600
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0007460	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	-0.0000120

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Na	Ni	Pb	Sb	Se
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0006580	0.0000000	0.0000000	0.0001290
Selenium	196.090	0.0000000	0.0000000	0.0003330	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc.

SDG No.: Q2320

Contract: FIRS02

Lab Code: CHEM

Case No.: Q2320

SAS No.: Q2320

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Sn	Ti	Tl	V	Zn
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000630	0.0001280	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0001110	0.0000000
Lead	220.353	0.0000000	-0.0003610	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	-0.0007420	0.0000000	0.0000000	0.0000000



METAL PREPARATION & ANALYICAL SUMMARY

Metals

- 13 -

SAMPLE PREPARATION SUMMARY

Client:	<u>First Environment, Inc.</u>	SDG No.:	<u>Q2320</u>
Contract:	<u>FIRS02</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>Q2320</u>
		SAS No.:	<u>Q2320</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB168518							
PB168497TB	PB168497TB	MB	WATER	06/17/2025	5.0	25.0	
PB168518BL	PB168518BL	MB	WATER	06/17/2025	5.0	25.0	
PB168518BS	PB168518BS	LCS	WATER	06/17/2025	5.0	25.0	
Q2320-01	WC	SAM	WATER	06/17/2025	5.0	25.0	
Q2325-04DUP	TP-8DUP	DUP	WATER	06/17/2025	5.0	25.0	
Q2325-04MS	TP-8MS	MS	WATER	06/17/2025	5.0	25.0	
Q2325-04MSD	TP-8MSD	MSD	WATER	06/17/2025	5.0	25.0	

Metals

- 13 -

SAMPLE PREPARATION SUMMARY

Client:	<u>First Environment, Inc.</u>	SDG No.:	<u>Q2320</u>
Contract:	<u>FIRS02</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>Q2320</u>
		SAS No.:	<u>Q2320</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB168519							
PB168497TB	PB168497TB	MB	WATER	06/17/2025	3.0	30.0	
PB168519BL	PB168519BL	MB	WATER	06/17/2025	30.0	30.0	
PB168519BS	PB168519BS	LCS	WATER	06/17/2025	30.0	30.0	
Q2320-01	WC	SAM	WATER	06/17/2025	3.0	30.0	
Q2325-04DUP	TP-8DUP	DUP	WATER	06/17/2025	3.0	30.0	
Q2325-04MS	TP-8MS	MS	WATER	06/17/2025	3.0	30.0	
Q2325-04MSD	TP-8MSD	MSD	WATER	06/17/2025	3.0	30.0	

metals
- 14 -
ANALYSIS RUN LOG

Client: First Environment, Inc. **Contract:** FIRS02

Lab code: CHEM **Case no.:** Q2320 **Sas no.:** Q2320 **Sdg no.:** Q2320

Instrument id number: **Method:** **Run number:** LB136181

Start date: 06/18/2025 **End date:** 06/18/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1020	HG
S0.2	S0.2	1	1025	HG
S2.5	S2.5	1	1027	HG
S5	S5	1	1030	HG
S7.5	S7.5	1	1032	HG
S10	S10	1	1034	HG
ICV43	ICV43	1	1037	HG
ICB43	ICB43	1	1039	HG
CCV57	CCV57	1	1042	HG
CCB57	CCB57	1	1044	HG
CRA	CRA	1	1046	HG
PB168519BL	PB168519BL	1	1053	HG
PB168519BS	PB168519BS	1	1055	HG
Q2320-01	WC	1	1118	HG
CCV58	CCV58	1	1121	HG
CCB58	CCB58	1	1123	HG
Q2325-04DUP	TP-8DUP	1	1130	HG
Q2325-04MS	TP-8MS	1	1133	HG
Q2325-04MSD	TP-8MSD	1	1135	HG
CCV59	CCV59	1	1157	HG
CCB59	CCB59	1	1200	HG
PB168497TB	PB168497TB	1	1210	HG
Q2325-04L	TP-8L	5	1213	HG
CCV60	CCV60	1	1226	HG
CCB60	CCB60	1	1228	HG
CCV61	CCV61	1	1249	HG
CCB61	CCB61	1	1251	HG

metals
- 14 -
ANALYSIS RUN LOG

Client: First Environment, Inc. **Contract:** FIRS02

Lab code: CHEM **Case no.:** Q2320 **Sas no.:** Q2320 **Sdg no.:** Q2320

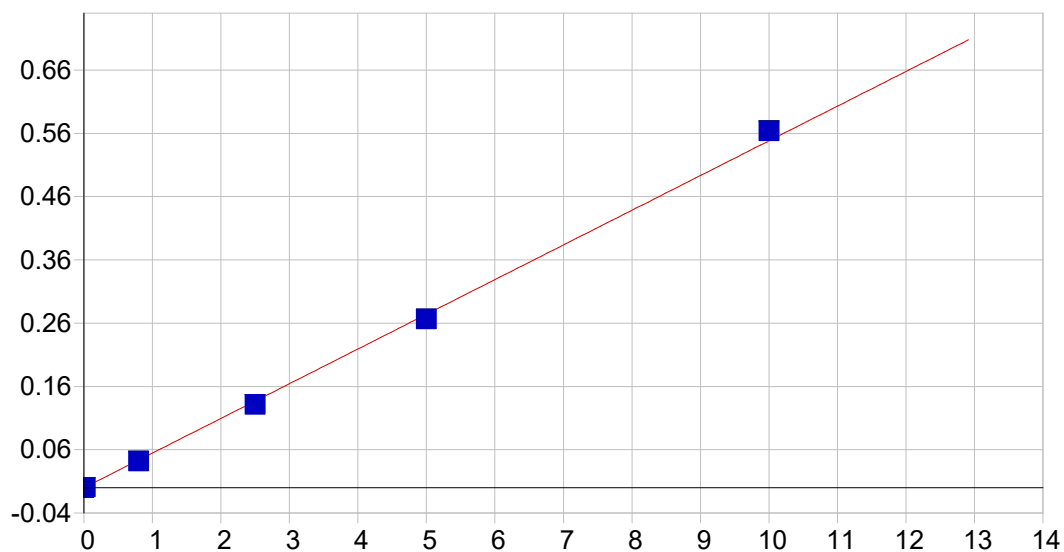
Instrument id number: **Method:** **Run number:** LB136210

Start date: 06/19/2025 **End date:** 06/19/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1410	Ag,As,Ba,Cd,Cr,Pb,Se
S1	S1	1	1414	Ag,As,Ba,Cd,Cr,Pb,Se
S2	S2	1	1419	Ag,As,Ba,Cd,Cr,Pb,Se
S3	S3	1	1423	Ag,As,Ba,Cd,Cr,Pb,Se
S4	S4	1	1427	Ag,As,Ba,Cd,Cr,Pb,Se
S5	S5	1	1431	Ag,As,Ba,Cd,Cr,Pb,Se
ICV01	ICV01	1	1445	Ag,As,Ba,Cd,Cr,Pb,Se
LLICV01	LLICV01	1	1457	Ag,As,Ba,Cd,Cr,Pb,Se
ICB01	ICB01	1	1501	Ag,As,Ba,Cd,Cr,Pb,Se
CRI01	CRI01	1	1506	Ag,As,Ba,Cd,Cr,Pb,Se
ICSA01	ICSA01	1	1510	Ag,As,Ba,Cd,Cr,Pb,Se
ICSAB01	ICSAB01	1	1516	Ag,As,Ba,Cd,Cr,Pb,Se
CCV01	CCV01	1	1533	Ag,As,Ba,Cd,Cr,Pb,Se
CCB01	CCB01	1	1543	Ag,As,Ba,Cd,Cr,Pb,Se
CCV02	CCV02	1	1631	Ag,As,Ba,Cd,Cr,Pb,Se
CCB02	CCB02	1	1635	Ag,As,Ba,Cd,Cr,Pb,Se
CCV03	CCV03	1	1644	Ag,As,Ba,Cd,Cr,Pb,Se
CCB03	CCB03	1	1648	Ag,As,Ba,Cd,Cr,Pb,Se
CCV04	CCV04	1	1732	Ag,As,Ba,Cd,Cr,Pb,Se
CCB04	CCB04	1	1736	Ag,As,Ba,Cd,Cr,Pb,Se
PB168518BL	PB168518BL	1	1807	Ag,As,Ba,Cd,Cr,Pb,Se
PB168518BS	PB168518BS	1	1811	Ag,As,Ba,Cd,Cr,Pb,Se
CCV05	CCV05	1	1825	Ag,As,Ba,Cd,Cr,Pb,Se
CCB05	CCB05	1	1829	Ag,As,Ba,Cd,Cr,Pb,Se
Q2320-01	WC	1	1834	Ag,As,Ba,Cd,Cr,Pb,Se
Q2325-04DUP	TP-8DUP	1	1843	Ag,As,Ba,Cd,Cr,Pb,Se
Q2325-04L	TP-8L	5	1847	Ag,As,Ba,Cd,Cr,Pb,Se
Q2325-04MS	TP-8MS	1	1852	Ag,As,Ba,Cd,Cr,Pb,Se
Q2325-04MSD	TP-8MSD	1	1856	Ag,As,Ba,Cd,Cr,Pb,Se
Q2325-04A	TP-8A	1	1901	Ba
PB168497TB	PB168497TB	1	1905	Ag,As,Ba,Cd,Cr,Pb,Se
CCV06	CCV06	1	1919	Ag,As,Ba,Cd,Cr,Pb,Se
CCB06	CCB06	1	1923	Ag,As,Ba,Cd,Cr,Pb,Se
CCV07	CCV07	1	1953	Ag,As,Ba,Cd,Cr,Pb,Se
CCB07	CCB07	1	1958	Ag,As,Ba,Cd,Cr,Pb,Se



METAL RAW DATA

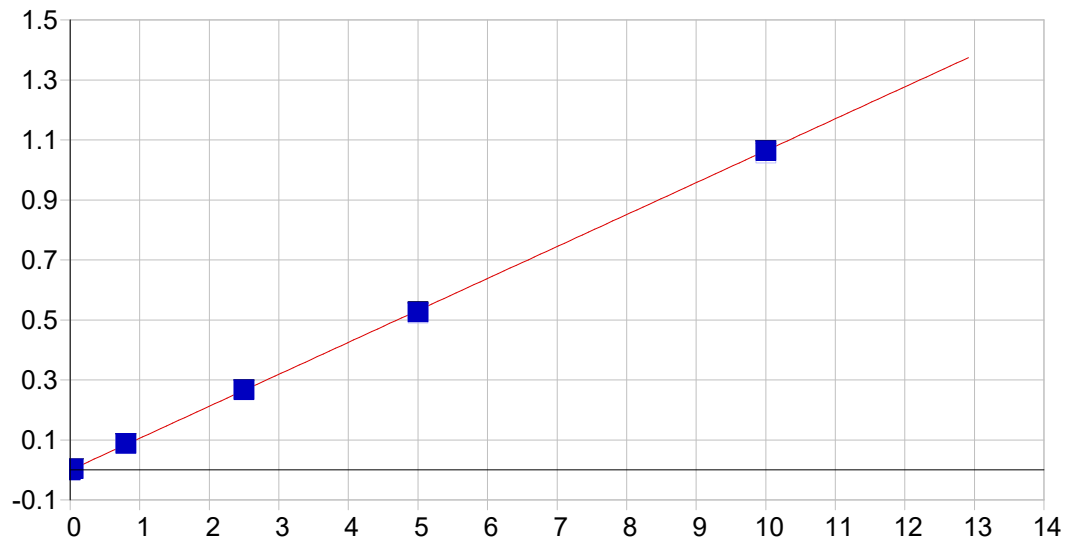


As 189.042 {479}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000154 Re-Slope: 1.000000
A1 (Gain): 0.054834 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999496 Status: OK.
Std Error of Est: 0.000041
Predicted MDL: 0.002753
Predicted MQL: 0.009175

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	-.00015	.000	1
S1	.02000	.01642	-.004	-17.9	.00074	.000	1
S2	.80000	.76325	-.037	-4.59	.04169	.000	1
S3	2.5000	2.3978	-.102	-4.09	.13131	.000	1
S4	5.0000	4.8593	-.141	-2.81	.26626	.000	1
S5	10.000	10.283	.283	2.83	.56362	.001	1

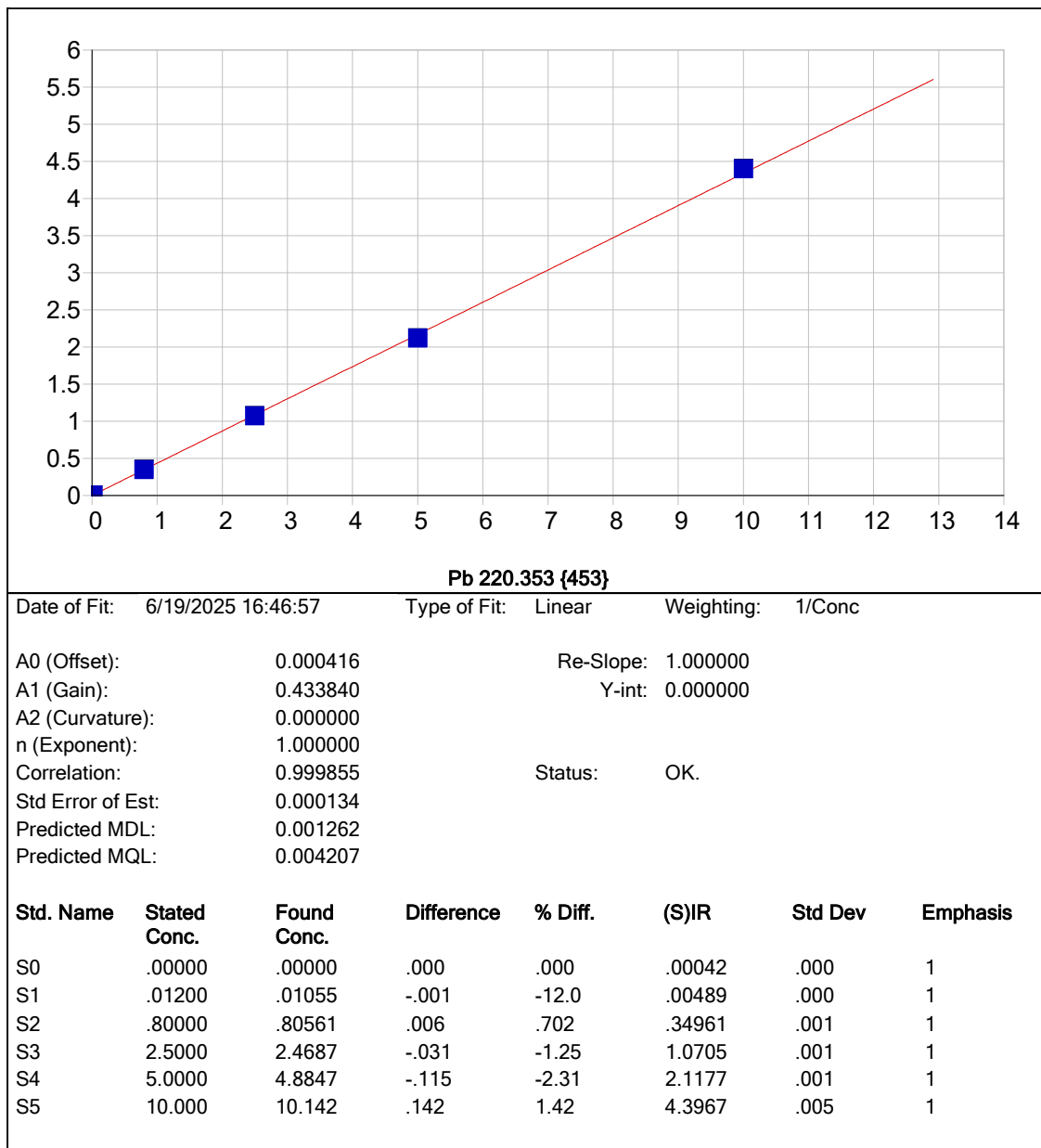


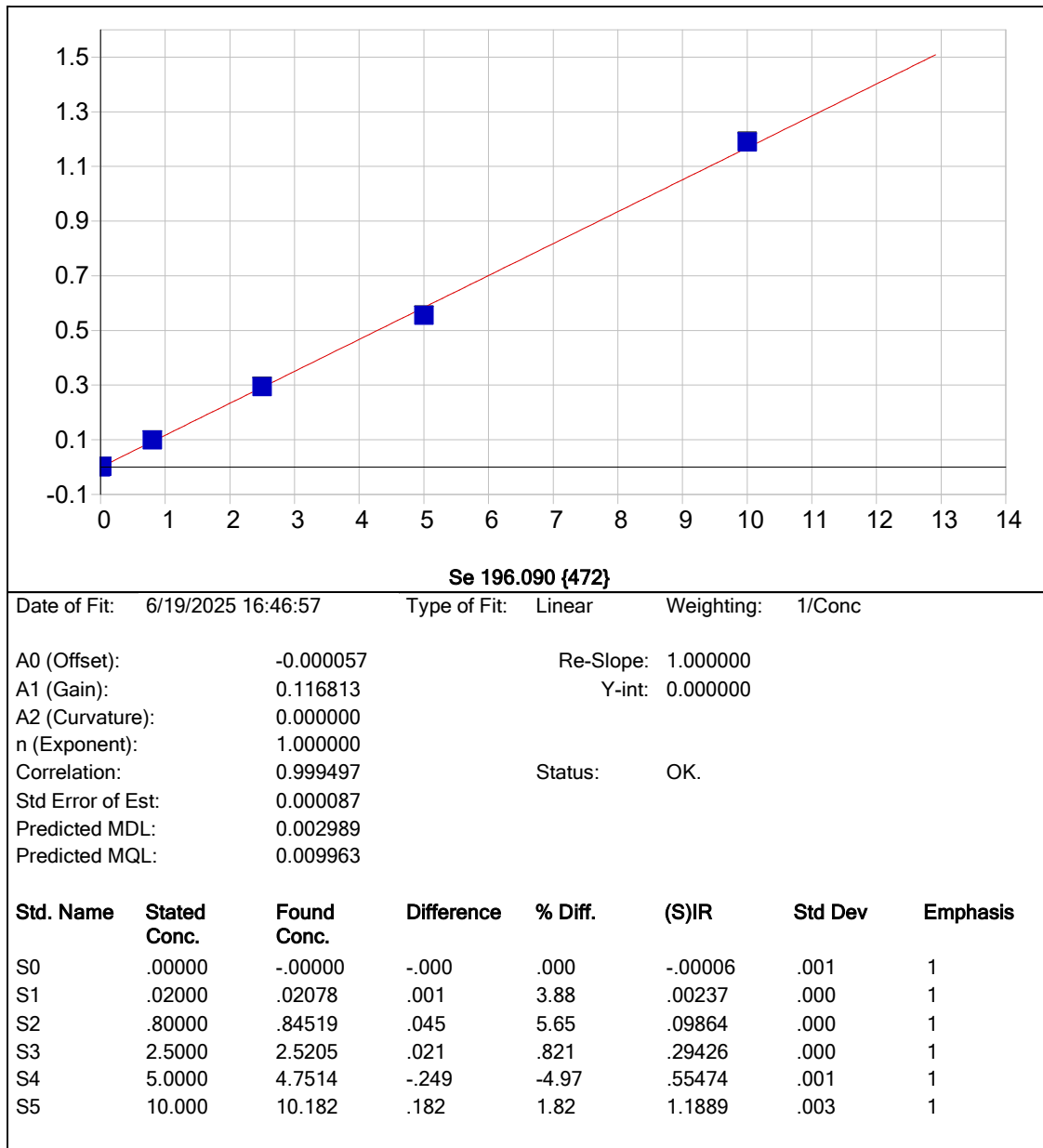
TI 190.856 {477}

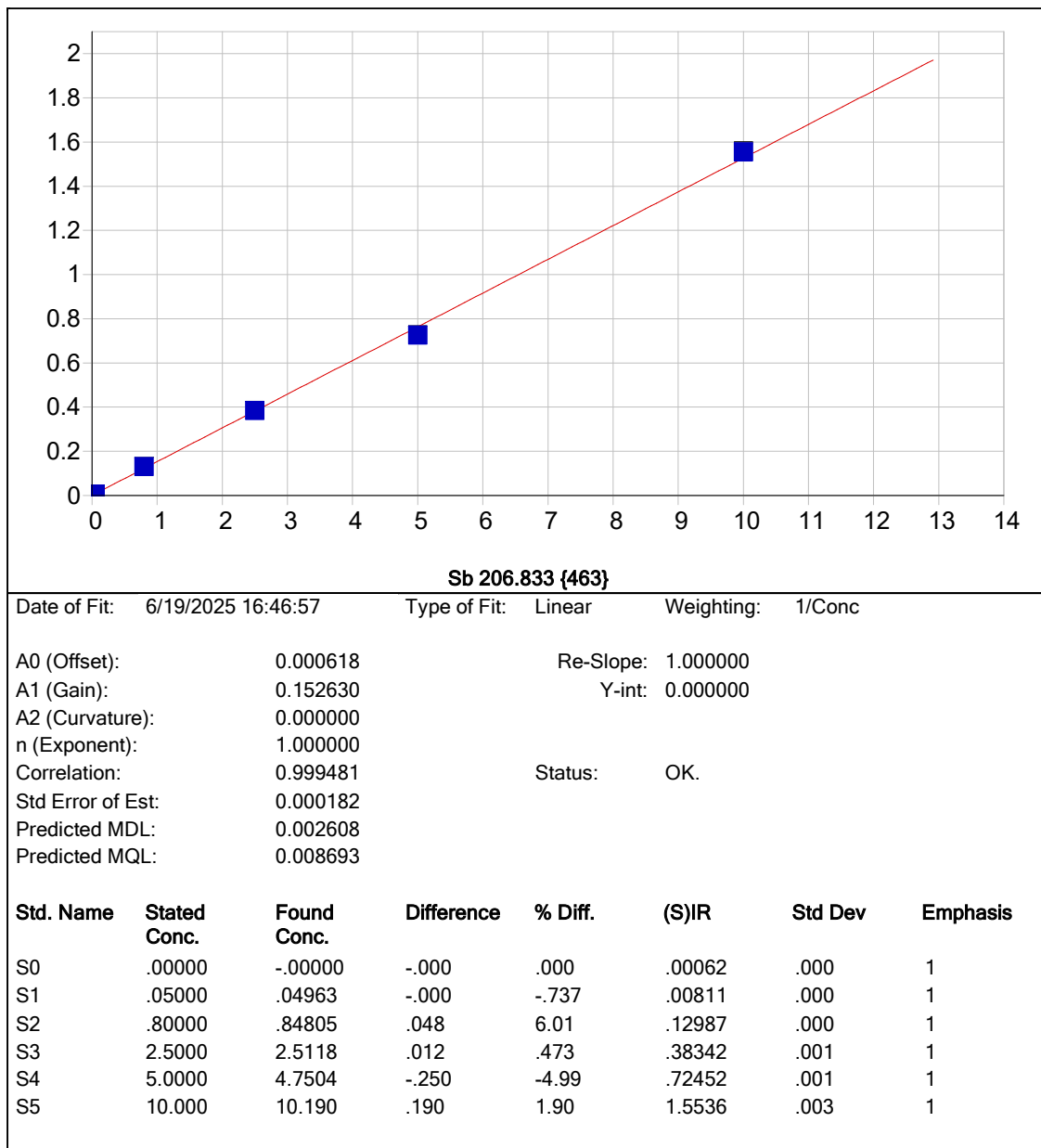
Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

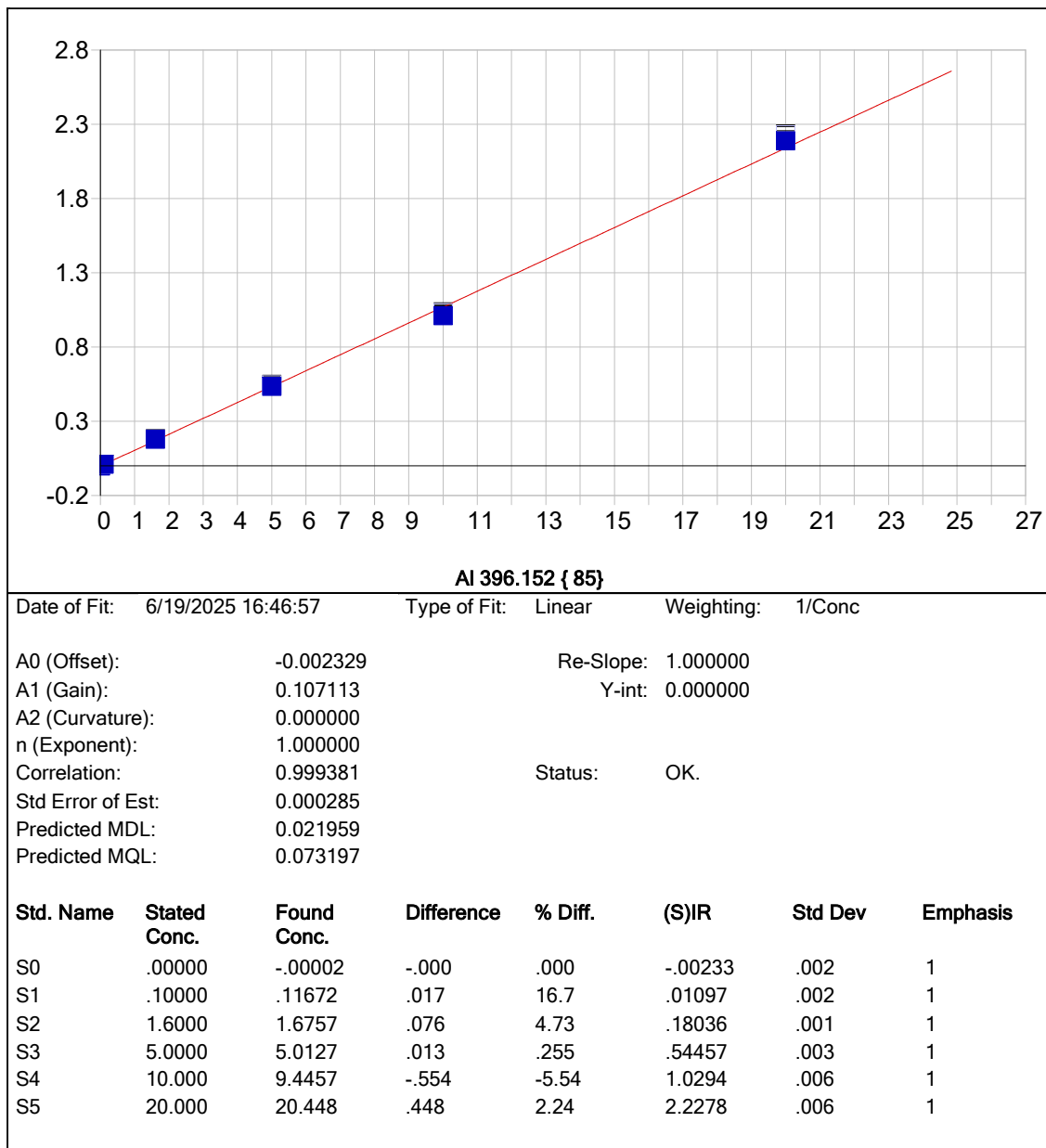
A0 (Offset): -0.000770 Re-Slope: 1.000000
A1 (Gain): 0.106470 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999945 Status: OK.
Std Error of Est: 0.000037
Predicted MDL: 0.002192
Predicted MQL: 0.007306

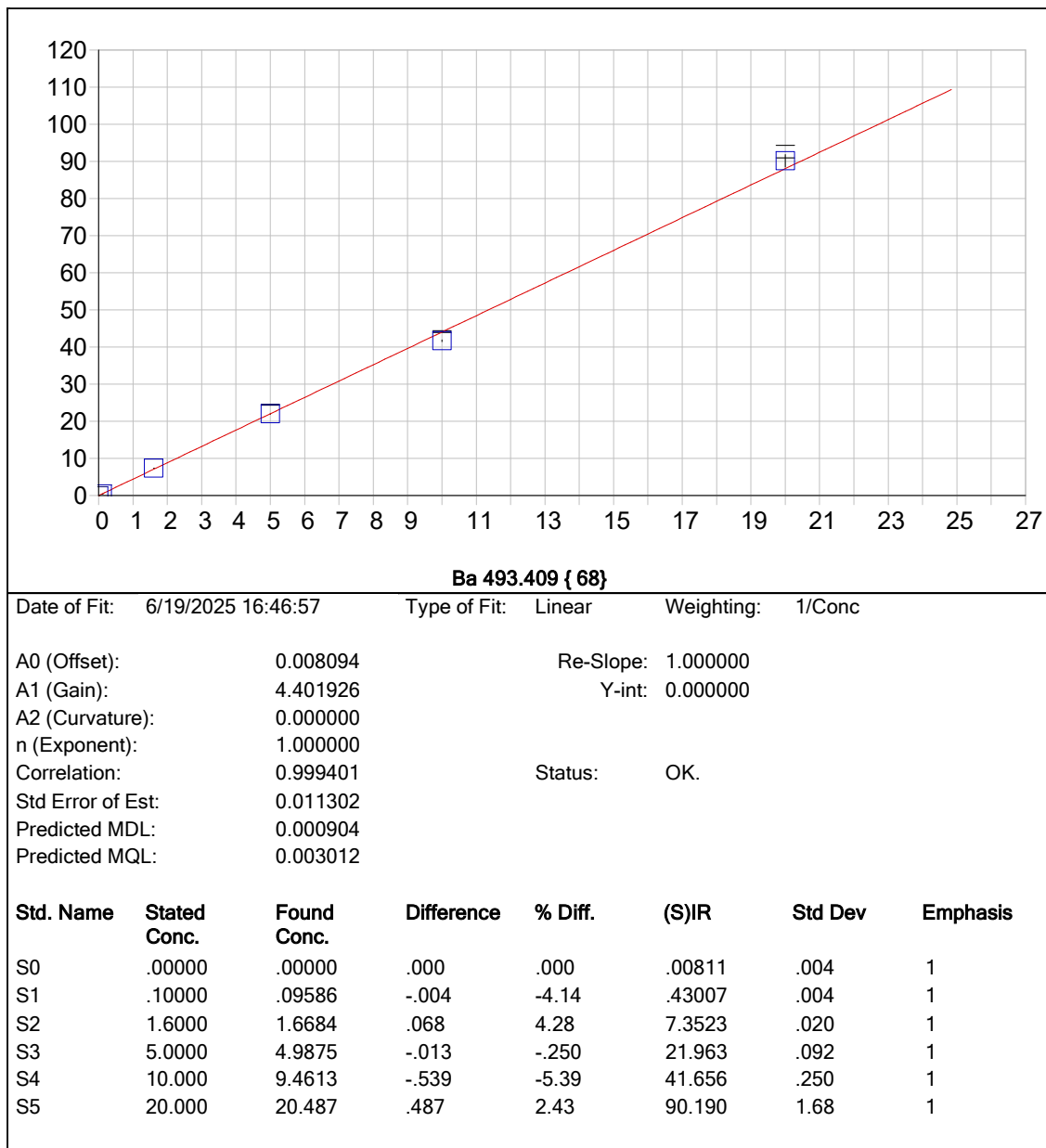
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00077	.000	1
S1	.04000	.03826	-.002	-4.35	.00320	.000	1
S2	.80000	.83228	.032	4.03	.08718	.000	1
S3	2.5000	2.5192	.019	.769	.26537	.001	1
S4	5.0000	4.9519	-.048	-.962	.52230	.001	1
S5	10.000	9.9983	-.002	-.017	1.0554	.000	1

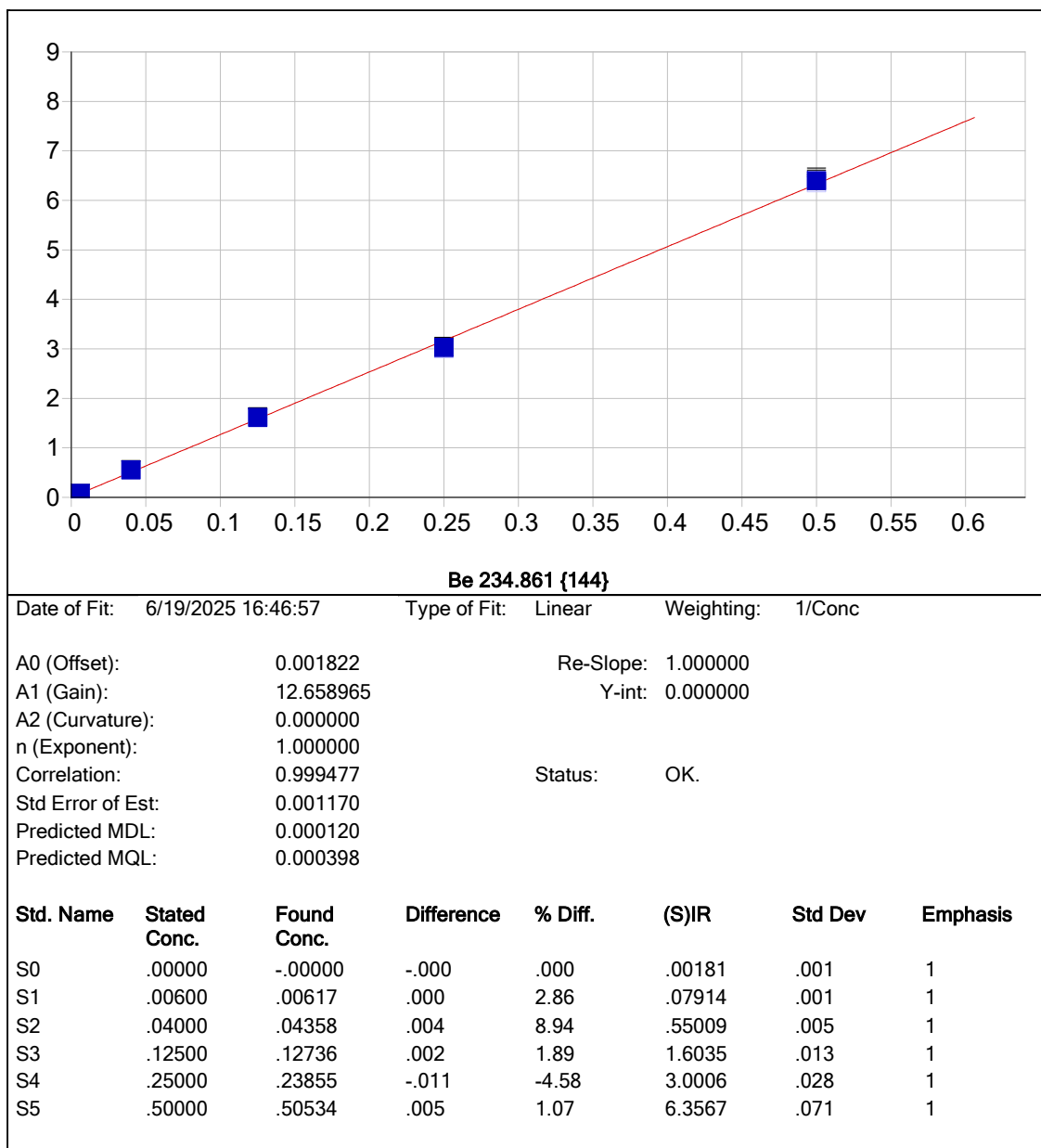


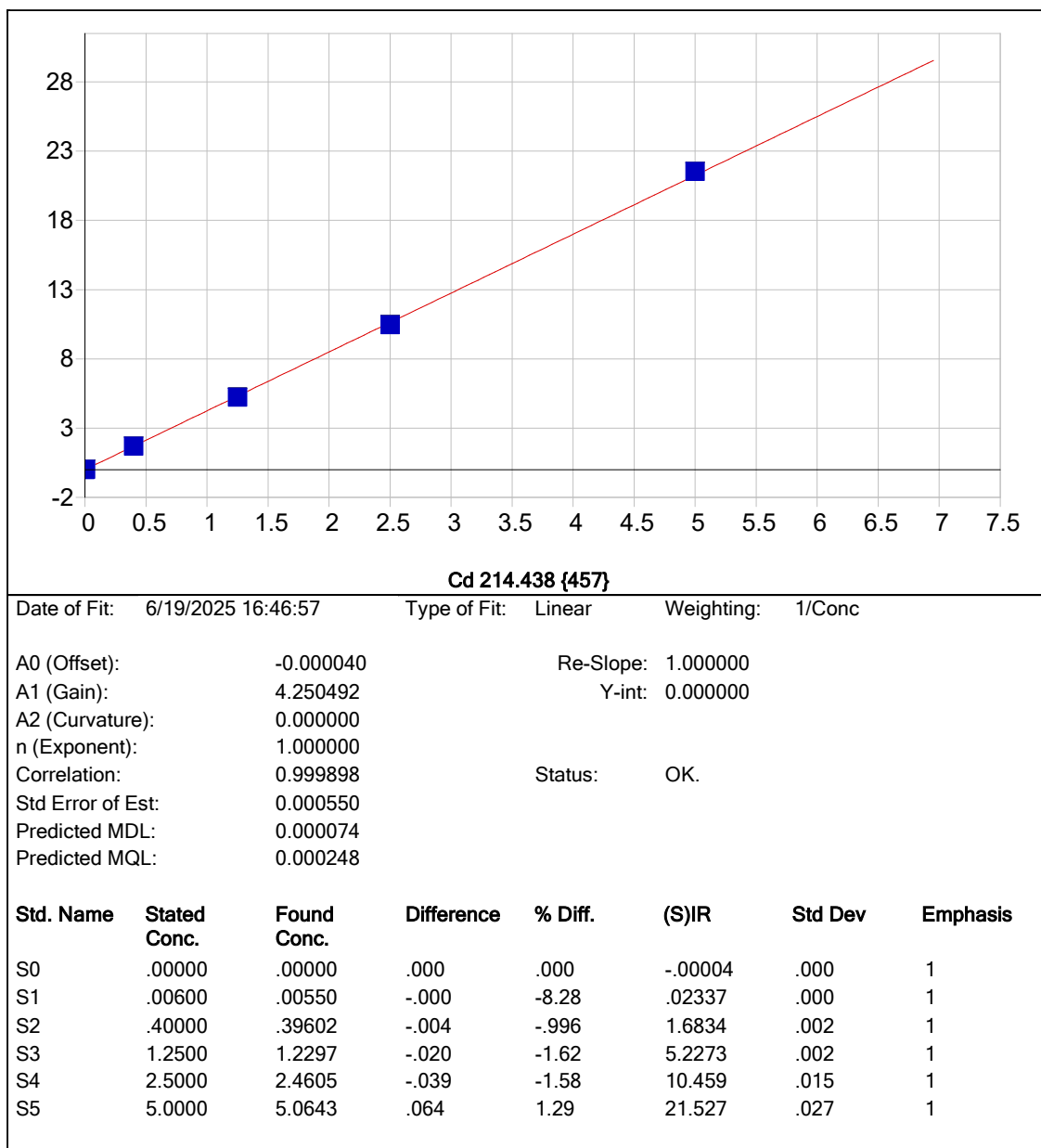


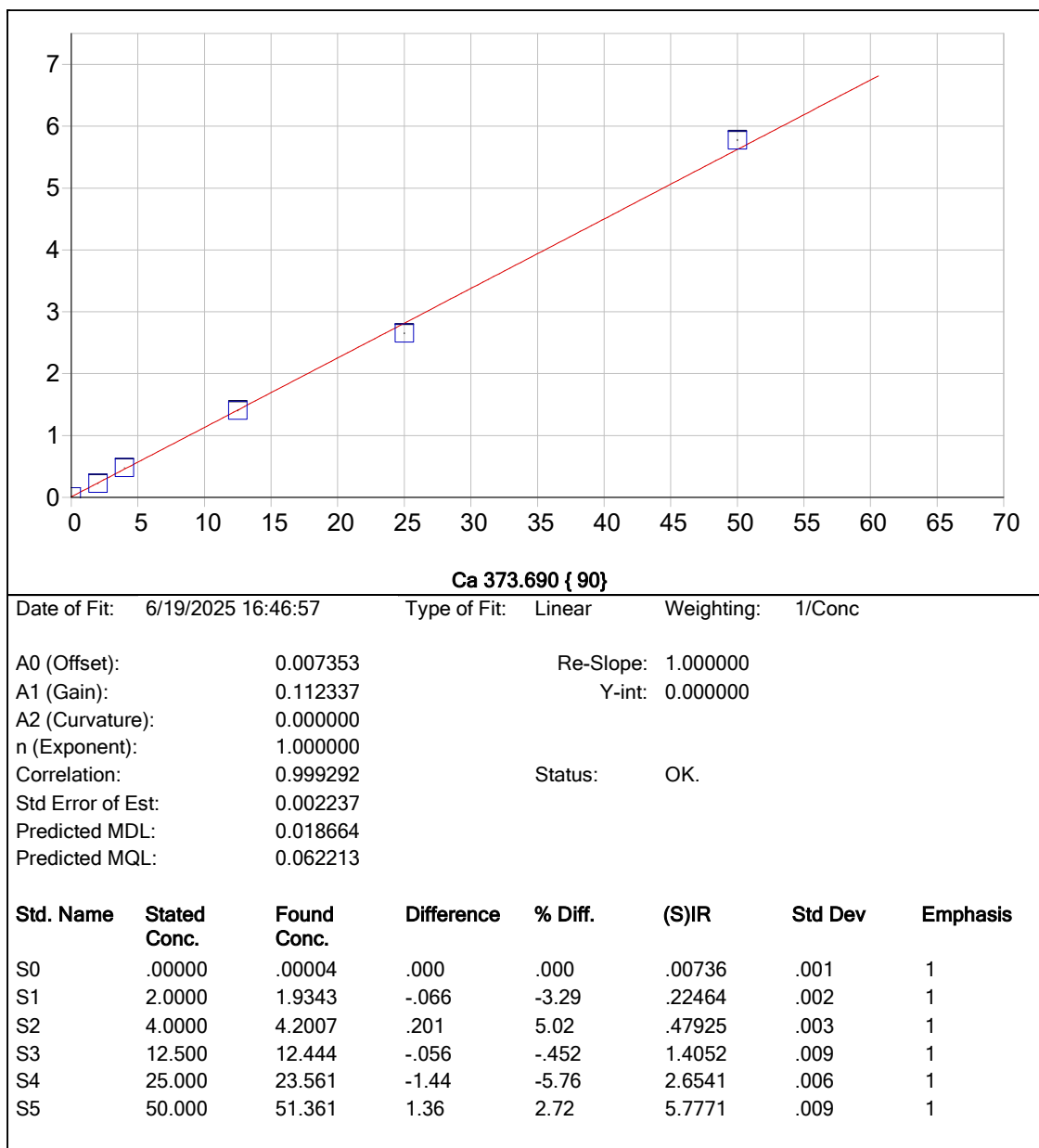


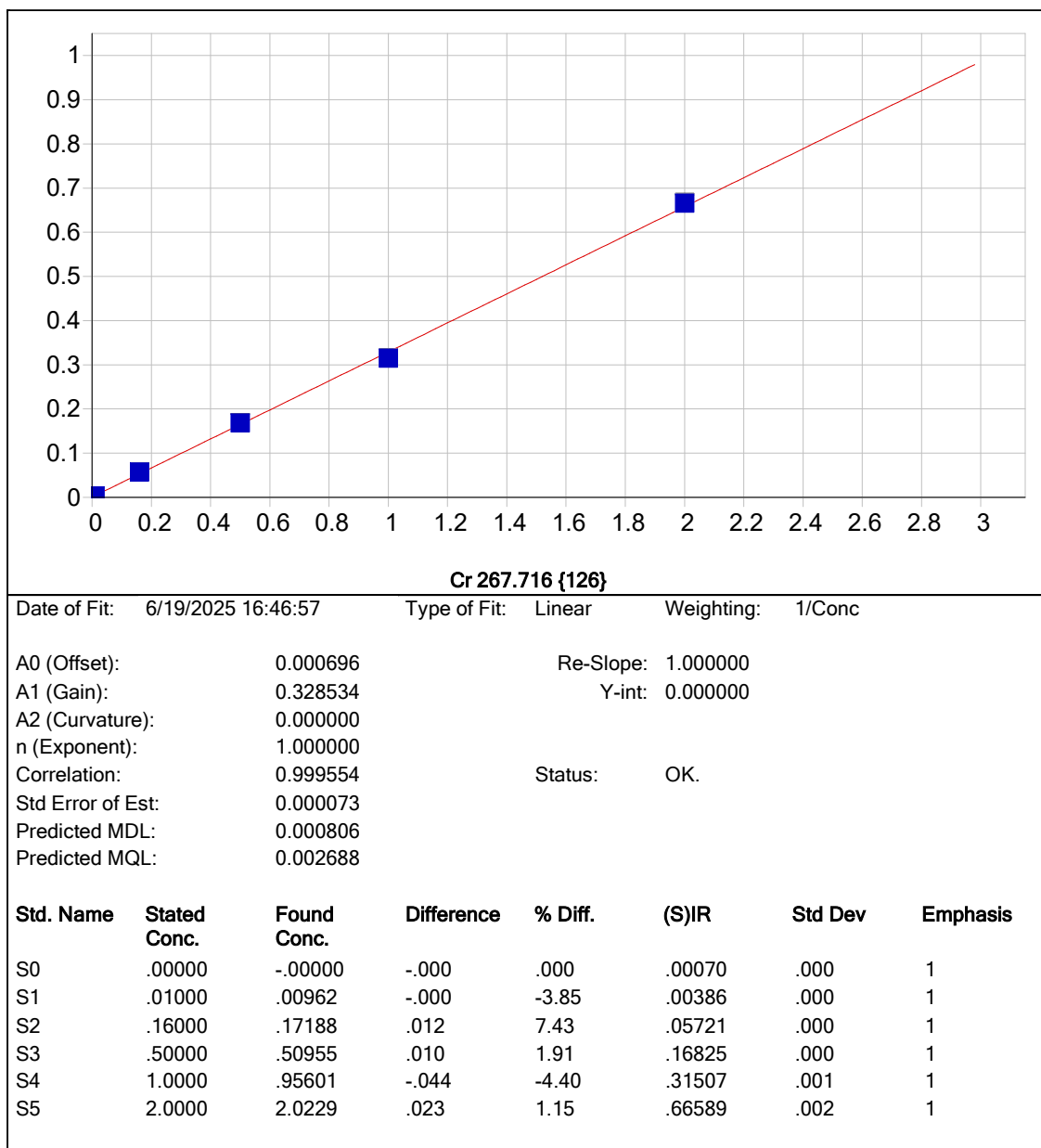


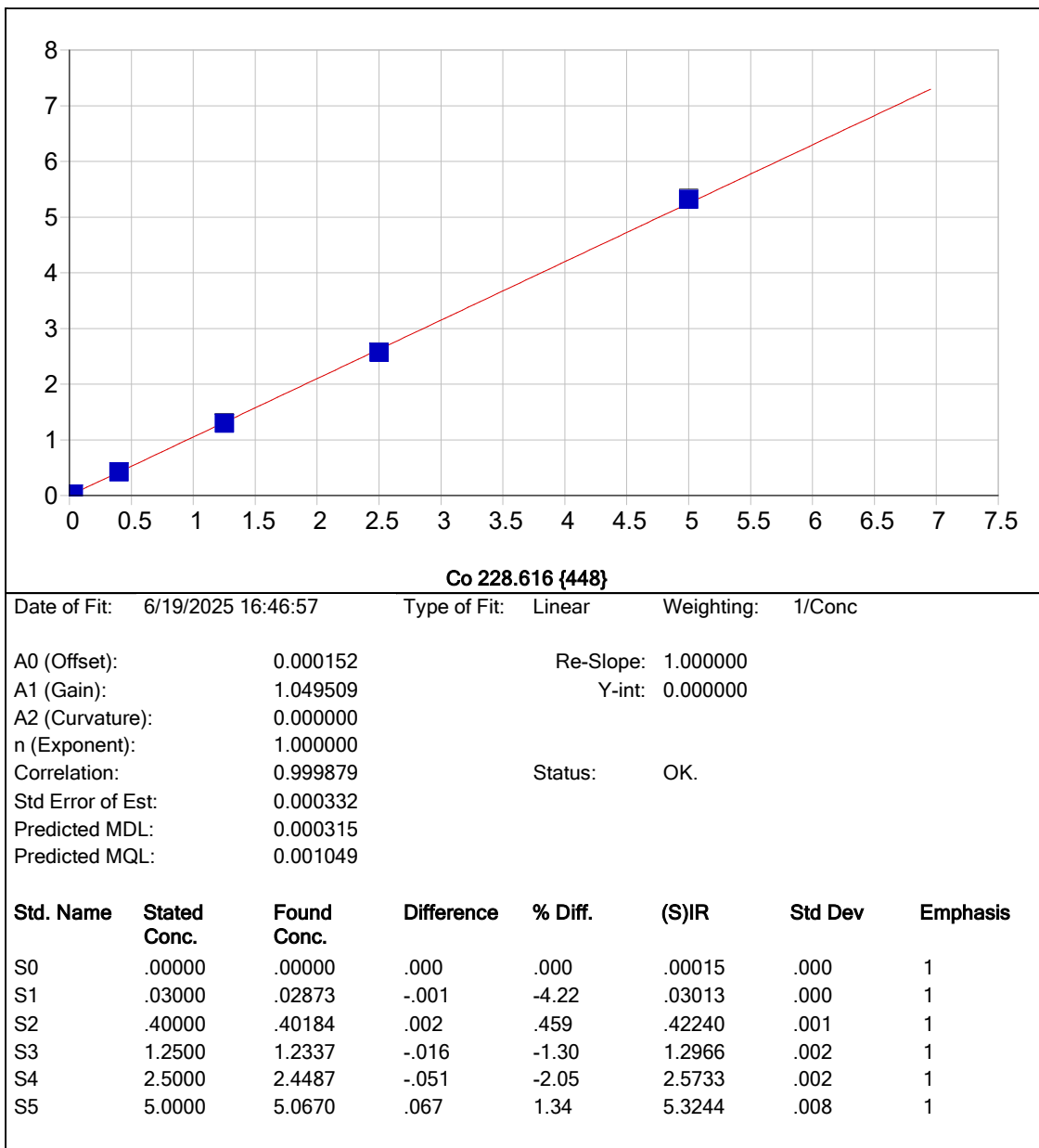


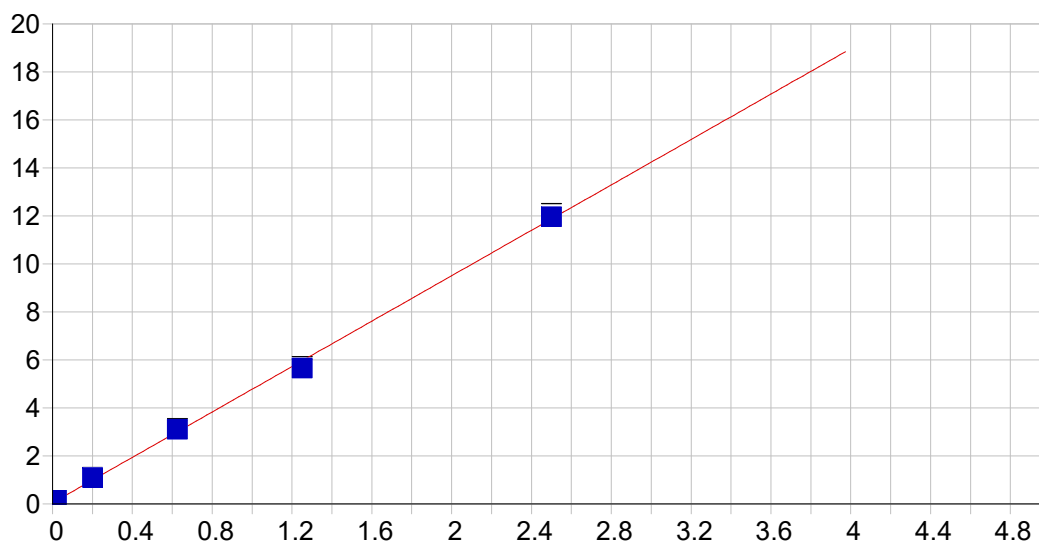










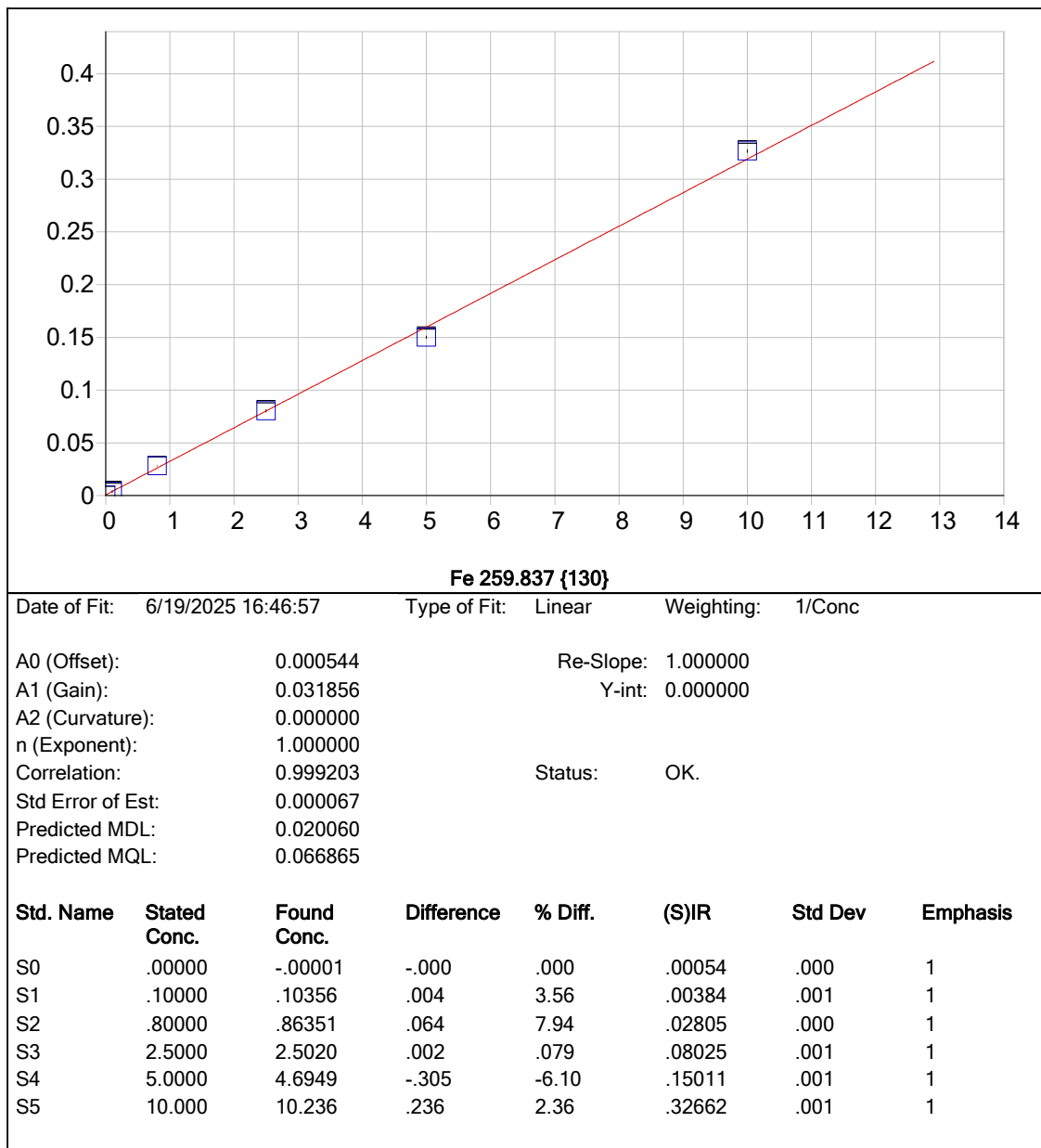


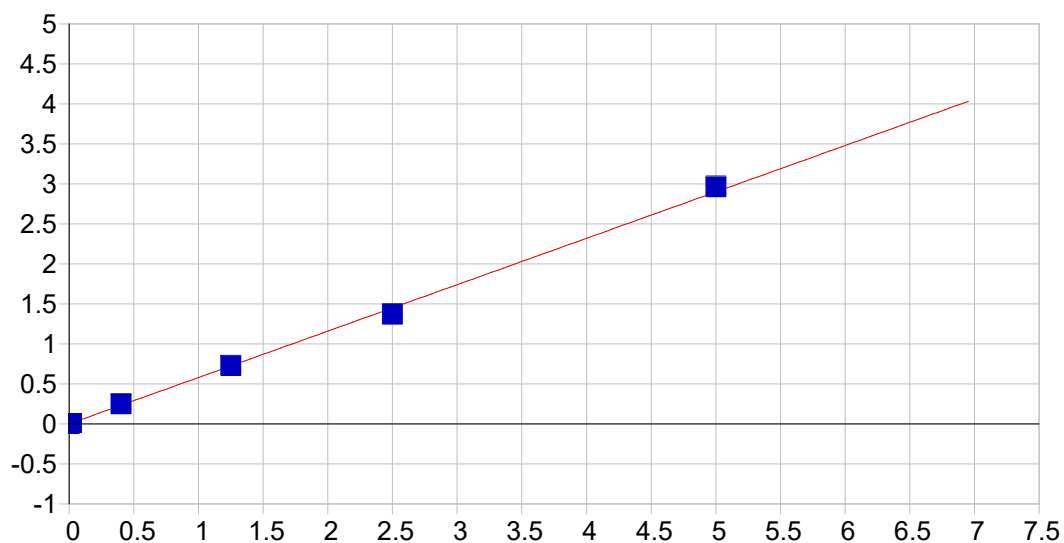
Cu 324.754 {104}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.046988 Re-Slope: 1.000000
A1 (Gain): 4.730255 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999272 Status: OK.
Std Error of Est: 0.002121
Predicted MDL: 0.000705
Predicted MQL: 0.002350

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.04698	.001	1
S1	.02000	.02041	.000	2.05	.14358	.002	1
S2	.20000	.22253	.023	11.3	1.1001	.012	1
S3	.62500	.64725	.022	3.56	3.1101	.030	1
S4	1.2500	1.1864	-.064	-5.09	5.6620	.062	1
S5	2.5000	2.5184	.018	.735	11.965	.138	1



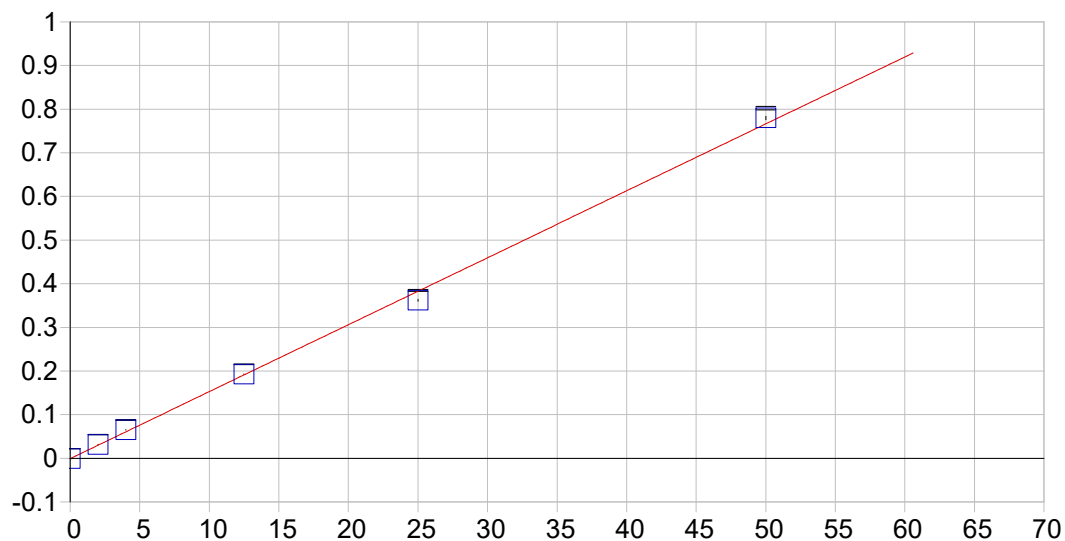


Mn 257.610 {131}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000443 Re-Slope: 1.000000
A1 (Gain): 0.579893 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999358 Status: OK.
Std Error of Est: 0.000345
Predicted MDL: 0.001093
Predicted MQL: 0.003643

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00044	.001	1
S1	.02000	.02032	.000	1.62	.01225	.001	1
S2	.40000	.42735	.027	6.84	.24847	.001	1
S3	1.2500	1.2549	.005	.395	.72882	.004	1
S4	2.5000	2.3615	-.139	-5.54	1.3712	.005	1
S5	5.0000	5.1059	.106	2.12	2.9639	.009	1

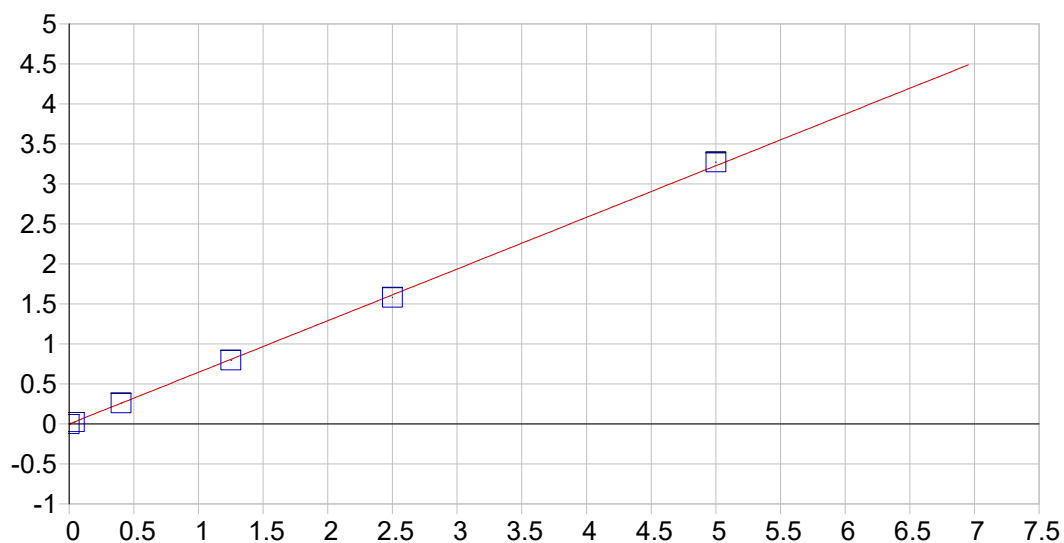


Mg 279.079 {121}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000730 Re-Slope: 1.000000
A1 (Gain): 0.015341 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999405 Status: OK.
Std Error of Est: 0.000280
Predicted MDL: 0.051784
Predicted MQL: 0.172614

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00017	-.000	.000	-.00073	.001	1
S1	2.0000	2.0962	.096	4.81	.03143	.000	1
S2	4.0000	4.2655	.266	6.64	.06471	.001	1
S3	12.500	12.614	.114	.915	.19279	.001	1
S4	25.000	23.652	-1.35	-5.39	.36211	.002	1
S5	50.000	50.872	.872	1.74	.77971	.004	1

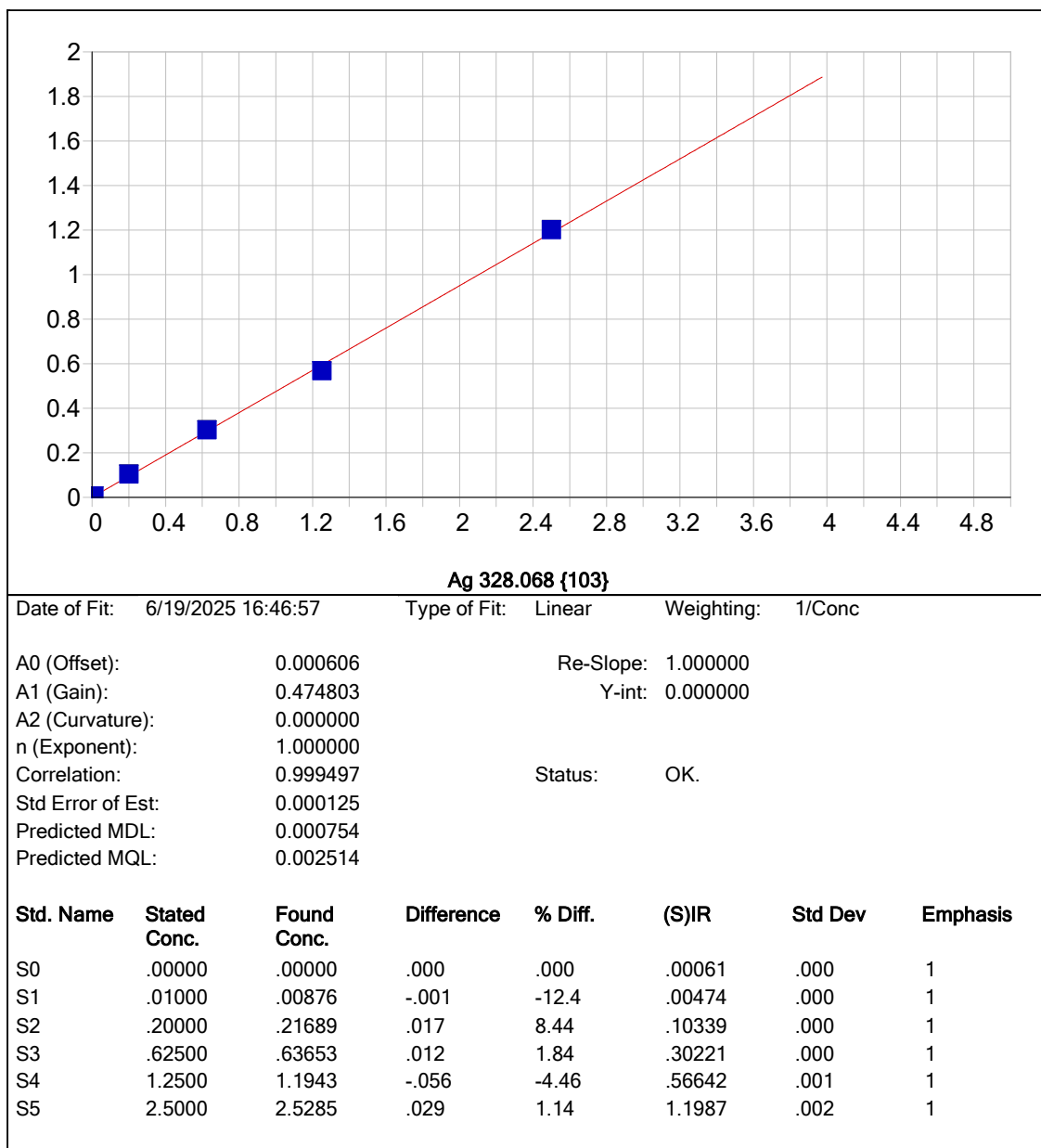


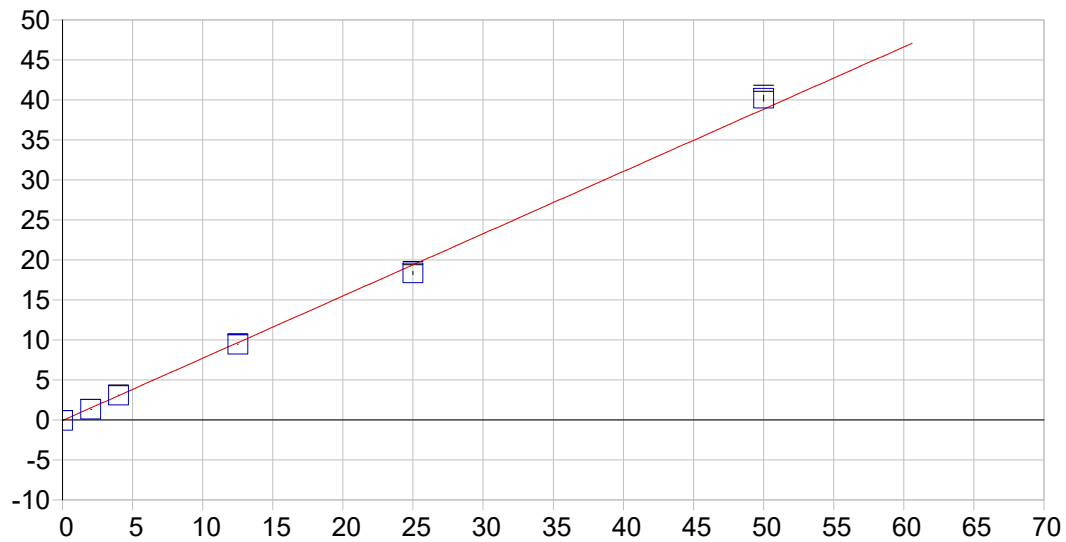
Ni 231.604 {446}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000179 Re-Slope: 1.000000
A1 (Gain): 0.645499 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999876 Status: OK.
Std Error of Est: 0.000239
Predicted MDL: 0.000539
Predicted MQL: 0.001796

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00018	.000	1
S1	.04000	.03758	-.002	-6.06	.02408	.000	1
S2	.40000	.40301	.003	.751	.25996	.000	1
S3	1.2500	1.2338	-.016	-1.30	.79622	.001	1
S4	2.5000	2.4493	-.051	-2.03	1.5809	.002	1
S5	5.0000	5.0663	.066	1.33	3.2701	.005	1



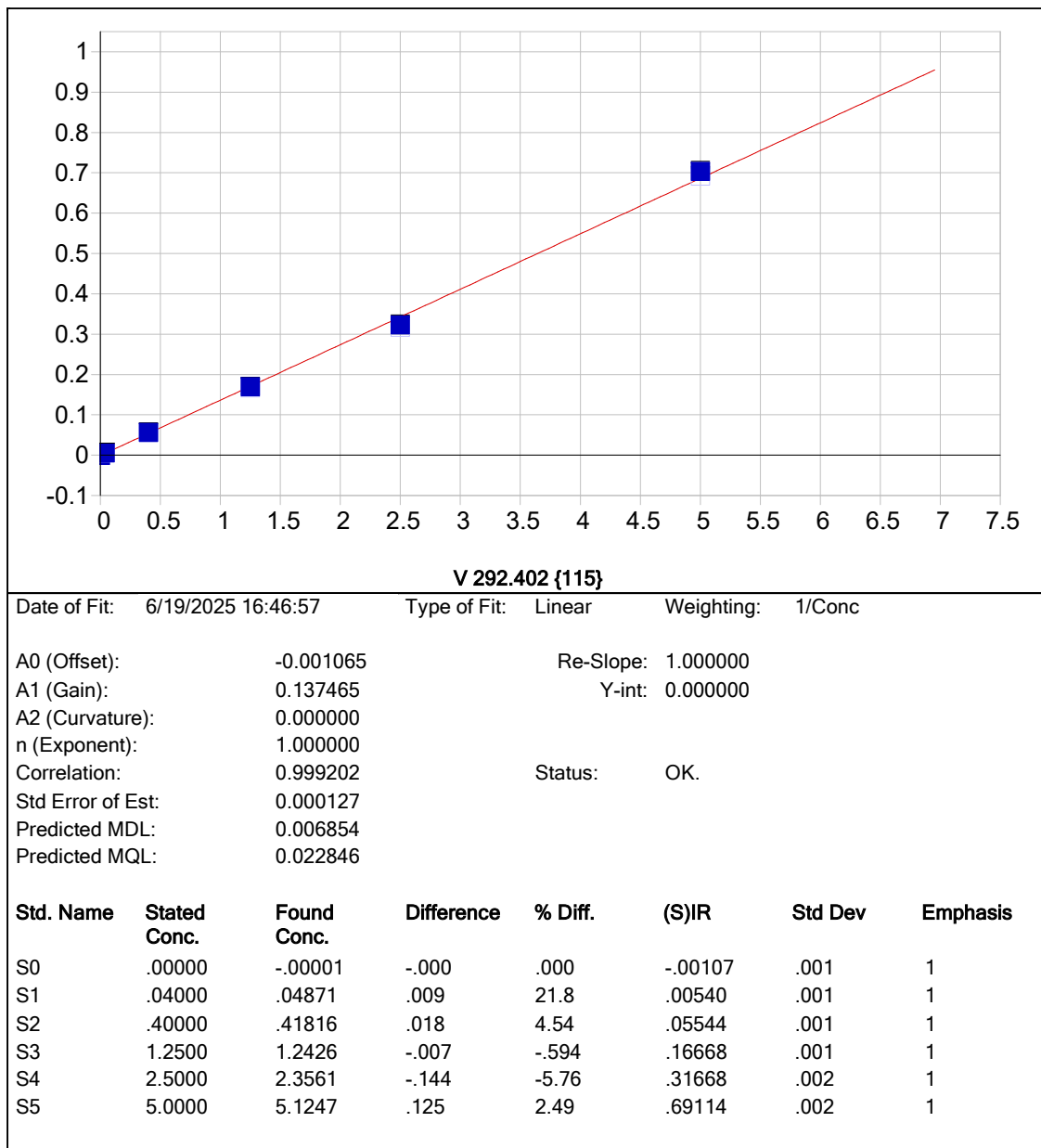


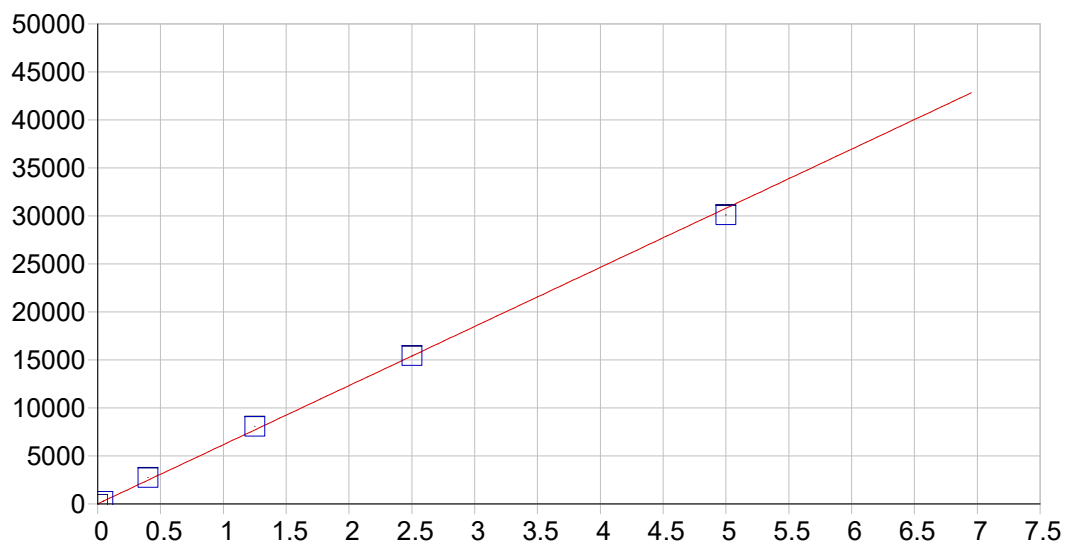
Na 818.326 { 41}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.072339 Re-Slope: 1.000000
A1 (Gain): 0.778214 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999125 Status: OK.
Std Error of Est: 0.017233
Predicted MDL: 0.013356
Predicted MQL: 0.044520

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00028	.000	.000	-.07212	.016	1
S1	2.0000	1.7768	-.223	-11.2	1.3104	.008	1
S2	4.0000	4.0482	.048	1.21	3.0780	.024	1
S3	12.500	12.238	-.262	-2.09	9.4516	.072	1
S4	25.000	23.673	-1.33	-5.31	18.350	.193	1
S5	50.000	51.764	1.76	3.53	40.211	.389	1



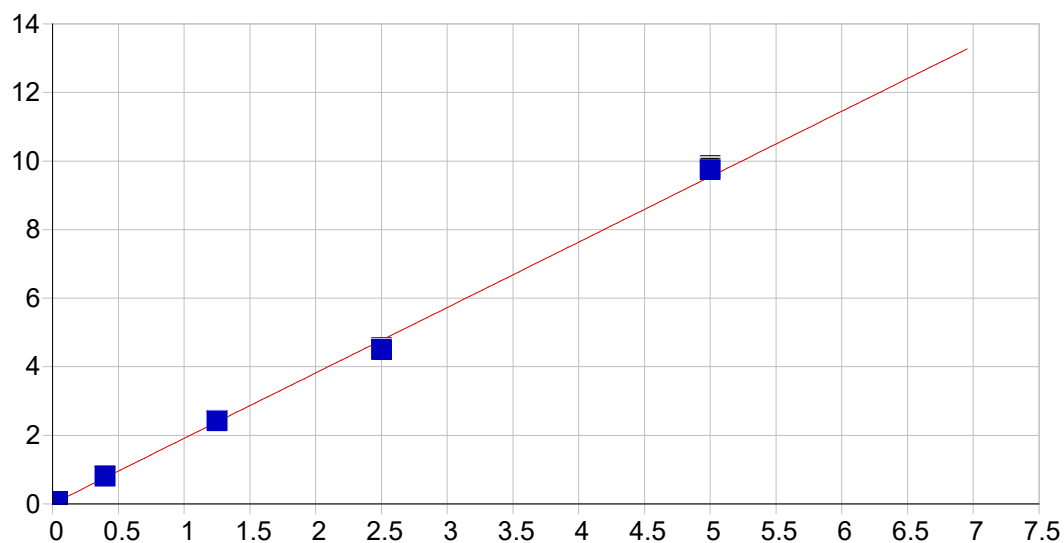


Zn 206.200 {464}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 11.012119 Re-Slope: 1.000000
A1 (Gain): 6157.472565 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999428 Status: OK.
Std Error of Est: 4.890705
Predicted MDL: 0.000212
Predicted MQL: 0.000708

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	10.967	.757	1
S1	.04000	.04171	.002	4.27	267.83	.243	1
S2	.40000	.44467	.045	11.2	2749.1	3.43	1
S3	1.2500	1.3109	.061	4.87	8082.8	20.7	1
S4	2.5000	2.5043	.004	.172	15431.	13.2	1
S5	5.0000	4.8884	-.112	-2.23	30111.	33.6	1

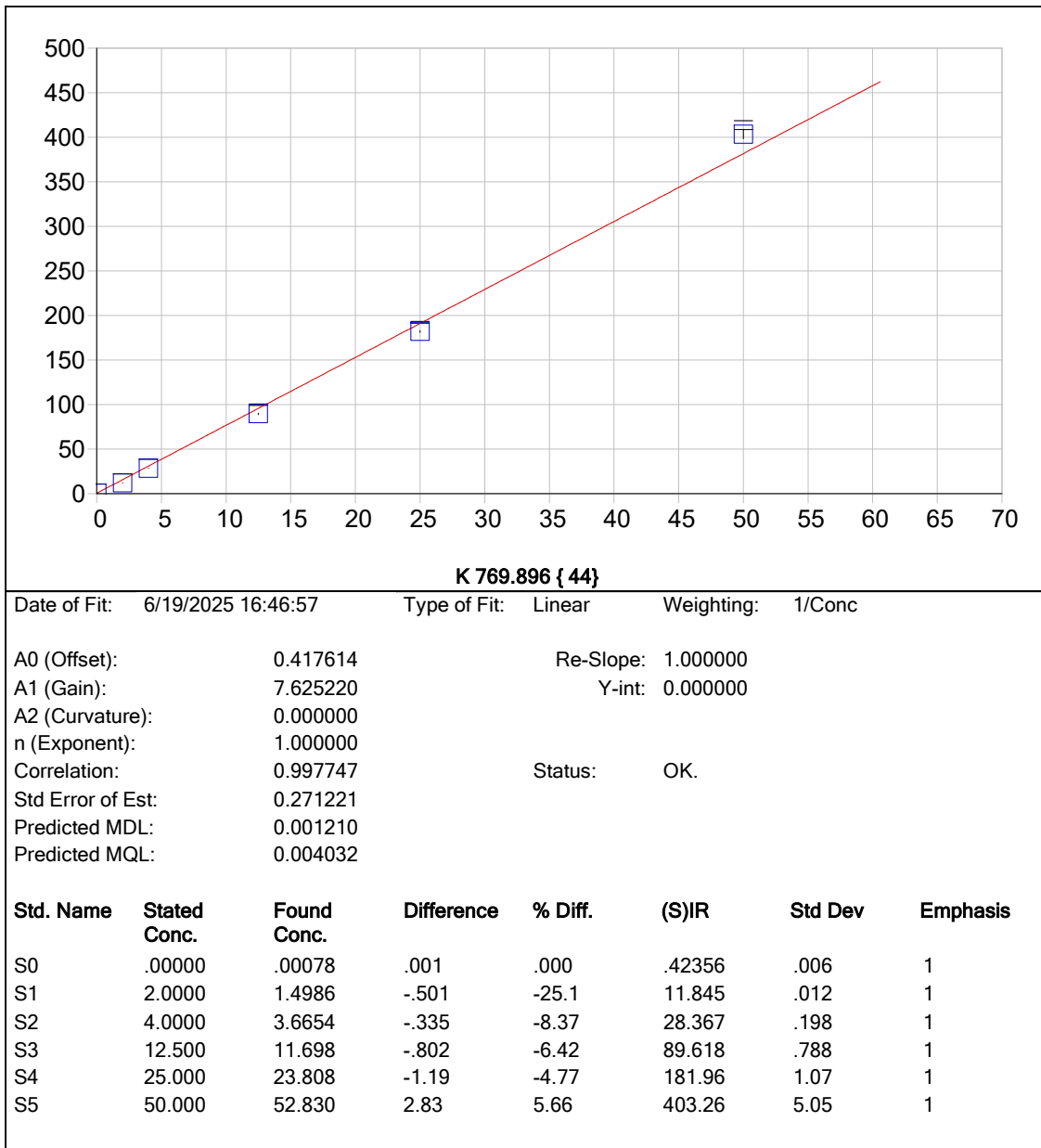


Zn 213.856 {158}

Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

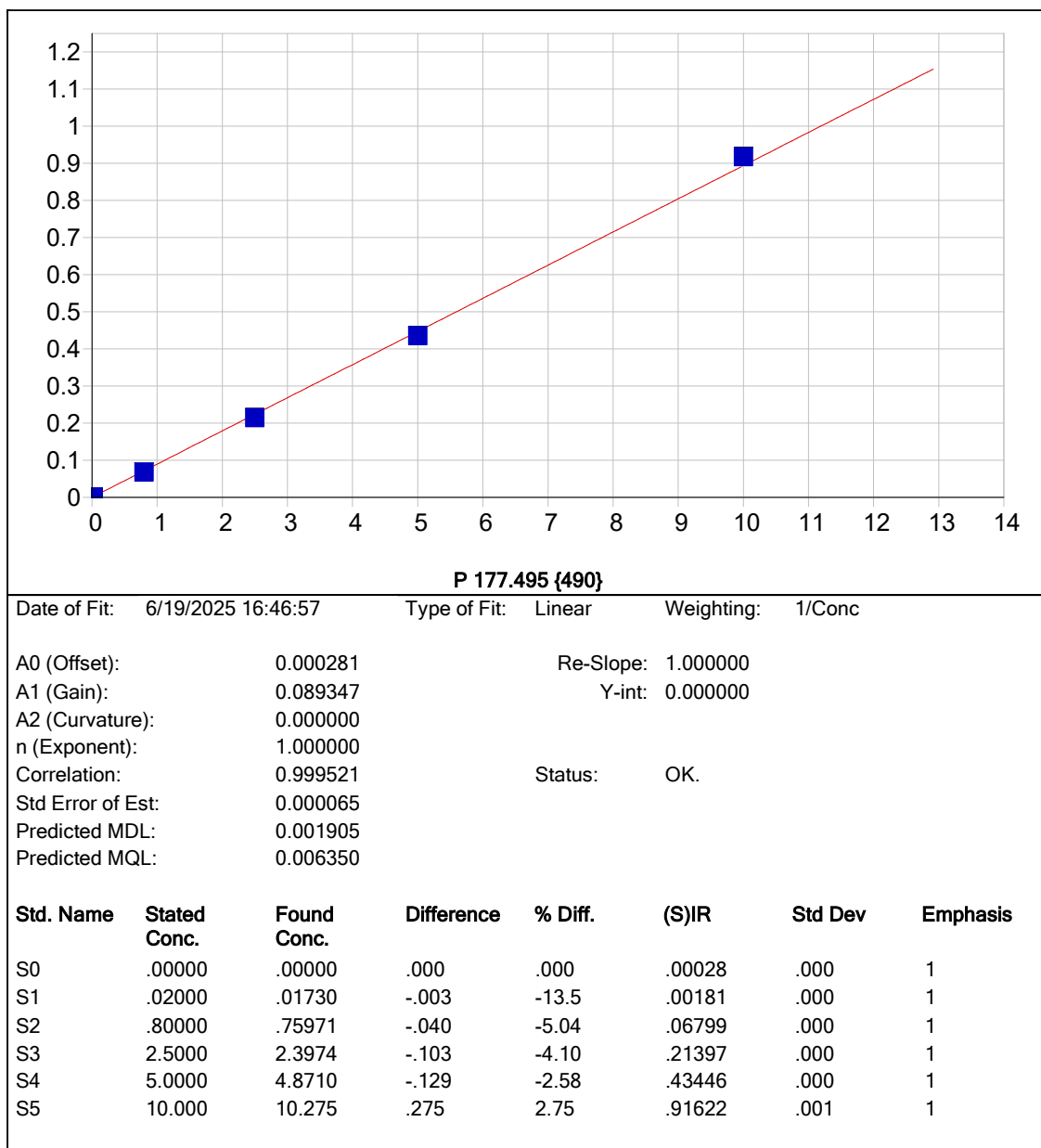
A0 (Offset): 0.002749 Re-Slope: 1.000000
A1 (Gain): 1.908302 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999371 Status: OK.
Std Error of Est: 0.001601
Predicted MDL: 0.000422
Predicted MQL: 0.001408

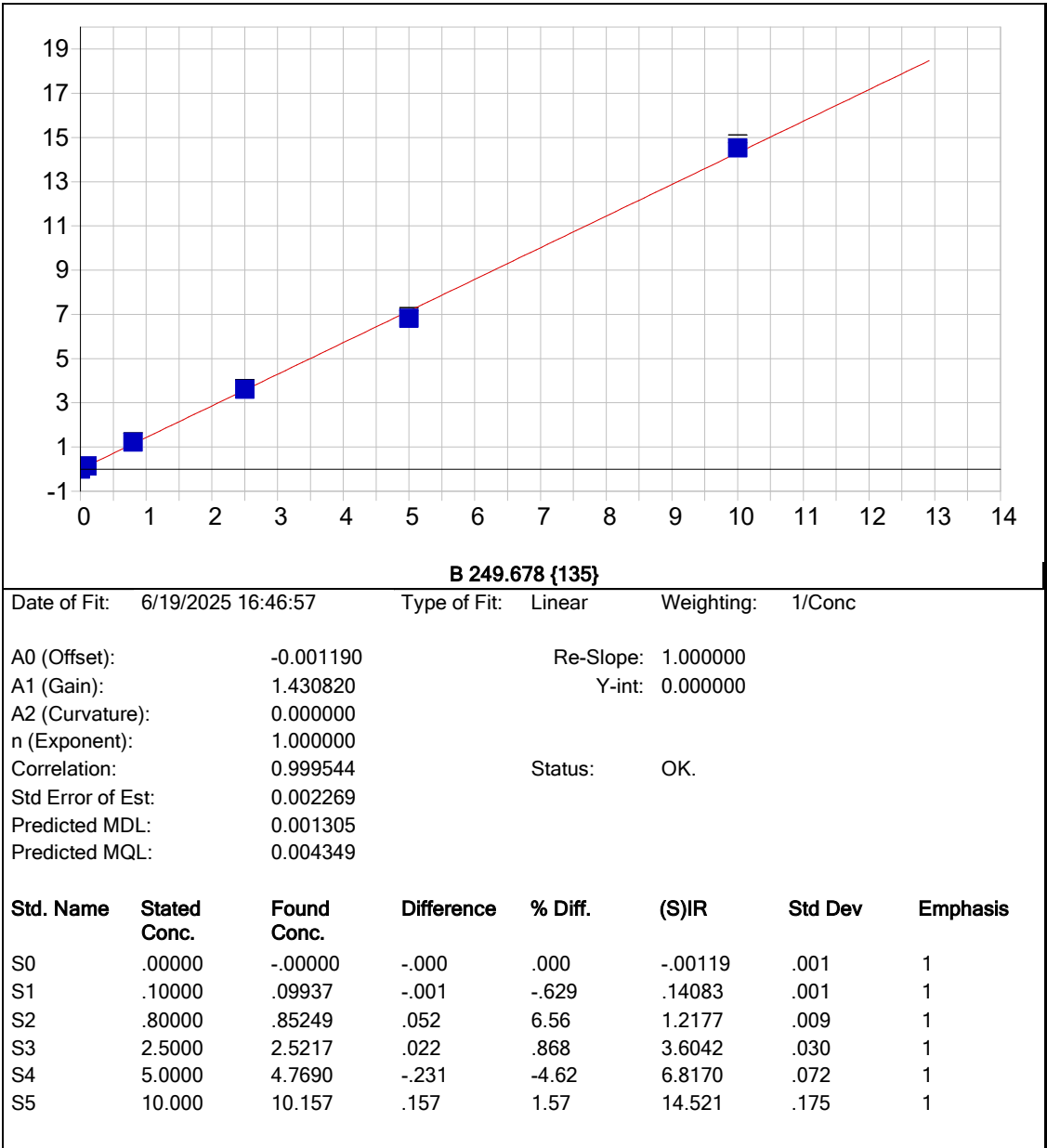
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00275	.001	1
S1	.04000	.03878	-.001	-3.05	.07731	.002	1
S2	.40000	.42138	.021	5.35	.81244	.002	1
S3	1.2500	1.2661	.016	1.29	2.4362	.002	1
S4	2.5000	2.3576	-.142	-5.70	4.5365	.014	1
S5	5.0000	5.1061	.106	2.12	9.8162	.046	1



Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

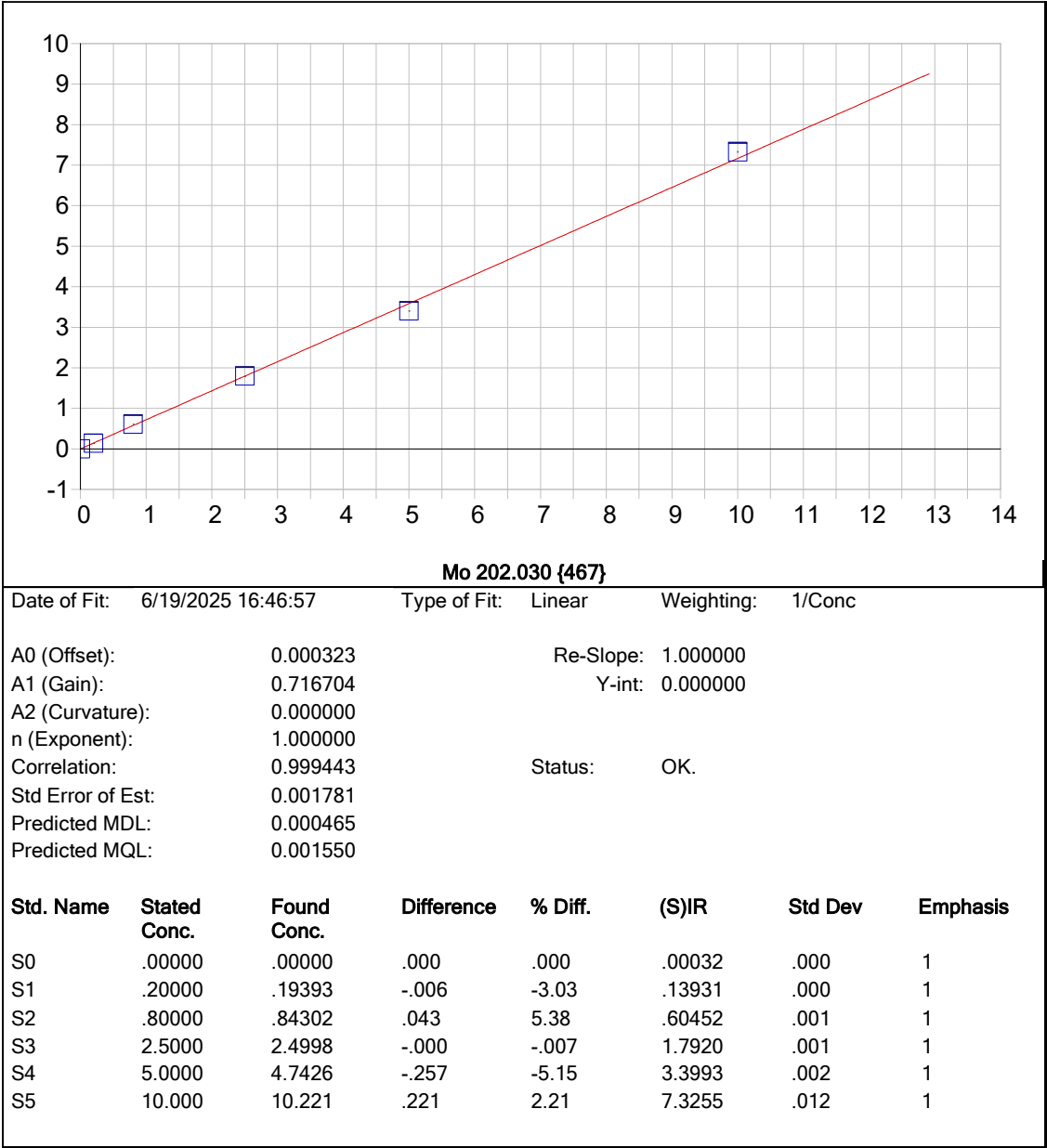
A0 (Offset): 0.417614 Re-Slope: 1.000000
A1 (Gain): 7.625220 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.997747 Status: OK.
Std Error of Est: 0.271221
Predicted MDL: 0.001210
Predicted MQL: 0.004032

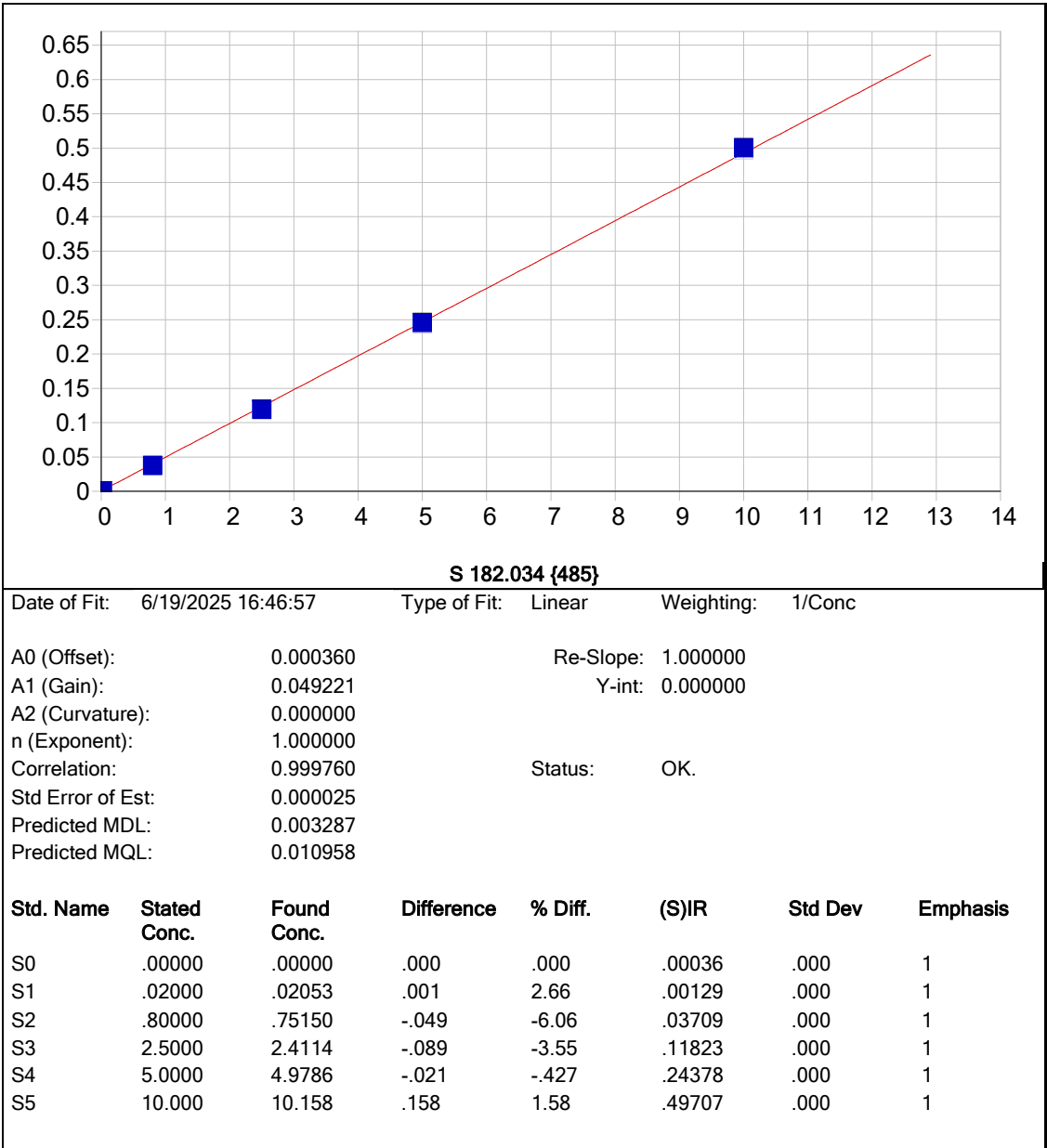


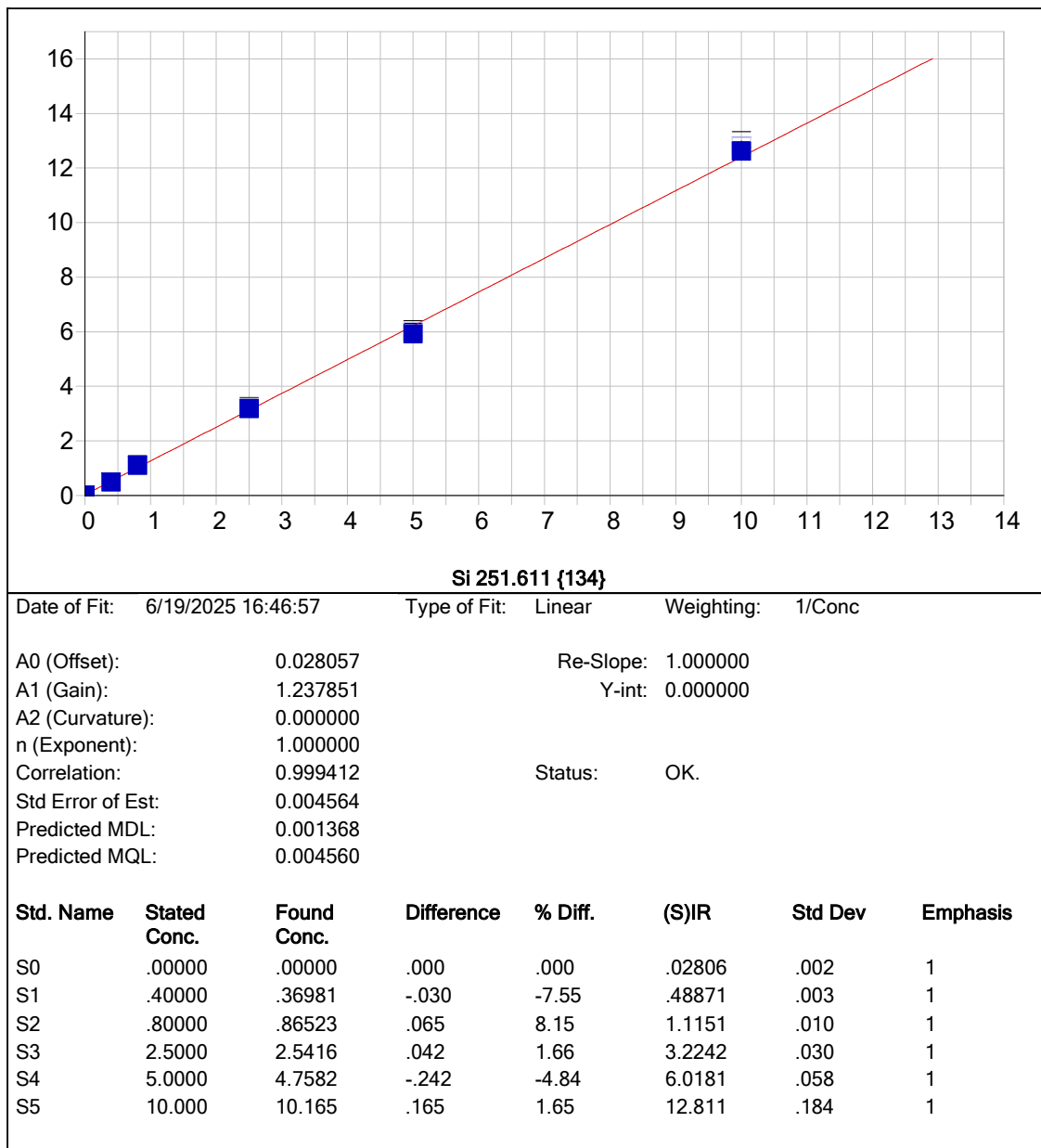


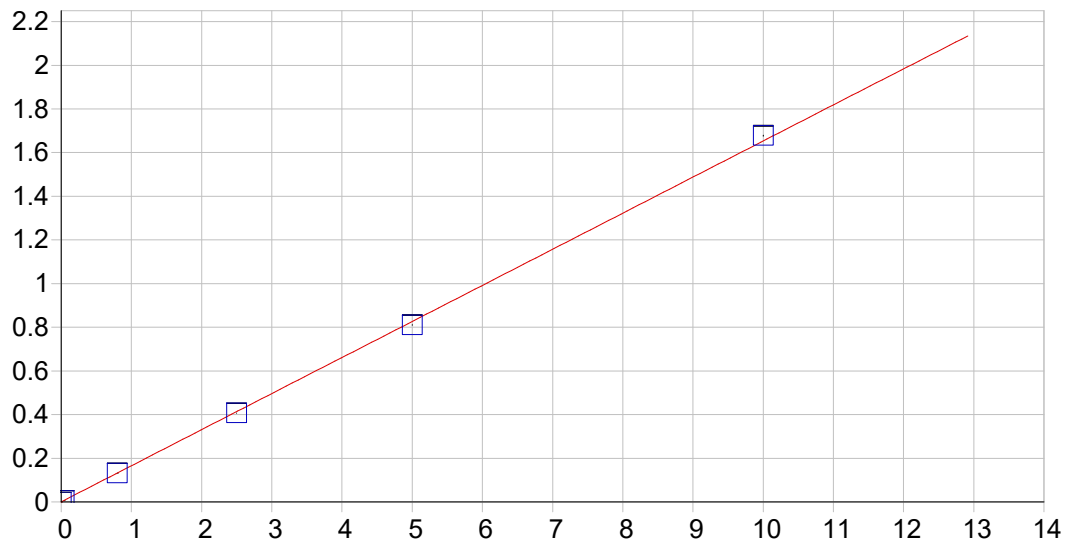
Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.001190 Re-Slope: 1.000000
A1 (Gain): 1.430820 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999544 Status: OK.
Std Error of Est: 0.002269
Predicted MDL: 0.001305
Predicted MQL: 0.004349







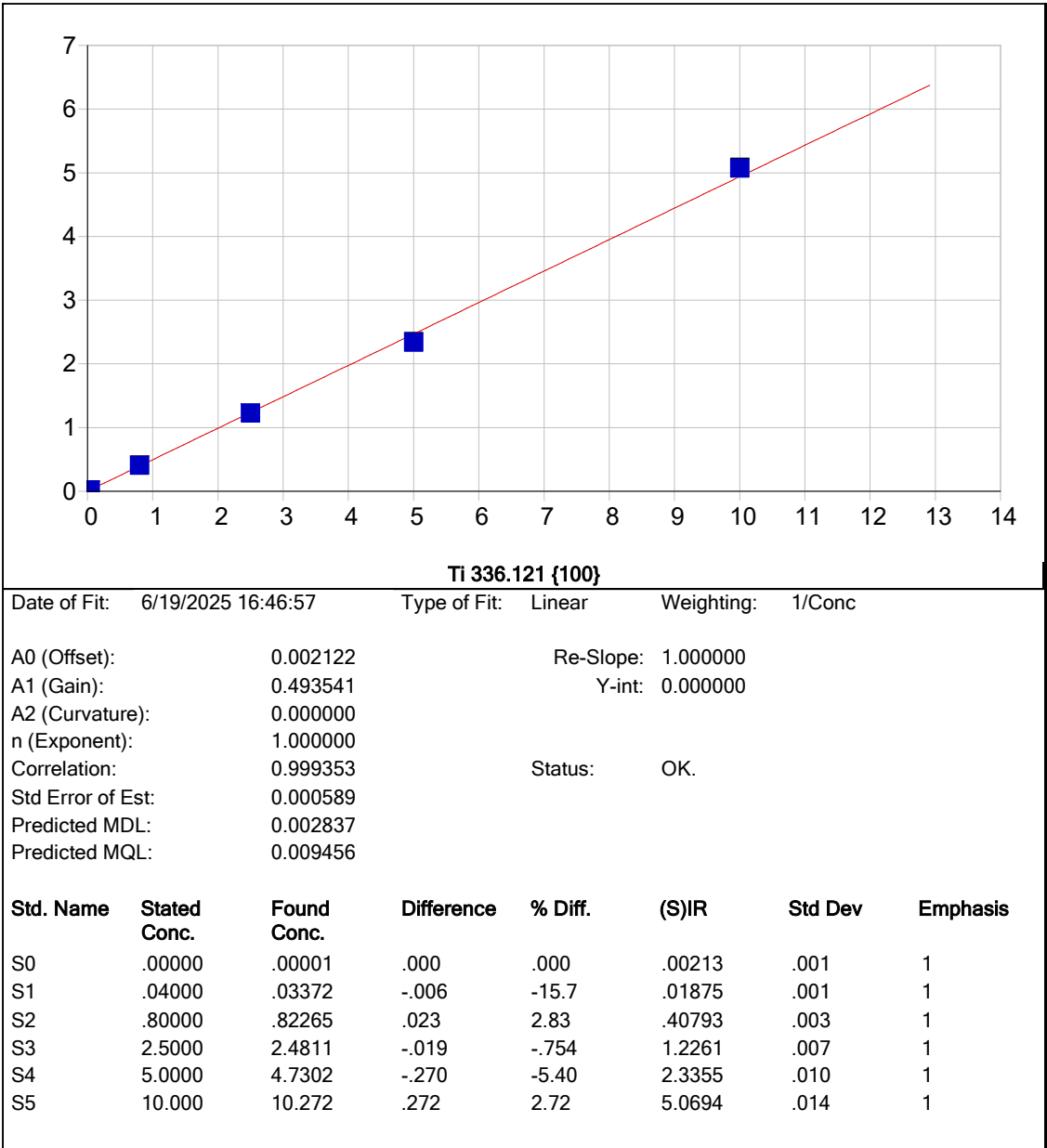


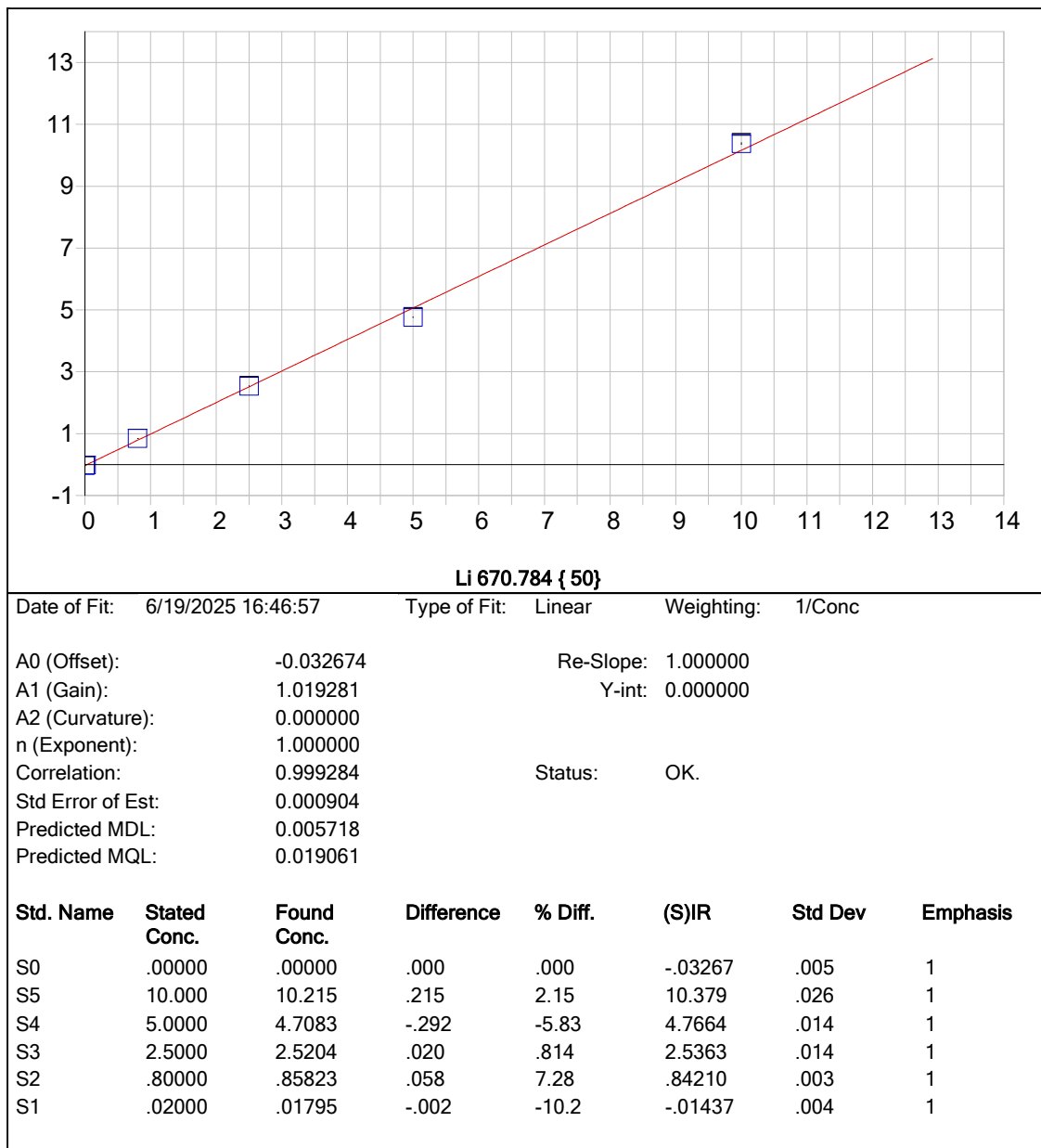
Sn 189.989 {478}

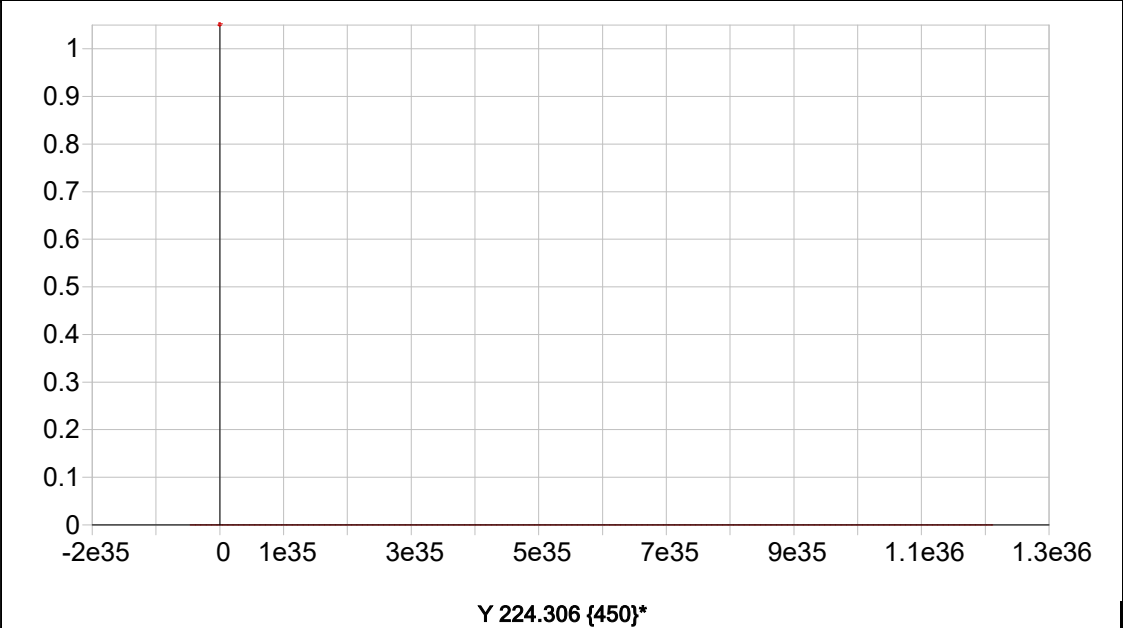
Date of Fit: 6/19/2025 16:46:57 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000305 Re-Slope: 1.000000
A1 (Gain): 0.165278 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999854 Status: OK.
Std Error of Est: 0.000094
Predicted MDL: 0.000938
Predicted MQL: 0.003127

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00031	.000	1
S1	.04000	.03548	-.005	-11.3	.00617	.000	1
S2	.80000	.79310	-.007	-.862	.13139	.000	1
S3	2.5000	2.4592	-.041	-1.63	.40676	.000	1
S4	5.0000	4.9027	-.097	-1.95	.81061	.001	1
S5	10.000	10.150	.150	1.50	1.6778	.002	1

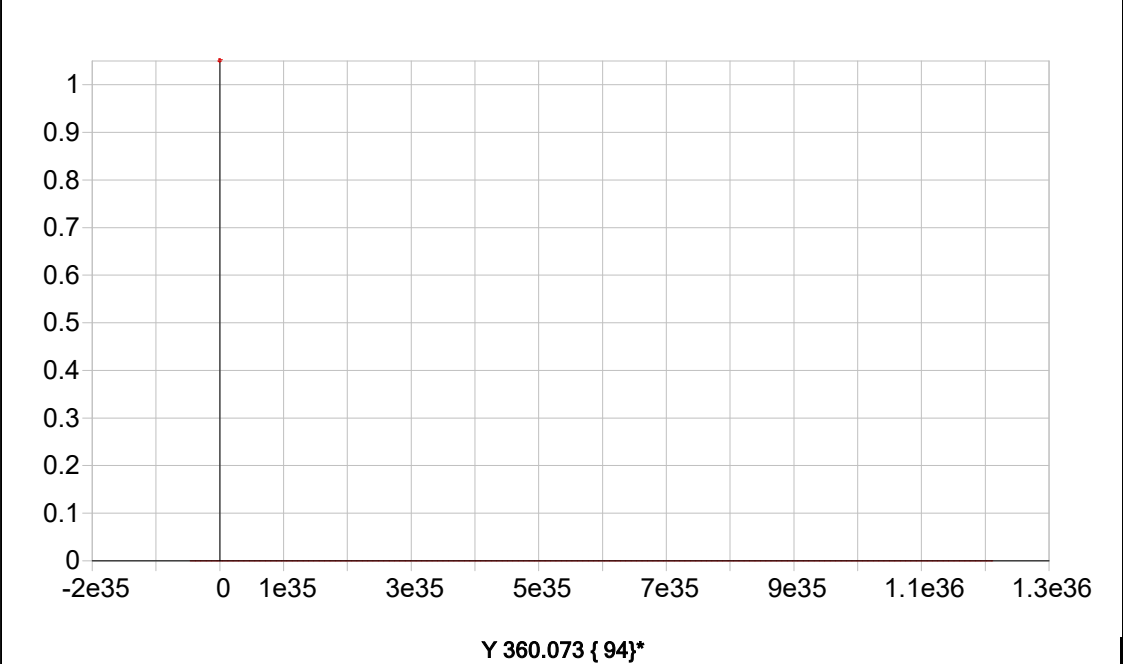




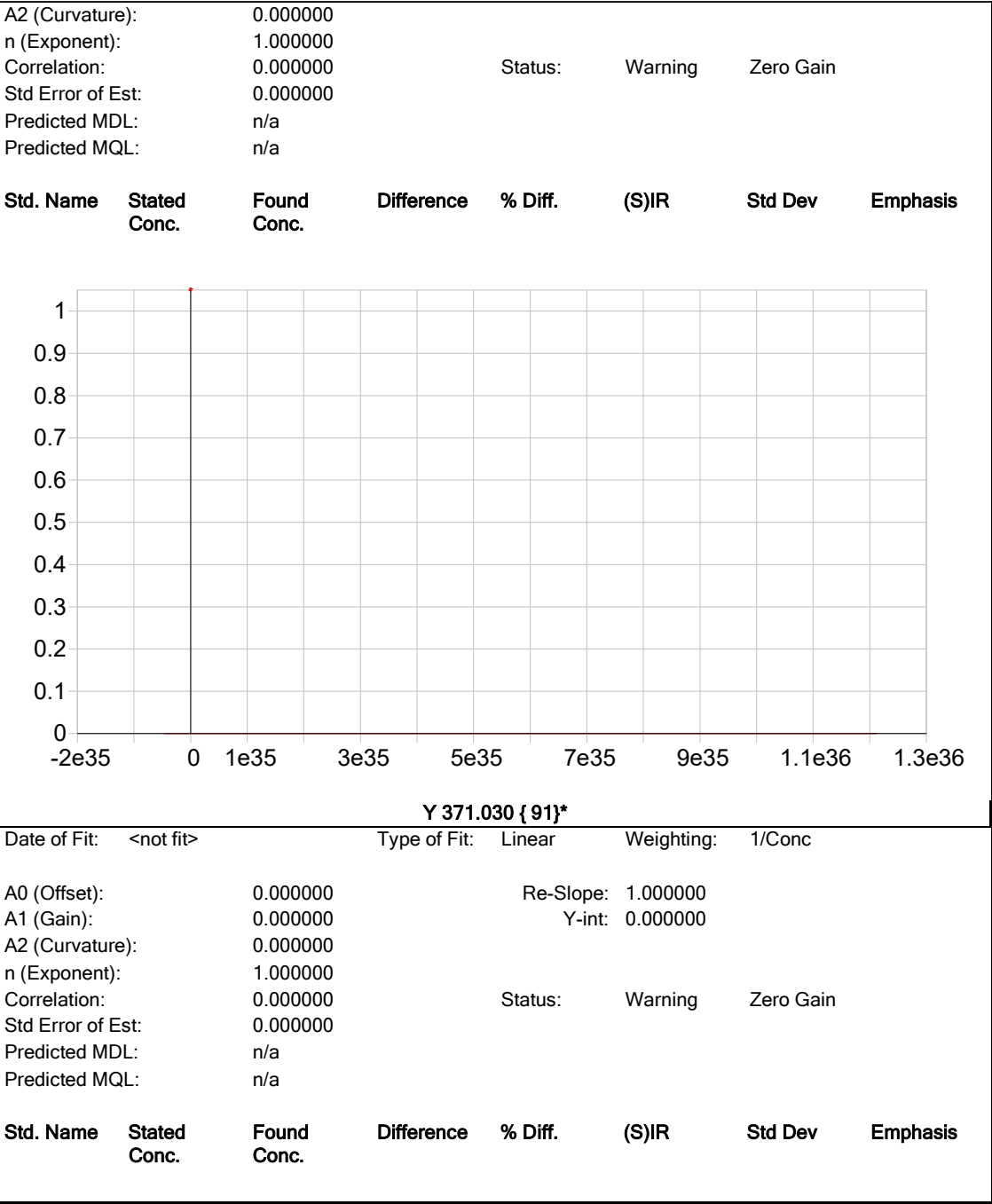


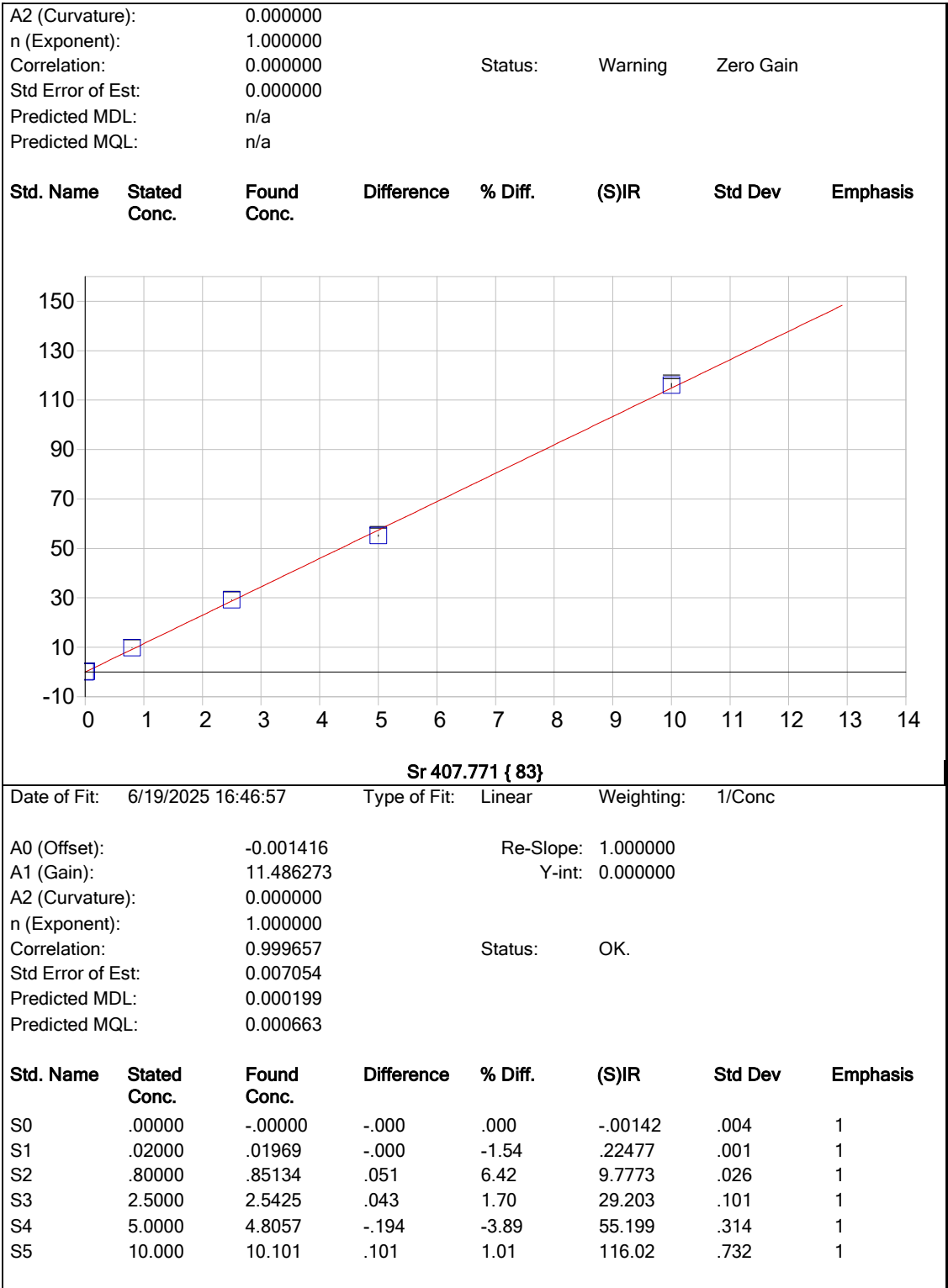
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000		Status:	Warning	Zero Gain
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
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		





Sample Name: S0 Acquired: 6/19/2025 14:10:05 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	-.00015	-.00077	.00042	-.00006	.00062	-.00233	.00811	.00181
Stddev	.00006	.00018	.00023	.00054	.00050	.00187	.00436	.00104
%RSD	37.053	22.881	55.895	939.49	80.859	80.223	53.775	57.520
#1	-.00020	-.00061	.00066	.00001	.00114	-.00034	.00809	.00123
#2	-.00009	-.00074	.00019	-.00063	.00058	-.00261	.00376	.00302
#3	-.00017	-.00096	.00040	.00044	.00014	-.00404	.01248	.00119
Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00004	.00736	.00070	.00015	.04698	.00054	.00044	-.00073
Stddev	.00020	.00107	.00022	.00008	.00139	.00043	.00074	.00054
%RSD	535.61	14.574	32.280	53.897	2.9658	78.625	167.14	73.780
#1	.00018	.00640	.00050	.00013	.04623	.00015	.00094	-.00070
#2	-.00008	.00852	.00094	.00024	.04858	.00100	.00079	-.00129
#3	-.00021	.00715	.00065	.00008	.04611	.00049	-.00041	-.00021
Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00018	.00061	-.07212	-.00107	.00275	.42356	.00028	-.00119
Stddev	.00036	.00020	.01577	.00104	.00086	.00612	.00010	.00091
%RSD	204.75	32.256	21.858	97.994	31.201	1.4449	37.151	76.462
#1	.00008	.00061	-.06545	-.00226	.00210	.41714	.00020	-.00176
#2	-.00059	.00041	-.06079	-.00064	.00243	.42420	.00040	-.00014
#3	-.00002	.00080	-.09013	-.00030	.00372	.42933	.00024	-.00168
Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00032	.00036	.02806	.00031	.00213	-.03267	-.00142	
Stddev	.00038	.00006	.00199	.00009	.00090	.00467	.00428	
%RSD	118.12	17.767	7.0864	29.034	42.541	14.298	300.14	
#1	-.00008	.00043	.02772	.00037	.00228	-.02891	.00350	
#2	.00036	.00035	.03020	.00021	.00294	-.03790	-.00355	
#3	.00069	.00030	.02627	.00034	.00115	-.03121	-.00422	

Sample Name: S0 Acquired: 6/19/2025 14:10:05 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	3338.7	36574.	2974.3	3853.7	4868.4
Stddev	131.9	87.	4.7	25.9	194.9
%RSD	3.9519	.23658	.15829	.67130	4.0029
#1	3437.0	36666.	2968.9	3874.3	5012.4
#2	3188.7	36563.	2977.0	3862.2	4646.7
#3	3390.3	36494.	2977.0	3824.7	4946.1

Sample Name: S1 Acquired: 6/19/2025 14:14:38 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	.00074	.00320	.00489	.00237	.00811	.01097	.43007	.07914
Stddev	.00006	.00015	.00037	.00014	.00022	.00164	.00402	.00055
%RSD	8.1635	4.5811	7.6446	5.7862	2.6515	14.950	.93473	.69283
#1	.00073	.00315	.00511	.00251	.00801	.00908	.42993	.07921
#2	.00069	.00310	.00509	.00234	.00797	.01181	.43415	.07965
#3	.00081	.00337	.00445	.00224	.00836	.01202	.42612	.07856
Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02337	.22464	.00386	.03013	.14358	.00384	.01225	.03143
Stddev	.00024	.00212	.00012	.00013	.00215	.00090	.00054	.00025
%RSD	1.0362	.94571	3.1377	.41948	1.4953	23.333	4.3997	.78426
#1	.02365	.22539	.00389	.03005	.14537	.00281	.01181	.03132
#2	.02326	.22225	.00396	.03006	.14416	.00431	.01209	.03125
#3	.02320	.22629	.00373	.03027	.14120	.00440	.01285	.03171
Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02408	.00474	1.3104	.00540	.07731	11.845	.00181	.14083
Stddev	.00028	.00006	.0078	.00123	.00152	.012	.00009	.00085
%RSD	1.1556	1.2760	.59839	22.705	1.9719	.10192	5.1244	.60080
#1	.02426	.00469	1.3096	.00495	.07628	11.837	.00174	.14180
#2	.02421	.00481	1.3186	.00446	.07659	11.838	.00191	.14029
#3	.02376	.00474	1.3030	.00678	.07906	11.859	.00177	.14040
Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.13931	.00129	.48871	.00617	.01875	-.01437	.22477	
Stddev	.00032	.00007	.00296	.00014	.00083	.00405	.00080	
%RSD	.22638	5.2599	.60605	2.1921	4.4368	28.201	.35804	
#1	.13899	.00129	.48712	.00632	.01845	-.01323	.22517	
#2	.13933	.00136	.49212	.00607	.01811	-.01101	.22530	
#3	.13962	.00123	.48688	.00611	.01969	-.01888	.22385	

Sample Name: S1 Acquired: 6/19/2025 14:14:38 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	3488.3	37371.	3034.6	3961.7	4945.8
Stddev	8.0	139.	12.0	17.4	5.4
%RSD	.22954	.37197	.39703	.43927	.10969
#1	3485.4	37491.	3040.3	3976.0	4940.6
#2	3497.3	37219.	3020.7	3942.3	4951.4
#3	3482.1	37405.	3042.7	3966.7	4945.5

Sample Name: S2 Acquired: 6/19/2025 14:19:07 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	.04169	.08718	.34961	.09864	.12987	.18036	7.3523	.55009
Stddev	.00023	.00009	.00148	.00019	.00011	.00138	.0198	.00453
%RSD	.54006	.10021	.42345	.19478	.08445	.76523	.26915	.82365

#1	.04170	.08711	.35008	.09851	.12991	.17937	7.3744	.55000
#2	.04191	.08728	.35080	.09886	.12975	.17977	7.3465	.54561
#3	.04146	.08714	.34796	.09854	.12996	.18193	7.3362	.55467

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.6834	.47925	.05721	.42240	1.1001	.02805	.24847	.06471
Stddev	.0016	.00288	.00048	.00095	.0119	.00017	.00107	.00067
%RSD	.09416	.60100	.83761	.22391	1.0847	.59614	.43194	1.0416

#1	1.6852	.48110	.05776	.42266	1.1112	.02824	.24893	.06435
#2	1.6823	.47593	.05700	.42318	1.0875	.02799	.24724	.06548
#3	1.6826	.48071	.05688	.42135	1.1015	.02792	.24923	.06428

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.25996	.10339	3.0780	.05544	.81244	28.367	.06799	1.2177
Stddev	.00021	.00014	.0238	.00065	.00191	.198	.00022	.0087
%RSD	.07893	.13526	.77358	1.1731	.23542	.69870	.32024	.71810

#1	.26020	.10350	3.0989	.05544	.81352	28.400	.06788	1.2213
#2	.25982	.10343	3.0521	.05609	.81356	28.155	.06786	1.2077
#3	.25987	.10323	3.0831	.05479	.81023	28.547	.06824	1.2241

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.60452	.03709	1.1151	.13139	.40793	.84210	9.7773	
Stddev	.00074	.00020	.0104	.00017	.00309	.00289	.0264	
%RSD	.12263	.54859	.92876	.13254	.75723	.34353	.27015	

#1	.60413	.03726	1.1162	.13131	.41146	.83898	9.8077	
#2	.60405	.03715	1.1042	.13127	.40568	.84263	9.7648	
#3	.60537	.03686	1.1249	.13159	.40667	.84470	9.7595	

Sample Name: S2 Acquired: 6/19/2025 14:19:07 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	3411.0	36512.	2953.6	3877.1	4795.6
Stddev	5.3	181.	16.9	19.7	11.5
%RSD	.15626	.49442	.57309	.50870	.23916
#1	3410.8	36420.	2941.5	3885.1	4792.8
#2	3405.8	36397.	2972.9	3854.7	4785.8
#3	3416.4	36720.	2946.3	3891.6	4808.2

Sample Name: S3 Acquired: 6/19/2025 14:23:24 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	.13131	.26537	1.0705	.29426	.38342	.54457	21.963	1.6035
Stddev	.00031	.00057	.0011	.00049	.00083	.00333	.092	.0131
%RSD	.23870	.21633	.10444	.16636	.21720	.61134	.41790	.81813
#1	.13113	.26583	1.0701	.29432	.38392	.54233	21.956	1.5888
#2	.13167	.26555	1.0717	.29472	.38246	.54840	22.057	1.6074
#3	.13112	.26473	1.0696	.29375	.38389	.54299	21.874	1.6142
Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.2273	1.4052	.16825	1.2966	3.1101	.08025	.72882	.19279
Stddev	.0024	.0090	.00010	.0021	.0304	.00107	.00404	.00057
%RSD	.04542	.63795	.05752	.16536	.97751	1.3396	.55409	.29636
#1	5.2249	1.4026	.16826	1.2941	3.0971	.07912	.72660	.19272
#2	5.2297	1.4152	.16815	1.2981	3.0883	.08126	.73348	.19339
#3	5.2272	1.3979	.16834	1.2975	3.1448	.08036	.72638	.19226
Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.79622	.30221	9.4516	.16668	2.4362	89.618	.21397	3.6042
Stddev	.00139	.00042	.0715	.00080	.0024	.788	.00012	.0300
%RSD	.17425	.13940	.75651	.48049	.09954	.87918	.05506	.83216
#1	.79463	.30188	9.4219	.16651	2.4338	88.877	.21387	3.5808
#2	.79721	.30207	9.3998	.16755	2.4387	89.530	.21394	3.5937
#3	.79682	.30268	9.5332	.16598	2.4361	90.446	.21410	3.6380
Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	1.7920	.11823	3.2242	.40676	1.2261	2.5363	29.203	
Stddev	.0006	.00033	.0300	.00049	.0074	.0141	.101	
%RSD	.03419	.27663	.92940	.11927	.60222	.55531	.34715	
#1	1.7918	.11817	3.2005	.40620	1.2290	2.5264	29.201	
#2	1.7926	.11794	3.2143	.40706	1.2315	2.5524	29.305	
#3	1.7914	.11859	3.2579	.40702	1.2177	2.5300	29.102	

Sample Name: S3 Acquired: 6/19/2025 14:23:24 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	3358.8	35797.	2959.4	3806.8	4498.0
Stddev	11.6	220.	4.4	26.8	14.7
%RSD	.34514	.61550	.14708	.70327	.32722
#1	3359.2	35550.	2958.9	3783.0	4500.0
#2	3370.2	35865.	2964.0	3801.7	4511.7
#3	3347.0	35975.	2955.3	3835.8	4482.4

Sample Name: S4 Acquired: 6/19/2025 14:27:41 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	.26626	.52230	2.1177	.55474	.72452	1.0294	41.656	3.0006
Stddev	.00020	.00058	.0013	.00094	.00091	.0057	.250	.0283
%RSD	.07667	.11197	.06231	.16997	.12594	.55533	.59925	.94356

#1	.26602	.52189	2.1181	.55515	.72538	1.0322	41.931	3.0333
#2	.26640	.52204	2.1162	.55541	.72462	1.0228	41.596	2.9845
#3	.26635	.52297	2.1187	.55366	.72356	1.0331	41.442	2.9839

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10.459	2.6541	.31507	2.5733	5.6620	.15011	1.3712	.36211
Stddev	.015	.0061	.00072	.0019	.0624	.00108	.0052	.00236
%RSD	.14349	.22995	.22706	.07232	1.1019	.71950	.37775	.65042

#1	10.449	2.6611	.31578	2.5732	5.7339	.15134	1.3769	.35940
#2	10.452	2.6504	.31509	2.5714	5.6306	.14932	1.3696	.36358
#3	10.476	2.6507	.31435	2.5752	5.6216	.14966	1.3669	.36336

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.5809	.56642	18.350	.31668	4.5365	181.96	.43446	6.8170
Stddev	.0016	.00053	.193	.00209	.0138	1.07	.00026	.0722
%RSD	.10207	.09286	1.0491	.66008	.30517	.58616	.05993	1.0591

#1	1.5797	.56700	18.570	.31861	4.5245	183.19	.43437	6.9002
#2	1.5802	.56627	18.268	.31446	4.5517	181.37	.43425	6.7804
#3	1.5827	.56598	18.212	.31697	4.5334	181.31	.43475	6.7704

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	3.3993	.24378	6.0181	.81061	2.3355	4.7664	55.199	
Stddev	.0023	.00039	.0579	.00140	.0100	.0136	.314	
%RSD	.06744	.15815	.96262	.17276	.42795	.28567	.56907	

#1	3.3993	.24387	6.0848	.81012	2.3468	4.7717	55.551	
#2	3.4017	.24335	5.9886	.80951	2.3278	4.7509	55.098	
#3	3.3971	.24411	5.9809	.81218	2.3318	4.7766	54.947	

Sample Name: S4 Acquired: 6/19/2025 14:27:41 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	3455.0	36932.	3061.4	3914.8	4347.6
Stddev	2.0	122.	28.0	15.8	8.2
%RSD	.05929	.33103	.91314	.40432	.18818
#1	3453.0	36996.	3030.1	3930.5	4347.8
#2	3457.1	36791.	3070.3	3898.8	4355.6
#3	3455.0	37010.	3083.9	3915.2	4339.2

Sample Name: S5 Acquired: 6/19/2025 14:31:57 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	.56362	1.0554	4.3967	1.1889	1.5536	2.2278	90.190	6.3567
Stddev	.00071	.0004	.0048	.0029	.0031	.0062	1.682	.0713
%RSD	.12514	.03964	.10838	.24329	.19765	.27590	1.8651	1.1215
#1	.56428	1.0552	4.4022	1.1922	1.5572	2.2214	89.269	6.2788
#2	.56371	1.0559	4.3935	1.1870	1.5516	2.2337	92.131	6.3727
#3	.56288	1.0552	4.3944	1.1875	1.5520	2.2284	89.170	6.4186
Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	21.527	5.7771	.66589	5.3244	11.965	.32662	2.9639	.77971
Stddev	.027	.0085	.00162	.0084	.138	.00129	.0093	.00416
%RSD	.12424	.14764	.24349	.15812	1.1547	.39375	.31245	.53352
#1	21.558	5.7710	.66587	5.3341	11.811	.32535	2.9651	.77637
#2	21.517	5.7868	.66753	5.3198	12.008	.32660	2.9725	.78437
#3	21.507	5.7734	.66428	5.3192	12.077	.32792	2.9541	.77839
Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.2701	1.1987	40.211	.69114	9.8162	403.26	.91622	14.521
Stddev	.0048	.0021	.389	.00181	.0465	5.05	.00063	.175
%RSD	.14662	.17432	.96693	.26197	.47334	1.2520	.06927	1.2070
#1	3.2756	1.1981	39.763	.68906	9.8121	397.43	.91562	14.332
#2	3.2682	1.2010	40.410	.69241	9.8646	406.27	.91688	14.555
#3	3.2665	1.1969	40.461	.69194	9.7720	406.08	.91615	14.678
Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	7.3255	.49707	12.811	1.6778	5.0694	10.379	116.02	
Stddev	.0117	.00043	.184	.0018	.0145	.026	.73	
%RSD	.15949	.08590	1.4394	.10800	.28588	.24611	.63061	
#1	7.3386	.49724	12.611	1.6798	5.0677	10.357	116.66	
#2	7.3161	.49739	12.847	1.6772	5.0847	10.407	116.18	
#3	7.3219	.49659	12.974	1.6763	5.0559	10.374	115.22	

Sample Name: S5 Acquired: 6/19/2025 14:31:57 Type: Cal
Method: METHOD 6010D, 200.7(v9) Mode: IR Corr. Factor: 1.000000
User: admin 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	3146.5	33990.	2811.0	3554.5	4072.5
Stddev	3.9	318.	20.8	39.9	2.5
%RSD	.12377	.93502	.73815	1.1224	.06126
#1	3144.1	33862.	2832.8	3535.3	4071.6
#2	3151.0	33756.	2791.5	3527.9	4075.3
#3	3144.4	34352.	2808.8	3600.4	4070.6

Sample Name: ICV01 Acquired: 6/19/2025 14:45:39 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.787408	3.883103	3.831698	4.017253	4.217173	7.884939	7.865167
Stddev	.007615	.010117	.007627	.004516	.003817	.012581	.058341
%RSD	.2010717	.2605514	.1990517	.1124092	.0905138	.1595598	.7417584
#1	3.795341	3.893071	3.840465	4.022100	4.212999	7.874580	7.801178
#2	3.786728	3.872842	3.828038	4.013164	4.218033	7.881298	7.878922
#3	3.780156	3.883396	3.826590	4.016496	4.220487	7.898939	7.915401
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2090503	1.944588	19.67984	.8085365	1.952549	1.048802	3.948719
Stddev	.0029189	.003566	.03765	.0012007	.004707	.012666	.037116
%RSD	1.396252	.1833739	.1913189	.1485080	.2410717	1.207684	.9399494
#1	.2060602	1.948319	19.63767	.8073391	1.957668	1.036614	3.907959
#2	.2091984	1.941214	19.71006	.8097405	1.948407	1.047894	3.957627
#3	.2118923	1.944233	19.69180	.8085298	1.951572	1.061897	3.980570
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.976127	19.96288	1.952849	.9489771	20.05903	2.011420	2.005579
Stddev	.007188	.08930	.004910	.0013259	.21581	.008175	.010945
%RSD	.3637604	.4473439	.2514439	.1397205	1.075867	.4064465	.5457210
#1	1.968122	19.86244	1.957683	.9494629	19.82856	2.003631	2.003992
#2	1.978227	19.99288	1.947866	.9499916	20.09219	2.010696	2.017231
#3	1.982031	20.03331	1.952999	.9474768	20.25634	2.019933	1.995515
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.74525	.0175540	.0153532	-.003998	.0213709	-.000377	.0004808
Stddev	.10122	.0013665	.0008910	.000327	.0009303	.000584	.0004819
%RSD	.5126056	7.784692	5.803514	8.176137	4.353128	154.6832	100.2208
#1	19.64886	.0170856	.0144765	-.004271	.0203003	-.001039	.0002356
#2	19.85068	.0164833	.0153252	-.003636	.0219825	-.000161	.0010360
#3	19.73620	.0190931	.0162579	-.004086	.0218300	.000067	.0001709

Sample Name: ICV01 Acquired: 6/19/2025 14:45:39 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.005377	.0450777	.0004383
Stddev	.001944	.0031778	.0001132
%RSD	36.14494	7.049520	25.83266
#1	-.004347	.0458474	.0005572
#2	-.004166	.0415858	.0003318
#3	-.007619	.0478000	.0004258

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3337.388	35965.45	2934.465	3790.754	4519.504
Stddev	10.244	143.32	23.902	26.077	18.622
%RSD	.3069391	.3984990	.8145117	.6879001	.4120394
#1	3330.813	35886.04	2960.487	3785.664	4502.751
#2	3332.159	35879.40	2929.419	3767.597	4516.206
#3	3349.191	36130.90	2913.489	3819.000	4539.555

Sample Name: LLICV01 Acquired: 6/19/2025 14:57:03 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0176588	.0407368	.0108011	.0217852	.0499587	.0906004	.0973094
Stddev	.0026237	.0013924	.0014539	.0004083	.0010847	.0048810	.0005722
%RSD	14.85785	3.418172	13.46091	1.874065	2.171219	5.387431	.5879740
#1	.0156122	.0397849	.0095902	.0221788	.0497477	.0851223	.0966589
#2	.0206166	.0400905	.0124136	.0213637	.0489950	.0921917	.0975348
#3	.0167474	.0423349	.0103994	.0218132	.0511334	.0944872	.0977346
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0062360	.0055299	1.944177	.0092101	.0286989	.0203361	.0962471
Stddev	.0001199	.0000809	.025130	.0009223	.0002997	.0005450	.0218251
%RSD	1.923367	1.463627	1.292567	10.01452	1.044424	2.680159	22.67610
#1	.0063000	.0056222	1.918050	.0099314	.0289958	.0205832	.1187842
#2	.0063104	.0054969	1.968174	.0081708	.0287046	.0207139	.0752116
#3	.0060977	.0054708	1.946306	.0095280	.0283964	.0197113	.0947454
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0199787	2.102861	.0374235	.0093955	1.813497	.0407283	.0391330
Stddev	.0002646	.050875	.0004984	.0003213	.016054	.0043071	.0003529
%RSD	1.324445	2.419319	1.331737	3.419928	.8852248	10.57515	.9017543
#1	.0199875	2.149320	.0368800	.0091025	1.808386	.0395378	.0395151
#2	.0197099	2.110766	.0378591	.0097391	1.800622	.0371417	.0390645
#3	.0202389	2.048496	.0375314	.0093448	1.831484	.0455054	.0388193
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.755756	.0185640	.1045440	.1941969	.2367157	.3739492	.0356452
Stddev	.010107	.0001551	.0011304	.0004370	.0037224	.0056117	.0003974
%RSD	.5756301	.8356232	1.081293	.2250022	1.572525	1.500645	1.114879
#1	1.764082	.0187034	.1055235	.1937442	.2358789	.3764562	.0360018
#2	1.744511	.0185916	.1048015	.1946161	.2407854	.3675210	.0357170
#3	1.758675	.0183969	.1033070	.1942305	.2334830	.3778703	.0352168

Sample Name: LLICV01 Acquired: 6/19/2025 14:57:03 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0332277	.0564148	.0195536
Stddev	.0007403	.0040445	.0001297
%RSD	2.227950	7.169260	.6631523
#1	.0333242	.0565855	.0196563
#2	.0324439	.0603712	.0194079
#3	.0339150	.0522876	.0195966

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3491.489	37804.46	3008.600	3935.384	4973.389
Stddev	6.414	118.37	12.487	23.344	11.957
%RSD	.1837161	.3131226	.4150376	.5931860	.2404263
#1	3485.519	37788.15	2998.364	3910.932	4960.378
#2	3490.679	37695.09	3022.512	3937.787	4975.892
#3	3498.270	37930.14	3004.924	3957.434	4983.896

Sample Name: ICB01 Acquired: 6/19/2025 15:01:45 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013746	.0003580	-.000405	.0025412	.0010707	-.004531
Stddev	.0020275	.0010872	.000944	.0021924	.0006488	.031625
%RSD	147.4990	303.7204	233.0634	86.27437	60.59958	697.9266

#1	.0035027	-.000082	-.000846	.0019256	.0017339	.031193
#2	-.000535	-.000440	-.001048	.0049756	.0010408	-.028949
#3	.001156	.001596	.000679	.0007224	.0004373	-.015838

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014392	.0001287	.0000111	.0301030	-.000270	.0000209
Stddev	.0012423	.0000653	.0000200	.0107951	.000378	.0003297
%RSD	86.31616	50.78937	180.1629	35.86071	140.2711	1579.508

#1	.0017517	.0000755	.0000031	.0377061	-.000632	-.000073
#2	.0000705	.0001088	.0000338	.0348559	.000122	-.000251
#3	.0024954	.0002016	-.000004	.0177469	-.000299	.000387

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001212	-.003331	-.000990	.0089957	-.000091	-.000492
Stddev	.000136	.011474	.000258	.0607391	.000308	.001032
%RSD	11.18525	344.4458	26.03299	675.2018	339.3214	209.5982

#1	-.001076	.003269	-.000985	-.040945	.000143	-.001542
#2	-.001347	.003318	-.000735	-.008680	.000025	-.000457
#3	-.001212	-.016580	-.001250	.076612	-.000441	.000521

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0631233	.0104029	.0042711	.0239295	-.000326	.0051281
Stddev	.0097484	.0083541	.0004593	.0010413	.000854	.0009283
%RSD	15.44349	80.30485	10.75439	4.351661	261.7664	18.10198

#1	.0539835	.0193582	.0044596	.0245497	.000575	.0049565
#2	.0733835	.0028201	.0046061	.0245114	-.000431	.0042976
#3	.0620028	.0090305	.0037475	.0227272	-.001123	.0061302

Sample Name: ICB01 Acquired: 6/19/2025 15:01:45 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001567	.0038518	.0007066	-.000412	-.002845	F .0323106
Stddev	.0002731	.0017605	.0003606	.000671	.001041	.0025688
%RSD	174.2122	45.70516	51.03084	163.0450	36.58823	7.950224
#1	.0004534	.0031469	.0007110	-.001109	-.001718	.0351678
#2	-.000084	.0058555	.0003438	.000230	-.003771	.0315720
#3	.000101	.0025530	.0010649	-.000357	-.003048	.0301921

Elem	Sr4077
Units	ppm
Avg	.0000573
Stddev	.0000610
%RSD	106.3991
#1	.0001278
#2	.0000212
#3	.0000231

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3423.118	37041.06	2954.404	3840.420	5005.390
Stddev	4.566	91.90	16.259	8.789	10.538
%RSD	.1333964	.2481082	.5503400	.2288670	.2105234
#1	3419.137	37095.49	2942.579	3835.327	5011.865
#2	3422.115	37092.74	2972.945	3835.365	4993.231
#3	3428.103	36934.96	2947.688	3850.570	5011.074

Sample Name: CRI01 Acquired: 6/19/2025 15:06:14 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin 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	.0190190	.0378802	.0101932	.0220130	.0496851	.1114480	.0978371
Stddev	.0015974	.0004947	.0006707	.0011423	.0020700	.0137825	.0008708
%RSD	8.398837	1.306089	6.579915	5.189061	4.166171	12.36675	.8900816

#1	.0185481	.0374900	.0105194	.0210434	.0476497	.1269171	.0976058
#2	.0177100	.0384367	.0094218	.0232722	.0496177	.1069519	.0988003
#3	.0207989	.0377140	.0106385	.0217234	.0517880	.1004750	.0971053

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0064711	.0055841	1.975312	.0091690	.0289318	.0208807	.1062240
Stddev	.0002298	.0000513	.011503	.0004371	.0005040	.0004546	.0070355
%RSD	3.550715	.9180679	.5823400	4.766701	1.742029	2.177269	6.623227

#1	.0066407	.0056021	1.988330	.0090527	.0288065	.0211316	.0981010
#2	.0062096	.0056239	1.971092	.0096525	.0285023	.0211545	.1103824
#3	.0065630	.0055262	1.966516	.0088019	.0294867	.0203559	.1101888

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0203606	2.082564	.0372961	.0088021	1.821951	.0478299	.0395633
Stddev	.0013209	.048144	.0004628	.0004569	.024791	.0078837	.0007553
%RSD	6.487664	2.311744	1.240996	5.190662	1.360676	16.48283	1.909091

#1	.0216714	2.027183	.0369214	.0093258	1.826980	.0514801	.0398584
#2	.0190298	2.114446	.0378135	.0085957	1.795031	.0532271	.0401266
#3	.0203807	2.106061	.0371533	.0084848	1.843841	.0387826	.0387050

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.765002	.0189808	.1028928	.1966656	.2403732	.3761395	.0362337
Stddev	.007451	.0002034	.0017850	.0002870	.0016317	.0026877	.0007522
%RSD	.4221721	1.071403	1.734791	.1459381	.6788371	.7145403	2.075960

#1	1.765876	.0190558	.1012291	.1963503	.2385687	.3786734	.0357075
#2	1.757152	.0191360	.1026710	.1967351	.2408062	.3733208	.0358984
#3	1.771977	.0187506	.1047783	.1969115	.2417448	.3764243	.0370953

Sample Name: CRI01 Acquired: 6/19/2025 15:06:14 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0326747	.0515784	.0196387
Stddev	.0025635	.0052464	.0002294
%RSD	7.845531	10.17172	1.168325
#1	.0354480	.0493955	.0198733
#2	.0303920	.0477759	.0196280
#3	.0321840	.0575639	.0194147

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3452.749	37482.13	2985.559	3883.415	4921.876
Stddev	4.750	156.27	5.220	22.905	11.974
%RSD	.1375645	.4169108	.1748430	.5898075	.2432831
#1	3457.602	37632.03	2981.797	3902.120	4931.833
#2	3452.537	37320.20	2991.518	3857.870	4925.205
#3	3448.109	37494.15	2983.361	3890.257	4908.589

Sample Name: ICSA01 Acquired: 6/19/2025 15:10:37 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052191	.0164053	.0069778	.0053127	.0117139	248.5013
Stddev	.0016148	.0017358	.0020811	.0013271	.0021566	.5794
%RSD	30.94063	10.58052	29.82449	24.97918	18.41062	.2331522

#1	.0056307	.0178022	.0071183	.0038697	.0098513	247.8808
#2	.0065883	.0144621	.0089851	.0064808	.0140766	249.0282
#3	.0034383	.0169516	.0048300	.0055876	.0112138	248.5949

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0076608	.0010316	-.000083	239.2946	.0493412	.0226510
Stddev	.0010589	.0001042	.000272	.2183	.0005563	.0009946
%RSD	13.82167	10.10126	329.8479	.0912086	1.127374	4.390910

#1	.0064381	.0009905	.000148	239.1724	.0489047	.0237993
#2	.0082691	.0011500	-.000012	239.5466	.0491514	.0220927
#3	.0082751	.0009541	-.000383	239.1649	.0499675	.0220609

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.011539	103.5382	.0048798	247.5394	.0018677	.0066551
Stddev	.000438	.3492	.0013432	.6553	.0003399	.0006072
%RSD	3.792503	.3372266	27.52660	.2647316	18.19936	9.123883

#1	-.011983	103.1685	.0050268	247.3022	.0021201	.0071894
#2	-.011526	103.8624	.0061435	248.2803	.0020017	.0067811
#3	-.011108	103.5836	.0034691	247.0358	.0014812	.0059947

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1653722	.0016305	.0178203	-.000416	.0089739	F .0339044
Stddev	.0126891	.0077025	.0005452	.000930	.0016929	.0007388
%RSD	7.673064	472.3960	3.059460	223.7320	18.86489	2.179222

#1	.1696299	.0050203	.0179409	.000123	.0108387	.0332096
#2	.1511017	-.007186	.0172249	.000120	.0085494	.0338229
#3	.1753848	.007057	.0182952	-.001490	.0075337	.0346805

Sample Name: ICSA01 Acquired: 6/19/2025 15:10:37 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.008757	.0209308	-.009657	.0044017	-.002001	F .0427888
Stddev	.000873	.0042096	.000557	.0006735	.000358	.0083217
%RSD	9.968319	20.11193	5.763357	15.29993	17.90502	19.44839
#1	-.009721	.0221082	-.009039	.0051730	-.001668	.0456886
#2	-.008019	.0244264	-.009811	.0041019	-.001955	.0334051
#3	-.008532	.0162579	-.010120	.0039303	-.002381	.0492726

Elem	Sr4077
Units	ppm
Avg	.0995947
Stddev	.0002359
%RSD	.2368651
#1	.0993449
#2	.0998137
#3	.0996254

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3053.251	32601.68	2826.024	3484.909	3898.810
Stddev	89.449	286.18	7.860	33.384	111.187
%RSD	2.929632	.8778101	.2781310	.9579503	2.851830
#1	2950.529	32801.88	2834.453	3500.850	3771.001
#2	3095.270	32729.27	2824.722	3507.334	3952.169
#3	3113.954	32273.90	2818.896	3446.543	3973.261

Sample Name: ICSAB01 Acquired: 6/19/2025 15:16:45 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0937071	.0955484	.0511105	.0503935	.6183396	248.3386
Stddev	.0008362	.0035142	.0020031	.0040549	.0071934	.5771
%RSD	.8924091	3.677930	3.919170	8.046523	1.163338	.2323725

#1	.0946725	.0986738	.0532580	.0459496	.6265704	247.8798
#2	.0932425	.0962271	.0492927	.0513382	.6132576	248.1495
#3	.0932063	.0917444	.0507808	.0538927	.6151906	248.9865

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5160664	.5248324	.9946469	238.9985	.5622282	.5072760
Stddev	.0017092	.0026223	.0040342	.4916	.0013974	.0021691
%RSD	.3311964	.4996516	.4055888	.2056936	.2485405	.4276006

#1	.5141496	.5256130	.9992240	238.4309	.5634065	.5097195
#2	.5174319	.5219084	.9931084	239.2801	.5625936	.5065308
#3	.5166176	.5269757	.9916084	239.2846	.5606844	.5055777

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4907583	103.4501	.5014370	247.9766	.9753753	.2220645
Stddev	.0034988	.1162	.0017008	.7387	.0024915	.0005612
%RSD	.7129439	.1123496	.3391758	.2979001	.2554432	.2527218

#1	.4918584	103.3470	.4997913	247.2343	.9781608	.2226713
#2	.4868416	103.5761	.5013318	247.9838	.9746060	.2219581
#3	.4935749	103.4272	.5031880	248.7117	.9733592	.2215642

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1679442	.5017212	1.048630	-.006310	F .0162771	F .0329506
Stddev	.0154077	.0009444	.001375	.000176	.0033631	.0006729
%RSD	9.174291	.1882378	.1311610	2.792834	20.66150	2.042204

#1	.1525160	.5011341	1.047173	-.006478	.0201595	.0333265
#2	.1833313	.5028107	1.049905	-.006127	.0144133	.0333515
#3	.1679854	.5012190	1.048813	-.006326	.0142586	.0321737

Sample Name: ICSAB01 Acquired: 6/19/2025 15:16:45 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009523	.0223865	-.006374	.0033964	-.006528	F .0374239
Stddev	.000364	.0051705	.001533	.0010540	.001550	.0051071
%RSD	3.826202	23.09663	24.05565	31.03326	23.73973	13.64662
#1	-.009367	.0170277	-.005554	.0042967	-.005710	.0315714
#2	-.009263	.0273455	-.008143	.0022370	-.008315	.0397226
#3	-.009940	.0227863	-.005425	.0036555	-.005558	.0409777

Elem	Sr4077
Units	ppm
Avg	.0998851
Stddev	.0003635
%RSD	.3639400
#1	.0995510
#2	.0998322
#3	.1002722

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3091.253	32357.60	2820.460	3450.553	3951.316
Stddev	7.138	255.58	11.954	30.192	7.399
%RSD	.2309085	.7898688	.4238487	.8749824	.1872438
#1	3083.037	32496.94	2834.254	3476.983	3951.647
#2	3094.786	32062.63	2813.119	3417.649	3943.758
#3	3095.935	32513.23	2814.007	3457.026	3958.544

Sample Name: ICSADLX20 Acquired: 6/19/2025 15:23:42 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002811	.0055988	.0015743	.0016806	-.000458	12.16961	.0011378
Stddev	.000931	.0037951	.0013302	.0050834	.002009	.01472	.0005443
%RSD	33.14096	67.78377	84.49505	302.4701	439.0320	.1209528	47.84161
#1	-.003886	.0012506	.0010831	-.002467	.001184	12.17644	.0017328
#2	-.002302	.0082444	.0030803	.000157	.000141	12.15272	.0006648
#3	-.002244	.0073013	.0005596	.007351	-.002697	12.17967	.0010159
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002738	-.000056	11.87880	.0021657	.0054942	-.000923	5.209358
Stddev	.0000756	.000048	.01938	.0009032	.0001342	.000665	.024144
%RSD	27.61496	85.81341	.1631268	41.70354	2.443011	72.05927	.4634722
#1	.0002726	-.000112	11.87330	.0025815	.0054630	-.000174	5.232712
#2	.0001988	-.000026	11.90034	.0027861	.0053784	-.001149	5.210866
#3	.0003500	-.000031	11.86278	.0011295	.0056413	-.001446	5.184495
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006572	12.54304	-.000620	.0005800	.0602420	.0059290	-.000381
Stddev	.0007102	.09878	.000389	.0003037	.0083965	.0044894	.000041
%RSD	108.0687	.7875511	62.73527	52.36702	13.93794	75.71918	10.82046
#1	-.000150	12.43812	-.000276	.0005056	.0578782	.0038255	-.000343
#2	.000938	12.63425	-.000543	.0003204	.0695671	.0110839	-.000425
#3	.001184	12.55675	-.001042	.0009141	.0532808	.0028776	-.000374
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0027505	.0005263	.0038877	-.001622	.0006262	.0003091	-.000278
Stddev	.0017321	.0007952	.0020031	.000286	.0035558	.0004271	.000994
%RSD	62.97212	151.0856	51.52262	17.62644	567.8300	138.1866	357.7712
#1	.0018766	.0013889	.0049022	-.001292	.0011090	-.000073	.000555
#2	.0016296	-.000177	.0051806	-.001806	.0039159	.000230	-.001378
#3	.0047455	.000367	.0015804	-.001766	-.003146	.000770	-.000010

Sample Name: ICSADLX20 Acquired: 6/19/2025 15:23:42 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003897	.0299850	.0050732
Stddev	.005164	.0073811	.0000383
%RSD	132.4923	24.61592	.7539781
#1	-.008517	.0364770	.0051088
#2	-.004852	.0315213	.0050328
#3	.001677	.0219567	.0050779

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3397.662	36615.99	2925.339	3820.771	4778.851
Stddev	1.473	107.59	12.772	9.253	8.074
%RSD	.0433614	.2938342	.4366035	.2421677	.1689596
#1	3397.617	36710.72	2929.236	3830.653	4772.735
#2	3399.158	36499.01	2935.709	3812.313	4788.003
#3	3396.212	36638.24	2911.073	3819.347	4775.813

Sample Name: ICSABDLX20 Acquired: 6/19/2025 15:28:42 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024058	.0062675	.0024448	.0029319	.0283505	11.98699	.0259247
Stddev	.0028782	.0020248	.0005327	.0025895	.0031345	.05762	.0005946
%RSD	119.6353	32.30655	21.79048	88.32124	11.05641	.4806731	2.293489
#1	.0006989	.0085718	.0027476	.0014770	.0259998	12.02848	.0266077
#2	.0057288	.0047724	.0027570	.0013970	.0271423	11.92121	.0255232
#3	.0007897	.0054583	.0018296	.0059216	.0319093	12.01130	.0256431
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0253939	.0446484	11.72346	.0265369	.0274241	.0232076	5.140000
Stddev	.0003658	.0000555	.06976	.0001742	.0001676	.0011729	.036585
%RSD	1.440558	.1242912	.5950631	.6565509	.6111836	5.054106	.7117679
#1	.0258088	.0445843	11.76646	.0263389	.0273209	.0243822	5.156242
#2	.0251178	.0446802	11.64297	.0266047	.0276175	.0220363	5.098106
#3	.0252551	.0446807	11.76094	.0266670	.0273339	.0232043	5.165652
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0240554	12.33063	.0443019	.0093615	.0627244	.0367434	.0477869
Stddev	.0007723	.09919	.0002624	.0002839	.0034027	.0030316	.0005553
%RSD	3.210619	.8043858	.5923070	3.033111	5.424758	8.250722	1.161943
#1	.0232250	12.40436	.0445163	.0095838	.0637023	.0399271	.0472945
#2	.0241890	12.21786	.0440093	.0094591	.0655310	.0338912	.0476774
#3	.0247522	12.36966	.0443802	.0090416	.0589399	.0364118	.0483887
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019094	.0014459	.0024170	-.001794	.0004175	-.002437	-.000550
Stddev	.0010898	.0020487	.0010364	.000386	.0014147	.002379	.001329
%RSD	57.07741	141.6890	42.87975	21.51021	338.8582	97.61277	241.5807
#1	.0010060	-.000243	.0012933	-.001348	.0018091	-.000569	.000372
#2	.0031198	.000856	.0033354	-.002022	-.001019	-.001627	-.002073
#3	.0016024	.003725	.0026222	-.002011	.000462	-.005116	.000051

Sample Name: ICSABDLX20 Acquired: 6/19/2025 15:28:42 Type: Unk
 Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
 Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001755	.0242251	.0049064
Stddev	.000566	.0037141	.0001459
%RSD	32.22911	15.33150	2.974195
#1	-.001187	.0285002	.0050453
#2	-.002318	.0217921	.0049197
#3	-.001759	.0223832	.0047543

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3395.332	36491.26	2927.823	3806.952	4781.634
Stddev	7.636	450.98	6.062	56.886	10.939
%RSD	.2248884	1.235860	.2070551	1.494261	.2287711
#1	3400.866	37010.45	2933.867	3870.509	4788.363
#2	3386.621	36196.76	2921.742	3760.807	4769.012
#3	3398.510	36266.58	2927.861	3789.542	4787.528

Sample Name: CCV01 Acquired: 6/19/2025 15:33:05 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.855873	5.027290	4.881287	4.990779	5.040817	9.999041	10.01705
Stddev	.007109	.009417	.008465	.008743	.013589	.040877	.03531
%RSD	.1463922	.1873125	.1734136	.1751745	.2695850	.4088047	.3525020
#1	4.854446	5.017810	4.883966	4.983106	5.026204	9.951841	10.02451
#2	4.863587	5.027418	4.871807	4.988936	5.043170	10.02249	9.97861
#3	4.849586	5.036643	4.888088	5.000297	5.053075	10.02279	10.04804
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2570441	2.465145	25.05831	1.002658	2.451254	1.276150	4.981457
Stddev	.0027452	.000885	.07762	.001472	.001506	.013874	.037426
%RSD	1.067971	.0358870	.3097550	.1468025	.0614271	1.087170	.7513033
#1	.2578129	2.465103	25.11544	1.001258	2.452253	1.280830	4.939408
#2	.2539964	2.464282	24.96994	1.004192	2.449522	1.260542	4.993840
#3	.2593228	2.466050	25.08955	1.002525	2.451986	1.287079	5.011121
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.507722	24.80683	2.463671	1.247629	25.14134	2.499280	2.511373
Stddev	.003697	.13611	.001148	.001258	.17065	.011954	.006047
%RSD	.1474381	.5486979	.0465856	.1008688	.6787729	.4782888	.2408006
#1	2.505256	24.76910	2.464970	1.248050	25.20776	2.486936	2.507190
#2	2.505936	24.69356	2.462793	1.246213	24.94747	2.510801	2.508623
#3	2.511973	24.95783	2.463251	1.248622	25.26880	2.500102	2.518307
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.37134	4.928090	5.091862	5.063118	4.876179	5.043584	4.942350
Stddev	.13249	.007432	.057490	.008207	.004445	.062419	.005301
%RSD	.5222082	.1508047	1.129059	.1620843	.0911636	1.237583	.1072569
#1	25.22300	4.925964	5.101537	5.055616	4.872323	5.044246	4.941439
#2	25.47793	4.921952	5.030148	5.061855	4.875173	4.980836	4.937563
#3	25.41308	4.936353	5.143900	5.071882	4.881041	5.105668	4.948047

Sample Name: CCV01 Acquired: 6/19/2025 15:33:05 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.973279	5.064261	5.014709
Stddev	.019371	.010792	.016788
%RSD	.3895057	.2130961	.3347838
#1	4.980000	5.068957	5.020064
#2	4.951442	5.051917	4.995897
#3	4.988394	5.071908	5.028168

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3253.288	35025.97	2843.295	3656.284	4322.535
Stddev	10.797	326.41	4.945	18.942	19.209
%RSD	.3318670	.9319129	.1739313	.5180593	.4443909
#1	3241.423	35086.89	2840.407	3663.050	4300.679
#2	3262.536	34673.39	2849.005	3634.888	4336.740
#3	3255.904	35317.63	2840.473	3670.913	4330.185

Sample Name: CCB01 Acquired: 6/19/2025 15:43:04 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003621	.0005779	.0012706	.0020617	-.002054	.0235998
Stddev	.0028988	.0012040	.0007746	.0015176	.001466	.0086811
%RSD	800.5428	208.3233	60.96509	73.60867	71.35470	36.78443

#1	.0036004	-.000808	.0021651	.0035443	-.000705	.0167119
#2	-.001991	.001362	.0008265	.0021293	-.003614	.0207369
#3	-.000523	.001180	.0008203	.0005114	-.001844	.0333508

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021224	.0001202	.0001085	.0332912	.0000188	.0002457
Stddev	.0008645	.0000336	.0000569	.0027008	.0004905	.0003708
%RSD	40.73075	27.94099	52.47629	8.112618	2607.733	150.8892

#1	.0011505	.0000871	.0000977	.0302483	.0004715	-.000032
#2	.0028056	.0001543	.0001700	.0342212	.0000872	.000102
#3	.0024111	.0001192	.0000577	.0354041	-.000502	.000667

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000209	.0106446	.0004062	-.000281	-.000171	.0001304
Stddev	.000739	.0086660	.0008840	.005051	.000315	.0004283
%RSD	354.2591	81.41213	217.6265	1795.964	184.4925	328.4112

#1	-.000640	.0043935	.0012997	-.002615	-.000346	.0002659
#2	.000644	.0205372	-.000468	-.003742	-.000359	.0004747
#3	-.000630	.0070031	.000387	.005514	.000193	-.000349

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0748407	.0109099	.0049214	.0245860	.0011983	.0079464
Stddev	.0121756	.0025678	.0005772	.0010362	.0014801	.0012821
%RSD	16.26863	23.53687	11.72865	4.214600	123.5168	16.13427

#1	.0618132	.0109454	.0046814	.0238529	.0003479	.0064977
#2	.0859324	.0134598	.0055799	.0241336	.0003397	.0089349
#3	.0767766	.0083245	.0045029	.0257715	.0029073	.0084067

Sample Name: CCB01 Acquired: 6/19/2025 15:43:04 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006267	.0043696	.0106195	.0006369	-.003100	F .0316515
Stddev	.0004333	.0029874	.0012582	.0013777	.001855	.0062795
%RSD	69.15062	68.36762	11.84774	216.2949	59.85894	19.83961
#1	.0009292	.0012250	.0094988	-.000386	-.001082	.0272420
#2	.0001302	.0071700	.0103792	.000093	-.003485	.0288714
#3	.0008206	.0047139	.0119805	.002204	-.004732	.0388412

Elem	Sr4077
Units	ppm
Avg	.0001956
Stddev	.0001665
%RSD	85.11147
#1	.0000110
#2	.0002414
#3	.0003345

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3374.741	36755.73	2919.756	3804.525	4911.311
Stddev	7.927	148.60	37.256	13.098	8.679
%RSD	.2349016	.4042805	1.275985	.3442619	.1767085
#1	3379.080	36586.18	2934.697	3795.803	4905.588
#2	3365.591	36863.29	2947.221	3819.586	4907.048
#3	3379.551	36817.72	2877.349	3798.184	4921.296

Sample Name: Q2336-01 Acquired: 6/19/2025 15:47:34 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1266777	-.047806	.8544400	.0640447	.0245798	155.2010	1.211280
Stddev	.0022571	.001259	.0006318	.0010991	.0015807	.2993	.006976
%RSD	1.781794	2.633771	.0739448	1.716077	6.430804	.1928166	.5758916
#1	.1241305	-.049022	.8551561	.0635983	.0261407	155.0140	1.212552
#2	.1274734	-.046508	.8539611	.0652968	.0229801	155.0428	1.203756
#3	.1284293	-.047889	.8542028	.0632391	.0246187	155.5461	1.217533
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0146712	.0062298	26.54290	.3962736	.2611183	.4310779	359.0997
Stddev	.0001823	.0000799	.12318	.0002810	.0006534	.0027888	.4029
%RSD	1.242485	1.282112	.4640610	.0709034	.2502394	.6469431	.1121900
#1	.0146368	.0061548	26.55605	.3961820	.2618184	.4312706	359.0418
#2	.0148683	.0063138	26.41368	.3960500	.2605247	.4337653	358.7289
#3	.0145086	.0062209	26.65898	.3965890	.2610117	.4281977	359.5284
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.81967	37.73986	.2791668	.0206325	1.170049	.9194460	.9553571
Stddev	.01694	.07672	.0016267	.0008820	.013750	.0058255	.0060485
%RSD	.1565895	.2032797	.5827153	4.274796	1.175183	.6335917	.6331174
#1	10.80688	37.80689	.2810024	.0201424	1.180002	.9180089	.9576863
#2	10.81325	37.75650	.2785945	.0201045	1.175785	.9144735	.9484903
#3	10.83889	37.65619	.2779035	.0216508	1.154359	.9258556	.9598949
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.025067	8.203037	.1414315	.0008674	2.368681	3.461464	.0387573
Stddev	.020716	.016945	.0008337	.0002158	.003237	.015800	.0016572
%RSD	.4122543	.2065687	.5894556	24.88172	.1366790	.4564614	4.275786
#1	5.024042	8.222393	.1422911	.0009878	2.366808	3.463170	.0405221
#2	5.046276	8.195837	.1406264	.0009963	2.372420	3.476343	.0385153
#3	5.004882	8.190881	.1413770	.0006183	2.366816	3.444881	.0372344

Sample Name: Q2336-01 Acquired: 6/19/2025 15:47:34 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.427853	.1688243	.1356245
Stddev	.019080	.0062841	.0008512
%RSD	.4309084	3.722283	.6276023
#1	4.419959	.1671187	.1356823
#2	4.413986	.1635690	.1347458
#3	4.449613	.1757852	.1364452

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4436.820	46511.80	3960.113	4920.962	4306.459
Stddev	3.749	179.25	3.871	26.625	3.534
%RSD	.0845006	.3853783	.0977406	.5410444	.0820741
#1	4432.545	46482.46	3957.175	4922.365	4302.391
#2	4439.549	46703.90	3958.665	4946.856	4308.779
#3	4438.365	46349.03	3964.499	4893.663	4308.207

Sample Name: Q2336-03 Acquired: 6/19/2025 15:51:47 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2066382	-.017786	.1833443	.0759398	.0179572	246.1357	2.648846
Stddev	.0039749	.004434	.0007479	.0018871	.0018967	1.5985	.021147
%RSD	1.923609	24.92733	.4079260	2.485043	10.56238	.6494343	.7983551
#1	.2071987	-.013374	.1842012	.0748153	.0199543	245.6957	2.651791
#2	.2024128	-.022240	.1828226	.0781185	.0161801	247.9081	2.668367
#3	.2103032	-.017743	.1830092	.0748857	.0177371	244.8033	2.626381
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0163468	.0033303	22.15672	.4329139	.4642869	.7763661	424.4877
Stddev	.0000348	.0001403	.13622	.0220923	.0006375	.0067716	3.0657
%RSD	.2129982	4.212260	.6148080	5.103170	.1373121	.8722222	.7222234
#1	.0163210	.0034465	22.15007	.4201022	.4649992	.7807972	423.3988
#2	.0163864	.0031745	22.29614	.4202156	.4640917	.7797299	427.9493
#3	.0163331	.0033699	22.02394	.4584238	.4637698	.7685712	422.1151
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.46989	68.51375	.5017130	.0214173	3.062626	.9469724	.7974293
Stddev	.14070	.43708	.0012575	.0020738	.027849	.0045828	.0340406
%RSD	.6873539	.6379387	.2506389	9.682913	.9093090	.4839384	4.268798
#1	20.43840	68.34347	.5031023	.0229021	3.080327	.9454380	.7771841
#2	20.62366	69.01034	.5006527	.0223020	3.077025	.9521255	.7783737
#3	20.34759	68.18744	.5013840	.0190479	3.030525	.9433538	.8367301
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.652503	7.062120	.1288053	.0032360	.7972982	2.878082	.0343045
Stddev	.089444	.016462	.0037292	.0003640	.0033204	.019062	.0016542
%RSD	.9266427	.2331052	2.895242	11.24734	.4164564	.6623262	4.822253
#1	9.724947	7.080478	.1254456	.0036020	.8008634	2.897512	.0326035
#2	9.680033	7.057211	.1328178	.0032318	.7967372	2.877325	.0359077
#3	9.552530	7.048670	.1281524	.0028741	.7942940	2.859410	.0344022

Sample Name: Q2336-03 Acquired: 6/19/2025 15:51:47 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.673727	.2956328	.1166171
Stddev	.014706	.0014791	.0007826
%RSD	.8786376	.5003195	.6710722
#1	1.671803	.2939601	.1165749
#2	1.689300	.2967681	.1174199
#3	1.660077	.2961701	.1158564

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4190.448	42963.29	3746.548	4595.592	4161.150
Stddev	14.587	1746.61	33.505	172.417	13.849
%RSD	.3480932	4.065352	.8942794	3.751802	.3328076
#1	4173.891	44057.22	3728.126	4711.781	4145.392
#2	4196.048	43883.68	3726.297	4677.508	4171.382
#3	4201.405	40948.97	3785.222	4397.487	4166.677

Sample Name: Q2337-01 Acquired: 6/19/2025 15:56:09 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0659484	-.025849	.8807289	.0387952	.0154568	123.4666	.9357226
Stddev	.0043525	.002270	.0012960	.0031323	.0032537	.6300	.0024618
%RSD	6.599863	8.783222	.1471475	8.073974	21.05004	.5102326	.2630913
#1	.0659953	-.026462	.8814011	.0374377	.0120516	123.4246	.9364040
#2	.0615727	-.027751	.8792350	.0423772	.0157846	122.8587	.9329919
#3	.0702773	-.023336	.8815507	.0365706	.0185341	124.1166	.9377720
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0085423	.0056810	398.0900	.1671973	.1827912	.5485338	303.3481
Stddev	.0001396	.0001062	1.7472	.0008216	.0001281	.0064729	1.5778
%RSD	1.634495	1.869086	.4388918	.4914073	.0701040	1.180029	.5201364
#1	.0086793	.0057250	397.6771	.1665554	.1826481	.5525383	302.9611
#2	.0084002	.0057581	396.5862	.1681232	.1828953	.5410661	301.9998
#3	.0085474	.0055599	400.0066	.1669132	.1828302	.5519970	305.0835
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.830080	238.3319	.2399606	.0170524	12.34229	.6241400	.9517999
Stddev	.018753	1.3529	.0012144	.0009187	.15954	.0034469	.0027989
%RSD	.4896327	.5676518	.5060763	5.387424	1.292639	.5522684	.2940665
#1	3.828632	237.9797	.2412847	.0168318	12.45441	.6209493	.9502850
#2	3.812093	237.1900	.2396982	.0162641	12.15964	.6236748	.9500850
#3	3.849515	239.8261	.2388988	.0180613	12.41281	.6277959	.9550298
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.16843	10.85091	.5960396	-.000723	6.513431	5.599124	.0352732
Stddev	.11706	.00905	.0058431	.000466	.011448	.078877	.0010481
%RSD	.6818058	.0833818	.9803141	64.49112	.1757605	1.408745	2.971238
#1	17.24731	10.86135	.5960870	-.000804	6.500690	5.654805	.0348836
#2	17.03393	10.84556	.5901730	-.000221	6.516752	5.508863	.0364602
#3	17.22404	10.84580	.6018588	-.001143	6.522851	5.633704	.0344757

Sample Name: Q2337-01 Acquired: 6/19/2025 15:56:09 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.574419	.1639119	.6159354
Stddev	.011883	.0097120	.0008653
%RSD	.2597745	5.925137	.1404839
#1	4.584676	.1530045	.6158160
#2	4.561397	.1716225	.6151361
#3	4.577184	.1671089	.6168543

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3778.494	40269.96	3551.667	4224.164	3824.547
Stddev	8.182	243.67	30.015	21.764	8.815
%RSD	.2165478	.6050987	.8450892	.5152266	.2304934
#1	3777.269	40527.64	3541.619	4248.302	3823.688
#2	3770.994	40043.25	3585.417	4206.038	3816.193
#3	3787.220	40239.00	3527.965	4218.152	3833.761

Sample Name: Q2338-01 Acquired: 6/19/2025 16:00:30 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0561232	-.073006	.1607992	.0589689	.0247233	256.4341	.4446971
Stddev	.0027528	.005295	.0010600	.0035527	.0031880	1.0531	.0029452
%RSD	4.904988	7.253144	.6591815	6.024734	12.89472	.4106612	.6622879
#1	.0534237	-.071962	.1614357	.0554580	.0264295	257.0726	.4474232
#2	.0589265	-.078746	.1595756	.0625620	.0266952	255.2186	.4415733
#3	.0560193	-.068311	.1613864	.0588868	.0210453	257.0110	.4450949
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075331	.0005549	32.15549	.1569511	.2266546	.4680137	361.6956
Stddev	.0001594	.0001106	.20365	.0009360	.0003773	.0022079	1.3768
%RSD	2.116376	19.93712	.6333150	.5963646	.1664634	.4717614	.3806391
#1	.0076877	.0005005	32.30161	.1574768	.2269117	.4705607	362.8154
#2	.0075422	.0006822	31.92287	.1558704	.2262215	.4668365	360.1585
#3	.0073693	.0004820	32.24199	.1575060	.2268306	.4666438	362.1130
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.277791	62.02567	.2786961	.0196481	43.27176	.8453230	.5243279
Stddev	.037377	.31648	.0005827	.0006499	.22161	.0046502	.0010527
%RSD	.5135773	.5102422	.2090754	3.307902	.5121348	.5501112	.2007776
#1	7.308269	62.38104	.2793678	.0198922	43.52607	.8410272	.5231442
#2	7.236088	61.77418	.2783263	.0189114	43.11999	.8446809	.5246799
#3	7.289017	61.92180	.2783943	.0201406	43.16923	.8502609	.5251595
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.18994	6.280842	.1384439	.0071717	10.93207	1.903706	.0103312
Stddev	.03260	.008429	.0008815	.0002692	.00837	.013634	.0008056
%RSD	.2913499	.1342081	.6367309	3.753588	.0765913	.7161921	7.797550
#1	11.22608	6.289832	.1392187	.0071817	10.93896	1.919438	.0109192
#2	11.16273	6.273116	.1374848	.0074358	10.92275	1.895330	.0094129
#3	11.18102	6.279578	.1386281	.0068977	10.93451	1.896350	.0106614

Sample Name: Q2338-01 Acquired: 6/19/2025 16:00:30 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	11.55585	.1292040	.1112972
Stddev	.04774	.0040688	.0005686
%RSD	.4131627	3.149104	.5109228
#1	11.60111	.1336671	.1113399
#2	11.50596	.1282434	.1107084
#3	11.56048	.1257014	.1118433

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4044.597	42041.35	3629.289	4511.189	4251.430
Stddev	1.920	46.43	13.648	18.622	6.747
%RSD	.0474798	.1104435	.3760643	.4127891	.1586917
#1	4043.636	42086.42	3613.580	4530.770	4243.732
#2	4043.346	42043.96	3638.246	4493.704	4254.240
#3	4046.808	41993.66	3636.040	4509.095	4256.316

Sample Name: Q2340-01 Acquired: 6/19/2025 16:04:52 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1423839	-.008004	.2599654	.0582580	.0204753	79.50911	.5998633
Stddev	.0042869	.001191	.0010881	.0014069	.0012021	.38072	.0048792
%RSD	3.010807	14.88648	.4185430	2.414905	5.870961	.4788440	.8133884
#1	.1473154	-.007829	.2607884	.0598808	.0213322	79.20088	.6008656
#2	.1402883	-.006910	.2587318	.0575100	.0191011	79.93470	.6041635
#3	.1395478	-.009273	.2603762	.0573831	.0209925	79.39174	.5945608
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0126271	-.000959	53.40839	.2485291	.1313738	.2080293	384.9402
Stddev	.0002096	.000087	.24933	.0013078	.0005003	.0015743	1.2890
%RSD	1.660083	9.019291	.4668448	.5262262	.3808393	.7567859	.3348622
#1	.0127153	-.000890	53.44714	.2484866	.1318297	.2072568	384.8398
#2	.0127781	-.001056	53.63607	.2498576	.1308385	.2098406	386.2765
#3	.0123877	-.000932	53.14194	.2472430	.1314530	.2069903	383.7043
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.184500	33.96033	.1973018	.0239527	9.457403	.3810470	.6559134
Stddev	.014184	.20692	.0009032	.0005079	.089284	.0034859	.0009378
%RSD	.4454023	.6092853	.4577594	2.120437	.9440648	.9148354	.1429756
#1	3.181648	33.91479	.1963421	.0234377	9.392861	.3850723	.6569408
#2	3.199893	34.18622	.1974281	.0244532	9.559297	.3790291	.6551033
#3	3.171958	33.77997	.1981352	.0239671	9.420051	.3790398	.6556961
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.72326	6.264972	.2941493	-.003947	.7387019	5.851873	.0112153
Stddev	.15013	.002739	.0015960	.000349	.0006794	.041461	.0011906
%RSD	1.400087	.0437118	.5425922	8.852792	.0919719	.7085162	10.61562
#1	10.65698	6.265548	.2952058	-.003966	.7394489	5.823485	.0106782
#2	10.89513	6.267377	.2949288	-.003589	.7381210	5.899453	.0125797
#3	10.61766	6.261991	.2923133	-.004287	.7385358	5.832681	.0103879

Sample Name: Q2340-01 Acquired: 6/19/2025 16:04:52 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.007170	.1788790	.3493406
Stddev	.014296	.0058810	.0024157
%RSD	.7122482	3.287678	.6915018
#1	2.008198	.1807234	.3497356
#2	2.020925	.1722968	.3515345
#3	1.992388	.1836166	.3467518

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3618.115	38541.69	3211.330	4038.040	4417.885
Stddev	9.579	85.18	34.853	9.985	7.523
%RSD	.2647548	.2210024	1.085322	.2472825	.1702835
#1	3629.168	38567.29	3230.588	4040.152	4426.529
#2	3612.213	38446.65	3171.097	4027.167	4414.308
#3	3612.965	38611.14	3232.305	4046.800	4412.818

Sample Name: Q2339-01 Acquired: 6/19/2025 16:09:17 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0582669	-.002421	.2663867	.0621491	.0222195	162.4294	2.608316
Stddev	.0009093	.002891	.0027115	.0007259	.0027388	.3537	.006634
%RSD	1.560554	119.3919	1.017867	1.168001	12.32623	.2177295	.2543367
#1	.0577405	-.004572	.2680056	.0617459	.0201481	162.5615	2.611275
#2	.0593169	.000865	.2632564	.0617143	.0211855	162.0288	2.600718
#3	.0577434	-.003557	.2678981	.0629871	.0253247	162.6981	2.612956
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0158993	.0024580	36.51237	.3037093	.2316866	.3277964	413.6596
Stddev	.0002141	.0000708	.13564	.0007209	.0005843	.0022592	.5018
%RSD	1.346624	2.881459	.3714973	.2373749	.2522139	.6892109	.1212972
#1	.0158775	.0025125	36.56857	.3044241	.2310486	.3296902	413.8538
#2	.0156969	.0024836	36.35766	.3037214	.2318155	.3252957	413.0897
#3	.0161234	.0023779	36.61088	.3029824	.2321958	.3284033	414.0352
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.48413	96.05450	.5163856	.0251516	5.347651	.4081688	.9723391
Stddev	.02366	.10770	.0010345	.0006361	.048409	.0079939	.0015846
%RSD	.1894936	.1121283	.2003292	2.529085	.9052303	1.958471	.1629671
#1	12.50282	96.15144	.5168482	.0245957	5.390590	.4171940	.9734772
#2	12.45753	95.93856	.5152006	.0250139	5.295189	.4019795	.9730109
#3	12.49203	96.07351	.5171081	.0258453	5.357175	.4053330	.9705293
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.19066	10.05790	.3320289	.0015165	.6967117	1.758969	.0140571
Stddev	.29852	.01712	.0014827	.0003769	.0035445	.020019	.0004800
%RSD	.8731003	.1702287	.4465646	24.85268	.5087464	1.138116	3.414759
#1	34.42840	10.06356	.3317415	.0012101	.6930131	1.764143	.0143467
#2	33.85563	10.03867	.3336343	.0019373	.7000787	1.736870	.0135030
#3	34.28793	10.07148	.3307109	.0014020	.6970433	1.775893	.0143214

Sample Name: Q2339-01 Acquired: 6/19/2025 16:09:17 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.567417	.5250507	.1777058
Stddev	.008761	.0022206	.0006066
%RSD	.1918093	.4229327	.3413413
#1	4.568595	.5275884	.1771066
#2	4.558126	.5240997	.1776914
#3	4.575528	.5234640	.1783195

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4188.158	44328.68	3768.587	4664.475	4160.804
Stddev	6.677	91.95	21.651	5.627	10.250
%RSD	.1594282	.2074226	.5745136	.1206434	.2463480
#1	4191.337	44319.58	3754.039	4665.056	4164.457
#2	4192.651	44241.62	3793.469	4658.579	4168.727
#3	4180.485	44424.84	3758.253	4669.789	4149.228

Sample Name: Q2341-05 Acquired: 6/19/2025 16:13:38 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0846919	-.019830	.1990541	.0451240	.0183228	152.7950	.7393318
Stddev	.0012553	.000826	.0017994	.0021463	.0012511	.4065	.0036479
%RSD	1.482154	4.164660	.9039899	4.756420	6.827820	.2660197	.4934077
#1	.0842457	-.019565	.2003369	.0450376	.0191076	152.3291	.7351380
#2	.0861093	-.020755	.1969971	.0430223	.0189808	152.9792	.7410879
#3	.0837207	-.019169	.1998281	.0473122	.0168801	153.0768	.7417696
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0120484	.0008863	19.82383	.2278758	.1490704	.9019500	296.8565
Stddev	.0002544	.0000933	.04999	.0007137	.0001250	.0077298	.4322
%RSD	2.111345	10.53194	.2521822	.3132173	.0838610	.8570157	.1455831
#1	.0119120	.0007884	19.77364	.2286997	.1492040	.8996483	296.3605
#2	.0123419	.0008962	19.87362	.2274843	.1490509	.9105692	297.1519
#3	.0118913	.0009743	19.82422	.2274436	.1489562	.8956323	297.0572
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.807030	52.50549	.2756330	.0184047	7.917571	.3548934	.5230171
Stddev	.002443	.12602	.0007392	.0003063	.051550	.0035533	.0003251
%RSD	.0420678	.2400153	.2681640	1.664530	.6510792	1.001241	.0621550
#1	5.809284	52.37287	.2748434	.0184214	7.895115	.3536368	.5231001
#2	5.804434	52.51992	.2763084	.0187023	7.976539	.3589043	.5232926
#3	5.807372	52.62367	.2757473	.0180903	7.881058	.3521391	.5226585
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.06196	4.872240	.1167369	-.001244	1.052031	3.690017	.0112811
Stddev	.11867	.015651	.0021728	.000287	.004367	.024514	.0009679
%RSD	.6955362	.3212258	1.861252	23.02843	.4151090	.6643338	8.579453
#1	17.04920	4.856497	.1145918	-.000919	1.047237	3.683399	.0121862
#2	16.95018	4.887797	.1166825	-.001460	1.055782	3.717160	.0113963
#3	17.18649	4.872426	.1189363	-.001354	1.053074	3.669491	.0102608

Sample Name: Q2341-05 Acquired: 6/19/2025 16:13:38 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.705200	.2338610	.1558496
Stddev	.027237	.0031472	.0004902
%RSD	.5788699	1.345774	.3145608
#1	4.676335	.2357007	.1553347
#2	4.708818	.2302269	.1563108
#3	4.730448	.2356552	.1559032

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4069.074	43024.92	3577.742	4508.509	4273.804
Stddev	8.248	72.47	20.407	8.005	9.413
%RSD	.2027104	.1684459	.5703751	.1775478	.2202428
#1	4071.331	43086.42	3594.252	4516.404	4281.474
#2	4075.959	43043.32	3554.927	4508.724	4276.638
#3	4059.932	42945.02	3584.047	4500.399	4263.300

Sample Name: Q2341-01 Acquired: 6/19/2025 16:18:01 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0950166	-.030456	.2551924	.0331488	.0149858	94.08514	.7462713
Stddev	.0005526	.002861	.0025644	.0017371	.0007204	.11776	.0035078
%RSD	.5816237	9.393092	1.004868	5.240417	4.807004	.1251619	.4700397
#1	.0956545	-.027688	.2523982	.0348958	.0158169	94.06357	.7484376
#2	.0946828	-.030279	.2557411	.0314217	.0145999	94.21219	.7481521
#3	.0947126	-.033401	.2574381	.0331289	.0145406	93.97966	.7422242
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0147502	.0024034	22.54971	.2066490	.1512475	.5577431	230.0844
Stddev	.0001256	.0000968	.04405	.0007155	.0002696	.0048581	.1860
%RSD	.8517600	4.026031	.1953555	.3462354	.1782671	.8710223	.0808369
#1	.0146570	.0024891	22.57101	.2060956	.1515169	.5620843	230.1141
#2	.0148931	.0022985	22.57907	.2063945	.1512481	.5586491	230.2537
#3	.0147005	.0024227	22.49906	.2074570	.1509776	.5524957	229.8853
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.905332	54.97621	.2618176	.0126813	15.20119	.3758298	.6731127
Stddev	.008801	.14677	.0008625	.0001820	.14854	.0044817	.0035194
%RSD	.1490397	.2669619	.3294321	1.435042	.9771351	1.192478	.5228502
#1	5.906346	55.10720	.2617741	.0127643	15.35086	.3803426	.6755218
#2	5.913582	55.00383	.2609777	.0124727	15.19888	.3757669	.6747424
#3	5.896067	54.81759	.2627010	.0128071	15.05382	.3713799	.6690738
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.75790	11.65989	.0988414	-.001295	.3352528	4.986634	.0135614
Stddev	.24339	.00375	.0030278	.000265	.0048186	.043923	.0005646
%RSD	1.231878	.0321821	3.063260	20.43228	1.437290	.8808162	4.163010
#1	19.91963	11.66021	.0953897	-.001100	.3296898	5.028627	.0135238
#2	19.87608	11.66347	.1000862	-.001189	.3381241	4.990269	.0130166
#3	19.47798	11.65599	.1010484	-.001596	.3379447	4.941007	.0141438

Sample Name: Q2341-01 Acquired: 6/19/2025 16:18:01 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.854782	.1943152	.0975892
Stddev	.023473	.0036614	.0002691
%RSD	.4009176	1.884246	.2757213
#1	5.870577	.1925109	.0978943
#2	5.865961	.1985285	.0974878
#3	5.827810	.1919060	.0973856

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4428.636	47195.51	3932.428	4955.695	4222.749
Stddev	11.123	136.91	26.082	8.748	13.345
%RSD	.2511558	.2900993	.6632429	.1765260	.3160181
#1	4436.185	47104.85	3903.840	4945.593	4235.703
#2	4433.861	47353.01	3938.517	4960.731	4223.500
#3	4415.863	47128.69	3954.926	4960.760	4209.045

Sample Name: Q2340-04 Acquired: 6/19/2025 16:22:25 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.012225	.0096433	.0064863	-.006309	.0010937	.0615717	.2052717
Stddev	.003332	.0035614	.0014523	.001791	.0023148	.0108771	.0040783
%RSD	27.25737	36.93118	22.39030	28.39407	211.6449	17.66578	1.986791

#1	-.014818	.0102038	.0081627	-.008052	.0001976	.0490127	.2008862
#2	-.013391	.0058349	.0056117	-.004473	.0037227	.0679741	.2059783
#3	-.008467	.0128912	.0056844	-.006402	-.000639	.0677284	.2089505

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001108	.0001396	54.61855	-.000466	.0138550	.0049446	.0435670
Stddev	.0001328	.0000276	.93426	.000434	.0001261	.0003680	.0076834
%RSD	119.8199	19.78984	1.710527	93.03230	.9104593	7.442884	17.63581

#1	.0002583	.0001707	53.55802	-.000609	.0137419	.0045679	.0358020
#2	.0000009	.0001300	54.97764	-.000811	.0139910	.0053032	.0511661
#3	.0000732	.0001180	55.31999	.000021	.0138320	.0049626	.0437329

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0636087	4.829393	-.000834	-.000942	261.2535	.0082514	.1234584
Stddev	.0014060	.173379	.000364	.000820	2.2653	.0090879	.0006845
%RSD	2.210440	3.590074	43.60381	87.02371	.8670954	110.1377	.5544291

#1	.0621366	4.630309	-.000808	-.000050	258.6630	.0093955	.1230793
#2	.0637517	4.910649	-.000484	-.001115	262.2347	.0167130	.1230472
#3	.0649378	4.947220	-.001211	-.001662	262.8627	-.001354	.1242485

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.548589	.0702434	.0397558	-.005796	.6644369	1.327723	.0007830
Stddev	.021341	.0027977	.0009478	.000659	.0060503	.020606	.0007671
%RSD	1.378083	3.982911	2.383961	11.36218	.9105931	1.551953	97.97313

#1	1.524078	.0670147	.0390946	-.005124	.6628652	1.305299	.0010012
#2	1.563042	.0717617	.0408416	-.006440	.6593275	1.345825	.0014174
#3	1.558647	.0719537	.0393312	-.005824	.6711179	1.332044	-.000070

Sample Name: Q2340-04 Acquired: 6/19/2025 16:22:25 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003161	.0185988	.2889065
Stddev	.000990	.0044740	.0043415
%RSD	31.33015	24.05550	1.502727
#1	-.002221	.0161180	.2841253
#2	-.003068	.0237636	.2899919
#3	-.004195	.0159147	.2926023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3191.072	34114.55	2873.687	3580.133	4196.293
Stddev	10.817	103.56	39.199	9.942	4.553
%RSD	.3389699	.3035593	1.364064	.2776855	.1084991
#1	3178.605	34005.43	2918.088	3582.420	4191.130
#2	3196.644	34211.47	2843.873	3588.732	4199.734
#3	3197.966	34126.76	2859.100	3569.248	4198.013

Sample Name: Q2348-01 Acquired: 6/19/2025 16:26:58 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005079	.0144460	.1564659	-.004865	.0075854	9.183276
Stddev	.001264	.0044473	.0019558	.001647	.0012952	.033423
%RSD	24.88187	30.78549	1.249967	33.84300	17.07440	.3639496

#1	-.003806	.0142186	.1586708	-.006124	.0089772	9.169900
#2	-.006333	.0101167	.1557865	-.005470	.0064155	9.221314
#3	-.005097	.0190025	.1549404	-.003002	.0073636	9.158612

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2026199	.0008878	.0008266	122.7057	.0311205	.0258455
Stddev	.0010420	.0001453	.0000545	.3442	.0016117	.0004354
%RSD	.5142851	16.37000	6.594940	.2805167	5.178949	1.684611

#1	.2014947	.0007366	.0008435	122.8913	.0301177	.0260438
#2	.2028133	.0010264	.0007656	122.9173	.0302641	.0261464
#3	.2035517	.0009004	.0008707	122.3086	.0329796	.0253462

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1566876	35.92347	.6792031	19.65643	.0223186	.0027384
Stddev	.0009626	.09998	.0012137	.01954	.0001633	.0005321
%RSD	.6143658	.2783251	.1786999	.0993830	.7316981	19.43196

#1	.1575404	35.98171	.6804577	19.67370	.0225065	.0023270
#2	.1568787	35.98067	.6791167	19.66037	.0222393	.0025487
#3	.1556438	35.80802	.6780349	19.63523	.0222102	.0033393

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.11085	.0242885	.9640750	16.53485	4.577848	.0831372
Stddev	.27135	.0035721	.0048184	.08296	.006311	.0009308
%RSD	.6600386	14.70686	.4997979	.5017343	.1378643	1.119638

#1	41.35235	.0273807	.9612274	16.62995	4.580236	.0821108
#2	41.16299	.0203784	.9696383	16.47732	4.582617	.0839267
#3	40.81722	.0251063	.9613594	16.49729	4.570691	.0833742

Sample Name: Q2348-01 Acquired: 6/19/2025 16:26:58 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013098	6.737367	F 21.37390	.0056262	.4415502	.0365581
Stddev	.0005091	.011653	.22324	.0012915	.0041560	.0056108
%RSD	38.86768	.1729547	1.044436	22.95549	.9412179	15.34775
#1	.0017036	6.724392	21.60286	.0069941	.4463434	.0337729
#2	.0007349	6.746941	21.36196	.0054567	.4393560	.0328849
#3	.0014909	6.740767	21.15687	.0044278	.4389512	.0430167

Elem	Sr4077
Units	ppm
Avg	.3326094
Stddev	.0008313
%RSD	.2499273
#1	.3318759
#2	.3335123
#3	.3324399

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3347.341	36242.19	2959.036	3769.563	4453.031
Stddev	12.085	77.42	18.232	9.061	17.825
%RSD	.3610424	.2136102	.6161425	.2403799	.4002793
#1	3340.710	36242.12	2947.599	3775.554	4443.421
#2	3340.022	36164.80	2949.447	3759.139	4442.073
#3	3361.290	36319.64	2980.061	3773.997	4473.598

Sample Name: CCV02 Acquired: 6/19/2025 16:31:25 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin 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	4.872613	5.034472	4.905236	5.024787	5.064981	10.64069	10.66764
Stddev	.006960	.010944	.006894	.003683	.002187	.79263	.78977
%RSD	.1428452	.2173727	.1405361	.0732878	.0431856	7.449069	7.403387
#1	4.873333	5.046814	4.905483	5.027343	5.062610	11.55159	11.57280
#2	4.865320	5.030650	4.898221	5.020566	5.065411	10.26241	10.31125
#3	4.879185	5.025953	4.912002	5.026453	5.066921	10.10806	10.11887
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2744204	2.475804	26.59866	1.021891	2.462741	1.367208	5.289853
Stddev	.0168231	.000428	2.05410	.019639	.001293	.083129	.460556
%RSD	6.130414	.0172915	7.722569	1.921846	.0524901	6.080202	8.706409
#1	.2931228	2.476210	28.95378	1.038900	2.463819	1.460188	5.819476
#2	.2696170	2.475845	25.66480	1.026377	2.463095	1.341368	5.066708
#3	.2605214	2.475357	25.17740	1.000398	2.461308	1.300068	4.983374
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.659460	26.54436	2.475484	1.277152	26.83124	2.643994	2.554517
Stddev	.207363	1.97406	.002588	.026070	1.65132	.195801	.053264
%RSD	7.797168	7.436852	.1045504	2.041250	6.154470	7.405513	2.085104
#1	2.897241	28.82010	2.478094	1.302724	28.66805	2.868181	2.604909
#2	2.564948	25.51911	2.472918	1.278122	26.35607	2.557258	2.559858
#3	2.516191	25.29387	2.475440	1.250611	25.46961	2.506542	2.498783
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.93535	4.964029	5.409069	5.084561	5.007962	5.419116	4.955551
Stddev	1.51942	.005206	.335155	.002480	.009203	.326780	.001721
%RSD	5.640989	.1048686	6.196171	.0487746	.1837635	6.030137	.0347271
#1	28.63263	4.969188	5.785746	5.085703	4.998331	5.783373	4.955340
#2	26.47151	4.964121	5.297639	5.081715	5.008887	5.322268	4.953946
#3	25.70192	4.958778	5.143821	5.086263	5.016667	5.151707	4.957368

Sample Name: CCV02 Acquired: 6/19/2025 16:31:25 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.291534	5.486650	5.362667
Stddev	.402441	.411957	.397481
%RSD	7.605367	7.508355	7.411995
#1	5.751523	5.959056	5.817788
#2	5.118688	5.298746	5.186484
#3	5.004391	5.202147	5.083729

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3268.178	34872.67	2711.442	3625.455	4337.258
Stddev	4.939	598.01	157.836	70.986	6.350
%RSD	.1511249	1.714853	5.821124	1.957989	.1464099
#1	3262.535	34322.82	2535.777	3559.003	4329.984
#2	3271.717	34785.83	2757.216	3617.122	4341.696
#3	3270.281	35509.36	2841.332	3700.239	4340.093

Sample Name: CCB02 Acquired: 6/19/2025 16:35:41 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010753	.0002108	-.000594	.0045728	-.000679	.0002177
Stddev	.0012963	.0012202	.000962	.0030479	.000802	.0439333
%RSD	120.5510	578.8045	161.7668	66.65307	118.1516	20180.56

#1	.0025004	-.000834	-.000348	.0054668	-.001432	-.037705
#2	-.000034	-.000085	.000220	.0070738	-.000769	-.010002
#3	.000759	.001552	-.001655	.0011779	.000164	.048360

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021877	.0002471	.0000415	-.004500	-.000190	.0001796
Stddev	.0006360	.0000615	.0000430	.004413	.000865	.0001234
%RSD	29.07230	24.88001	103.4926	98.06603	454.9409	68.70752

#1	.0021802	.0003181	.0000492	-.000918	.000197	.0000897
#2	.0028274	.0002095	-.000005	-.009429	-.001181	.0001288
#3	.0015555	.0002137	.000080	-.003153	.000414	.0003203

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000693	.0054119	-.001124	.0033093	.0001235	-.000541
Stddev	.000648	.0254272	.001006	.0301609	.0005119	.000900
%RSD	93.56332	469.8361	89.47746	911.3918	414.6071	166.2754

#1	-.001437	-.013428	-.000012	.0141264	.0003014	-.001464
#2	-.000392	.034334	-.001389	-.030768	-.000454	-.000495
#3	-.000250	-.004670	-.001971	.026570	.000523	.000335

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0666681	.0060966	-.000750	.0063894	-.000064	.0138955
Stddev	.0097710	.0060716	.000801	.0005894	.001690	.0008004
%RSD	14.65619	99.58944	106.6805	9.224174	2646.011	5.760375

#1	.0627819	.0050694	-.000952	.0057144	-.001020	.0148197
#2	.0594382	.0006042	.000132	.0068020	.001887	.0134231
#3	.0777843	.0126163	-.001431	.0066517	-.001059	.0134437

Sample Name: CCB02 Acquired: 6/19/2025 16:35:41 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005650	.0023562	.0006486	.0000847	-.003983	F .0532445
Stddev	.0001926	.0019931	.0008309	.0005366	.001796	.0027196
%RSD	34.09776	84.58832	128.1178	633.1915	45.07936	5.107781
#1	.0005729	.0017461	.0005938	.0003289	-.005870	.0508648
#2	.0007535	.0007395	-.000154	-.000531	-.002295	.0526598
#3	.0003685	.0045830	.001506	.000456	-.003785	.0562089

Elem	Sr4077
Units	ppm
Avg	.0000666
Stddev	.0000397
%RSD	59.64941
#1	.0000805
#2	.0000218
#3	.0000974

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3372.303	36696.80	2891.042	3799.425	4920.450
Stddev	10.276	260.06	13.954	17.581	16.161
%RSD	.3047245	.7086725	.4826489	.4627152	.3284518
#1	3372.075	36451.61	2903.621	3781.150	4922.136
#2	3382.691	36669.25	2876.033	3800.907	4935.702
#3	3362.142	36969.54	2893.473	3816.218	4903.512

Sample Name: Q2348-02 Acquired: 6/19/2025 16:40:10 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.006325	.0130183	.1337453	-.004742	.0064065	7.540376
Stddev	.001004	.0014685	.0028329	.003170	.0015423	.007021
%RSD	15.87045	11.28045	2.118116	66.85151	24.07345	.0931166

#1	-.006601	.0115473	.1311088	-.003455	.0062612	7.533139
#2	-.005212	.0130233	.1367404	-.008353	.0080164	7.540831
#3	-.007162	.0144844	.1333869	-.002418	.0049421	7.547159

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1679047	.0006871	.0008209	101.7734	.0318350	.0239346
Stddev	.0016801	.0000268	.0000817	.4660	.0005791	.0002883
%RSD	1.000595	3.894800	9.956072	.4578432	1.819196	1.204722

#1	.1665654	.0007147	.0007621	101.3015	.0324564	.0236128
#2	.1673590	.0006613	.0009143	101.7857	.0313103	.0241696
#3	.1697898	.0006855	.0007864	102.2332	.0317383	.0240214

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1287584	28.17279	.5197263	19.55554	.0229739	.0028631
Stddev	.0013240	.08638	.0030407	.10047	.0004165	.0004313
%RSD	1.028296	.3066222	.5850625	.5137613	1.812864	15.06267

#1	.1272407	28.09465	.5162895	19.45052	.0230639	.0033534
#2	.1293574	28.15816	.5220671	19.65074	.0233380	.0025426
#3	.1296770	28.26555	.5208223	19.56535	.0225198	.0026932

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.13740	.0266793	.8121785	13.33475	3.843613	.0823959
Stddev	.37569	.0011065	.0046218	.09855	.086170	.0007636
%RSD	.7804546	4.147426	.5690657	.7390461	2.241894	.9267329

#1	47.70641	.0277351	.8124141	13.22161	3.792683	.0831468
#2	48.31016	.0267745	.8166780	13.38081	3.943103	.0824206
#3	48.39565	.0255282	.8074434	13.40184	3.795051	.0816202

Sample Name: Q2348-02 Acquired: 6/19/2025 16:40:10 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001692	6.317555	F 19.74470	.0038963	.3672560	.0327510
Stddev	.0009732	.154098	.13617	.0011320	.0063965	.0064925
%RSD	575.0108	2.439209	.6896574	29.05210	1.741696	19.82395
#1	-.000733	6.220459	19.58775	.0029157	.3743567	.0336000
#2	.000041	6.495237	19.81509	.0036383	.3654662	.0387772
#3	.001200	6.236968	19.83128	.0051350	.3619450	.0258757

Elem	Sr4077
Units	ppm
Avg	.2907234
Stddev	.0016996
%RSD	.5846111
#1	.2888425
#2	.2911790
#3	.2921488

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3281.215	35719.33	2922.262	3741.887	4370.408
Stddev	64.620	246.13	17.512	29.756	91.016
%RSD	1.969395	.6890777	.5992566	.7952024	2.082541
#1	3307.386	35537.91	2942.220	3723.866	4414.462
#2	3207.615	35620.58	2909.465	3725.563	4265.747
#3	3328.645	35999.50	2915.101	3776.232	4431.013

Sample Name: CCV03 Acquired: 6/19/2025 16:44:40 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin 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	5.006771	5.155195	5.040742	5.158038	5.189435	10.27167	10.30118
Stddev	.007975	.004917	.006978	.004934	.009916	.06467	.04561
%RSD	.1592793	.0953890	.1384301	.0956643	.1910884	.6295798	.4427241
#1	4.998306	5.153758	5.045535	5.161544	5.190508	10.25534	10.35384
#2	5.007865	5.160670	5.043954	5.152395	5.179027	10.34294	10.27549
#3	5.014143	5.151155	5.032736	5.160175	5.198772	10.21673	10.27422
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2630344	2.543783	25.64561	1.031204	2.537863	1.311040	5.128865
Stddev	.0025489	.002644	.07827	.001471	.001937	.011751	.031814
%RSD	.9690406	.1039451	.3052126	.1426719	.0763289	.8963331	.6202838
#1	.2605464	2.541386	25.70290	1.031103	2.537603	1.303337	5.103435
#2	.2656402	2.543344	25.67751	1.029786	2.539917	1.324566	5.164538
#3	.2629167	2.546619	25.55642	1.032723	2.536070	1.305217	5.118621
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.552994	25.68318	2.542894	1.283731	25.90199	2.562302	2.560399
Stddev	.004601	.16899	.000412	.000636	.17480	.017226	.010838
%RSD	.1802163	.6579681	.0162009	.0495157	.6748329	.6722741	.4232973
#1	2.553413	25.57732	2.542766	1.284464	25.76578	2.571969	2.548184
#2	2.557371	25.87807	2.542561	1.283344	26.09909	2.572523	2.564148
#3	2.548198	25.59415	2.543354	1.283384	25.84111	2.542414	2.568865
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.92851	5.107187	5.189693	5.200039	5.057831	5.210748	5.091752
Stddev	.16709	.008227	.057380	.012493	.000728	.051844	.002515
%RSD	.6444326	.1610844	1.105643	.2402523	.0143851	.9949381	.0494014
#1	25.78566	5.103874	5.143009	5.196038	5.058072	5.165995	5.089981
#2	26.11225	5.101134	5.253752	5.190036	5.057013	5.267558	5.090644
#3	25.88762	5.116554	5.172318	5.214042	5.058407	5.198692	5.094632

Sample Name: CCV03 Acquired: 6/19/2025 16:44:40 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.095646	5.270149	5.178777
Stddev	.032993	.012510	.019023
%RSD	.6474819	.2373720	.3673328
#1	5.133506	5.265925	5.200139
#2	5.073038	5.284224	5.163665
#3	5.080395	5.260298	5.172527

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3189.343	34305.08	2789.238	3593.906	4216.029
Stddev	5.202	173.05	12.612	24.004	11.707
%RSD	.1630945	.5044571	.4521700	.6678990	.2776813
#1	3184.836	34266.99	2802.885	3594.125	4208.926
#2	3188.159	34494.01	2778.012	3617.800	4209.619
#3	3195.035	34154.25	2786.816	3569.794	4229.541

Sample Name: CCB03 Acquired: 6/19/2025 16:48:55 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007820	.0014988	.0004688	.0023298	.0009060	-.007051
Stddev	.0023948	.0035976	.0006486	.0023245	.0009558	.014140
%RSD	306.2531	240.0273	138.3587	99.77296	105.4893	200.5403

#1	.0035286	.0020502	-.000149	.0042472	.0015090	-.004316
#2	-.000313	-.002343	.001145	-.000256	-.000196	.005522
#3	-.000870	.004789	.000411	.002998	.001405	-.022358

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021527	.0001274	.0001386	.0193452	-.000143	.0003205
Stddev	.0008150	.0000528	.0000468	.0096571	.000719	.0003379
%RSD	37.85833	41.43339	33.79903	49.91976	501.7611	105.4281

#1	.0015178	.0001266	.0001889	.0114900	-.000973	.0003428
#2	.0018686	.0000750	.0001308	.0301271	.000310	.0006466
#3	.0030717	.0001806	.0000962	.0164186	.000233	-.000028

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005320	.0085727	.0006130	.0060442	.0005054	-.000023
Stddev	.0006509	.0105440	.0005985	.0328887	.0006021	.000413
%RSD	122.3446	122.9957	97.62934	544.1393	119.1187	1763.468

#1	-.000177	.0200408	.0013040	.0116867	.0011947	.000415
#2	.000670	.0063796	.0002798	.0357465	.0000823	-.000078
#3	.001103	-.000702	.0002553	-.029301	.0002393	-.000407

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0926572	.0075932	.0051430	.0240990	.0016684	.0192340
Stddev	.0107480	.0047637	.0001799	.0100263	.0014780	.0017415
%RSD	11.59975	62.73633	3.497006	41.60464	88.58461	9.054367

#1	.0985415	.0130837	.0053215	.0129572	.0001842	.0172699
#2	.0802519	.0045591	.0051457	.0323942	.0031400	.0205897
#3	.0991782	.0051368	.0049618	.0269455	.0016811	.0198424

Sample Name: CCB03 Acquired: 6/19/2025 16:48:55 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003514	.0069894	.0131894	.0006958	-.004419	F .0655032
Stddev	.0005613	.0036586	.0046625	.0004563	.000688	.0061128
%RSD	159.7455	52.34454	35.35045	65.58021	15.57393	9.332103
#1	.0003362	.0107023	.0079288	.0002765	-.003657	.0625700
#2	-.000202	.0033878	.0168115	.0011818	-.004604	.0725298
#3	.000920	.0068780	.0148278	.0006292	-.004995	.0614098

Elem	Sr4077
Units	ppm
Avg	.0002802
Stddev	.0002410
%RSD	86.03574
#1	.0002871
#2	.0000357
#3	.0005177

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3346.598	36325.73	2942.257	3777.528	4842.714
Stddev	3.314	199.88	380.636	32.404	5.076
%RSD	.0990386	.5502466	12.93688	.8578071	.1048197
#1	3343.555	36387.11	3360.939	3801.538	4838.006
#2	3346.109	36102.35	2617.103	3740.671	4842.043
#3	3350.130	36487.72	2848.727	3790.376	4848.092

Sample Name: Q2348-02DUP Acquired: 6/19/2025 16:53:24 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004393	.0141828	.1289823	-.002660	.0062941	7.419693
Stddev	.002940	.0015554	.0015674	.000688	.0024735	.570521
%RSD	66.91812	10.96667	1.215173	25.87079	39.29919	7.689277

#1	-.003984	.0146853	.1282980	-.002973	.0034385	6.855520
#2	-.001679	.0124383	.1278734	-.003136	.0076713	7.996356
#3	-.007516	.0154247	.1307754	-.001871	.0077724	7.407204

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1796568	.0006018	.0006975	111.6160	.0250595	.0237835
Stddev	.0133228	.0001244	.0001020	8.1912	.0006191	.0001332
%RSD	7.415683	20.67732	14.61952	7.338758	2.470472	.5600824

#1	.1670000	.0004847	.0007926	103.7509	.0245835	.0236541
#2	.1935582	.0007325	.0005898	120.0984	.0257594	.0237762
#3	.1784122	.0005882	.0007101	110.9989	.0248357	.0239202

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1176396	29.69990	.5642070	21.17513	.0206990	.0022024
Stddev	.0088779	2.20015	.0395936	1.68243	.0001341	.0007732
%RSD	7.546680	7.407926	7.017567	7.945318	.6479364	35.10580

#1	.1094787	27.50748	.5252541	19.54095	.0206861	.0013097
#2	.1270928	31.90769	.6044117	22.90198	.0205718	.0026381
#3	.1163473	29.68452	.5629551	21.08246	.0208391	.0026595

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.35951	.0266438	.8343285	14.38483	3.934981	.0902006
Stddev	3.55350	.0072961	.0057971	1.07448	.003466	.0060397
%RSD	6.786726	27.38401	.6948193	7.469558	.0880750	6.695809

#1	48.99402	.0235157	.8405109	13.38671	3.933454	.0838868
#2	56.07509	.0349824	.8334598	15.52212	3.938948	.0959225
#3	52.00941	.0214332	.8290148	14.24566	3.932541	.0907927

Sample Name: Q2348-02DUP Acquired: 6/19/2025 16:53:24 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000638	6.366899	F 19.71943	.0042236	.3405067	.0314580
Stddev	.0003117	.009284	1.29595	.0001794	.0254992	.0067736
%RSD	488.7675	.1458118	6.571963	4.246517	7.488599	21.53209
#1	.0003211	6.358734	18.48503	.0043755	.3162447	.0380810
#2	.0001530	6.364967	21.06922	.0040257	.3670850	.0317496
#3	-.000283	6.376997	19.60403	.0042696	.3381905	.0245433

Elem	Sr4077
Units	ppm
Avg	.3209425
Stddev	.0235763
%RSD	7.345949
#1	.2983563
#2	.3453976
#3	.3190735

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3299.171	35369.32	2870.006	3709.048	4387.364
Stddev	9.209	122.41	198.157	19.550	8.964
%RSD	.2791189	.3460918	6.904410	.5270883	.2043129
#1	3297.087	35310.95	3062.331	3694.223	4390.540
#2	3309.243	35287.01	2666.491	3701.718	4394.308
#3	3291.183	35509.99	2881.195	3731.204	4377.245

Sample Name: Q2348-02LX5 Acquired: 6/19/2025 16:57:51 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004053	.0036452	.0286860	-.002209	.0049541	1.574754	.0361440
Stddev	.001948	.0004370	.0014441	.002463	.0016775	.033441	.0003746
%RSD	48.05252	11.98952	5.034341	111.4796	33.86168	2.123581	1.036369
#1	-.006118	.0038981	.0271708	-.004477	.0041786	1.591808	.0365703
#2	-.003793	.0038969	.0300467	.000410	.0068791	1.536224	.0359944
#3	-.002249	.0031405	.0288406	-.002560	.0038046	1.596231	.0358674
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003051	.0001313	21.65946	.0064328	.0095725	.0267432	6.003917
Stddev	.0001654	.0000933	.03634	.0002418	.0001322	.0007056	.022372
%RSD	54.18903	71.00403	.1677586	3.759019	1.381113	2.638271	.3726242
#1	.0004876	.0002216	21.69162	.0061630	.0095465	.0275576	5.993441
#2	.0002627	.0001371	21.62004	.0065055	.0094553	.0263557	5.988704
#3	.0001652	.0000354	21.66671	.0066299	.0097158	.0263163	6.029604
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1094584	4.243327	.0032944	.0002019	10.18914	.0090632	.1695208
Stddev	.0013137	.048335	.0000829	.0001664	.07986	.0032721	.0006097
%RSD	1.200212	1.139091	2.517011	82.45447	.7837875	36.10277	.3596585
#1	.1098826	4.292317	.0033836	.0003747	10.27920	.0083756	.1697859
#2	.1079849	4.241992	.0032197	.0001882	10.12697	.0061896	.1688234
#3	.1105076	4.195673	.0032799	.0000426	10.16123	.0126245	.1699530
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.325500	.7576707	.0224791	-.001610	1.260529	4.270650	.0004479
Stddev	.010979	.0063512	.0008307	.000126	.012619	.024938	.0002406
%RSD	.4721016	.8382547	3.695200	7.809774	1.001127	.5839317	53.71526
#1	2.337148	.7635561	.0228140	-.001673	1.274781	4.299365	.0005095
#2	2.315343	.7585175	.0215333	-.001691	1.256031	4.258155	.0001825
#3	2.324011	.7509387	.0230901	-.001465	1.250774	4.254429	.0006518

Sample Name: Q2348-02LX5 Acquired: 6/19/2025 16:57:51 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0735130	.0513903	.0620121
Stddev	.0030940	.0019478	.0002382
%RSD	4.208736	3.790144	.3841769
#1	.0763766	.0492013	.0622278
#2	.0739314	.0529320	.0620522
#3	.0702312	.0520376	.0617564

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3417.245	36613.88	2948.159	3810.360	4753.778
Stddev	14.955	182.93	17.218	22.029	24.838
%RSD	.4376462	.4996161	.5840151	.5781287	.5224835
#1	3400.506	36411.51	2929.749	3796.016	4725.543
#2	3421.935	36767.49	2963.864	3835.724	4763.536
#3	3429.293	36662.63	2950.864	3799.340	4772.255

Sample Name: Q2348-02MS Acquired: 6/19/2025 17:02:14 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7689231	1.958365	1.077308	1.735017	.7853643	9.638230
Stddev	.0038142	.005841	.002521	.004921	.0045567	.049429
%RSD	.4960437	.2982422	.2340229	.2836148	.5801994	.5128419

#1	.7688314	1.961865	1.079507	1.730724	.7831503	9.587175
#2	.7651556	1.951623	1.077860	1.733940	.7823377	9.641660
#3	.7727824	1.961608	1.074556	1.740387	.7906049	9.685854

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3765013	.2098651	.1981539	111.4000	.4323200	.2235319
Stddev	.0007081	.0010149	.0001644	.5592	.0005594	.0007706
%RSD	.1880754	.4835809	.0829639	.5019923	.1293869	.3447344

#1	.3761380	.2086983	.1981426	110.8768	.4324613	.2239934
#2	.3773174	.2105428	.1979954	111.3337	.4327952	.2226423
#3	.3760486	.2103542	.1983236	111.9894	.4317036	.2239599

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4269652	32.15844	.7577519	22.94235	.5204495	.0519595
Stddev	.0026488	.22536	.0054974	.19018	.0012093	.0007106
%RSD	.6203671	.7007852	.7254852	.8289454	.2323533	1.367666

#1	.4244531	31.98046	.7537866	22.96915	.5210306	.0520855
#2	.4297322	32.08301	.7554417	22.74019	.5190594	.0511943
#3	.4267102	32.41184	.7640274	23.11770	.5212587	.0525987

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	55.24297	.3306662	.9952427	25.35023	9.646246	.3655705
Stddev	.18004	.0024731	.0065347	.15092	.006398	.0004163
%RSD	.3259042	.7479044	.6565892	.5953561	.0663227	.1138751

#1	55.16500	.3332973	1.001630	25.25394	9.652847	.3651034
#2	55.44885	.3283894	.995528	25.52417	9.645818	.3657058
#3	55.11506	.3303118	.988570	25.27259	9.640073	.3659024

Sample Name: Q2348-02MS Acquired: 6/19/2025 17:02:14 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4121391	6.226273	F 21.35125	.5168853	.5431743	.2373341
Stddev	.0010980	.012859	.05636	.0011406	.0026972	.0058913
%RSD	.2664071	.2065332	.2639852	.2206696	.4965546	2.482271
#1	.4134019	6.232838	21.29637	.5181553	.5454595	.2366681
#2	.4116059	6.211456	21.40899	.5159480	.5401992	.2435301
#3	.4114096	6.234524	21.34841	.5165528	.5438643	.2318042

Elem	Sr4077
Units	ppm
Avg	.5170652
Stddev	.0028235
%RSD	.5460591
#1	.5139635
#2	.5177462
#3	.5194859

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3340.250	35655.79	2904.828	3771.223	4414.501
Stddev	4.211	47.88	10.737	22.417	4.602
%RSD	.1260619	.1342794	.3696362	.5944294	.1042400
#1	3340.607	35603.09	2916.280	3749.050	4413.243
#2	3344.271	35667.68	2894.988	3770.742	4419.601
#3	3335.872	35696.61	2903.217	3793.877	4410.659

Sample Name: Q2348-02MSD Acquired: 6/19/2025 17:06:31 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8291307	2.088886	1.148961	1.862465	.8375832	10.47028
Stddev	.0254275	.051085	.031837	.053611	.0228918	.05674
%RSD	3.066769	2.445546	2.770895	2.878502	2.733081	.5419556

#1	.8367776	2.088039	1.149873	1.866771	.8389539	10.44571
#2	.8498573	2.140388	1.180332	1.913794	.8597588	10.53517
#3	.8007572	2.038229	1.116678	1.806831	.8140368	10.42997

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4101649	.2294912	.2129467	120.7192	.4643227	.2388035
Stddev	.0009950	.0010438	.0061464	.1566	.0170235	.0070389
%RSD	.2425872	.4548206	2.886356	.1296989	3.666306	2.947556

#1	.4113117	.2299828	.2131242	120.5711	.4446663	.2383098
#2	.4095311	.2301985	.2190024	120.8830	.4740108	.2460762
#3	.4096519	.2282924	.2067135	120.7035	.4742910	.2320245

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4660785	34.91929	.8192751	24.64279	.5590592	.0576080
Stddev	.0016489	.08383	.0031669	.13182	.0162525	.0027978
%RSD	.3537894	.2400700	.3865504	.5349136	2.907116	4.856687

#1	.4656284	34.86547	.8156300	24.54560	.5608057	.0546560
#2	.4679058	34.87653	.8208435	24.79283	.5743679	.0602208
#3	.4647014	35.01588	.8213517	24.58994	.5420040	.0579473

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	59.34618	.3702469	1.083164	27.67418	10.29016	.3968929
Stddev	.11650	.0019191	.034891	.22797	.27947	.0017704
%RSD	.1963018	.5183279	3.221233	.8237600	2.715886	.4460546

#1	59.40229	.3720629	1.043119	27.86580	10.29474	.3988024
#2	59.42400	.3682391	1.107023	27.73468	10.56731	.3953062
#3	59.21224	.3704387	1.099349	27.42207	10.00843	.3965701

Sample Name: Q2348-02MSD Acquired: 6/19/2025 17:06:31 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4376816	6.633807	F 22.95494	.5553567	.5872004	.2518989
Stddev	.0128218	.188164	.11015	.0175022	.0011596	.0015684
%RSD	2.929481	2.836448	.4798365	3.151529	.1974842	.6226415
#1	.4370830	6.632170	23.08055	.5569049	.5880776	.2517711
#2	.4507923	6.822784	22.90938	.5720334	.5858856	.2535274
#3	.4251697	6.446466	22.87488	.5371318	.5876379	.2503984

Elem	Sr4077
Units	ppm
Avg	.5648432
Stddev	.0009259
%RSD	.1639171
#1	.5642668
#2	.5643517
#3	.5659112

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3401.578	36266.22	2909.905	3825.898	4487.533
Stddev	92.231	1106.18	24.190	105.322	120.309
%RSD	2.711427	3.050153	.8312901	2.752864	2.680969
#1	3398.110	37543.24	2883.716	3945.891	4479.543
#2	3311.130	35651.31	2914.587	3748.754	4371.418
#3	3495.495	35604.13	2931.411	3783.050	4611.639

Sample Name: Q2348-02A Acquired: 6/19/2025 17:10:49 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7537351	1.916838	1.056940	1.895245	.7948351	9.203460
Stddev	.0063366	.001940	.004298	.001872	.0013914	.014275
%RSD	.8406953	.1012068	.4066548	.0987768	.1750513	.1551003

#1	.7486947	1.915620	1.054701	1.893519	.7963054	9.212304
#2	.7608486	1.915818	1.061895	1.894982	.7935391	9.211083
#3	.7516619	1.919075	1.054224	1.897235	.7946607	9.186992

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3659985	.2043545	.1932456	103.7789	.4327262	.2177962
Stddev	.0002062	.0012599	.0003442	.0937	.0016154	.0005281
%RSD	.0563373	.6165334	.1781168	.0902645	.3733084	.2424800

#1	.3657709	.2053673	.1928947	103.6754	.4308711	.2178098
#2	.3660519	.2047525	.1932595	103.8578	.4338225	.2183173
#3	.3661728	.2029436	.1935827	103.8036	.4334849	.2172614

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4338471	30.99582	.7231724	21.54602	.5094232	.0704145
Stddev	.0023007	.05478	.0013838	.17640	.0004949	.0004989
%RSD	.5303089	.1767370	.1913499	.8187317	.0971398	.7085130

#1	.4360534	30.96525	.7233483	21.37165	.5088585	.0708184
#2	.4340256	31.05906	.7217091	21.72438	.5097809	.0698568
#3	.4314623	30.96315	.7244599	21.54202	.5096304	.0705683

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.41699	.3303223	.9961718	23.96205	9.447530	.3573652
Stddev	.18366	.0109087	.0048613	.12361	.008705	.0018935
%RSD	.3572026	3.302449	.4879947	.5158683	.0921436	.5298617

#1	51.58352	.3300476	.9973899	23.81955	9.437565	.3594968
#2	51.44746	.3195535	1.000308	24.02612	9.453653	.3567207
#3	51.22000	.3413658	.990817	24.04047	9.451373	.3558780

Sample Name: Q2348-02A Acquired: 6/19/2025 17:10:49 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4031116	6.105292	F 19.91322	.6823756	.5385026	.2314138
Stddev	.0007498	.006016	.18784	.0025787	.0017493	.0027336
%RSD	.1860141	.0985348	.9433037	.3778931	.3248489	1.181262
#1	.4027110	6.098399	20.12467	.6805015	.5368629	.2315791
#2	.4026471	6.107995	19.84938	.6813089	.5403441	.2286014
#3	.4039767	6.109482	19.76562	.6853165	.5383007	.2340611

Elem	Sr4077
Units	ppm
Avg	.4920656
Stddev	.0002538
%RSD	.0515797
#1	.4919383
#2	.4923579
#3	.4919007

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3364.577	35949.42	2936.076	3784.169	4466.108
Stddev	6.079	178.33	2.018	7.881	7.089
%RSD	.1806676	.4960565	.0687154	.2082682	.1587291
#1	3367.189	36147.34	2934.619	3792.398	4473.715
#2	3368.914	35899.69	2935.231	3776.689	4464.923
#3	3357.630	35801.24	2938.379	3783.420	4459.686

Sample Name: Q2349-01 Acquired: 6/19/2025 17:15:06 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030760	.0159903	.2706908	-.002198	.0114695	15.72185
Stddev	.0037031	.0031732	.0042985	.001739	.0014260	.04550
%RSD	120.3877	19.84429	1.587959	79.12869	12.43263	.2894022

#1	.0035074	.0182944	.2756431	-.003534	.0116931	15.74838
#2	.0065445	.0173054	.2685027	-.000231	.0127705	15.74786
#3	-.000824	.0123710	.2679266	-.002830	.0099450	15.66931

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3600434	.0014427	.0015032	215.2727	.0542125	.0355967
Stddev	.0011139	.0001161	.0001540	.5226	.0004390	.0005478
%RSD	.3093877	8.048775	10.24328	.2427545	.8097576	1.538979

#1	.3587867	.0014191	.0016519	215.6371	.0541998	.0362002
#2	.3609094	.0013403	.0013445	215.5070	.0546577	.0354592
#3	.3604340	.0015689	.0015131	214.6739	.0537800	.0351308

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2465078	61.45377	1.157245	36.44387	.0467055	.0051579
Stddev	.0018224	.41220	.006913	.11132	.0007173	.0000653
%RSD	.7392883	.6707554	.5973390	.3054659	1.535867	1.265897

#1	.2451221	61.53044	1.161178	36.55982	.0472745	.0051293
#2	.2458290	61.82226	1.161294	36.43396	.0458997	.0052326
#3	.2485721	61.00861	1.149263	36.33784	.0469422	.0051118

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	92.24741	.0450883	1.731010	31.31532	8.314837	.1514996
Stddev	.58026	.0028613	.006274	.39270	.141645	.0008160
%RSD	.6290269	6.345885	.3624354	1.254022	1.703525	.5386268

#1	91.92483	.0474865	1.731759	31.08877	8.473099	.1507738
#2	91.90012	.0419211	1.724395	31.08841	8.199954	.1523829
#3	92.91729	.0458571	1.736875	31.76877	8.271458	.1513420

Sample Name: Q2349-01 Acquired: 6/19/2025 17:15:06 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0066476	10.51136	F 37.67467	.0078449	.7309488	.0509061
Stddev	.0003779	.16469	.32023	.0004696	.0041676	.0058301
%RSD	5.685293	1.566736	.8499746	5.986319	.5701675	11.45259
#1	.0063246	10.69271	37.52496	.0073103	.7357063	.0574411
#2	.0070633	10.37113	37.45672	.0080338	.7279426	.0462386
#3	.0065549	10.47025	38.04232	.0081907	.7291974	.0490386

Elem	Sr4077
Units	ppm
Avg	.6309840
Stddev	.0009803
%RSD	.1553632
#1	.6298551
#2	.6314763
#3	.6316206

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3279.524	34960.08	2935.271	3704.579	4180.621
Stddev	44.753	176.61	13.141	5.709	63.995
%RSD	1.364611	.5051778	.4476988	.1541185	1.530748
#1	3228.935	34821.71	2945.046	3698.600	4109.392
#2	3313.950	34899.52	2940.435	3705.163	4233.269
#3	3295.687	35159.00	2920.332	3709.974	4199.203

Sample Name: Q2349-04 Acquired: 6/19/2025 17:19:31 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017635	.0147835	.2647000	-.002846	.0127281	15.35445
Stddev	.0016829	.0013496	.0004426	.002518	.0035919	.07521
%RSD	95.43006	9.129278	.1671919	88.47599	28.22045	.4898328

#1	-.000157	.0143130	.2641901	-.000679	.0161907	15.30450
#2	.002468	.0163054	.2649252	-.002252	.0129740	15.31789
#3	.002979	.0137321	.2649846	-.005609	.0090195	15.44095

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3658972	.0013166	.0016244	214.1193	.0521595	.0356869
Stddev	.0015610	.0002211	.0000181	1.2208	.0032612	.0003120
%RSD	.4266077	16.78891	1.113406	.5701614	6.252313	.8741238

#1	.3642184	.0010662	.0016428	212.7615	.0533921	.0354029
#2	.3673047	.0013991	.0016067	214.4701	.0546247	.0356370
#3	.3661684	.0014845	.0016236	215.1263	.0484616	.0360208

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2524233	60.71289	1.140140	36.08177	.0497952	.0047551
Stddev	.0010793	.33917	.005623	.16563	.0001381	.0003620
%RSD	.4275772	.5586405	.4932207	.4590522	.2773388	7.612767

#1	.2529851	60.39529	1.135888	35.89238	.0496969	.0045095
#2	.2531058	60.67325	1.138016	36.15337	.0497355	.0045849
#3	.2511790	61.07014	1.146516	36.19956	.0499531	.0051708

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	90.66121	.0528106	1.657527	30.71052	8.233265	.1506824
Stddev	.02596	.0058666	.063195	.21511	.004447	.0013524
%RSD	.0286313	11.10870	3.812615	.7004592	.0540166	.8975227

#1	90.68352	.0477253	1.694391	30.54364	8.230406	.1502000
#2	90.66739	.0592290	1.693633	30.63463	8.238389	.1522099
#3	90.63272	.0514776	1.584557	30.95329	8.231000	.1496374

Sample Name: Q2349-04 Acquired: 6/19/2025 17:19:31 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0069174	10.20028	F 36.26601	.0083434	.7148850	.0473042
Stddev	.0002990	.01031	.09692	.0013227	.0176311	.0079748
%RSD	4.323262	.1010516	.2672350	15.85309	2.466284	16.85859
#1	.0070331	10.18860	36.32458	.0093817	.7037462	.0392677
#2	.0065777	10.20811	36.15415	.0087944	.7352125	.0474290
#3	.0071412	10.20414	36.31931	.0068542	.7056965	.0552159

Elem	Sr4077
Units	ppm
Avg	.6265254
Stddev	.0027286
%RSD	.4355077
#1	.6234272
#2	.6285705
#3	.6275784

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3294.472	35648.08	2949.378	3780.702	4209.536
Stddev	9.153	1184.18	17.546	120.863	13.041
%RSD	.2778321	3.321860	.5948932	3.196841	.3098032
#1	3301.327	34984.03	2961.901	3720.441	4221.212
#2	3298.013	34944.94	2956.910	3701.817	4211.934
#3	3284.078	37015.26	2929.324	3919.848	4195.463

Sample Name: PB168511BS Acquired: 6/19/2025 17:23:56 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7341944	2.075202	.9722397	2.065467	.8371460	2.063916	.2097735
Stddev	.0064827	.003733	.0036910	.001666	.0018533	.010259	.0013392
%RSD	.8829701	.1799012	.3796378	.0806614	.2213783	.4970432	.6383925
#1	.7333745	2.071329	.9752612	2.065226	.8384995	2.053077	.2108162
#2	.7410480	2.075497	.9733321	2.063934	.8350338	2.065196	.2082632
#3	.7281606	2.078778	.9681259	2.067240	.8379047	2.073474	.2102411
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2178109	.1948383	1.096847	.4170988	.1992935	.3362826	3.319886
Stddev	.0013815	.0001566	.011608	.0011313	.0003800	.0021000	.022816
%RSD	.6342748	.0803853	1.058322	.2712197	.1906644	.6244818	.6872656
#1	.2174392	.1948735	1.110163	.4180872	.1989864	.3380268	3.294235
#2	.2193402	.1946671	1.091513	.4173444	.1991757	.3368695	3.327505
#3	.2166532	.1949744	1.088864	.4158650	.1997185	.3339516	3.337918
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2117066	2.156232	.4997695	.0759773	3.073250	.3035104	.2119060
Stddev	.0005128	.036698	.0004298	.0005868	.023024	.0043203	.0009491
%RSD	.2422110	1.701956	.0859890	.7723067	.7491823	1.423427	.4479006
#1	.2120991	2.180734	.4999029	.0762823	3.094621	.3042894	.2127468
#2	.2111264	2.114040	.5001166	.0763488	3.076261	.3073882	.2108768
#3	.2118942	2.173924	.4992888	.0753009	3.048869	.2988537	.2120943
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.961295	5.641653	.3174378	.4136375	.0082050	.9683626	.6831710
Stddev	.059121	.005208	.0020872	.0012698	.0029840	.0052764	.0006102
%RSD	.6597390	.0923057	.6575223	.3069881	36.36830	.5448800	.0893252
#1	9.029333	5.639047	.3185759	.4121755	.0108111	.9732411	.6825977
#2	8.932120	5.647649	.3187086	.4144646	.0088538	.9690842	.6831029
#3	8.922433	5.638262	.3150289	.4142725	.0049499	.9627626	.6838125

Sample Name: PB168511BS Acquired: 6/19/2025 17:23:56 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1954014	.2944688	.2091448
Stddev	.0010642	.0053993	.0005842
%RSD	.5446151	1.833579	.2793094
#1	.1953462	.2987948	.2096357
#2	.1943659	.2961938	.2084987
#3	.1964921	.2884178	.2093000

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3358.731	36208.24	2870.779	3794.159	4761.735
Stddev	7.610	181.53	16.428	31.500	11.538
%RSD	.2265667	.5013538	.5722437	.8302115	.2423114
#1	3359.247	36101.89	2853.664	3771.941	4765.997
#2	3366.069	36417.84	2886.421	3830.208	4770.536
#3	3350.876	36104.97	2872.250	3780.327	4748.672

Sample Name: PB168539BS Acquired: 6/19/2025 17:28:17 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7260735	2.037043	.9534477	2.025102	.8161886	2.749228	.2059195
Stddev	.0002274	.004339	.0004356	.004432	.0021267	.032518	.0034031
%RSD	.0313146	.2130269	.0456823	.2188765	.2605636	1.182807	1.652654
#1	.7258276	2.037072	.9539506	2.027354	.8138359	2.779861	.2085314
#2	.7261170	2.041367	.9532021	2.019995	.8179745	2.715106	.2020709
#3	.7262760	2.032689	.9531904	2.027956	.8167555	2.752716	.2071562
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2127276	.1911921	1.030494	.4083380	.1953099	.3308785	3.222396
Stddev	.0004853	.0000902	.017688	.0018808	.0000700	.0006743	.035696
%RSD	.2281125	.0471646	1.716475	.4606046	.0358508	.2037760	1.107745
#1	.2125256	.1912404	1.045792	.4090282	.1953184	.3302939	3.181504
#2	.2132813	.1910880	1.034564	.4097762	.1952360	.3316161	3.247321
#3	.2123761	.1912478	1.011125	.4062096	.1953753	.3307254	3.238364
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2067306	2.127025	.4909403	.0741563	3.023597	.3044217	.2244011
Stddev	.0021994	.060197	.0003435	.0008357	.017718	.0017142	.0018954
%RSD	1.063909	2.830091	.0699626	1.126895	.5859962	.5630918	.8446384
#1	.2069922	2.196518	.4905666	.0734563	3.038820	.3034886	.2222442
#2	.2044121	2.090954	.4912421	.0739310	3.027823	.3033766	.2258010
#3	.2087875	2.093604	.4910122	.0750815	3.004148	.3064000	.2251582
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.729152	5.546459	.3109869	.4034458	.0061050	.9450289	.6682323
Stddev	.033603	.002075	.0015661	.0002918	.0016081	.0038255	.0018902
%RSD	.3849567	.0374192	.5035756	.0723242	26.34028	.4048049	.2828597
#1	8.767903	5.548650	.3100730	.4037686	.0046742	.9485747	.6660501
#2	8.708050	5.544522	.3127952	.4032009	.0078454	.9455377	.6692878
#3	8.711504	5.546205	.3100924	.4033678	.0057956	.9409745	.6693589

Sample Name: PB168539BS Acquired: 6/19/2025 17:28:17 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1920590	.2653676	.2046494
Stddev	.0025413	.0004666	.0008375
%RSD	1.323189	.1758285	.4092286
#1	.1949657	.2652525	.2052350
#2	.1909541	.2658810	.2036901
#3	.1902572	.2649694	.2050230

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3411.133	36652.75	2921.079	3841.414	4823.253
Stddev	13.416	229.70	11.393	4.942	16.912
%RSD	.3933112	.6266969	.3900114	.1286574	.3506321
#1	3423.952	36409.39	2908.552	3846.468	4839.016
#2	3397.190	36683.08	2923.865	3836.592	4805.389
#3	3412.257	36865.78	2930.820	3841.181	4825.354

Sample Name: CCV04 Acquired: 6/19/2025 17:32:38 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin 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	4.863644	4.965556	4.897317	5.006662	5.004609	9.854354	9.971192
Stddev	.001712	.012345	.006148	.012470	.007356	.032070	.031519
%RSD	.0352000	.2486049	.1255347	.2490771	.1469833	.3254446	.3161025

#1	4.861777	4.979562	4.901176	5.010164	5.000416	9.818222	9.966339
#2	4.864014	4.956259	4.890227	4.992814	5.000309	9.879446	10.00486
#3	4.865141	4.960847	4.900548	5.017006	5.013103	9.865395	9.94238

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2537354	2.460944	24.76036	.9969327	2.460396	1.260640	4.892171
Stddev	.0018811	.001747	.08289	.0020980	.001528	.010147	.028469
%RSD	.7413573	.0709864	.3347494	.2104481	.0620979	.8048960	.5819282

#1	.2516634	2.462318	24.74603	.9952283	2.460906	1.249576	4.921788
#2	.2553358	2.458978	24.84947	.9962938	2.458679	1.269511	4.889715
#3	.2542070	2.461537	24.68557	.9992758	2.461604	1.262832	4.865009

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.453309	24.74118	2.456585	1.243824	25.09140	2.457544	2.485581
Stddev	.006428	.05524	.001826	.001694	.12023	.020847	.004483
%RSD	.2620140	.2232770	.0743459	.1362120	.4791657	.8483002	.1803652

#1	2.448611	24.72065	2.458220	1.242114	24.95710	2.445890	2.483662
#2	2.460634	24.80374	2.454614	1.243856	25.18902	2.481613	2.482376
#3	2.450682	24.69913	2.456919	1.245502	25.12808	2.445130	2.490704

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.09563	4.940064	5.012614	5.006577	4.836883	5.051929	4.916231
Stddev	.14657	.001753	.031604	.008215	.011610	.041894	.005956
%RSD	.5840458	.0354908	.6304871	.1640782	.2400312	.8292710	.1211428

#1	24.93011	4.942074	4.976381	5.012580	4.840556	5.004179	4.919327
#2	25.14780	4.938852	5.034497	4.997215	4.846212	5.082521	4.909365
#3	25.20898	4.939265	5.026963	5.009936	4.823881	5.069085	4.920001

Sample Name: CCV04 Acquired: 6/19/2025 17:32:38 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.915300	5.059573	5.006985
Stddev	.022195	.009307	.016123
%RSD	.4515509	.1839484	.3220002
#1	4.916796	5.052462	5.001884
#2	4.936709	5.070107	5.025041
#3	4.892395	5.056151	4.994030

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3283.789	35227.56	2874.404	3700.983	4331.263
Stddev	14.777	183.99	7.698	13.416	16.297
%RSD	.4499839	.5222799	.2678121	.3625067	.3762758
#1	3270.941	35020.64	2879.468	3685.502	4316.273
#2	3299.937	35372.71	2865.545	3708.233	4348.611
#3	3280.490	35289.34	2878.199	3709.214	4328.904

Sample Name: CCB04 Acquired: 6/19/2025 17:36:52 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024277	.0014500	-.000300	-.000324	-.001820	.0000119
Stddev	.0022876	.0008374	.000581	.002700	.000774	.0055011
%RSD	94.22597	57.75034	193.6147	832.8922	42.50563	46349.10

#1	.0000252	.0012638	-.000889	-.000410	-.001341	-.002242
#2	.0045797	.0007214	.000273	.002418	-.001407	-.004005
#3	.0026783	.0023648	-.000285	-.002981	-.002713	.006282

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011467	.0000789	.0000808	-.014672	-.000543	.0000324
Stddev	.0011967	.0001554	.0000300	.008493	.000667	.0001434
%RSD	104.3624	196.8352	37.18445	57.88738	122.8297	442.7775

#1	.0024478	-.000094	.0001105	-.020474	.000165	.0001452
#2	.0008992	.000124	.0000815	-.004924	-.001158	-.000129
#3	.0000931	.000207	.0000505	-.018618	-.000636	.000081

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000793	-.003822	-.000152	.0435559	-.000050	-.000577
Stddev	.000418	.009055	.001014	.0681083	.000681	.000540
%RSD	52.77464	236.8938	667.5284	156.3700	1371.290	93.55158

#1	-.000318	-.000275	-.000910	.0405830	-.000779	-.001147
#2	-.000953	-.014114	.001000	.1131020	.000570	-.000075
#3	-.001108	.002922	-.000546	-.023017	.000061	-.000508

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0661493	-.004789	-.001083	.0054758	-.000769	.0162945
Stddev	.0084821	.008839	.000220	.0012565	.000870	.0012105
%RSD	12.82259	184.5883	20.29965	22.94556	113.1388	7.429081

#1	.0743975	.005406	-.001146	.0046996	-.000118	.0176895
#2	.0665992	-.010313	-.001265	.0048024	-.000432	.0155213
#3	.0574513	-.009459	-.000839	.0069254	-.001758	.0156726

Sample Name: CCB04 Acquired: 6/19/2025 17:36:52 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001881	.0004817	.0019950	-.001255	-.001939	F .0486373
Stddev	.0001738	.0027923	.0015376	.000756	.003016	.0052744
%RSD	92.39655	579.6828	77.07224	60.25052	155.5212	10.84443
#1	.0002673	.0036577	.0027890	-.000412	-.004818	.0426623
#2	-.000011	-.000625	.0002227	-.001873	-.002198	.0506031
#3	.000308	-.001588	.0029734	-.001479	.001198	.0526466

Elem	Sr4077
Units	ppm
Avg	.0000052
Stddev	.0001011
%RSD	1956.320
#1	-.000072
#2	-.000033
#3	.000120

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3444.562	37218.14	2926.924	3893.762	5004.908
Stddev	5.562	110.41	8.436	18.915	9.927
%RSD	.1614763	.2966518	.2882094	.4857731	.1983500
#1	3438.153	37280.40	2929.167	3888.384	4995.765
#2	3447.398	37090.66	2934.012	3878.119	5003.493
#3	3448.134	37283.36	2917.594	3914.784	5015.467

Sample Name: PB168539BL Acquired: 6/19/2025 17:41:22 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000018	.0000932	-.000082	.0024585	-.001540	.0315653
Stddev	.000680	.0025817	.000205	.0020390	.001146	.0234646
%RSD	3780.540	2769.199	249.4665	82.94003	74.39545	74.33651

#1	-.000446	-.001811	-.000306	.0044456	-.001198	.0341395
#2	-.000374	.003032	-.000036	.0003712	-.000604	.0536366
#3	.000766	-.000941	.000096	.0025586	-.002818	.0069198

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010482	.0000765	.0000762	.0051241	-.000885	-.000016
Stddev	.0006177	.0000344	.0000761	.0129998	.000134	.000229
%RSD	58.92902	44.91234	99.82269	253.7002	15.13511	1463.429

#1	.0004926	.0000857	.0001160	.0026427	-.000733	.000093
#2	.0017134	.0000384	.0001243	-.006456	-.000936	-.000279
#3	.0009386	.0001053	-.000012	.019186	-.000987	.000139

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000171	.0226775	.0002682	.0425353	-.000253	-.000480
Stddev	.000567	.0186582	.0005829	.0555531	.000300	.000339
%RSD	331.4581	82.27604	217.3488	130.6047	118.5624	70.74178

#1	.000116	.0253015	.0009411	.0345681	.000024	-.000174
#2	.000195	.0398848	-.000078	-.008604	-.000572	-.000844
#3	-.000824	.0028463	-.000058	.101642	-.000211	-.000420

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0768306	.0085786	.0050250	.0163210	.0018781	.0090247
Stddev	.0135822	.0012683	.0003644	.0010339	.0004024	.0009839
%RSD	17.67816	14.78490	7.251130	6.334473	21.42566	10.90199

#1	.0616132	.0095645	.0052464	.0174172	.0019161	.0101222
#2	.0811531	.0090236	.0052241	.0153636	.0014580	.0087302
#3	.0877256	.0071477	.0046045	.0161821	.0022601	.0082217

Sample Name: PB168539BL Acquired: 6/19/2025 17:41:22 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005744	.0036895	.0085432	-.000699	-.002815	F .0436036
Stddev	.0004068	.0034035	.0009139	.000265	.002449	.0030538
%RSD	70.82347	92.24814	10.69724	37.89697	86.97222	7.003464
#1	.0009909	.0058312	.0083759	-.000432	-.005001	.0466765
#2	.0005542	.0054722	.0095293	-.000961	-.003277	.0405693
#3	.0001781	-.000235	.0077246	-.000703	-.000169	.0435651

Elem	Sr4077
Units	ppm
Avg	.0000579
Stddev	.0000718
%RSD	123.9409
#1	-.000017
#2	.000065
#3	.000126

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3431.872	37049.28	2933.338	3874.573	4965.267
Stddev	2.295	178.06	8.831	7.919	6.051
%RSD	.0668610	.4806032	.3010422	.2043756	.1218746
#1	3432.025	37254.60	2941.355	3874.302	4962.978
#2	3434.086	36955.86	2934.788	3866.793	4972.128
#3	3429.504	36937.36	2923.873	3882.623	4960.693

Sample Name: Q2341-01DUP Acquired: 6/19/2025 17:45:51 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0676820	-.026822	.2502389	.0312860	.0114369	81.06804	.7076870
Stddev	.0019869	.001607	.0019638	.0027077	.0007125	.14460	.0040118
%RSD	2.935641	5.991195	.7847788	8.654684	6.230210	.1783690	.5668890
#1	.0698921	-.028171	.2501901	.0316198	.0112819	81.21331	.7059410
#2	.0671102	-.025044	.2522266	.0338113	.0108146	80.92412	.7048440
#3	.0660437	-.027250	.2482998	.0284268	.0122142	81.06671	.7122759
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0120272	.0013780	19.82403	.1714512	.1237424	.5841831	203.2016
Stddev	.0001763	.0000910	.07380	.0005722	.0004676	.0012310	.2905
%RSD	1.466139	6.605699	.3722542	.3337694	.3779156	.2107174	.1429770
#1	.0118508	.0014434	19.83206	.1713097	.1241970	.5834451	203.3542
#2	.0122035	.0014165	19.74655	.1709631	.1237674	.5856042	202.8665
#3	.0120273	.0012740	19.89349	.1720810	.1232627	.5835002	203.3840
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.405248	46.75718	.2120934	.0096043	14.88719	.3692876	.5573705
Stddev	.007092	.04978	.0009145	.0007498	.01102	.0049149	.0011665
%RSD	.1312130	.1064559	.4311900	7.807274	.0740533	1.330902	.2092922
#1	5.403044	46.73840	.2122194	.0104698	14.89623	.3646018	.5576025
#2	5.399520	46.71953	.2129384	.0091508	14.89044	.3744032	.5584036
#3	5.413181	46.81362	.2111224	.0091922	14.87491	.3688578	.5561054
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.65466	9.230561	.0983385	-.001469	.1334188	4.901774	.0117982
Stddev	.09102	.024273	.0011748	.000545	.0012478	.004791	.0002633
%RSD	.6211032	.2629621	1.194649	37.07445	.9352672	.0977385	2.231881
#1	14.73027	9.226296	.0970301	-.002085	.1335352	4.906670	.0120445
#2	14.55363	9.256684	.0986827	-.001051	.1346043	4.901555	.0118296
#3	14.68008	9.208703	.0993028	-.001270	.1321168	4.897096	.0115206

Sample Name: Q2341-01DUP Acquired: 6/19/2025 17:45:51 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.358606	.1578162	.0742992
Stddev	.031671	.0050679	.0003817
%RSD	.5910287	3.211244	.5137728
#1	5.366917	.1623668	.0742694
#2	5.323608	.1587273	.0739333
#3	5.385293	.1523546	.0746950

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4296.498	45487.07	3798.104	4858.496	4323.451
Stddev	8.801	148.94	5.009	7.282	7.059
%RSD	.2048302	.3274254	.1318714	.1498826	.1632733
#1	4286.719	45328.67	3797.234	4852.733	4315.339
#2	4303.780	45624.28	3803.490	4856.074	4326.813
#3	4298.994	45508.25	3793.587	4866.680	4328.200

Sample Name: Q2341-01LX5 Acquired: 6/19/2025 17:50:16 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0183028	-.005721	.0558617	.0109135	.0024578	25.73858	.2047539
Stddev	.0023583	.001493	.0013735	.0015902	.0013827	.02972	.0006560
%RSD	12.88507	26.08823	2.458704	14.57046	56.25791	.1154506	.3203743
#1	.0158431	-.006628	.0566553	.0100624	.0040348	25.70661	.2040138
#2	.0185206	-.006538	.0566540	.0099301	.0018857	25.76537	.2052636
#3	.0205446	-.003999	.0542758	.0127481	.0014530	25.74375	.2049843
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043355	-.000114	6.118993	.0567799	.0324805	.1556619	63.10365
Stddev	.0000604	.000042	.023926	.0015053	.0007648	.0008200	.12649
%RSD	1.393482	36.86196	.3910042	2.651186	2.354794	.5267551	.2004469
#1	.0043915	-.000080	6.146105	.0550961	.0328895	.1562294	63.07214
#2	.0043436	-.000161	6.100841	.0579956	.0329539	.1560343	63.24292
#3	.0042715	-.000102	6.110033	.0572479	.0315981	.1547218	62.99590
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.612910	15.30708	.0539776	.0025922	4.102505	.1078826	.1822916
Stddev	.002207	.06136	.0005384	.0002317	.009011	.0021921	.0008224
%RSD	.1368307	.4008424	.9973768	8.936663	.2196501	2.031911	.4511465
#1	1.612651	15.27979	.0545896	.0023640	4.111757	.1053622	.1824011
#2	1.615236	15.37734	.0537660	.0025855	4.102003	.1089414	.1814199
#3	1.610845	15.26409	.0535771	.0028272	4.093756	.1093444	.1830538
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.511205	2.391802	.0331800	-.000533	.0731790	2.850403	.0017127
Stddev	.022272	.021379	.0010047	.000057	.0023660	.004314	.0004656
%RSD	.4937097	.8938272	3.027940	10.69225	3.233228	.1513495	27.18383
#1	4.535991	2.411400	.0326587	-.000598	.0708371	2.855272	.0017726
#2	4.504753	2.395001	.0343382	-.000501	.0731313	2.848879	.0021455
#3	4.492872	2.369004	.0325432	-.000498	.0755685	2.847058	.0012201

Sample Name: Q2341-01LX5 Acquired: 6/19/2025 17:50:16 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.602322	.0806978	.0267655
Stddev	.007809	.0030160	.0001215
%RSD	.4873733	3.737415	.4537998
#1	1.593624	.0832112	.0267886
#2	1.604613	.0773534	.0266342
#3	1.608730	.0815288	.0268738

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3615.789	38613.58	3144.975	4085.202	4583.482
Stddev	5.072	123.67	20.524	9.705	5.815
%RSD	.1402786	.3202641	.6525920	.2375607	.1268636
#1	3621.587	38480.27	3123.663	4073.996	4588.691
#2	3612.178	38635.92	3146.655	4090.696	4577.209
#3	3613.600	38724.56	3164.607	4090.914	4584.547

Sample Name: Q2341-01MS Acquired: 6/19/2025 17:54:34 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8725477	1.972622	1.245461	1.448254	.2995205	102.7860	.9728966
Stddev	.0040581	.003403	.001905	.002438	.0026122	.1898	.0045030
%RSD	.4650817	.1725193	.1529477	.1683743	.8721285	.1846995	.4628482
#1	.8738563	1.968922	1.244719	1.445439	.2966229	102.6894	.9771749
#2	.8679967	1.975619	1.244039	1.449614	.3016950	102.6639	.9681983
#3	.8757899	1.973325	1.247626	1.449709	.3002435	103.0047	.9733167
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1645777	.2062500	23.64456	.5015713	.3616170	.9208434	228.3129
Stddev	.0018742	.0001665	.08450	.0012185	.0009463	.0085060	.2783
%RSD	1.138810	.0807150	.3573630	.2429405	.2616895	.9237187	.1218915
#1	.1647010	.2062569	23.73135	.5003159	.3605844	.9221186	228.2644
#2	.1626449	.2060802	23.56256	.5016486	.3618239	.9117718	228.0621
#3	.1663873	.2064129	23.63976	.5027493	.3624428	.9286398	228.6123
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.008415	58.55135	.7873680	.0655095	17.88322	.5942634	.7833662
Stddev	.016262	.16997	.0007137	.0005980	.15351	.0051784	.0014456
%RSD	.2706526	.2902897	.0906428	.9128245	.8584208	.8714021	.1845370
#1	6.001883	58.52219	.7881111	.0653380	17.86741	.5985746	.7818534
#2	5.996435	58.39785	.7866879	.0661745	17.73822	.5885194	.7847336
#3	6.026928	58.73401	.7873050	.0650160	18.04402	.5956963	.7835115
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.23916	16.79227	.3076560	.2944261	.1812964	3.592009	.7204264
Stddev	.41376	.02673	.0011204	.0001639	.0008087	.033047	.0015499
%RSD	1.518974	.1591877	.3641830	.0556641	.4460708	.9200245	.2151381
#1	27.26455	16.77029	.3083056	.2942590	.1815263	3.596907	.7199524
#2	26.81330	16.78449	.3063622	.2945866	.1803977	3.556785	.7191689
#3	27.63964	16.82203	.3083001	.2944327	.1819653	3.622333	.7221580

Sample Name: Q2341-01MS Acquired: 6/19/2025 17:54:34 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.466980	.3685669	.2434665
Stddev	.023814	.0034380	.0007049
%RSD	.3682380	.9327914	.2895474
#1	6.489270	.3724692	.2441046
#2	6.441890	.3672475	.2427098
#3	6.469779	.3659841	.2435851

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4445.084	47103.97	3967.386	4998.851	4232.739
Stddev	7.332	127.52	40.529	10.774	10.292
%RSD	.1649558	.2707262	1.021549	.2155292	.2431413
#1	4453.482	47247.78	3971.726	5010.987	4242.114
#2	4441.816	47004.68	4005.570	4990.412	4234.374
#3	4439.953	47059.44	3924.862	4995.156	4221.727

Sample Name: Q2341-01MSD Acquired: 6/19/2025 17:58:51 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8099864	1.895510	1.147821	1.468138	.3023902	88.47415	.8032835
Stddev	.0089179	.002567	.001291	.001644	.0015252	.27085	.0015779
%RSD	1.100999	.1354235	.1124506	.1119886	.5043680	.3061399	.1964277
#1	.8168260	1.895251	1.149311	1.469843	.3034443	88.67631	.8046941
#2	.7998999	1.893083	1.147108	1.468009	.3006413	88.16640	.8035770
#3	.8132333	1.898197	1.147045	1.466563	.3030848	88.57973	.8015796
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1677992	.1951286	19.87062	.4746343	.3124354	.7604543	191.3897
Stddev	.0002776	.0003237	.07081	.0009689	.0001363	.0032801	.1443
%RSD	.1654497	.1658786	.3563520	.2041284	.0436195	.4313410	.0754006
#1	.1678897	.1950389	19.93152	.4737836	.3125422	.7627804	191.4254
#2	.1674876	.1948593	19.79292	.4744305	.3122819	.7567026	191.2310
#3	.1680203	.1954877	19.88741	.4756889	.3124820	.7618799	191.5129
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.380477	49.48545	.6954401	.0641640	16.15053	.5283943	.7079906
Stddev	.008431	.08331	.0011014	.0007652	.06018	.0060092	.0017275
%RSD	.1566932	.1683478	.1583694	1.192576	.3726232	1.137266	.2439946
#1	5.375496	49.53185	.6961396	.0644303	16.19916	.5336640	.7080027
#2	5.375723	49.38927	.6941706	.0647605	16.08322	.5296689	.7062572
#3	5.390211	49.53522	.6960101	.0633012	16.16920	.5218500	.7097120
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.37854	14.20150	.2966488	.2967629	.1444693	5.657841	.6821854
Stddev	.14152	.01047	.0006102	.0005148	.0015178	.014665	.0011776
%RSD	.5805280	.0737175	.2057029	.1734754	1.050568	.2591980	.1726168
#1	24.51151	14.19942	.2967213	.2962453	.1451360	5.662071	.6830128
#2	24.22979	14.19223	.2960056	.2967687	.1427323	5.641527	.6808373
#3	24.39432	14.21285	.2972195	.2972748	.1455396	5.669927	.6827063

Sample Name: Q2341-01MSD Acquired: 6/19/2025 17:58:51 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.606350	.3294560	.2244749
Stddev	.007732	.0023496	.0006195
%RSD	.1379137	.7131620	.2759732
#1	5.611240	.3277238	.2242669
#2	5.597436	.3285139	.2239862
#3	5.610373	.3321305	.2251716

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4369.385	46309.19	3808.378	4922.085	4449.653
Stddev	9.363	144.89	14.033	10.378	14.161
%RSD	.2142796	.3128837	.3684782	.2108446	.3182608
#1	4361.229	46142.79	3794.176	4910.102	4437.556
#2	4379.609	46407.45	3822.235	4928.002	4465.230
#3	4367.317	46377.33	3808.722	4928.151	4446.172

Sample Name: Q2341-01A Acquired: 6/19/2025 18:03:09 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8367841	1.868147	1.187164	1.419996	.5844970	93.12685	.8834611
Stddev	.0023104	.006321	.000879	.000917	.0026446	.18604	.0009227
%RSD	.2761052	.3383451	.0740212	.0645971	.4524504	.1997717	.1044464

#1	.8364301	1.864227	1.187334	1.420347	.5849057	92.92192	.8831382
#2	.8392511	1.875439	1.187945	1.420687	.5869133	93.28511	.8827432
#3	.8346711	1.864776	1.186212	1.418956	.5816718	93.17351	.8845019

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1595661	.1950102	22.84103	.4930952	.3421546	.7662807	226.3636
Stddev	.0010936	.0005859	.04424	.0009576	.0003127	.0032210	.2893
%RSD	.6853367	.3004354	.1936930	.1942104	.0914039	.4203478	.1277822

#1	.1597627	.1951760	22.79263	.4920718	.3419201	.7674680	226.0312
#2	.1605480	.1954953	22.85109	.4932443	.3425097	.7687397	226.5579
#3	.1583876	.1943593	22.87938	.4939696	.3420341	.7626346	226.5017

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.844419	54.96834	.7379820	.0622352	17.17319	.5834711	.8010463
Stddev	.008814	.03420	.0023692	.0003670	.11683	.0095172	.0048114
%RSD	.1508166	.0622225	.3210422	.5896941	.6803156	1.631134	.6006411

#1	5.836510	54.99416	.7368159	.0622146	17.16494	.5797722	.7960072
#2	5.842826	54.98130	.7407082	.0626121	17.29393	.5763585	.8015396
#3	5.853921	54.92955	.7364217	.0618790	17.06070	.5942824	.8055920

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.07031	17.06221	.3090333	.2870551	.3247715	5.532694	.6914883
Stddev	.36692	.04403	.0014251	.0005826	.0050342	.037453	.0027893
%RSD	1.355420	.2580697	.4611466	.2029642	1.550068	.6769456	.4033730

#1	27.00618	17.07614	.3074123	.2876717	.3218434	5.512661	.6926621
#2	27.46506	17.09759	.3095987	.2865137	.3305844	5.575903	.6934989
#3	26.73969	17.01290	.3100889	.2869800	.3218867	5.509517	.6883040

Sample Name: Q2341-01A Acquired: 6/19/2025 18:03:09 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.890503	.3384149	.2404204
Stddev	.010751	.0022834	.0004099
%RSD	.1825170	.6747200	.1705025
#1	5.878167	.3359021	.2406726
#2	5.897880	.3403626	.2399474
#3	5.895461	.3389802	.2406412

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4466.196	47565.35	3966.298	5039.054	4264.562
Stddev	10.481	181.46	29.431	23.637	12.370
%RSD	.2346834	.3815060	.7420351	.4690771	.2900586
#1	4458.688	47736.38	3969.440	5066.320	4261.891
#2	4461.729	47374.99	3935.421	5026.468	4253.746
#3	4478.171	47584.68	3994.032	5024.372	4278.049

Sample Name: PB168518BL Acquired: 6/19/2025 18:07:27 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005216	.0013431	.0007814	.0009091	.0000748	.0080715
Stddev	.0010381	.0013909	.0005612	.0033464	.0012287	.0158509
%RSD	199.0203	103.5533	71.81876	368.0850	1643.346	196.3819

#1	.0013731	-.000214	.0010035	.0016683	-.001093	.0027940
#2	-.000635	.002464	.0001431	.0038107	.001356	.0258879
#3	.000827	.001779	.0011975	-.002752	-.000039	-.004468

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014376	.0001983	.0000175	.0260937	-.000163	.0002741
Stddev	.0008157	.0001567	.0000400	.0342693	.000640	.0001391
%RSD	56.74235	79.01682	228.3186	131.3316	392.2570	50.75472

#1	.0023340	.0002801	.0000542	.0213421	-.000605	.0001717
#2	.0012400	.0000176	-.000025	-.005552	-.000455	.0004325
#3	.0007388	.0002972	.000024	.062491	.000570	.0002181

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000049	.0448484	.0002525	.0212559	-.000032	-.000145
Stddev	.000178	.0545963	.0006197	.0449828	.000126	.000950
%RSD	365.3203	121.7353	245.3757	211.6253	393.1592	653.7413

#1	.000072	.0930864	.0007695	.0321479	.000089	.000766
#2	-.000253	.0558801	.0004226	-.028173	-.000022	-.000072
#3	.000035	-.014421	-.000434	.059792	-.000163	-.001130

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0671909	.0067105	-.000702	.0068391	.0032194	.0041182
Stddev	.0073274	.0028818	.000367	.0008994	.0021737	.0016722
%RSD	10.90534	42.94518	52.35043	13.15068	67.51945	40.60403

#1	.0590934	.0055549	-.000658	.0078680	.0009737	.0022938
#2	.0691151	.0099907	-.001089	.0064464	.0053132	.0044830
#3	.0733642	.0045858	-.000358	.0062027	.0033712	.0055778

Sample Name: PB168518BL Acquired: 6/19/2025 18:07:27 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001843	.0010287	-.000063	-.000890	-.002573	F .0451410
Stddev	.0002586	.0034739	.000847	.000472	.001125	.0059532
%RSD	140.3364	337.7021	1333.461	53.04072	43.71489	13.18804
#1	-.000057	.0007944	.000291	-.000674	-.003449	.0434582
#2	.000457	-.002322	-.001030	-.001432	-.002965	.0402103
#3	.000153	.004614	.000548	-.000565	-.001305	.0517545

Elem	Sr4077
Units	ppm
Avg	.0002500
Stddev	.0000918
%RSD	36.73664
#1	.0001452
#2	.0002883
#3	.0003165

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3420.128	36830.23	2915.129	3859.256	4983.200
Stddev	5.061	235.66	12.563	33.846	5.538
%RSD	.1479625	.6398453	.4309423	.8770129	.1111244
#1	3414.285	36558.84	2902.509	3820.394	4978.923
#2	3423.136	36948.73	2927.633	3882.274	4981.222
#3	3422.962	36983.11	2915.246	3875.100	4989.455

Sample Name: PB168518BS Acquired: 6/19/2025 18:11:56 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7124891	1.997741	.9398659	1.992296	.8024858	2.006654	.2037643
Stddev	.0039674	.002708	.0034297	.006831	.0043373	.031747	.0002769
%RSD	.5568316	.1355547	.3649182	.3428759	.5404856	1.582093	.1359029
#1	.7114974	1.995754	.9370297	1.995876	.7990250	1.989201	.2040711
#2	.7091117	1.996643	.9388901	1.996592	.8010809	1.987464	.2036890
#3	.7168583	2.000825	.9436777	1.984419	.8073514	2.043299	.2035328
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2085103	.1877597	1.013539	.4023352	.1927288	.3223073	3.174406
Stddev	.0012859	.0003770	.009761	.0006620	.0002907	.0024779	.015772
%RSD	.6167051	.2008105	.9631079	.1645458	.1508421	.7687907	.4968404
#1	.2091668	.1874841	1.013559	.4030935	.1925276	.3240767	3.171461
#2	.2070287	.1876057	1.023290	.4020392	.1925967	.3194754	3.160315
#3	.2093355	.1881894	1.003767	.4018727	.1930621	.3233699	3.191443
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2007049	1.979961	.4823443	.0735739	2.949596	.2984064	.2039581
Stddev	.0014588	.056018	.0016299	.0001255	.014744	.0056974	.0002365
%RSD	.7268175	2.829231	.3379073	.1705556	.4998776	1.909286	.1159698
#1	.2023183	2.044429	.4820556	.0736297	2.961421	.2925998	.2042137
#2	.2003173	1.952308	.4808781	.0734302	2.933076	.3039880	.2037469
#3	.1994790	1.943148	.4840992	.0736618	2.954290	.2986313	.2039136
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.608168	5.437580	.3045318	.3956060	-.000397	.9249326	.6542693
Stddev	.037037	.009035	.0033746	.0004868	.000978	.0108955	.0024959
%RSD	.4302576	.1661503	1.108119	.1230573	246.1186	1.177982	.3814867
#1	8.639090	5.432965	.3052807	.3951048	.000524	.9297261	.6537964
#2	8.567121	5.431785	.3008457	.3960770	-.001424	.9124621	.6520437
#3	8.618293	5.447990	.3074691	.3956363	-.000292	.9326095	.6569679

Sample Name: PB168518BS Acquired: 6/19/2025 18:11:56 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1895511	.2480474	.2025408
Stddev	.0023721	.0085562	.0008986
%RSD	1.251416	3.449433	.4436742
#1	.1869995	.2567470	.2034791
#2	.1916894	.2396421	.2016879
#3	.1899643	.2477532	.2024554

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3432.092	36630.82	2920.176	3860.725	4859.331
Stddev	8.944	72.58	16.237	10.964	13.231
%RSD	.2605869	.1981330	.5560448	.2839869	.2722868
#1	3429.358	36591.81	2910.766	3867.053	4853.426
#2	3442.083	36586.09	2938.926	3848.065	4874.486
#3	3424.834	36714.56	2910.837	3867.056	4850.080

Sample Name: Q2312-04 Acquired: 6/19/2025 18:16:17 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.001254	s .0057503	s .0010278	s .0002091	s -.000226	k .0337820	.2603507
Stddev	.005370	.0018738	.0031041	.0013818	.003457	.0183415	.0007130
%RSD	428.2038	32.58601	302.0144	660.8780	1530.341	54.29369	.2738600

#1	-.007421	.0079066	.0046078	-.001123	.003741	.0269820	.2608852
#2	s .001268	s .0045174	s -.000610	s .000115	s -.002594	k .0198116	.2606256
#3	.002390	.0048269	-.000914	.001635	-.001825	.0545524	.2595411

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .0001716	s .0000990	35.32661	k .0094438	s .0033551	k .0036433	.1012097
Stddev	.0000726	.0001054	.09278	.0003173	.0058793	.0006888	.0041015
%RSD	42.31123	106.4651	.2626377	3.359617	175.2380	18.90529	4.052523

#1	.0001305	.0002176	35.29990	.0091143	.0101439	.0028486	.1033962
#2	k .0001289	s .0000635	35.25012	k .0094697	s -.000029	k .0040690	.1037547
#3	.0002554	.0000159	35.42982	.0097473	-.000050	.0040122	.0964782

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .1345489	8.483705	s .0002545	k -.000420	367.7077	k .0077377	k .0388397
Stddev	.0021373	.051797	.0003536	.000063	.3784	.0027512	.0001617
%RSD	1.588489	.6105444	138.9506	15.10584	.1029182	35.55586	.4163339

#1	.1327487	8.529246	.0006614	-.000444	368.0177	.0109131	.0390240
#2	k .1369110	8.494512	s .0000804	k -.000467	367.8193	k .0062336	k .0387734
#3	.1339869	8.427358	.0000217	-.000348	367.2859	.0060666	.0387217

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.812365	s .0648837	k .0249302	s -.001499	s .1328781	k .9846119	s -.001065
Stddev	.006691	.1145132	.0020199	.002119	.2344137	.0025547	.001830
%RSD	.2379118	176.4899	8.102038	141.3798	176.4127	.2594607	171.9175

#1	2.806361	.1971102	.0226569	-.003945	.4035229	.9823533	.001045
#2	2.811157	s -.000620	k .0265185	s -.000344	s .0012042	k .9840978	s -.002006
#3	2.819578	-.001839	.0256153	-.000208	-.006093	.9873845	-.002233

Sample Name: Q2312-04 Acquired: 6/19/2025 18:16:17 Type: Unk
 Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: Custom ID2: Custom ID3:
 Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	k -.003392	.0190544	.1808262
Stddev	.003129	.0004738	.0002442
%RSD	92.25329	2.486803	.1350229
#1	-.005311	.0188649	.1808910
#2	k .000219	.0187046	.1810315
#3	-.005084	.0195936	.1805562

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	^ *****	32640.36	2811.990	3504.379	^ *****
Stddev	-----	197.52	8.669	15.807	-----
%RSD	-----	.6051489	.3082885	.4510774	-----
#1	3420.621	32574.84	2815.543	3501.498	4461.683
#2	^ -----	32483.91	2802.109	3490.210	^ -----
#3	10792.88	32862.31	2818.318	3521.429	17463.57

Sample Name: Q2319-04 Acquired: 6/19/2025 18:20:52 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.002409	s .0001613	s .0012026	k .0007477	k -.001638	.2272020	.2613633
Stddev	.004691	.0042367	.0003735	.0019389	.003380	.0292778	.0014542
%RSD	194.7042	2627.250	31.05608	259.3029	206.3800	12.88625	.5563990

#1	-.006766	-.004009	.0014990	.0029433	-.002935	.2413984	.2614757
#2	-.003017	.000031	.0013257	-.000729	.002199	.2466751	.2598562
#3	s .002556	s .004462	s .0007831	k .000029	k -.004177	.1935324	.2627581

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .0005897	s .0001641	7.801382	k .0006646	s .0025823	k .0090756	.0647638
Stddev	.0000688	.0001077	.010881	.0006880	.0023690	.0010799	.0163136
%RSD	11.66305	65.63265	.1394691	103.5331	91.74146	11.89936	25.18930

#1	.0006611	.0002615	7.813513	.0006417	.0041442	.0096787	.0716737
#2	.0005238	.0001823	7.792487	-.000012	.0037463	.0078288	.0461325
#3	k .0005842	s .0000485	7.798145	k .001364	s -.000144	k .0097193	.0764853

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .2546660	2.647730	s .0012547	k -.000366	322.2252	-.002004	k .0512164
Stddev	.0024099	.049815	.0011789	.000956	5.4493	.003822	.0025482
%RSD	.9462946	1.881422	93.95339	261.1050	1.691143	190.7164	4.975342

#1	.2520894	2.690914	.0020530	-.001044	317.5624	.000450	.0515371
#2	.2550440	2.659044	.0018104	-.000783	320.8975	-.000054	.0485230
#3	k .2568646	2.593231	s -.000099	k .000728	328.2156	-.006408	k .0535891

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.260870	s .0135252	k .0369946	-.000917	s .3728993	.6707857	s -.001207
Stddev	.016191	.0134573	.0021424	.000520	.3260222	.0083315	.000879
%RSD	1.284143	99.49770	5.791149	56.72622	87.42902	1.242045	72.79040

#1	1.258793	.0245076	.0393223	-.001389	.5911795	.6639342	-.001315
#2	1.245817	.0175545	.0351053	-.001002	.5293825	.6683629	-.000280
#3	1.278000	s -.001486	k .0365561	-.000360	s -.001864	.6800601	s -.002028

Sample Name: Q2319-04 Acquired: 6/19/2025 18:20:52 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	k -.000123	.0146191	.0406040
Stddev	.000448	.0033292	.0001872
%RSD	365.3104	22.77261	.4610009
#1	-.000142	.0180301	.0404401
#2	.000334	.0144491	.0405639
#3	k -.000560	.0113783	.0408080

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5768.086	33852.05	2806.301	3629.693	^ *****
Stddev	4254.247	1444.61	19.528	152.208	-----
%RSD	73.75491	4.267437	.6958677	4.193413	-----
#1	3181.934	33304.61	2823.570	3568.041	4184.348
#2	3444.191	35490.37	2810.224	3803.054	4543.016
#3	10678.13	32761.16	2785.109	3517.982	^ -----

Sample Name: CCV05 Acquired: 6/19/2025 18:25:27 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin 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	4.895725	4.967377	4.922590	5.039592	5.036884	9.972244	10.10833
Stddev	.005981	.004822	.002640	.004985	.009510	.028175	.02772
%RSD	.1221687	.0970742	.0536275	.0989240	.1888072	.2825300	.2742252
#1	4.892432	4.968086	4.925466	5.045275	5.039836	9.986368	10.14023
#2	4.902628	4.971805	4.920278	5.037542	5.044569	9.939801	10.09462
#3	4.892113	4.962240	4.922025	5.035957	5.026249	9.990562	10.09014
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2552344	2.465473	24.94441	1.009126	2.474175	1.278015	4.904166
Stddev	.0025976	.001159	.07566	.003612	.000927	.007964	.024740
%RSD	1.017734	.0470276	.3033066	.3579829	.0374762	.6231220	.5044705
#1	.2574849	2.466171	25.03148	1.013061	2.473913	1.286253	4.920216
#2	.2558263	2.466114	24.90706	1.005959	2.475206	1.277434	4.875675
#3	.2523919	2.464135	24.89469	1.008358	2.473408	1.270357	4.916607
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.444507	24.57616	2.464570	1.254409	25.64763	2.454936	2.512541
Stddev	.002788	.05480	.003874	.001717	.20098	.013721	.002118
%RSD	.1140361	.2229909	.1572079	.1369150	.7836384	.5589155	.0843166
#1	2.446526	24.59292	2.466449	1.256309	25.87956	2.467907	2.514146
#2	2.441326	24.51494	2.467147	1.253952	25.53867	2.440571	2.510139
#3	2.445668	24.62063	2.460114	1.252967	25.52465	2.456330	2.513337
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.36702	4.953840	5.087665	5.034234	4.846917	5.110623	4.930736
Stddev	.27206	.007949	.034534	.004662	.005164	.030220	.002709
%RSD	1.072501	.1604544	.6787816	.0926075	.1065332	.5913168	.0549500
#1	25.67972	4.949954	5.127529	5.038249	4.845210	5.143176	4.930206
#2	25.23685	4.962984	5.068586	5.035332	4.852718	5.105228	4.933672
#3	25.18451	4.948583	5.066879	5.029121	4.842823	5.083463	4.928331

Sample Name: CCV05 Acquired: 6/19/2025 18:25:27 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.954716	5.153128	5.062951
Stddev	.009587	.015454	.011941
%RSD	.1934864	.2999008	.2358542

#1	4.965380	5.170402	5.076625
#2	4.951957	5.140614	5.054574
#3	4.946812	5.148368	5.057656

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3261.739	34869.17	2835.097	3676.957	4309.577
Stddev	7.025	202.99	20.944	5.746	8.166
%RSD	.2153606	.5821616	.7387557	.1562711	.1894906

#1	3257.738	34762.70	2810.924	3677.054	4307.387
#2	3269.850	35103.25	2847.816	3682.654	4318.615
#3	3257.629	34741.55	2846.552	3671.163	4302.729

Sample Name: CCB05 Acquired: 6/19/2025 18:29:41 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004705	.0016610	.0007155	.0017693	-.000442	-.008936
Stddev	.0024184	.0026973	.0004546	.0017909	.000801	.011311
%RSD	513.9949	162.3912	63.53860	101.2154	181.3580	126.5785

#1	-.002153	.0045699	.0010324	.0031601	.000313	-.009120
#2	.002611	.0011704	.0009195	-.000251	-.000356	.002466
#3	.000954	-.000757	.0001946	.002399	-.001282	-.020154

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016009	.0001964	.0001098	-.006841	-.000648	.0000508
Stddev	.0004328	.0000517	.0000706	.002201	.000918	.0001918
%RSD	27.03453	26.32322	64.26025	32.18178	141.8101	377.3904

#1	.0013057	.0002166	.0000300	-.006504	-.000316	-.000068
#2	.0020977	.0002350	.0001641	-.004827	-.001685	-.000051
#3	.0013992	.0001377	.0001354	-.009191	.000059	.000272

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000482	-.004384	-.000028	.0402725	.0004356	.0001489
Stddev	.000531	.017694	.000215	.0460796	.0000955	.0004890
%RSD	110.1515	403.5997	760.7826	114.4196	21.92180	328.3750

#1	-.000777	.005514	.000220	.0683888	.0004333	.0007093
#2	.000131	-.024812	-.000160	-.012906	.0003413	-.000191
#3	-.000799	.006146	-.000145	.065335	.0005322	-.000071

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0748408	.0050345	-.000867	.0052551	.0011137	.0139029
Stddev	.0084344	.0033259	.000201	.0004930	.0006636	.0008953
%RSD	11.26973	66.06234	23.22740	9.382297	59.58488	6.439546

#1	.0837941	.0082708	-.001094	.0058165	.0009529	.0143986
#2	.0736834	.0016257	-.000709	.0050563	.0005453	.0144408
#3	.0670449	.0052071	-.000797	.0048925	.0018429	.0128694

Sample Name: CCB05 Acquired: 6/19/2025 18:29:41 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007265	-.000058	.0027872	-.000912	-.003904	F .0542705
Stddev	.0004310	.003486	.0011790	.000480	.002310	.0061379
%RSD	59.33269	6049.007	42.30058	52.57212	59.17498	11.30978
#1	.0005061	.003410	.0027330	-.000385	-.001769	.0519343
#2	.0004502	-.003563	.0016362	-.001029	-.006356	.0612335
#3	.0012231	-.000020	.0039923	-.001323	-.003587	.0496439

Elem	Sr4077
Units	ppm
Avg	.0004140
Stddev	.0000973
%RSD	23.49194
#1	.0005142
#2	.0003200
#3	.0004079

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3436.665	36712.73	2926.603	3852.687	5009.513
Stddev	9.871	197.85	22.302	6.001	21.156
%RSD	.2872189	.5389232	.7620405	.1557658	.4223214
#1	3435.092	36501.19	2906.976	3854.067	5014.842
#2	3427.675	36743.79	2921.979	3857.877	4986.202
#3	3447.227	36893.22	2950.855	3846.116	5027.495

Sample Name: Q2320-01 Acquired: 6/19/2025 18:34:10 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.013869	.0234825	.0132838	-.010871	.0050434	.0532585	.2783620
Stddev	.003666	.0027003	.0020232	.000749	.0017010	.0229465	.0014024
%RSD	26.43157	11.49924	15.23031	6.894110	33.72642	43.08517	.5037992
#1	-.011864	.0203647	.0140866	-.011647	.0069737	.0745548	.2782884
#2	-.018101	.0250790	.0109824	-.010152	.0037640	.0562629	.2769979
#3	-.011644	.0250037	.0147823	-.010814	.0043925	.0289578	.2797998
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000058	.0013429	139.8931	.0020038	.0360705	.0067711	.0350739
Stddev	.000256	.0000902	.2363	.0005003	.0002317	.0008359	.0188472
%RSD	442.8766	6.719883	.1688871	24.96743	.6424408	12.34543	53.73565
#1	-.000336	.0013449	139.9370	.0019286	.0359676	.0060548	.0532929
#2	.000167	.0014321	140.1044	.0015454	.0363359	.0076895	.0156558
#3	-.000004	.0012517	139.6380	.0025374	.0359081	.0065690	.0362730
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.456273	6.388233	.0085858	-.000790	282.4040	.0065824	.1243859
Stddev	.002790	.039259	.0004577	.000320	2.3799	.0078331	.0006211
%RSD	.0807242	.6145493	5.330899	40.52869	.8427132	118.9995	.4993621
#1	3.455568	6.401098	.0084279	-.000878	282.7173	.0150776	.1239634
#2	3.459348	6.344156	.0091016	-.001056	284.6117	-.000354	.1240953
#3	3.453903	6.419445	.0082280	-.000435	279.8830	.005024	.1250991
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.274621	.0141079	.0718877	-.008249	2.255692	1.746425	.0025568
Stddev	.019388	.0009125	.0009244	.000163	.009533	.009238	.0004012
%RSD	.5920667	6.467903	1.285864	1.977284	.4226043	.5289682	15.69171
#1	3.284892	.0131234	.0727046	-.008269	2.247059	1.752542	.0022702
#2	3.286713	.0142751	.0720744	-.008401	2.254094	1.750935	.0023849
#3	3.252259	.0149253	.0708843	-.008077	2.265923	1.735798	.0030154

Sample Name: Q2320-01 Acquired: 6/19/2025 18:34:10 Type: Unk
 Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: Custom ID2: Custom ID3:
 Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003854	.0216050	.4769670
Stddev	.000740	.0035399	.0012875
%RSD	19.20401	16.38469	.2699386
#1	-.003960	.0216767	.4784013
#2	-.004535	.0251085	.4759110
#3	-.003067	.0180297	.4765887

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3219.511	33863.75	2905.648	3584.353	4198.595
Stddev	9.997	88.30	16.524	13.817	11.649
%RSD	.3105120	.2607494	.5686960	.3854718	.2774418
#1	3224.920	33816.81	2892.947	3590.841	4209.456
#2	3225.638	33965.61	2899.667	3593.731	4200.036
#3	3207.975	33808.84	2924.330	3568.486	4186.292

Sample Name: Q2325-04 Acquired: 6/19/2025 18:38:41 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000757	.0291140	.0590919	-.005543	.0055834	.7576615	.5448124
Stddev	.001224	.0030861	.0011958	.003552	.0021277	.0078377	.0022920
%RSD	161.6825	10.60005	2.023591	64.07424	38.10785	1.034453	.4206965

#1	-.002127	.0268307	.0588216	-.006124	.0073535	.7492359	.5472566
#2	.000231	.0326250	.0580543	-.001737	.0032228	.7590132	.5427113
#3	-.000376	.0278863	.0603996	-.008769	.0061738	.7647353	.5444692

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002568	.0000316	127.7148	.0019742	.0372862	.0009384	26.79860
Stddev	.0001350	.0000239	.3091	.0002893	.0004227	.0005475	.11007
%RSD	52.56036	75.73348	.2419912	14.65221	1.133586	58.34500	.4107233

#1	.0001026	.0000464	128.0710	.0020840	.0374861	.0003237	26.86071
#2	.0003534	.0000442	127.5550	.0016461	.0368007	.0011178	26.86358
#3	.0003144	.0000040	127.5183	.0021924	.0375719	.0013739	26.67152

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.244990	3.002103	.0054250	.0010072	415.8872	.0117738	.0689164
Stddev	.021548	.021768	.0003747	.0012208	2.9869	.0075194	.0003992
%RSD	.3450406	.7250919	6.905926	121.2049	.7181885	63.86570	.5792887

#1	6.267444	3.022406	.0056476	-.000392	418.4133	.0181818	.0693474
#2	6.224480	2.979118	.0049924	.001559	416.6578	.0034959	.0688425
#3	6.243045	3.004785	.0056350	.001855	412.5906	.0136438	.0685592

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.017866	.0841849	.0614219	-.008864	.4530867	1.667265	.0030758
Stddev	.004576	.0012625	.0006499	.000155	.0030348	.032879	.0006447
%RSD	.2267708	1.499642	1.058078	1.753666	.6697985	1.972005	20.96159

#1	2.022662	.0845516	.0609755	-.008697	.4512539	1.695389	.0026751
#2	2.017390	.0852234	.0611227	-.008891	.4514164	1.631117	.0027329
#3	2.013547	.0827796	.0621675	-.009005	.4565897	1.675290	.0038196

Sample Name: Q2325-04 Acquired: 6/19/2025 18:38:41 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0171951	.0223062	.4869689
Stddev	.0040166	.0052710	.0005962
%RSD	23.35884	23.63027	.1224283
#1	.0213096	.0168626	.4876045
#2	.0132842	.0226702	.4868800
#3	.0169916	.0273857	.4864221

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3134.909	32649.37	2828.462	3489.033	4023.653
Stddev	6.697	129.18	13.081	17.753	16.342
%RSD	.2136254	.3956712	.4624848	.5088355	.4061570
#1	3133.728	32548.99	2814.431	3488.226	4023.041
#2	3142.118	32604.00	2830.633	3471.696	4040.292
#3	3128.882	32795.12	2840.322	3507.176	4007.624

Sample Name: Q2325-04DUP Acquired: 6/19/2025 18:43:13 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001140	.0246409	.0501542	-.001974	.0028195	.6578157	.4633463
Stddev	.002318	.0011610	.0026326	.001286	.0004387	.0109835	.0008238
%RSD	203.3977	4.711564	5.249082	65.11374	15.55803	1.669685	.1777900
#1	-.003731	.0234492	.0516824	-.000771	.0024507	.6703972	.4630299
#2	.000738	.0247049	.0516658	-.003329	.0027032	.6529086	.4642813
#3	-.000427	.0257685	.0471143	-.001823	.0033045	.6501412	.4627275
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003066	-.000083	109.3482	.0018245	.0338670	.0003635	22.98424
Stddev	.0001665	.000039	.3331	.0007568	.0001204	.0002516	.11398
%RSD	54.30285	46.67707	.3045774	41.48139	.3555018	69.20050	.4959083
#1	.0001148	-.000109	109.0446	.0026307	.0339798	.0001586	22.88508
#2	.0004133	-.000102	109.7045	.0011294	.0338809	.0006443	23.10877
#3	.0003918	-.000038	109.2957	.0017133	.0337402	.0002876	22.95887
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.353144	2.640035	.0033843	.0010468	359.5783	.0056524	.0583450
Stddev	.008615	.072990	.0003921	.0007176	2.1391	.0049611	.0003092
%RSD	.1609336	2.764740	11.58546	68.55580	.5948776	87.76943	.5300018
#1	5.348093	2.650231	.0030300	.0018752	361.8796	.0062130	.0586406
#2	5.363091	2.562483	.0033172	.0006490	359.2047	.0004349	.0583705
#3	5.348247	2.707391	.0038056	.0006162	357.6507	.0103095	.0580237
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.691982	.0695102	.0522166	-.008466	.3801425	1.378134	.0025446
Stddev	.007458	.0019810	.0016457	.000320	.0057024	.004201	.0006861
%RSD	.4408041	2.849946	3.151597	3.785533	1.500056	.3048125	26.96164
#1	1.685154	.0705667	.0509458	-.008796	.3817518	1.380296	.0033367
#2	1.690852	.0672249	.0540755	-.008155	.3738085	1.373292	.0021572
#3	1.699941	.0707389	.0516284	-.008446	.3848673	1.380813	.0021398

Sample Name: Q2325-04DUP Acquired: 6/19/2025 18:43:13 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0141981	.0188516	.4148851
Stddev	.0014417	.0015358	.0011971
%RSD	10.15411	8.146880	.2885300
#1	.0144609	.0203092	.4158262
#2	.0126431	.0189977	.4152913
#3	.0154904	.0172480	.4135378

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3146.575	32849.86	2825.102	3509.014	4059.497
Stddev	8.244	179.72	12.643	27.831	11.620
%RSD	.2619982	.5470817	.4475124	.7931150	.2862495
#1	3156.053	32797.39	2830.123	3511.035	4070.749
#2	3141.073	32702.22	2810.720	3480.228	4047.541
#3	3142.598	33049.97	2834.462	3535.779	4060.202

Sample Name: Q2325-04LX5 Acquired: 6/19/2025 18:47:44 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005828	.0098207	.0111250	.0019513	.0020213	.1526723	.1026565
Stddev	.003886	.0008979	.0002864	.0041997	.0005178	.0097591	.0007223
%RSD	66.67320	9.142747	2.574712	215.2264	25.61702	6.392167	.7036183

#1	-.009953	.0089754	.0107959	.0067354	.0023802	.1417897	.1019464
#2	-.002236	.0107633	.0113178	.0002462	.0022561	.1606467	.1033904
#3	-.005296	.0097234	.0112615	-.001128	.0014277	.1555806	.1026327

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002631	.0000223	23.90376	-.000242	.0119648	-.000291	5.016325
Stddev	.0001073	.0000897	.04611	.001119	.0005382	.000402	.004844
%RSD	40.79140	402.3054	.1928961	461.4913	4.498256	138.1466	.0965555

#1	.0003822	.0000690	23.92280	-.000713	.0113990	-.000610	5.021745
#2	.0002329	-.000081	23.85118	-.001049	.0120251	.000161	5.014806
#3	.0001740	.000079	23.93731	.001035	.0124704	-.000425	5.012422

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.174909	.5675958	.0001704	-.000095	87.85395	.0085237	.0122650
Stddev	.000901	.0321318	.0003116	.000625	.57418	.0023623	.0001153
%RSD	.0767195	5.661041	182.8719	656.4272	.6535664	27.71430	.9400841

#1	1.173904	.5437534	-.000178	-.000727	88.47659	.0080791	.0123918
#2	1.175646	.5548977	.000268	.000523	87.34534	.0064153	.0121664
#3	1.175178	.6041363	.000422	-.000081	87.73991	.0110767	.0122368

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3153514	.0156578	.0134900	-.003581	.0814621	.3042835	-.000216
Stddev	.0019763	.0015866	.0012588	.000607	.0038029	.0026923	.000880
%RSD	.6267080	10.13281	9.331079	16.94430	4.668272	.8848071	408.2543

#1	.3176329	.0144767	.0149430	-.003473	.0835986	.3073922	.000281
#2	.3141647	.0150356	.0127305	-.003035	.0837163	.3027182	.000304
#3	.3142567	.0174612	.0127964	-.004234	.0770715	.3027399	-.001231

Sample Name: Q2325-04LX5 Acquired: 6/19/2025 18:47:44 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001087	.1015476	.0907824
Stddev	.004084	.0051852	.0005897
%RSD	375.8271	5.106127	.6495847
#1	-.003110	.1045472	.0902826
#2	-.003764	.1045353	.0906318
#3	.003614	.0955603	.0914328

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3314.420	34977.75	2904.216	3707.004	4472.453
Stddev	3.602	138.75	12.964	23.521	2.242
%RSD	.1086793	.3966906	.4463918	.6344932	.0501202
#1	3317.537	35136.64	2889.921	3722.660	4474.621
#2	3310.476	34916.18	2915.212	3718.394	4472.595
#3	3315.245	34880.44	2907.515	3679.956	4470.144

Sample Name: Q2325-04MS Acquired: 6/19/2025 18:52:10 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8646921	2.020177	1.081766	2.104890	.8468989	3.108319	.7984593
Stddev	.0029806	.004124	.004255	.005892	.0024363	.017496	.0016762
%RSD	.3447016	.2041651	.3933443	.2799233	.2876717	.5628897	.2099293
#1	.8681054	2.022285	1.080994	2.110324	.8457294	3.107334	.7966151
#2	.8626038	2.022822	1.086355	2.105719	.8452679	3.126287	.7988728
#3	.8633670	2.015425	1.077950	2.098628	.8496994	3.091336	.7998901
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2115672	.2167319	138.1767	.4341136	.2503373	.3067611	32.09946
Stddev	.0013510	.0000361	.6640	.0005259	.0006931	.0013885	.07009
%RSD	.6385693	.0166385	.4805451	.1211521	.2768775	.4526450	.2183625
#1	.2111040	.2167593	137.8801	.4338258	.2498935	.3057905	32.01922
#2	.2130888	.2166911	138.9374	.4347206	.2511360	.3083516	32.13038
#3	.2105086	.2167454	137.7128	.4337943	.2499824	.3061411	32.14878
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.911234	5.233573	.5358601	.0770177	444.4107	.3281580	.2922671
Stddev	.025478	.017249	.0010396	.0004792	1.8894	.0024833	.0011737
%RSD	.3686526	.3295833	.1940129	.6221417	.4251498	.7567418	.4015912
#1	6.899781	5.243777	.5346675	.0775386	445.7037	.3268817	.2924444
#2	6.940429	5.213657	.5365753	.0769187	442.2424	.3265723	.2910149
#3	6.893492	5.243283	.5363375	.0765958	445.2860	.3310199	.2933422
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.04612	6.777357	.3530933	.4255763	.4843758	2.906455	.7378580
Stddev	.12892	.005178	.0020226	.0008997	.0056009	.014145	.0017365
%RSD	.8034462	.0764070	.5728316	.2114080	1.156310	.4866593	.2353379
#1	15.99070	6.782067	.3507587	.4248012	.4785646	2.895947	.7371687
#2	16.19349	6.778193	.3543198	.4253647	.4897396	2.922537	.7398333
#3	15.95418	6.771812	.3542012	.4265629	.4848231	2.900882	.7365721

Sample Name: Q2325-04MS Acquired: 6/19/2025 18:52:10 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2256053	.2198300	.7343907
Stddev	.0029117	.0043712	.0010993
%RSD	1.290615	1.988445	.1496824
#1	.2242368	.2150908	.7336239
#2	.2236299	.2206956	.7356501
#3	.2289491	.2237037	.7338982

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3108.726	32558.47	2790.260	3481.454	3978.042
Stddev	12.894	76.57	7.568	13.544	15.590
%RSD	.4147650	.2351762	.2712299	.3890368	.3918959
#1	3122.303	32505.89	2793.053	3481.840	3996.040
#2	3107.229	32646.32	2781.692	3494.801	3968.761
#3	3096.646	32523.21	2796.034	3467.721	3969.324

Sample Name: Q2325-04MSD Acquired: 6/19/2025 18:56:37 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7978367	1.893503	1.002317	1.959366	.7998188	2.762234	.6523417
Stddev	.0079358	.004019	.002097	.006490	.0012112	.163165	.0401861
%RSD	.9946640	.2122305	.2091701	.3312544	.1514385	5.906996	6.160279
#1	.8018940	1.893791	1.001587	1.966379	.8010950	2.950568	.6984611
#2	.7886925	1.889348	1.004681	1.953570	.7986851	2.663503	.6248474
#3	.8029236	1.897370	1.000684	1.958150	.7996762	2.672633	.6337164
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1978624	.2017479	108.0504	.4066044	.2303750	.2892971	25.68595
Stddev	.0108567	.0001797	6.7011	.0003271	.0000688	.0166721	1.56954
%RSD	5.486987	.0890515	6.201791	.0804481	.0298552	5.762953	6.110508
#1	.2103930	.2019523	115.7403	.4067200	.2304111	.3085234	27.49652
#2	.1919241	.2016766	103.4615	.4062352	.2302957	.2805334	24.71100
#3	.1912702	.2016149	104.9494	.4068581	.2304182	.2788346	24.85034
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.447755	4.457161	.4996202	.0718363	353.0379	.3080347	.2634835
Stddev	.329130	.269853	.0009307	.0001563	19.9281	.0243523	.0006059
%RSD	6.041568	6.054361	.1862737	.2175615	5.644749	7.905716	.2299574
#1	5.824549	4.767838	.5006223	.0719985	376.0407	.3359883	.2641185
#2	5.216391	4.281076	.4994551	.0718236	341.0039	.2914152	.2634204
#3	5.302325	4.322569	.4987831	.0716867	342.0692	.2967007	.2629116
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.32533	6.274481	.3217279	.4004339	.3813511	2.394192	.6939400
Stddev	.82494	.010476	.0185358	.0007649	.0025517	.132795	.0006470
%RSD	5.758618	.1669659	5.761315	.1910100	.6691292	5.546529	.0932384
#1	15.27482	6.279004	.3430575	.4008922	.3832269	2.547412	.6946639
#2	13.78440	6.262503	.3125989	.3995510	.3823810	2.322792	.6934182
#3	13.91677	6.281936	.3095272	.4008586	.3784454	2.312373	.6937378

Sample Name: Q2325-04MSD Acquired: 6/19/2025 18:56:37 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2091960	.2048873	.6022856
Stddev	.0104315	.0100879	.0369885
%RSD	4.986454	4.923646	6.141357
#1	.2211712	.2163898	.6446671
#2	.2020852	.1975437	.5765121
#3	.2043317	.2007284	.5856775

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3272.652	34331.73	2923.024	3637.920	4222.673
Stddev	2.181	256.83	164.124	20.468	5.094
%RSD	.0666506	.7480779	5.614884	.5626233	.1206305
#1	3271.194	34144.69	2733.691	3620.086	4217.094
#2	3275.160	34624.55	3024.874	3660.268	4223.847
#3	3271.602	34225.93	3010.508	3633.407	4227.077

Sample Name: Q2325-04A Acquired: 6/19/2025 19:01:05 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8328931	1.974495	1.041432	2.039472	.8247034	2.761939	.6971749
Stddev	.0079335	.003908	.005584	.004399	.0014938	.034901	.0009937
%RSD	.9525277	.1979109	.5361740	.2156700	.1811300	1.263628	.1425316
#1	.8278417	1.973201	1.036276	2.037643	.8259624	2.799046	.6968983
#2	.8288003	1.978885	1.040658	2.044490	.8230528	2.757000	.6963488
#3	.8420372	1.971398	1.047363	2.036282	.8250950	2.729771	.6982776
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2068395	.2103595	114.9614	.4233783	.2399767	.3032796	27.34436
Stddev	.0004081	.0003519	.1117	.0014272	.0004160	.0004745	.07890
%RSD	.1973073	.1672854	.0971517	.3371048	.1733497	.1564692	.2885276
#1	.2064547	.2101634	114.9271	.4250046	.2394977	.3032455	27.28166
#2	.2072675	.2101494	115.0862	.4227960	.2401851	.3037703	27.43295
#3	.2067963	.2107658	114.8709	.4223343	.2402474	.3028230	27.31848
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.773534	4.615217	.5216636	.0720318	378.3327	.3184307	.2775359
Stddev	.010606	.068020	.0012959	.0008282	1.9656	.0027673	.0017789
%RSD	.1836973	1.473820	.2484222	1.149735	.5195460	.8690331	.6409529
#1	5.762068	4.691522	.5209063	.0713135	377.9924	.3197827	.2794673
#2	5.782993	4.593182	.5209246	.0729377	380.4462	.3202622	.2771757
#3	5.775541	4.560946	.5231600	.0718441	376.5595	.3152474	.2759647
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.13773	6.555641	.3384289	.4133211	.3912368	2.415415	.7248490
Stddev	.03813	.007439	.0016471	.0002148	.0039146	.004835	.0000609
%RSD	.2518688	.1134759	.4866795	.0519812	1.000563	.2001541	.0083999
#1	15.14852	6.554969	.3391716	.4130969	.3944670	2.410344	.7248161
#2	15.16930	6.548561	.3365413	.4133410	.3868834	2.415929	.7248117
#3	15.09537	6.563394	.3395738	.4135252	.3923601	2.419973	.7249193

Sample Name: Q2325-04A Acquired: 6/19/2025 19:01:05 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2210294	.2143985	.6420439
Stddev	.0029215	.0066917	.0007330
%RSD	1.321753	3.121134	.1141638
#1	.2183302	.2091989	.6412013
#2	.2206266	.2219482	.6423960
#3	.2241313	.2120483	.6425344

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3159.321	32930.88	2804.102	3497.725	4077.766
Stddev	12.225	135.58	1.829	10.944	11.398
%RSD	.3869567	.4117083	.0652193	.3128893	.2795264
#1	3172.193	32775.63	2806.145	3485.429	4090.114
#2	3147.866	32991.08	2802.619	3501.347	4067.645
#3	3157.904	33025.94	2803.541	3506.399	4075.540

Sample Name: PB168497TB Acquired: 6/19/2025 19:05:33 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001677	-.002918	.0006129	.0016673	-.000841	.0003439	.0012702
Stddev	.001327	.001889	.0005422	.0025365	.002536	.0068414	.0007912
%RSD	79.13544	64.74076	88.47002	152.1362	301.4581	1989.140	62.29028
#1	-.001351	-.002822	.0006534	.0045962	-.001578	.0041191	.0020313
#2	-.003136	-.001079	.0000516	.0001877	.001982	.0044660	.0013273
#3	-.000543	-.004854	.0011338	.0002180	-.002928	-.007553	.0004520
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000269	.0000456	.0002242	.0010439	.0000440	.0002538	.0036941
Stddev	.0001393	.0001190	.0051398	.0003633	.0003276	.0004254	.0210363
%RSD	516.8910	261.2081	2292.374	34.80367	743.7461	167.6535	569.4511
#1	-.000121	-.000041	.0046089	.0013536	-.000226	-.000055	.0025292
#2	.000046	.000181	-.005432	.0011341	.000409	.000078	-.016735
#3	.000156	-.000003	.001496	.0006440	-.000051	.000739	.025289
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017057	-.010724	.0011247	.0001399	308.3329	.0134778	-.000314
Stddev	.0006373	.044809	.0002457	.0001968	4.0138	.0060787	.000629
%RSD	37.36408	417.8439	21.84374	140.6549	1.301760	45.10145	200.6388
#1	.0011592	-.007586	.0014051	.0003260	310.6777	.0069541	-.001038
#2	.0024058	.032434	.0009470	-.000066	303.6983	.0144964	-.000002
#3	.0015521	-.057020	.0010222	.000160	310.6225	.0189828	.000099
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0575048	.0072157	.0027231	.0005642	.0210880	.0030011	-.001425
Stddev	.0013736	.0012847	.0007286	.0001077	.0038990	.0012411	.000531
%RSD	2.388676	17.80421	26.75772	19.08861	18.48900	41.35336	37.28076
#1	.0573811	.0059457	.0021448	.0005038	.0253026	.0019760	-.001179
#2	.0561972	.0085146	.0035415	.0005002	.0176096	.0026464	-.002034
#3	.0589360	.0071866	.0024829	.0006885	.0203519	.0043809	-.001061

Sample Name: PB168497TB Acquired: 6/19/2025 19:05:33 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001311	.0092012	.0000429
Stddev	.001485	.0017319	.0001909
%RSD	113.2946	18.82291	445.1495
#1	-.000689	.0094826	.0002516
#2	-.003005	.0107752	-.000000
#3	-.000238	.0073458	-.000123

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3181.563	33520.80	2848.333	3568.250	4234.749
Stddev	12.243	309.08	38.355	32.154	15.975
%RSD	.3848218	.9220421	1.346580	.9011268	.3772457
#1	3185.082	33457.75	2820.688	3573.218	4239.359
#2	3191.661	33856.53	2892.121	3597.630	4247.913
#3	3167.945	33248.10	2832.191	3533.900	4216.976

Sample Name: PB168511BL Acquired: 6/19/2025 19:10:11 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010541	.0003552	-.000308	.0029404	.0002269	F .2283362
Stddev	.0005919	.0009694	.000467	.0012075	.0012798	.0108627
%RSD	56.15410	272.9405	151.4895	41.06548	564.1069	4.757345

#1	.0003844	-.000736	-.000805	.0015639	.0016487	.2257420
#2	.0015071	.000683	-.000241	.0038207	-.000833	.2402612
#3	.0012709	.001118	.000122	.0034367	-.000135	.2190054

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023663	.0002294	.0000816	.0177309	-.000361	-.000191
Stddev	.0003475	.0001536	.0000584	.0083457	.000241	.000269
%RSD	14.68350	66.94436	71.52361	47.06864	66.91183	140.7431

#1	.0019677	.0000521	.0000447	.0267488	-.000596	.000019
#2	.0025265	.0003150	.0001489	.0161646	-.000114	-.000495
#3	.0026048	.0003212	.0000512	.0102794	-.000373	-.000099

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000096	-.017329	-.000561	-.004183	.0003085	-.000795
Stddev	.000363	.005168	.000548	.027797	.0003079	.000459
%RSD	378.5459	29.82062	97.65416	664.5734	99.80083	57.67872

#1	-.000452	-.022694	.000012	.027801	.0004981	-.001263
#2	-.000111	-.012385	-.001080	-.017839	.0004740	-.000347
#3	.000274	-.016906	-.000615	-.022510	-.000047	-.000775

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2835852	.0116402	-.000395	.0183041	.0014923	.0011817
Stddev	.0317014	.0068470	.000138	.0010934	.0015934	.0015664
%RSD	11.17879	58.82218	34.96155	5.973720	106.7751	132.5520

#1	.3172566	.0189610	-.000483	.0194303	.0029917	.0029869
#2	.2791857	.0053941	-.000236	.0182352	-.000181	.0001822
#3	.2543134	.0105654	-.000467	.0172467	.001666	.0003760

Sample Name: PB168511BL Acquired: 6/19/2025 19:10:11 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002953	-.000783	-.001986	-.001058	-.001471	F .0984913
Stddev	.0000949	.001872	.001119	.000968	.002865	.0063471
%RSD	32.14720	238.9518	56.34739	91.41507	194.7355	6.444336
#1	.0002673	-.002396	-.000794	-.002171	-.004462	.1057718
#2	.0004011	-.001224	-.003015	-.000412	.001248	.0955799
#3	.0002175	.001269	-.002149	-.000593	-.001200	.0941221

Elem	Sr4077
Units	ppm
Avg	.0002954
Stddev	.0000684
%RSD	23.16596
#1	.0002170
#2	.0003432
#3	.0003259

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3483.000	37491.69	2990.428	3915.687	5050.402
Stddev	8.578	290.65	17.812	31.568	13.491
%RSD	.2462788	.7752448	.5956425	.8061814	.2671284
#1	3492.892	37157.75	2973.673	3879.397	5065.468
#2	3478.489	37687.62	2988.476	3930.877	5046.299
#3	3477.619	37629.71	3009.136	3936.789	5039.439

Sample Name: Q2328-05 Acquired: 6/19/2025 19:14:40 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.013612	.0166975	.2982998	.0002659	.0037401	.1113761	.5255976
Stddev	.001304	.0015639	.0006451	.0030200	.0024452	.0129982	.0129873
%RSD	9.580163	9.366314	.2162540	1135.608	65.37706	11.67053	2.470965
#1	-.014377	.0163777	.2976839	-.002933	.0059803	.1247636	.5315644
#2	-.012106	.0183966	.2982448	.000663	.0011317	.1105590	.5345293
#3	-.014353	.0153181	.2989706	.003068	.0041082	.0988058	.5106991
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000511	.0018307	50.88689	.0022183	.0401745	-.000162	10.35690
Stddev	.0001665	.0000744	1.36463	.0006567	.0001490	.000285	.31205
%RSD	325.8152	4.066848	2.681689	29.60190	.3708098	175.4231	3.013009
#1	.0002170	.0018707	51.75813	.0025849	.0402416	-.000122	10.60483
#2	.0000521	.0017448	51.58834	.0026097	.0400038	.000100	10.45939
#3	-.000116	.0018767	49.31421	.0014602	.0402781	-.000466	10.00649
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.158304	2.134898	.0359870	-.000056	282.9299	.0146641	4.007082
Stddev	.080528	.085808	.0000750	.000795	5.6484	.0030802	.012942
%RSD	2.549730	4.019296	.2083120	1426.692	1.996393	21.00486	.3229700
#1	3.205963	2.223453	.0359032	.000829	287.3272	.0177086	4.018215
#2	3.203621	2.129111	.0360103	-.000709	284.9028	.0115494	3.992883
#3	3.065328	2.052130	.0360476	-.000287	276.5597	.0147342	4.010150
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.616931	.0179052	.0991357	-.005964	.7255938	1.671295	.0006092
Stddev	.057825	.0017926	.0024178	.000308	.0035285	.037328	.0009918
%RSD	2.209633	10.01149	2.438848	5.171903	.4862970	2.233474	162.8102
#1	2.657712	.0169555	.1013438	-.005778	.7251745	1.697655	-.000022
#2	2.642327	.0199728	.0995111	-.005794	.7222936	1.687650	.000097
#3	2.550755	.0167873	.0965522	-.006320	.7293132	1.628581	.001752

Sample Name: Q2328-05 Acquired: 6/19/2025 19:14:40 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001287	.0139491	.2579100
Stddev	.002683	.0043001	.0064719
%RSD	208.5076	30.82723	2.509372
#1	-.001547	.0189034	.2617293
#2	-.003830	.0111849	.2615632
#3	.001517	.0117590	.2504375

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3217.073	33665.47	2897.202	3572.987	4221.658
Stddev	4.068	176.49	69.333	20.808	2.482
%RSD	.1264561	.5242403	2.393096	.5823574	.0587815
#1	3215.403	33461.99	2845.518	3549.033	4222.400
#2	3221.711	33776.89	2870.094	3583.350	4223.684
#3	3214.106	33757.55	2975.993	3586.579	4218.890

Sample Name: CCV06 Acquired: 6/19/2025 19:19:10 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin 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	4.858932	4.930414	4.896338	5.001087	5.002726	9.823732	10.17411
Stddev	.011293	.008048	.010173	.008066	.007274	.025547	.01805
%RSD	.2324194	.1632338	.2077753	.1612815	.1453991	.2600557	.1773784
#1	4.861524	4.922316	4.888453	4.992484	5.008837	9.794316	10.15327
#2	4.846569	4.930514	4.892740	5.008480	4.994681	9.840359	10.18424
#3	4.868705	4.938411	4.907822	5.002296	5.004662	9.836521	10.18481
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2507249	2.444489	24.85240	1.002935	2.454324	1.258218	4.814573
Stddev	.0009518	.003728	.06018	.001464	.004680	.003580	.013514
%RSD	.3795985	.1525213	.2421551	.1459404	.1906918	.2845191	.2806971
#1	.2508945	2.441984	24.78344	1.002063	2.452634	1.257822	4.799004
#2	.2496998	2.442709	24.87941	1.004625	2.450723	1.254853	4.821439
#3	.2515805	2.448774	24.89434	1.002117	2.459614	1.261980	4.823277
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.418879	24.50376	2.444689	1.244238	25.61683	2.446617	2.516891
Stddev	.006736	.15284	.004033	.001956	.04883	.005165	.000303
%RSD	.2784769	.6237524	.1649875	.1571933	.1906237	.2111264	.0120265
#1	2.411347	24.34305	2.441977	1.245098	25.62800	2.441379	2.517218
#2	2.420965	24.52094	2.442765	1.245617	25.56339	2.451706	2.516621
#3	2.424325	24.64728	2.449324	1.242000	25.65912	2.446765	2.516834
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.47626	4.923143	5.014609	4.999828	4.807625	5.000929	4.894529
Stddev	.17202	.009109	.015630	.005216	.003841	.019795	.004204
%RSD	.6752232	.1850249	.3116847	.1043160	.0798868	.3958325	.0858874
#1	25.62805	4.913573	5.014185	4.997939	4.803418	4.984699	4.893080
#2	25.28941	4.924150	4.999196	4.995820	4.810944	4.995104	4.891240
#3	25.51131	4.931707	5.030447	5.005725	4.808513	5.022983	4.899265

Sample Name: CCV06 Acquired: 6/19/2025 19:19:10 Type: Unk
 Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: CCV06 Custom ID2: Custom ID3:
 Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.972583	5.105880	5.075771
Stddev	.016928	.008567	.006165
%RSD	.3404279	.1677965	.1214574
#1	4.954301	5.096986	5.068686
#2	4.987714	5.114079	5.079914
#3	4.975735	5.106576	5.078712

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3292.990	34934.38	2864.287	3675.131	4354.588
Stddev	16.629	30.13	10.270	7.646	25.609
%RSD	.5049910	.0862375	.3585553	.2080444	.5880974
#1	3304.877	34947.10	2864.915	3677.304	4372.955
#2	3300.107	34956.06	2874.229	3681.455	4365.476
#3	3273.987	34899.98	2853.717	3666.633	4325.334

Sample Name: CCB06 Acquired: 6/19/2025 19:23:25 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003658	.0021174	.0002740	.0032490	-.000507	.0089637
Stddev	.0025694	.0032208	.0006602	.0006795	.001344	.0130327
%RSD	702.4541	152.1094	240.9514	20.91371	265.2183	145.3947

#1	.0011044	-.001067	.0010359	.0027340	-.000071	.0082157
#2	.0024849	.002046	-.000126	.0040191	.000566	-.003679
#3	-.002492	.005373	-.000088	.0029938	-.002015	.022354

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021385	.0001001	.0002058	-.000739	-.000613	.0005822
Stddev	.0016895	.0000890	.0000409	.006577	.000515	.0000940
%RSD	79.00367	88.97533	19.87562	890.1695	83.99741	16.14981

#1	.0032600	.0002012	.0001844	.006363	-.000077	.0005444
#2	.0029601	.0000656	.0001801	-.006620	-.000657	.0005130
#3	.0001953	.0000334	.0002530	-.001959	-.001104	.0006893

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000951	.0036502	-.000573	-.016135	-.000293	.0002142
Stddev	.000756	.0211852	.001614	.012976	.000382	.0007841
%RSD	79.46618	580.3886	281.8546	80.42043	130.3172	366.1160

#1	-.000092	.0126325	.000959	-.016681	.000146	.0011186
#2	-.001246	.0188644	-.002258	-.002895	-.000549	-.000200
#3	-.001516	-.020546	-.000419	-.028829	-.000477	-.000276

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0980572	.0095325	.0012656	.0126908	-.001113	.0148399
Stddev	.0117334	.0027255	.0000362	.0008437	.001888	.0002626
%RSD	11.96587	28.59171	2.858864	6.648343	169.5932	1.769193

#1	.0875284	.0096939	.0012817	.0134060	-.000438	.0145460
#2	.1107061	.0067299	.0012241	.0117603	-.003246	.0150512
#3	.0959370	.0121738	.0012909	.0129060	.000344	.0149224

Sample Name: CCB06 Acquired: 6/19/2025 19:23:25 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006251	-.000272	.0016618	.0009821	-.001941	F .0598144
Stddev	.0002443	.002127	.0009912	.0004311	.002111	.0019382
%RSD	39.09034	783.1189	59.64908	43.89640	108.7578	3.240361
#1	.0008525	.000869	.0027323	.0007388	-.002948	.0581394
#2	.0003667	.001042	.0007756	.0007276	-.003360	.0593665
#3	.0006559	-.002725	.0014775	.0014799	.000485	.0619374

Elem	Sr4077
Units	ppm
Avg	.0008823
Stddev	.0001779
%RSD	20.16013
#1	.0008883
#2	.0010570
#3	.0007015

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3434.276	36757.25	2948.856	3849.189	5010.522
Stddev	2.295	99.81	25.050	20.901	3.562
%RSD	.0668379	.2715447	.8494893	.5430040	.0710920
#1	3436.577	36844.87	2950.133	3853.868	5014.550
#2	3434.264	36778.30	2973.242	3867.354	5007.788
#3	3431.986	36648.60	2923.191	3826.345	5009.227

Sample Name: Q2358-01 Acquired: 6/19/2025 19:27:54 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0223751	-.027299	.1194687	.0274447	.0212018	79.21071	.5470087
Stddev	.0023326	.001395	.0006616	.0017644	.0038051	.24441	.0006310
%RSD	10.42476	5.109828	.5537749	6.428910	17.94695	.3085545	.1153523

#1	.0250666	-.028560	.1195610	.0256468	.0212374	78.92849	.5466821
#2	.0211175	-.027535	.1187657	.0275136	.0173790	79.35130	.5477361
#3	.0209413	-.025801	.1200792	.0291736	.0249889	79.35233	.5466080

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052022	.0020704	62.44462	.2116356	.1082641	1.270497	206.5169
Stddev	.0000860	.0001051	.14213	.0008546	.0002860	.008104	.4406
%RSD	1.652734	5.078096	.2276056	.4037817	.2641717	.6378833	.2133646

#1	.0051167	.0021174	62.31456	.2108334	.1079686	1.264028	206.0184
#2	.0052011	.0021439	62.59633	.2115390	.1082842	1.279587	206.6783
#3	.0052887	.0019500	62.42299	.2125343	.1085395	1.267875	206.8541

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.374337	66.08194	.1703253	.0098997	2.603414	.3439769	.2955839
Stddev	.010825	.32436	.0006090	.0011330	.023191	.0035244	.0002752
%RSD	.4559129	.4908477	.3575804	11.44442	.8907790	1.024604	.0930905

#1	2.361839	65.71929	.1710013	.0106211	2.607367	.3418303	.2953457
#2	2.380763	66.18217	.1701554	.0085939	2.624374	.3480444	.2958851
#3	2.380408	66.34436	.1698192	.0104842	2.578501	.3420560	.2955209

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.82515	4.786491	.4478842	-.002229	3.519298	5.943552	.0109276
Stddev	.26813	.000861	.0013449	.000241	.001518	.125420	.0001542
%RSD	1.228546	.0179832	.3002702	10.81426	.0431263	2.110186	1.411337

#1	21.63129	4.785862	.4474877	-.001985	3.520999	5.823349	.0108040
#2	22.13114	4.787472	.4493827	-.002467	3.518084	5.933699	.0111004
#3	21.71301	4.786139	.4467821	-.002234	3.518811	6.073608	.0108784

Sample Name: Q2358-01 Acquired: 6/19/2025 19:27:54 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	8.886658	.1558027	.1367731
Stddev	.031838	.0032886	.0004642
%RSD	.3582629	2.110743	.3394035
#1	8.851344	.1532990	.1362962
#2	8.913166	.1545821	.1372235
#3	8.895462	.1595271	.1367996

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3716.923	39124.64	3300.335	4152.157	4458.396
Stddev	8.225	117.39	22.802	9.330	10.542
%RSD	.2212976	.3000306	.6908960	.2247065	.2364507
#1	3723.319	39260.09	3324.218	4162.822	4469.769
#2	3719.806	39052.38	3278.795	4148.143	4456.469
#3	3707.644	39061.46	3297.994	4145.505	4448.951

Sample Name: Q2358-01DUP Acquired: 6/19/2025 19:32:16 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0199303	-.029130	.1245339	.0245723	.0211335	80.36959	.6448671
Stddev	.0013016	.003337	.0011638	.0038320	.0030392	.12620	.0020864
%RSD	6.530843	11.45601	.9345393	15.59465	14.38106	.1570278	.3235358
#1	.0214135	-.025372	.1242698	.0239824	.0177206	80.22410	.6440763
#2	.0193991	-.030271	.1235249	.0286650	.0235476	80.44953	.6432918
#3	.0189783	-.031747	.1258071	.0210694	.0221325	80.43514	.6472333
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052889	.0006879	59.54895	.2140650	.0930776	1.097787	203.1355
Stddev	.0003223	.0000680	.12663	.0005485	.0002313	.001356	.6566
%RSD	6.093960	9.891486	.2126542	.2562318	.2484767	.1234947	.3232445
#1	.0056589	.0006805	59.40380	.2146974	.0933433	1.098774	202.3859
#2	.0050685	.0006238	59.60625	.2137187	.0929686	1.096241	203.4114
#3	.0051395	.0007593	59.63681	.2137789	.0929210	1.098346	203.6091
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.864276	62.15671	.1617333	.0099758	2.854472	.3222791	.2822846
Stddev	.009999	.31846	.0003582	.0006334	.006195	.0077874	.0008561
%RSD	.5363413	.5123581	.2214957	6.349077	.2170374	2.416359	.3032663
#1	1.855550	61.96626	.1615765	.0104354	2.847390	.3138002	.2814167
#2	1.875187	62.52437	.1614802	.0102388	2.857142	.3291119	.2831283
#3	1.862092	61.97951	.1621432	.0092533	2.858885	.3239251	.2823087
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.22885	6.383985	.1910383	-.001151	3.802464	4.200445	.0100679
Stddev	.09187	.006377	.0010084	.000506	.008629	.028320	.0000097
%RSD	.3641652	.0998944	.5278281	43.94619	.2269418	.6742207	.0962271
#1	25.12282	6.389774	.1919323	-.001700	3.807934	4.177015	.0100644
#2	25.28493	6.385032	.1899452	-.000706	3.806941	4.192403	.0100604
#3	25.27880	6.377149	.1912373	-.001045	3.792516	4.231917	.0100788

Sample Name: Q2358-01DUP Acquired: 6/19/2025 19:32:16 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	8.520651	.1663603	.1075947
Stddev	.053612	.0034885	.0002596
%RSD	.6291983	2.096944	.2412989
#1	8.470710	.1653225	.1072988
#2	8.513941	.1702499	.1077007
#3	8.577302	.1635085	.1077845

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3677.672	38660.75	3277.399	4105.546	4404.841
Stddev	17.463	127.23	8.866	18.085	16.739
%RSD	.4748252	.3290810	.2705183	.4405088	.3800029
#1	3691.096	38807.59	3285.861	4120.950	4415.194
#2	3683.990	38583.60	3268.178	4085.633	4413.800
#3	3657.930	38591.05	3278.158	4110.056	4385.530

Sample Name: Q2358-01LX5 Acquired: 6/19/2025 19:36:40 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020682	-.003093	.0237179	.0064606	.0022591	17.24988	.1184807
Stddev	.0027530	.002432	.0014304	.0013459	.0012303	.00916	.0012260
%RSD	133.1094	78.62029	6.030941	20.83251	54.45905	.0530772	1.034742
#1	.0001421	-.003452	.0248138	.0076586	.0035695	17.24519	.1171691
#2	.0052213	-.000502	.0220998	.0050043	.0020790	17.24402	.1195978
#3	.0008412	-.005325	.0242403	.0067190	.0011288	17.26043	.1186753
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013377	.0002219	13.53660	.0459516	.0245564	.2810960	44.88091
Stddev	.0000282	.0000222	.03541	.0005631	.0002878	.0034327	.01935
%RSD	2.107585	10.01127	.2616230	1.225427	1.171899	1.221191	.0431222
#1	.0013620	.0001970	13.54158	.0461722	.0247535	.2802274	44.85859
#2	.0013068	.0002291	13.49896	.0463711	.0242262	.2781809	44.89307
#3	.0013443	.0002397	13.56926	.0453117	.0246896	.2848795	44.89108
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5149504	14.57499	.0323976	.0019621	.6161853	.0794290	.0627282
Stddev	.0007962	.10330	.0003281	.0006783	.0133430	.0024686	.0005675
%RSD	.1546155	.7087708	1.012625	34.56990	2.165424	3.107933	.9046296
#1	.5151881	14.59860	.0321579	.0026047	.6016523	.0786306	.0633607
#2	.5140624	14.66444	.0327715	.0012530	.6278825	.0821980	.0622638
#3	.5156007	14.46193	.0322634	.0020286	.6190209	.0774584	.0625602
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.822222	.9179130	.1036824	-.001007	.6687435	1.568452	.0019383
Stddev	.041791	.0022174	.0004918	.000634	.0014311	.053619	.0003798
%RSD	1.093363	.2415730	.4743531	62.97517	.2139971	3.418619	19.59351
#1	3.815021	.9199403	.1037979	-.001574	.6698776	1.521474	.0015062
#2	3.784501	.9155449	.1041062	-.000322	.6692174	1.557016	.0022192
#3	3.867146	.9182539	.1031432	-.001123	.6671356	1.626867	.0020895

Sample Name: Q2358-01LX5 Acquired: 6/19/2025 19:36:40 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.906067	.0687599	.0296023
Stddev	.009550	.0033907	.0001947
%RSD	.5010406	4.931280	.6578052
#1	1.909917	.0723579	.0295671
#2	1.913092	.0682982	.0294276
#3	1.895193	.0656237	.0298123

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3460.259	36619.27	3014.160	3864.681	4691.604
Stddev	14.359	160.01	23.626	6.502	13.257
%RSD	.4149790	.4369440	.7838256	.1682352	.2825591
#1	3454.367	36743.07	3029.936	3861.311	4684.876
#2	3476.627	36438.60	3025.545	3872.176	4706.876
#3	3449.783	36676.15	2986.997	3860.556	4683.061

Sample Name: Q2358-01MS Acquired: 6/19/2025 19:40:59 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7747579	1.949974	1.146766	1.697212	.3825311	106.7895	.9122668
Stddev	.0044665	.000394	.001902	.002264	.0025379	.3632	.0011036
%RSD	.5765088	.0201907	.1658149	.1333900	.6634468	.3400794	.1209685
#1	.7769312	1.949845	1.146411	1.694726	.3827930	106.7274	.9110310
#2	.7696206	1.949660	1.145067	1.697753	.3798724	107.1798	.9126155
#3	.7777218	1.950416	1.148820	1.699155	.3849279	106.4615	.9131539
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1917422	.2029288	53.08363	.6018725	.3157239	1.588057	232.0481
Stddev	.0008398	.0000219	.14821	.0003462	.0004815	.005665	.7322
%RSD	.4379653	.0108036	.2792000	.0575226	.1524956	.3566991	.3155504
#1	.1921761	.2029126	52.92707	.6015057	.3151708	1.593090	231.7024
#2	.1922763	.2029202	53.22177	.6019179	.3159522	1.589157	232.8892
#3	.1907742	.2029538	53.10204	.6021937	.3160488	1.581923	231.5528
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.589745	67.07938	.7081009	.0797094	5.892790	.6599553	.5202854
Stddev	.001654	.07482	.0013196	.0001397	.017026	.0012495	.0002476
%RSD	.0638551	.1115449	.1863628	.1753009	.2889264	.1893252	.0475933
#1	2.587992	67.04194	.7072993	.0798707	5.903060	.6603710	.5200026
#2	2.591277	67.16553	.7096240	.0796266	5.902174	.6609438	.5204636
#3	2.589966	67.03067	.7073794	.0796309	5.873137	.6585509	.5203899
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.23611	11.35713	.5169852	.3577151	3.795550	4.920621	.7158169
Stddev	.30803	.00948	.0029202	.0010277	.001350	.040904	.0015837
%RSD	.7850771	.0834623	.5648604	.2872974	.0355786	.8312796	.2212388
#1	39.50989	11.35180	.5169194	.3574523	3.796457	4.953141	.7170851
#2	38.90257	11.36807	.5199378	.3588486	3.793998	4.934026	.7140419
#3	39.29585	11.35151	.5140984	.3568442	3.796194	4.874696	.7163237

Sample Name: Q2358-01MS Acquired: 6/19/2025 19:40:59 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.874833	.3688588	.3058157
Stddev	.004791	.0007964	.0007732
%RSD	.0485209	.2159161	.2528344
#1	9.880130	.3696006	.3067072
#2	9.873566	.3680172	.3054116
#3	9.870802	.3689586	.3053282

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3687.578	38654.34	3252.756	4114.068	4309.452
Stddev	9.374	113.95	8.388	11.498	12.208
%RSD	.2541926	.2947870	.2578697	.2794749	.2832917
#1	3697.463	38695.51	3243.758	4115.511	4319.930
#2	3686.454	38741.97	3260.359	4124.776	4312.381
#3	3678.817	38525.52	3254.152	4101.917	4296.046

Sample Name: Q2358-01MSD Acquired: 6/19/2025 19:45:15 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7839253	1.978166	1.128276	1.734689	.4004080	91.15546	.8492161
Stddev	.0042267	.004404	.002547	.001249	.0014198	.07032	.0036001
%RSD	.5391664	.2226516	.2257595	.0720193	.3545844	.0771395	.4239324
#1	.7791752	1.983097	1.125494	1.733269	.4019586	91.08033	.8525974
#2	.7853297	1.974621	1.128840	1.735178	.4000936	91.16637	.8454312
#3	.7872710	1.976781	1.130493	1.735620	.3991717	91.21969	.8496197
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1936869	.2038019	81.83189	.6023137	.3118805	1.684068	216.9946
Stddev	.0002536	.0004458	.14241	.0001684	.0008766	.002356	.2985
%RSD	.1309496	.2187299	.1740261	.0279506	.2810532	.1399079	.1375535
#1	.1939695	.2035208	81.81306	.6021233	.3116633	1.681678	217.1834
#2	.1936121	.2035690	81.69983	.6023746	.3111329	1.684136	216.6505
#3	.1934791	.2043159	81.98278	.6024430	.3128452	1.686389	217.1500
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.344712	79.26782	.7120365	.0798157	5.402534	.6275436	.5123583
Stddev	.005600	.07568	.0015482	.0006463	.006976	.0014911	.0012442
%RSD	.2388332	.0954732	.2174329	.8097219	.1291285	.2376121	.2428383
#1	2.348479	79.32097	.7104537	.0797518	5.396429	.6273943	.5110456
#2	2.338277	79.18118	.7121083	.0804916	5.401035	.6291038	.5125090
#3	2.347379	79.30133	.7135476	.0792038	5.410138	.6261328	.5135203
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.75840	11.64549	.4821915	.3665662	4.629834	5.310844	.7112820
Stddev	.08061	.00994	.0004905	.0006433	.002868	.074790	.0006141
%RSD	.2079919	.0853435	.1017149	.1754804	.0619429	1.408251	.0863433
#1	38.67746	11.63625	.4827388	.3664142	4.626613	5.237247	.7117370
#2	38.83868	11.64421	.4820441	.3660126	4.632109	5.308513	.7105834
#3	38.75907	11.65601	.4817917	.3672719	4.630781	5.386773	.7115255

Sample Name: Q2358-01MSD Acquired: 6/19/2025 19:45:15 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.483144	.3861151	.3308643
Stddev	.034524	.0032792	.0011191
%RSD	.3640613	.8492804	.3382233
#1	9.500732	.3826991	.3320511
#2	9.443367	.3892377	.3298283
#3	9.505332	.3864086	.3307135

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3549.944	37383.69	3161.653	3966.374	4208.819
Stddev	4.652	42.72	10.840	13.174	10.920
%RSD	.1310393	.1142785	.3428720	.3321517	.2594491
#1	3555.233	37431.13	3174.063	3978.034	4218.729
#2	3548.108	37348.25	3156.864	3952.082	4210.616
#3	3546.489	37371.70	3154.031	3969.006	4197.112

Sample Name: Q2358-01A Acquired: 6/19/2025 19:49:31 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7721705	1.849002	1.049287	1.736470	.7325273	80.54123	.7342902
Stddev	.0004825	.003747	.002383	.005989	.0019288	.28627	.0029017
%RSD	.0624827	.2026543	.2271113	.3449153	.2633087	.3554311	.3951742
#1	.7716162	1.845323	1.046536	1.737610	.7346873	80.44620	.7319100
#2	.7723996	1.848868	1.050680	1.729992	.7309771	80.31456	.7334381
#3	.7724957	1.852813	1.050645	1.741807	.7319175	80.86293	.7375226
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1823194	.1901877	63.71710	.5708603	.3004431	1.546324	210.7932
Stddev	.0010941	.0006873	.32128	.0018730	.0004436	.009257	.4237
%RSD	.6001162	.3613757	.5042363	.3280957	.1476621	.5986218	.2010159
#1	.1834737	.1895151	63.49176	.5727072	.3002063	1.553539	210.7763
#2	.1812975	.1901592	63.57453	.5689623	.3001682	1.535887	210.3781
#3	.1821870	.1908888	64.08499	.5709115	.3009550	1.549547	211.2251
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.555724	68.14717	.6460590	.0753969	4.977296	.6130014	.4703450
Stddev	.005863	.39087	.0015811	.0003885	.024743	.0055288	.0025921
%RSD	.2293988	.5735661	.2447301	.5153241	.4971236	.9019233	.5511150
#1	2.551666	67.81347	.6447052	.0756579	4.982266	.6067825	.4683493
#2	2.553061	68.05085	.6456751	.0755824	4.950445	.6148612	.4694110
#3	2.562446	68.57720	.6477967	.0749504	4.999177	.6173605	.4732747
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.34311	10.42882	.7000770	.3537907	3.480789	4.529270	.6838939
Stddev	.38097	.03241	.0029470	.0009073	.012442	.072271	.0030821
%RSD	1.215467	.3107825	.4209512	.2564618	.3574487	1.595635	.4506699
#1	31.39154	10.40739	.7000351	.3538564	3.474766	4.601216	.6835780
#2	30.94025	10.41297	.6971512	.3528523	3.472505	4.456679	.6809819
#3	31.69755	10.46611	.7030447	.3546634	3.495097	4.529917	.6871218

Sample Name: Q2358-01A Acquired: 6/19/2025 19:49:31 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.091330	.3337424	.3161545
Stddev	.048457	.0001037	.0017760
%RSD	.5330024	.0310761	.5617645
#1	9.050765	.3337209	.3147040
#2	9.078237	.3336512	.3156242
#3	9.144989	.3338552	.3181353

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3581.855	37723.04	3170.518	4006.611	4288.224
Stddev	2.632	36.21	17.307	11.115	9.903
%RSD	.0734712	.0959780	.5458706	.2774151	.2309431
#1	3583.528	37694.08	3156.028	4018.635	4296.096
#2	3583.216	37763.63	3189.682	3996.712	4291.472
#3	3578.822	37711.40	3165.843	4004.484	4277.105

Sample Name: CCV07 Acquired: 6/19/2025 19:53:48 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.856687	4.890903	4.899635	4.994773	4.997722	9.818855	10.19743
Stddev	.007715	.008463	.005595	.008733	.008445	.051861	.08177
%RSD	.1588582	.1730410	.1142000	.1748515	.1689826	.5281819	.8018445
#1	4.859895	4.882097	4.893403	5.002879	5.006320	9.763620	10.10310
#2	4.847886	4.891637	4.904228	4.995915	4.989438	9.866508	10.24813
#3	4.862281	4.898976	4.901273	4.985525	4.997409	9.826437	10.24107
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2494730	2.434398	24.93770	1.003626	2.456074	1.257364	4.890024
Stddev	.0023488	.002939	.11740	.003443	.002003	.010454	.020406
%RSD	.9414891	.1207228	.4707875	.3430150	.0815533	.8313958	.4173022
#1	.2469642	2.431167	24.81677	1.001346	2.453840	1.245539	4.874912
#2	.2516196	2.435115	24.94510	1.001947	2.457709	1.265377	4.913237
#3	.2498353	2.436912	25.05123	1.007586	2.456674	1.261175	4.881924
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.419271	24.42132	2.441469	1.248207	25.58223	2.443507	2.512764
Stddev	.009581	.17930	.001359	.000557	.24139	.008228	.005241
%RSD	.3960451	.7341781	.0556482	.0446630	.9435941	.3367489	.2085758
#1	2.408600	24.21518	2.440173	1.247707	25.30715	2.435325	2.506915
#2	2.427135	24.54106	2.442883	1.248107	25.68077	2.451781	2.517032
#3	2.422079	24.50772	2.441352	1.248808	25.75876	2.443414	2.514346
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.12539	4.909245	5.004572	4.989108	4.786953	5.009303	4.878211
Stddev	.24599	.010149	.037679	.002655	.012192	.050803	.008013
%RSD	.9790587	.2067405	.7528823	.0532101	.2547000	1.014175	.1642667
#1	24.89701	4.898168	4.962528	4.989248	4.782420	4.950740	4.872234
#2	25.09330	4.911468	5.035285	4.986386	4.777676	5.041542	4.875083
#3	25.38585	4.918098	5.015902	4.991690	4.800763	5.035627	4.887317

Sample Name: CCV07 Acquired: 6/19/2025 19:53:48 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.969452	5.072150	5.083029
Stddev	.028982	.024575	.035970
%RSD	.5832084	.4845024	.7076421
#1	4.937271	5.047389	5.041506
#2	4.993497	5.072527	5.102942
#3	4.977587	5.096534	5.104638

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3256.872	34531.68	2845.299	3657.132	4316.493
Stddev	5.708	280.76	27.317	25.468	11.687
%RSD	.1752475	.8130610	.9600584	.6963828	.2707489
#1	3262.908	34523.50	2870.122	3663.300	4329.188
#2	3251.563	34816.44	2849.742	3678.949	4306.181
#3	3256.144	34255.10	2816.034	3629.147	4314.110

Sample Name: CCB07 Acquired: 6/19/2025 19:58:03 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009051	.0014048	.0008946	.0042535	-.001901	.0169600
Stddev	.0010365	.0015402	.0008959	.0011516	.001189	.0088811
%RSD	114.5121	109.6390	100.1402	27.07316	62.55936	52.36526

#1	.0019844	.0031593	.0004925	.0035608	-.003264	.0196262
#2	-.000083	.0007800	.0002703	.0055828	-.001075	.0242026
#3	.000814	.0002751	.0019211	.0036168	-.001364	.0070511

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021012	.0002452	.0001834	.0140216	-.000306	.0001005
Stddev	.0005960	.0000526	.0000377	.0129408	.000069	.0002148
%RSD	28.36603	21.43803	20.54391	92.29202	22.58596	213.8473

#1	.0015435	.0002215	.0001964	.0070595	-.000365	.0002432
#2	.0020309	.0003054	.0001410	.0289531	-.000323	-.000147
#3	.0027293	.0002086	.0002130	.0060523	-.000230	.000205

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000324	.0069880	-.000576	.0061891	-.000073	.0002381
Stddev	.000906	.0312844	.000381	.0273485	.000215	.0006152
%RSD	279.3653	447.6861	66.21801	441.8794	293.4376	258.3281

#1	-.001368	-.029114	-.000232	.0375058	-.000318	.0009014
#2	.000267	.023947	-.000509	-.012989	.000081	.0001266
#3	.000127	.026131	-.000986	-.005949	.000018	-.000314

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0555947	.0064761	.0005445	.0074725	-.000226	.0160032
Stddev	.0133730	.0041193	.0003933	.0010313	.002803	.0010737
%RSD	24.05437	63.60773	72.23296	13.80063	1240.954	6.709122

#1	.0704366	.0107519	.0003928	.0086063	-.001572	.0152805
#2	.0518650	.0061430	.0009912	.0065903	-.002102	.0172370
#3	.0444826	.0025335	.0002497	.0072209	.002997	.0154922

Sample Name: CCB07 Acquired: 6/19/2025 19:58:03 Type: Unk
Method: METHOD 6010D, 200.7(v9) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005786	-.000108	.0014032	-.000572	-.003772	F .0455300
Stddev	.0002527	.002123	.0002418	.000318	.001437	.0044642
%RSD	43.68382	1965.503	17.23524	55.53890	38.10150	9.804992
#1	.0003863	.001626	.0011240	-.000465	-.003113	.0440772
#2	.0004845	-.002475	.0015387	-.000321	-.005421	.0419732
#3	.0008648	.000526	.0015468	-.000929	-.002783	.0505397

Elem	Sr4077
Units	ppm
Avg	.0005658
Stddev	.0002947
%RSD	52.08211
#1	.0005155
#2	.0002995
#3	.0008824

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3410.708	36262.31	2896.510	3806.371	4982.161
Stddev	1.994	72.71	10.786	9.651	7.032
%RSD	.0584520	.2005234	.3723871	.2535427	.1411488
#1	3409.877	36250.14	2897.230	3795.323	4984.795
#2	3409.265	36340.34	2885.382	3810.629	4987.496
#3	3412.983	36196.45	2906.918	3813.160	4974.192

LB136181

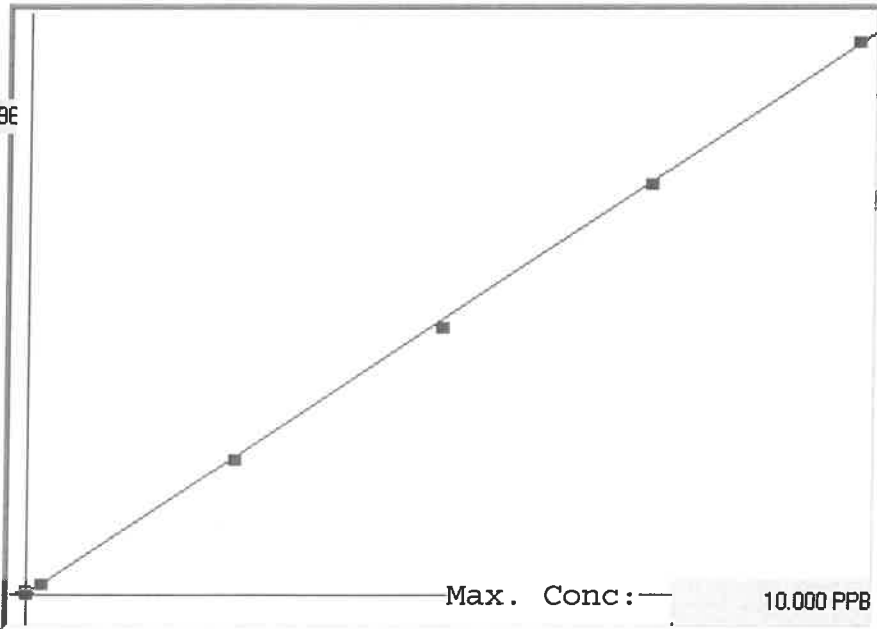
7470A

INSTRUMENT ID: CV1

Linear

μ Abs.:

4429E



A= 0.0000e+000
B= 2.2702e-004
C= 6.8206e-003
Rho= 0.9998853
Accept= Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.0	0.000	0.045	0.045	167	0.000	167	0			
0.2	0.200	0.218	0.018	931	0.0 %	931				
2.5	2.500	2.497	-0.003	10969	0.0 %	10969				
5.0	5.000	4.889	-0.111	21506	0.0 %	21506				
7.5	7.500	7.488	-0.012	32954	0.0 %	32954				
10.0	10.000	10.063	0.063	44296	0.0 %	44296				

0.000190201

LB136181 INSTRUMENT ID : CV1

Method: 7470A

Operator: Admin

Date of Analysis: 18 Jun 2025 09:57:26

Sample ID	Extended ID	µ Abs	Conc	Strd Conc	Method	Units	Date	Type	Type
0.0 - 1	50	167	-	0.000	7470A	PPB	18 Jun 2025 10:20:25	S	Std
0.2 - 1	50-2	931	-	0.200	7470A	PPB	18 Jun 2025 10:25:36	S	Std
2.5 - 1	52-5	10968	-	2.500	7470A	PPB	18 Jun 2025 10:27:53	S	Std
5.0 - 1	55	21506	-	5.000	7470A	PPB	18 Jun 2025 10:30:10	S	Std
7.5 - 1	57-5	32954	-	7.500	7470A	PPB	18 Jun 2025 10:32:28	S	Std
10.0 - 1	51-5	44296	-	10.000	7470A	PPB	18 Jun 2025 10:34:46	S	Std
ICV43 - 1	ICV43	16489	3.7502	-	7470A	PPB	18 Jun 2025 10:37:36	U	SMPL
ICB43 - 1	ICB43	-117	-0.0197	-	7470A	PPB	18 Jun 2025 10:39:52	U	SMPL
CCV57 - 1	CCV57	20009	4.5493	-	7470A	PPB	18 Jun 2025 10:42:09	U	SMPL
CCB57 - 1	CCB57	-151	-0.0275	-	7470A	PPB	18 Jun 2025 10:44:24	U	SMPL
CRA - 1	CRA	879	0.2064	-	7470A	PPB	18 Jun 2025 10:46:41	U	SMPL
HighStd - 1	HighStd	43812	9.9530	-	7470A	PPB	18 Jun 2025 10:48:56	U	SMPL
ChkStd - 1	ChkStd	28107	6.3877	-	7470A	PPB	18 Jun 2025 10:51:12	U	SMPL
PB168519BL - 1	PBW	-384	-0.0804	-	7470A	PPB	18 Jun 2025 10:53:31	U	SMPL
PB168519BS - 1	LCSW	16101	3.6621	-	7470A	PPB	18 Jun 2025 10:55:50	U	SMPL
Q2311-04 - 1	TP03-MH2MH3-WC	1462	0.3387	-	7470A	PPB	18 Jun 2025 11:04:08	U	SMPL
Q2311-08 - 1	TP04-MH2MH3-WC	1426	0.3306	-	7470A	PPB	18 Jun 2025 11:06:24	U	SMPL
Q2312-04 - 1	TP-1	879	0.2064	-	7470A	PPB	18 Jun 2025 11:14:28	U	SMPL
Q2319-04 - 1	MH-B	475	0.1147	-	7470A	PPB	18 Jun 2025 11:16:44	U	SMPL
Q2320-01 - 1	WC	2627	0.6032	-	7470A	PPB	18 Jun 2025 11:18:59	U	SMPL
CCV58 - 1	CCV58	23705	5.3883	-	7470A	PPB	18 Jun 2025 11:21:15	U	SMPL
CCB58 - 1	CCB58	-116	-0.0195	-	7470A	PPB	18 Jun 2025 11:23:30	U	SMPL
Q2325-04 - 1	TP-8	717	0.1696	-	7470A	PPB	18 Jun 2025 11:28:38	U	SMPL
Q2325-04DUP - 1	TP-8DUP	600	0.1430	-	7470A	PPB	18 Jun 2025 11:30:52	U	SMPL
Q2325-04MS - 1	TP-8MS	17948	4.0814	-	7470A	PPB	18 Jun 2025 11:33:08	U	SMPL
Q2325-04MSD - 1	TP-8MSD	17486	3.9765	-	7470A	PPB	18 Jun 2025 11:35:24	U	SMPL
PB168530BL - 1	PBW	52	0.0186	-	7470A	PPB	18 Jun 2025 11:37:42	U	SMPL
PB168530BS - 1	LCSW	17053	3.8782	-	7470A	PPB	18 Jun 2025 11:40:01	U	SMPL
Q2126-07 - 1	LOD-MDL-WATER-01-QT2-2025	149	0.0406	-	7470A	PPB	18 Jun 2025 11:47:32	U	SMPL
Q2126-08 - 1	LOQ-WATER-02-QT2-2025	760	0.1794	-	7470A	PPB	18 Jun 2025 11:49:49	U	SMPL
Q2307-03 - 1	LINDEN-SAA-WATER	240276	54.5544	-	7470A	PPB	18 Jun 2025 11:52:06	U	SMPL
Q2307-03DUP - 1	LINDEN-SAA-WATERDUP	227381	51.6269	-	7470A	PPB	18 Jun 2025 11:54:22	U	SMPL
CCV59 - 1	CCV59	20695	4.7050	-	7470A	PPB	18 Jun 2025 11:57:21	U	SMPL
CCB59 - 1	CCB59	-304	-0.0622	-	7470A	PPB	18 Jun 2025 12:00:07	U	SMPL
Q2307-03MS - 1	LINDEN-SAA-WATERMS	247821	56.2672	-	7470A	PPB	18 Jun 2025 12:02:25	U	SMPL
Q2307-03MSD - 1	LINDEN-SAA-WATERMSD	241248	54.7750	-	7470A	PPB	18 Jun 2025 12:04:41	U	SMPL
PB168497TB - 1	PB168497TB	121	0.0343	-	7470A	PPB	18 Jun 2025 12:10:44	U	SMPL
Q2325-04LX5 - 1		112	0.0322	-	7470A	PPB	18 Jun 2025 12:13:00	U	SMPL
Q2325-04A - 1		18011	4.0957	-	7470A	PPB	18 Jun 2025 12:15:16	U	SMPL
Q2307-03LX5 - 1		46738	10.6173	-	7470A	PPB	18 Jun 2025 12:17:35	U	SMPL
Q2307-03A - 1		241309	54.7889	-	7470A	PPB	18 Jun 2025 12:19:54	U	SMPL
CCV60 - 1	CCV60	22857	5.1958	-	7470A	PPB	18 Jun 2025 12:26:12	U	SMPL
CCB60 - 1	CCB60	-149	-0.0270	-	7470A	PPB	18 Jun 2025 12:28:28	U	SMPL
Q2307-03DLX10 - 1		25846	5.8744	-	7470A	PPB	18 Jun 2025 12:30:47	U	SMPL
Q2307-03DUPDLX10 - 1		27408	6.2290	-	7470A	PPB	18 Jun 2025 12:33:02	U	SMPL
Q2307-03MSDLX10 - 1		30499	6.9307	-	7470A	PPB	18 Jun 2025 12:35:20	U	SMPL
Q2307-03MSDDLX10 - 1		30245	6.8731	-	7470A	PPB	18 Jun 2025 12:37:38	U	SMPL
Q2307-03LDLX50 - 1		5663	1.2924	-	7470A	PPB	18 Jun 2025 12:44:43	U	SMPL
Q2307-03ADLX10 - 1		27392	6.2254	-	7470A	PPB	18 Jun 2025 12:46:58	U	SMPL
CCV61 - 1	CCV61	22035	5.0092	-	7470A	PPB	18 Jun 2025 12:49:14	U	SMPL
CCB61 - 1	CCB61	-60	-0.0068	-	7470A	PPB	18 Jun 2025 12:51:32	U	SMPL

SOP ID : M3010A-Digestion-17

SDG No : N/A

Matrix : WATER

Pipette ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

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

Start Digest Date: 06/17/2025 Time : 12:30 Temp : 96 °C

End Digest Date: 06/17/2025 Time : 15:32 Temp : 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: *SLG*

Supervisor Signature: *SO*

Temp : 1. 96°C 2. N/A

Standardized Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M6007
LFS-2	0.25	M6016
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	3.00	M6158
1:1 HCL	5.00	MP85156
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
06/17/25 16:35	<i>SLG met dig</i>	<i>SLG metals (red)</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
PB168518BL	PBW518	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	1
PB168518BS	LCS518	<2	5	25	Colorless	Colorless	Clear	Clear	M6007,M6016	2
PB168518TB PB168497TB	LEB518 LEB497 SR 06/11/25	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	3
Q2311-04	TP03-MH2MH3-WC	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	4
Q2311-08	TP04-MH2MH3-WC	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	5
Q2312-04	TP-1	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	6
Q2319-04	MH-B	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	7
Q2320-01	WC	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	8
Q2325-04	TP-8	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	9
Q2325-04MS	TP-8MS	<2	5	25	Colorless	Colorless	Clear	Clear	M6007,M6016	11
Q2325-04MSD	TP-8MSD	<2	5	25	Colorless	Colorless	Clear	Clear	M6007,M6016	12
Q2325-04DUP	TP-8DUP	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	10

→

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB168497TB	LEB497	07	N/A	2000	N/A	N/A	N/A	4.93	1.0	T-1
Q2311-04	TP03-MH2MH3-WC	01	100.02	2000	N/A	N/A	N/A	8.2	1.5	T-1
Q2311-08	TP04-MH2MH3-WC	02	100.03	2000	N/A	N/A	N/A	7.2	1.0	T-1
Q2312-04	TP-1	03	100.01	2000	N/A	N/A	N/A	5.8	1.5	T-1
Q2319-04	MH-B	04	100.02	2000	N/A	N/A	N/A	3.5	1.0	T-1
Q2320-01	WC	05	100.03	2000	N/A	N/A	N/A	5.0	1.5	T-1
Q2325-04	TP-8	06	100.04	2000	N/A	N/A	N/A	3.5	1.0	T-1

SOP ID : M7470A-Mercury-20

SDG No : NA

Matrix : WATER

Pipette ID : HG A

Balance ID : N/A

Filter paper ID : NA

pH Strip ID : M6069

Hood ID : #1

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

Start Digest Date: 06/17/2025 Time : 14:40 Temp : 94 °C

End Digest Date: 06/17/2025 Time : 16:40 Temp : 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature: *[Signature]*

Supervisor Signature: *[Signature]*

Temp : 1. 94°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP85997
CCV	30mL	MP85999
CRA	30mL	MP86001
Blank Spike	0.48mL	MP85990
Matrix Spike	0.48mL	MP85990

Chemical Used	ML/SAMPLE USED	Lot Number
HNO3/H2SO4(1:2)	2.25mL	MP85892
KMnO4 (5%)	4.5mL	MP85893
K2S2O8 (5%)	2.4mL	MP85894
Hydroxylamine HCL (12%)	1.8mL	MP85895
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	MP85991
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP85992
2.5 ppb	S2.5	30mL	MP85993
5.0 ppb	S5.0	30mL	MP85994
7.5 ppb	S7.5	30mL	MP85995
10.0 ppb	S10.0	30mL	MP85996
ICV	ICV	30mL	MP85997
ICB	ICB	30mL	MP85998
CCV	CCV	30mL	MP85999
CCB	CCB	30mL	MP86000
CRI	CRI	30mL	MP86001
CHK STD	CHK STD	30mL	MP86002

Extraction Conformance/Non-Conformance Comments:

N/A		
Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
6/17/2025 17:10	<i>[Signature]</i> M4 Lab	<i>[Signature]</i> M4 Lab
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Comment	Prep Pos
PB168497TB	PB168497TB	3	30	<2	N/A	3-1
PB168519BL	PBW519	30	30	<2	N/A	2
PB168519BS	LCS519	30	30	<2	MP85990	3
Q2311-04	TP03-MH2MH3-WC	3	30	<2	N/A	4
Q2311-08	TP04-MH2MH3-WC	3	30	<2	N/A	5
Q2312-04	TP-1	3	30	<2	N/A	6
Q2319-04	MH-B	3	30	<2	N/A	7
Q2320-01	WC	3	30	<2	N/A	8
Q2325-04	TP-8	3	30	<2	N/A	9
Q2325-04DUP	TP-8DUP	3	30	<2	N/A	10
Q2325-04MS	TP-8MS	3	30	<2	MP85990	11
Q2325-04MSD	TP-8MSD	3	30	<2	MP85990	12

TCLP EXTRACTION LOGPAGE

PB168497

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB168497TB	LEB497	07	N/A	2000	N/A	N/A	N/A	4.93	1.0	T-1
Q2311-04	TP03-MH2MH3-WC	01	100.02	2000	N/A	N/A	N/A	8.2	1.5	T-1
Q2311-08	TP04-MH2MH3-WC	02	100.03	2000	N/A	N/A	N/A	7.2	1.0	T-1
Q2312-04	TP-1	03	100.01	2000	N/A	N/A	N/A	5.8	1.5	T-1
Q2319-04	MH-B	04	100.02	2000	N/A	N/A	N/A	3.5	1.0	T-1
Q2320-01	WC	05	100.03	2000	N/A	N/A	N/A	5.0	1.5	T-1
→ Q2325-04	TP-8	06	100.04	2000	N/A	N/A	N/A	3.5	1.0	T-1

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136181

Review By	MOHAN	Review On	6/19/2025 10:26:06 AM
Supervise By	jaswal	Supervise On	6/19/2025 3:46:53 PM

STD. NAME	STD REF.#
ICAL Standard	MP85991,MP85992,MP85993,MP85994,MP85995,MP85996
ICV Standard	MP85997
CCV Standard	MP85999
ICSA Standard	
CRI Standard	MP86001
LCS Standard	
Chk Standard	MP85998,MP86000,MP86002,MP86006

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	06/18/25 10:20		MOHAN	OK
2	S0.2	S0.2	CAL2	06/18/25 10:25		MOHAN	OK
3	S2.5	S2.5	CAL3	06/18/25 10:27		MOHAN	OK
4	S5	S5	CAL4	06/18/25 10:30		MOHAN	OK
5	S7.5	S7.5	CAL5	06/18/25 10:32		MOHAN	OK
6	S10	S10	CAL6	06/18/25 10:34		MOHAN	OK
7	ICV43	ICV43	ICV	06/18/25 10:37		MOHAN	OK
8	ICB43	ICB43	ICB	06/18/25 10:39		MOHAN	OK
9	CCV57	CCV57	CCV	06/18/25 10:42		MOHAN	OK
10	CCB57	CCB57	CCB	06/18/25 10:44		MOHAN	OK
11	CRA	CRA	CRDL	06/18/25 10:46		MOHAN	OK
12	HighStd	HighStd	HIGH STD	06/18/25 10:48		MOHAN	OK
13	ChkStd	ChkStd	SAM	06/18/25 10:51		MOHAN	OK
14	PB168519BL	PB168519BL	MB	06/18/25 10:53		MOHAN	OK
15	PB168519BS	PB168519BS	LCS	06/18/25 10:55		MOHAN	OK
16	Q2311-04	TP03-MH2MH3-WC	SAM	06/18/25 11:04		MOHAN	OK
17	Q2311-08	TP04-MH4-WC	SAM	06/18/25 11:06		MOHAN	OK
18	Q2312-04	TP-1	SAM	06/18/25 11:14		MOHAN	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136181

Review By	MOHAN	Review On	6/19/2025 10:26:06 AM
Supervise By	jaswal	Supervise On	6/19/2025 3:46:53 PM
STD. NAME	STD REF.#		
ICAL Standard	MP85991,MP85992,MP85993,MP85994,MP85995,MP85996		
ICV Standard	MP85997		
CCV Standard	MP85999		
ICSA Standard			
CRI Standard	MP86001		
LCS Standard			
Chk Standard	MP85998,MP86000,MP86002,MP86006		

19	Q2319-04	MH-B	SAM	06/18/25 11:16		MOHAN	OK
20	Q2320-01	WC	SAM	06/18/25 11:18		MOHAN	OK
21	CCV58	CCV58	CCV	06/18/25 11:21		MOHAN	OK
22	CCB58	CCB58	CCB	06/18/25 11:23		MOHAN	OK
23	Q2325-04	TP-8	SAM	06/18/25 11:28		MOHAN	OK
24	Q2325-04DUP	TP-8DUP	DUP	06/18/25 11:30		MOHAN	OK
25	Q2325-04MS	TP-8MS	MS	06/18/25 11:33		MOHAN	OK
26	Q2325-04MSD	TP-8MSD	MSD	06/18/25 11:35		MOHAN	OK
27	PB168530BL	PB168530BL	MB	06/18/25 11:37		MOHAN	OK
28	PB168530BS	PB168530BS	LCS	06/18/25 11:40		MOHAN	OK
29	Q2126-07	LOD-MDL-WATER-01	SAM	06/18/25 11:47		MOHAN	OK
30	Q2126-08	LOQ-WATER-02-QT2	LOQ	06/18/25 11:49		MOHAN	OK
31	Q2307-03	LINDEN-SAA-WATER	SAM	06/18/25 11:52	Hg high	MOHAN	Dilution
32	Q2307-03DUP	LINDEN-SAA-WATER	DUP	06/18/25 11:54	Hg high	MOHAN	Dilution
33	CCV59	CCV59	CCV	06/18/25 11:57		MOHAN	OK
34	CCB59	CCB59	CCB	06/18/25 12:00		MOHAN	OK
35	Q2307-03MS	LINDEN-SAA-WATER	MS	06/18/25 12:02	Hg high	MOHAN	Dilution
36	Q2307-03MSD	LINDEN-SAA-WATER	MSD	06/18/25 12:04	Hg high	MOHAN	Dilution
37	PB168497TB	PB168497TB	MB	06/18/25 12:10		MOHAN	OK
38	Q2325-04L	TP-8L	SD	06/18/25 12:13		MOHAN	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136181

Review By	MOHAN	Review On	6/19/2025 10:26:06 AM
Supervise By	jaswal	Supervise On	6/19/2025 3:46:53 PM
STD. NAME	STD REF.#		
ICAL Standard	MP85991,MP85992,MP85993,MP85994,MP85995,MP85996		
ICV Standard	MP85997		
CCV Standard	MP85999		
ICSA Standard			
CRI Standard	MP86001		
LCS Standard			
Chk Standard	MP85998,MP86000,MP86002,MP86006		

39	Q2325-04A	TP-8A	PS	06/18/25 12:15		MOHAN	OK
40	Q2307-03L	LINDEN-SAA-WATER	SD	06/18/25 12:17	Hg high	MOHAN	Dilution
41	Q2307-03A	LINDEN-SAA-WATER	PS	06/18/25 12:19	Hg high	MOHAN	Dilution
42	CCV60	CCV60	CCV	06/18/25 12:26		MOHAN	OK
43	CCB60	CCB60	CCB	06/18/25 12:28		MOHAN	OK
44	Q2307-03DL	LINDEN-SAA-WATER	SAM	06/18/25 12:30	10X For Hg high	MOHAN	Confirms
45	Q2307-03DUPDL	LINDEN-SAA-WATER	DUP	06/18/25 12:33	10X For Hg high	MOHAN	Confirms
46	Q2307-03MSDL	LINDEN-SAA-WATER	MS	06/18/25 12:35	10X For Hg high	MOHAN	Confirms
47	Q2307-03MSDDL	LINDEN-SAA-WATER	MSD	06/18/25 12:37	10X For Hg high	MOHAN	Confirms
48	Q2307-03LDL	LINDEN-SAA-WATER	SD	06/18/25 12:44	50X For Hg high	MOHAN	Confirms
49	Q2307-03ADL	LINDEN-SAA-WATER	PS	06/18/25 12:46	10X For Hg high	MOHAN	Confirms
50	CCV61	CCV61	CCV	06/18/25 12:49		MOHAN	OK
51	CCB61	CCB61	CCB	06/18/25 12:51		MOHAN	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB136210

Review By	Janvi	Review On	6/20/2025 12:25:55 PM
Supervise By	MOHAN	Supervise On	6/23/2025 5:20:13 PM
STD. NAME	STD REF.#		
ICAL Standard	MP85867,MP85897,MP85871,MP85870,MP85869,MP85868		
ICV Standard	MP85934		
CCV Standard	MP85875		
ICSA Standard	MP85873,MP85874		
CRI Standard	MP85897		
LCS Standard			
Chk Standard	MP85876,MP85877		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	06/19/25 14:10		Jaswal	OK
2	S1	S1	CAL2	06/19/25 14:14		Jaswal	OK
3	S2	S2	CAL3	06/19/25 14:19		Jaswal	OK
4	S3	S3	CAL4	06/19/25 14:23		Jaswal	OK
5	S4	S4	CAL5	06/19/25 14:27		Jaswal	OK
6	S5	S5	CAL6	06/19/25 14:31		Jaswal	OK
7	ICV01	ICV01	ICV	06/19/25 14:45	ICV fail for Sb,As,Ag (200.7) (95-105)	Jaswal	OK
8	LLICV01	LLICV01	LLICV	06/19/25 14:57		Jaswal	OK
9	ICB01	ICB01	ICB	06/19/25 15:01		Jaswal	OK
10	CRI01	CRI01	CRDL	06/19/25 15:06		Jaswal	OK
11	ICSA01	ICSA01	ICSA	06/19/25 15:10		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	06/19/25 15:16		Jaswal	OK
13	ICSADL	ICSADL	ICSA	06/19/25 15:23		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	06/19/25 15:28		Jaswal	OK
15	CCV01	CCV01	CCV	06/19/25 15:33		Jaswal	OK
16	CCB01	CCB01	CCB	06/19/25 15:43		Jaswal	OK
17	Q2336-01	WBR-1	SAM	06/19/25 15:47		Jaswal	OK
18	Q2336-03	WBR-2	SAM	06/19/25 15:51		Jaswal	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB136210

Review By	Janvi	Review On	6/20/2025 12:25:55 PM
Supervise By	MOHAN	Supervise On	6/23/2025 5:20:13 PM
STD. NAME	STD REF.#		
ICAL Standard	MP85867,MP85897,MP85871,MP85870,MP85869,MP85868		
ICV Standard	MP85934		
CCV Standard	MP85875		
ICSA Standard	MP85873,MP85874		
CRI Standard	MP85897		
LCS Standard			
Chk Standard	MP85876,MP85877		

19	Q2337-01	OR-02-061625	SAM	06/19/25 15:56		Jaswal	OK
20	Q2338-01	OK-03-061625	SAM	06/19/25 16:00		Jaswal	OK
21	Q2340-01	TP05-MH17A-WC	SAM	06/19/25 16:04		Jaswal	OK
22	Q2339-01	MH-C	SAM	06/19/25 16:09		Jaswal	OK
23	Q2341-05	EP-3	SAM	06/19/25 16:13		Jaswal	OK
24	Q2341-01	TP-9	SAM	06/19/25 16:18	RPD fail for more than 50% elements	Jaswal	Not Ok
25	Q2340-04	TP05-MH17A-WC	SAM	06/19/25 16:22		Jaswal	OK
26	Q2348-01	001-WILLETS-PT-BLV	SAM	06/19/25 16:26		Jaswal	OK
27	CCV02	CCV02	CCV	06/19/25 16:31		Jaswal	OK
28	CCB02	CCB02	CCB	06/19/25 16:35		Jaswal	OK
29	Q2348-02	002-35TH-AVE(MAY)	SAM	06/19/25 16:40		Jaswal	OK
30	CCV03	CCV03	CCV	06/19/25 16:44		Jaswal	OK
31	CCB03	CCB03	CCB	06/19/25 16:48		Jaswal	OK
32	Q2348-02DUP	002-35TH-AVE(MAY)	DUP	06/19/25 16:53		Jaswal	OK
33	Q2348-02L	002-35TH-AVE(MAY)	SD	06/19/25 16:57		Jaswal	OK
34	Q2348-02MS	002-35TH-AVE(MAY)	MS	06/19/25 17:02		Jaswal	OK
35	Q2348-02MSD	002-35TH-AVE(MAY)	MSD	06/19/25 17:06		Jaswal	OK
36	Q2348-02A	002-35TH-AVE(MAY)	PS	06/19/25 17:10	0.1ML M6004,M6013-10ML SAMPLE	Jaswal	OK
37	Q2349-01	001-WILLETS-PT-BLV	SAM	06/19/25 17:15		Jaswal	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB136210

Review By	Janvi	Review On	6/20/2025 12:25:55 PM
Supervise By	MOHAN	Supervise On	6/23/2025 5:20:13 PM

STD. NAME	STD REF.#
ICAL Standard	MP85867,MP85897,MP85871,MP85870,MP85869,MP85868
ICV Standard	MP85934
CCV Standard	MP85875
ICSA Standard	MP85873,MP85874
CRI Standard	MP85897
LCS Standard	
Chk Standard	MP85876,MP85877

38	Q2349-04	002-35TH-AVE(JUNE	SAM	06/19/25 17:19		Jaswal	OK
39	PB168539BS	PB168539BS	LCS	06/19/25 17:28		Jaswal	OK
40	CCV04	CCV04	CCV	06/19/25 17:32		Jaswal	OK
41	CCB04	CCB04	CCB	06/19/25 17:36		Jaswal	OK
42	PB168539BL	PB168539BL	MB	06/19/25 17:41		Jaswal	OK
43	Q2341-01DUP	TP-9DUP	DUP	06/19/25 17:45	RPD fail for more than 50% elements	Jaswal	Not Ok
44	Q2341-01L	TP-9L	SD	06/19/25 17:50	RPD fail for more than 50% elements	Jaswal	Not Ok
45	Q2341-01MS	TP-9MS	MS	06/19/25 17:54	RPD fail for more than 50% elements	Jaswal	Not Ok
46	Q2341-01MSD	TP-9MSD	MSD	06/19/25 17:58	RPD fail for more than 50% elements	Jaswal	Not Ok
47	Q2341-01A	TP-9A	PS	06/19/25 18:03	RPD fail for more than 50% elements	Jaswal	Not Ok
48	PB168518BL	PB168518BL	MB	06/19/25 18:07		Jaswal	OK
49	PB168518BS	PB168518BS	LCS	06/19/25 18:11		Jaswal	OK
50	Q2312-04	TP-1	SAM	06/19/25 18:16	Bad injection	Jaswal	Not Ok
51	Q2319-04	MH-B	SAM	06/19/25 18:20	Bad injection	Jaswal	Not Ok
52	CCV05	CCV05	CCV	06/19/25 18:25		Jaswal	OK
53	CCB05	CCB05	CCB	06/19/25 18:29		Jaswal	OK
54	Q2320-01	WC	SAM	06/19/25 18:34		Jaswal	OK
55	Q2325-04	TP-8	SAM	06/19/25 18:38		Jaswal	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB136210

Review By	Janvi	Review On	6/20/2025 12:25:55 PM
Supervise By	MOHAN	Supervise On	6/23/2025 5:20:13 PM
STD. NAME	STD REF.#		
ICAL Standard	MP85867,MP85897,MP85871,MP85870,MP85869,MP85868		
ICV Standard	MP85934		
CCV Standard	MP85875		
ICSA Standard	MP85873,MP85874		
CRI Standard	MP85897		
LCS Standard			
Chk Standard	MP85876,MP85877		

56	Q2325-04DUP	TP-8DUP	DUP	06/19/25 18:43		Jaswal	OK
57	Q2325-04L	TP-8L	SD	06/19/25 18:47		Jaswal	OK
58	Q2325-04MS	TP-8MS	MS	06/19/25 18:52		Jaswal	OK
59	Q2325-04MSD	TP-8MSD	MSD	06/19/25 18:56		Jaswal	OK
60	Q2325-04A	TP-8A	PS	06/19/25 19:01	0.1ML M6004,M6013-10ML SAMPLE	Jaswal	OK
61	PB168497TB	PB168497TB	MB	06/19/25 19:05		Jaswal	OK
62	Q2328-05	CHRT25653	SAM	06/19/25 19:14		Jaswal	OK
63	CCV06	CCV06	CCV	06/19/25 19:19		Jaswal	OK
64	CCB06	CCB06	CCB	06/19/25 19:23		Jaswal	OK
65	Q2358-01	NB-07-06182025	SAM	06/19/25 19:27		Jaswal	OK
66	Q2358-01DUP	NB-07-06182025DUP	DUP	06/19/25 19:32		Jaswal	OK
67	Q2358-01L	NB-07-06182025L	SD	06/19/25 19:36		Jaswal	OK
68	Q2358-01MS	NB-07-06182025MS	MS	06/19/25 19:40		Jaswal	OK
69	Q2358-01MSD	NB-07-06182025MSD	MSD	06/19/25 19:45		Jaswal	OK
70	Q2358-01A	NB-07-06182025A	PS	06/19/25 19:49	0.1ML M6004,M6013-10ML SAMPLE	Jaswal	OK
71	CCV07	CCV07	CCV	06/19/25 19:53		Jaswal	OK
72	CCB07	CCB07	CCB	06/19/25 19:58		Jaswal	OK

SOP ID :	M1311-TCLP-16	
SDG No :	N/A	Start Prep Date : 06/13/2025 Time : 16:00
Weigh By :	JP	End Prep Date : 06/14/2025 Time : 10:20
Balance ID :	WC SC-7	Combination Ratio : 20
pH Meter ID :	WC PH METER-1	ZHE Cleaning Batch : 78
Extraction By :	JP	Initial Room Temperature: 23 °C
Filter By :	JP	Final Room Temperature: 22 °C
Pipette ID :	WC	TCLP Technician Signature : 78
Tumbler ID :	T-1	Supervisor By : 12
TCLP Filter ID :	115525	

Standardized Name	MLS USED	STD REF. # FROM LOG
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE U	Lot Number
TCLP-FLUID-1	N/A	WP112795
HCL-TCLP,1N	N/A	WP112797
HNO3-TCLP,1N	N/A	WP112799
pH Strips	N/A	W1931,W1934,W3171,W3172
pH Strips	W1940,W1941,W1942	W3166,W1938,W1939,
1 Liter Amber	N/A	90924-08
120ml Plastic bottle	N/A	2738
1:1 HNO3	N/A	MP84041

Extraction Conformance/Non-Conformance Comments:

Matrix spikes are added after filtration and before preservation. TUMBLER T-1 checked,30 rpm. q2325-04 is used for MS-MSD.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
06/11/25 10:00	JP 1000 RUM	SPG. RS 1541
	Preparation Group	Analysis Group 1021 D.Y.

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB168497TB	LEB497	07	N/A	2000	N/A	N/A	N/A	4.93	1.0	T-1
Q2311-04	TP03-MH2MH3-WC	01	100.02	2000	N/A	N/A	N/A	8.2	1.5	T-1
Q2311-08	TP04-MH2MH3-WC	02	100.03	2000	N/A	N/A	N/A	7.2	1.0	T-1
Q2312-04	TP-1	03	100.01	2000	N/A	N/A	N/A	5.8	1.5	T-1
Q2319-04	MH-B	04	100.02	2000	N/A	N/A	N/A	3.5	1.0	T-1
Q2320-01	WC	05	100.03	2000	N/A	N/A	N/A	5.0	1.5	T-1
Q2325-04	TP-8	06	100.04	2000	N/A	N/A	N/A	3.5	1.0	T-1

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
PB168497TB	LEB497	N/A	N/A	N/A	N/A	N/A	N/A
Q2311-04	TP03-MH2MH3-WC	N/A	N/A	N/A	N/A	100	N/A
Q2311-08	TP04-MH2MH3-WC	N/A	N/A	N/A	N/A	100	N/A
Q2312-04	TP-1	N/A	N/A	N/A	N/A	100	N/A
Q2319-04	MH-B	N/A	N/A	N/A	N/A	100	N/A
Q2320-01	WC	N/A	N/A	N/A	N/A	100	N/A
Q2325-04	TP-8	N/A	N/A	N/A	N/A	100	N/A

Hot Block ID : WC S-1 / WC S-2

Thermometer ID : FLASHPOINT

SampleID	ClientID	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or 2	pH Extraction Fluid
PB168497TB	LEB497	N/A	N/A	N/A	N/A	#1	4.93
Q2311-04	TP03-MH2MH3-WC	5.02	96.5	9.1	4.0	#1	4.93
Q2311-08	TP04-MH2MH3-WC	5.03	96.5	10.0	4.0	#1	4.93
Q2312-04	TP-1	5.02	96.5	8.0	3.5	#1	4.93
Q2319-04	MH-B	5.01	96.5	5.8	1.5	#1	4.93
Q2320-01	WC	5.02	96.5	8.0	3.0	#1	4.93
Q2325-04	TP-8	5.03	96.5	6.6	1.5	#1	4.93

Prep Standard - Chemical Standard Summary

Order ID : Q2320

Test : TCLP ICP Metals,TCLP Mercury

Prepbatch ID : PB168518,PB168519,

Sequence ID/Qc Batch ID: LB136181,LB136210,LB136210,

Standard ID :

MP85156,MP85867,MP85868,MP85869,MP85870,MP85871,MP85873,MP85874,MP85875,MP85876,MP85877,MP85892,MP85893,MP85894,MP85895,MP85896,MP85897,MP85934,MP85990,MP85991,MP85992,MP85993,MP85994,MP85995,MP85996,MP85997,MP85998,MP85999,MP86000,MP86001,MP86002,MP86006,

Chemical ID :

M4371,M4465,M4916,M5062,M5466,M5467,M5471,M5658,M5697,M5747,M5748,M5798,M5799,M5800,M5801,M5811,M5814,M5820,M5882,M5884,M5942,M5962,M5969,M5970,M5984,M5985,M5996,M5997,M6007,M6016,M6021,M6023,M6028,M6030,M6032,M6041,M6077,M6127,M6128,M6137,M6138,M6142,M6144,M6145,M6146,M6151,M6152,M6155,M6158,M6159,M6161,M6162,M6163,M6164,M6165,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>
170	1:1HCL	MP85156	04/07/2025	08/18/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								04/07/2025

FROM 1250.00000ml of M6151 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

<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)	MP85867	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal
								06/14/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6162 = 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>
907	ICP AES STD S (S5)	MP85868	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
A) <u>FROM</u> 5.00000ml of M5467 + 5.00000ml of M5471 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5970 + 5.00000ml of M5996 + 5.00000ml of M5997 + 5.00000ml of M6077 + 5.00000ml of M6146 + 455.00000ml of MP85867 = 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	MP85869	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
FROM 50.00000ml of MP85867 + 50.00000ml of MP85868 = 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	MP85870	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal 06/14/2025
FROM 25.00000ml of MP85868 + 75.00000ml of MP85867 = 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>
908	ICP AES S2/CRI MINERALS ONLY STD	MP85871	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
FROM 8.00000ml of MP85868 + 92.00000ml of MP85867 = 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	MP85873	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 06/14/2025
<u>FROM</u>	25.00000ml of M6152 + 225.00000ml of MP85867 = 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>
3494	ICP AES ICSAB SOLN-1	MP85874	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 06/14/2025
<u>FROM</u>	10.00000ml of M6152 + 10.00000ml of M6155 + 80.00000ml of MP85867 = 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>
911	ICP AES CCV SOLN	MP85875	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
FROM 50.00000ml of MP85867 + 50.00000ml of MP85868 = 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	MP85876	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
FROM 1.00000ml of M5984 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6162 = 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>
903	ICP AES RINSE SOLN	MP85877	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal 06/14/2025
FROM 200.00000ml of M6162 + 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>
3965	2:1 H2SO4 : HNO3	MP85892	06/05/2025	11/27/2025	Mohan Bera	None	None	Sarabjit Jaswal 06/14/2025
<u>FROM</u>	1600.00000ml of M6041 + 800.00000ml of M6162 = Final Quantity: 3200.000 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>
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP85893	06/05/2025	12/05/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal
06/14/2025								

FROM 100.00000gram of M4916 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

<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>
66	POTASSIUM PERSULFATE SOLUTION 5 %	MP85894	06/05/2025	08/06/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal
06/14/2025								

FROM 100.00000ml of M4465 + 2000.00000ml of W3112 = 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>
67	SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION	MP85895	06/05/2025	06/25/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025
<u>FROM</u> 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 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>
2950	ICP AES S1/CRI STOCK STD	MP85896	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
FROM 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5658 + 0.05000ml of M5811 + 0.05000ml of M6030 + 0.05000ml of M6159 + 0.06000ml of M5747 + 0.10000ml of M5471 + 0.10000ml of M5697 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5969 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5942 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6145 + 0.25000ml of M5466 + 0.25000ml of M6146 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M6127 + 1.00000ml of M6138 + 1.00000ml of M6142 + 1.00000ml of M6144 + 2.00000ml of M6137 + 90.03000ml of MP85867 = 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	MP85897	06/02/2025	06/25/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
FROM 2.00000ml of MP85896 + 90.03000ml of MP85867 = 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>
4163	NEW ICV-060925	MP85934	06/10/2025	06/25/2025	Sarabjit Jaswal	METALS_SCALE_1 (M SC-1)	METALS_PIPETTE_3 (A)	Mohan Bera 06/16/2025
<u>FROM</u>	0.20000ml of M6163 + 0.20000ml of M6164 + 0.20000ml of M6165 + 49.40000ml of MP85867 = Final Quantity: 50.000 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.	MP85990	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal 06/19/2025
A)								
<u>FROM</u>	1.00000ml of M6162 + 2.50000ml of M5062 + 96.50000ml of W3112 = 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>
1340	Hg 0.00 PPB STD	MP85991	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 06/19/2025
<u>FROM</u>	2.50000ml of M6162 + 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	MP85992	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal
A) FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP85990 = 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>
1342	Hg 2.5 PPB STD	MP85993	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG	Sarabjit Jaswal
A) FROM 2.50000ml of M6162 + 245.00000ml of W3112 + 2.50000ml of MP85990 = 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	MP85994	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal
A) FROM 2.50000ml of M6162 + 242.50000ml of W3112 + 5.00000ml of MP85990 = 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>
1344	Hg 7.5 PPB STD	MP85995	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal
A) FROM 2.50000ml of M6162 + 240.00000ml of W3112 + 7.50000ml of MP85990 = 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	MP85996	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal
A) FROM 2.50000ml of M6162 + 237.50000ml of W3112 + 10.00000ml of MP85990 = 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>
1346	Hg ICV SOLUTION	MP85997	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 06/19/2025
<u>FROM</u>	2.50000ml of M6161 + 2.50000ml of M6162 = 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)	MP85998	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG	Sarabjit Jaswal
FROM 2.50000ml of M6162 + 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>
1358	CCV (Hg 5.0 PPB SOLUTION)	MP85999	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 06/19/2025
FROM 485.00000ml of W3112 + 5.00000ml of M6162 + 10.00000ml of MP85990 = 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>
1352	CCB (Hg 0.00 PPB SOLUTION)	MP86000	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal
FROM 495.00000ml of W3112 + 5.00000ml of M6162 = 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>
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP86001	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 06/19/2025
<u>FROM</u>	2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP85990 = 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)	MP86002	06/17/2025	06/18/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal
FROM 2.50000ml of M6162 + 240.50000ml of W3112 + 7.00000ml of MP85990 = 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>
68	STANNOUS CHLORIDE SOLUTION	MP86006	06/18/2025	06/19/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/19/2025
<u>FROM</u> 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6151 = Final Quantity: 500.000 ml								

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2196-01 / Hydroxylamine Hydrochloride, Crystal (cs/4x500g)	0000215387	06/25/2025	07/01/2019 / RICHARD	06/07/2019 / RICHARD	M4371

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3238-05 / Potassium Persulfate (2.5kg)	0000234156	08/06/2025	07/23/2019 /	07/25/2019 / manojkumar	M4465

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3227-05 / Potassium Permanganate (2.5kg)	210800	03/31/2026	11/30/2022 / mohan	07/28/2021 / mohan	M4916

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	061322	06/13/2025	03/06/2023 / bin	03/01/2023 / bin	M5466

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	082922	08/29/2025	04/14/2025 / jaswal	03/16/2023 / jaswal	M5471

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

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

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.	57004 / Be, 1000 PPM, 125 ml	102523	10/25/2026	02/09/2024 / bin	02/09/2024 / bin	M5798

CHEMICAL RECEIPT LOG BOOK

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

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

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

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

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

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 #
Seidler Chemical	BA-3980-01 / Stannous Chloride (cs/4x500g)	232820	08/31/2028	04/30/2024 / mohan	04/25/2024 / mohan	M5882

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3624-05 / Sodium Chloride, Crystal (cs/4x2.5kg)	0000281938	07/06/2026	04/30/2024 / mohan	04/25/2024 / mohan	M5884

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	03/31/2026	03/31/2025 / kareem	06/11/2024 / Jaswal	M5969

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	08/05/2024 / kareem	06/14/2024 / Jaswal	M5984

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	T2-MEB714417	01/27/2027	05/07/2024 / JANVI	02/22/2024 / kareem	M5996

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB727800	12/21/2027	02/03/2025 / JANVI	02/22/2024 / kareem	M5997

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	T2-MEB723367	05/27/2026	05/27/2025 / Janvi	05/14/2024 / Jaswal	M6007

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	10/30/2025	04/30/2025 / mohan	05/14/2024 / Jaswal	M6016

CHEMICAL RECEIPT LOG BOOK

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

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 #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	23D2462010	03/20/2028	08/16/2024 / mohan	08/16/2024 / mohan	M6041

CHEMICAL RECEIPT LOG BOOK

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSI1-1 / SILICON 125mL 1000ug/mL	V2-SI744713	07/10/2029	01/14/2025 / Jaswal	10/03/2024 / Jaswal	M6137

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	121824	12/18/2027	04/17/2025 / Janvi	01/13/2025 / Jaswal	M6138

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58119 / K, 10000 PPM, 500 ml	103024	10/30/2027	05/06/2025 / JANVI	01/13/2025 / Jaswal	M6142

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58111 / Na, 10000 PPM, 500 ml	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 /	01/13/2025 / Jaswal	M6145

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	08/18/2025	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	08/24/2025	02/24/2025 / kareem	04/20/2021 / kareem	M6152

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	06/30/2025	02/10/2025 / kareem	02/09/2024 / kareem	M6155

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)	24D1062002	03/25/2029	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011325	03/18/2026	03/18/2025 / kareem	02/09/2025 / kareem	M6159

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV 5 0415	07/31/2025	05/01/2025 / mohan	03/30/2024 / mohan	M6161

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24H0162012	11/27/2025	05/27/2025 / Sagar	04/27/2025 / Sagar	M6162

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-1-125ML / EPA CLP ICP Verification Standard1	V2-MEB744107	05/22/2029	06/09/2025 / jaswal	06/06/2025 / jaswal	M6163

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-2-125ML / EPA CLP ICP Verification Standard2	U2-MEB733713	06/01/2028	06/09/2025 / jaswal	06/09/2025 / jaswal	M6164

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-3-125ML / EPA CLP ICP Verification Standard3	V2-MEB749572	01/02/2030	06/09/2025 / jaswal	06/09/2025 / jaswal	M6165

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: 57056
Lot Number: 010924
Description: Barium (Ba)
Solvent: Nitric Acid
Lot #

Expiration Date: 010927
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
2% **40.0** **Nitric Acid**
(mL)

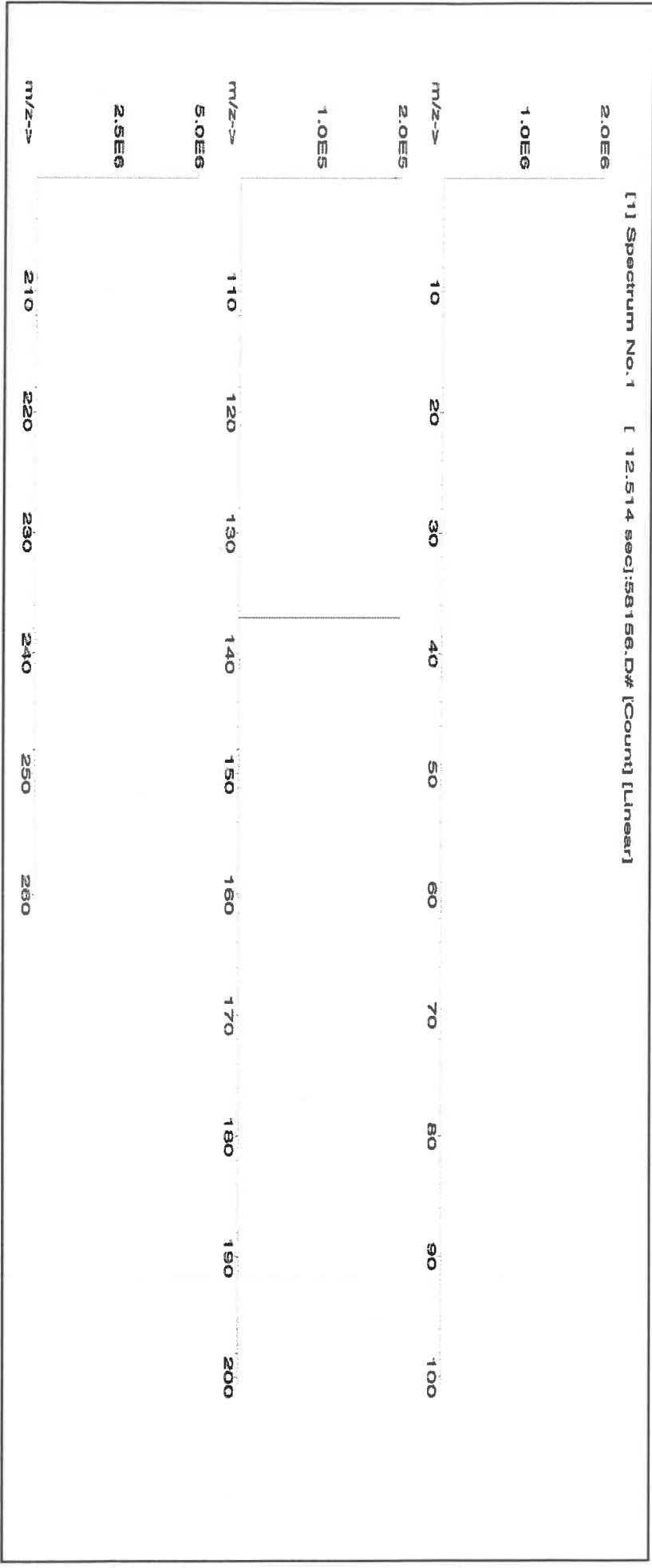
NIST Test Number: 6UTB

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

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

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)
Barium nitrate (Ba)	IN023 BA0022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	1000.1	2.0

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/mL 3 0.5 mg/mL 3 3104a





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 Nitric Acid (mL)

Expiration Date: 070127

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

SE-05 Balance Uncertainty

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

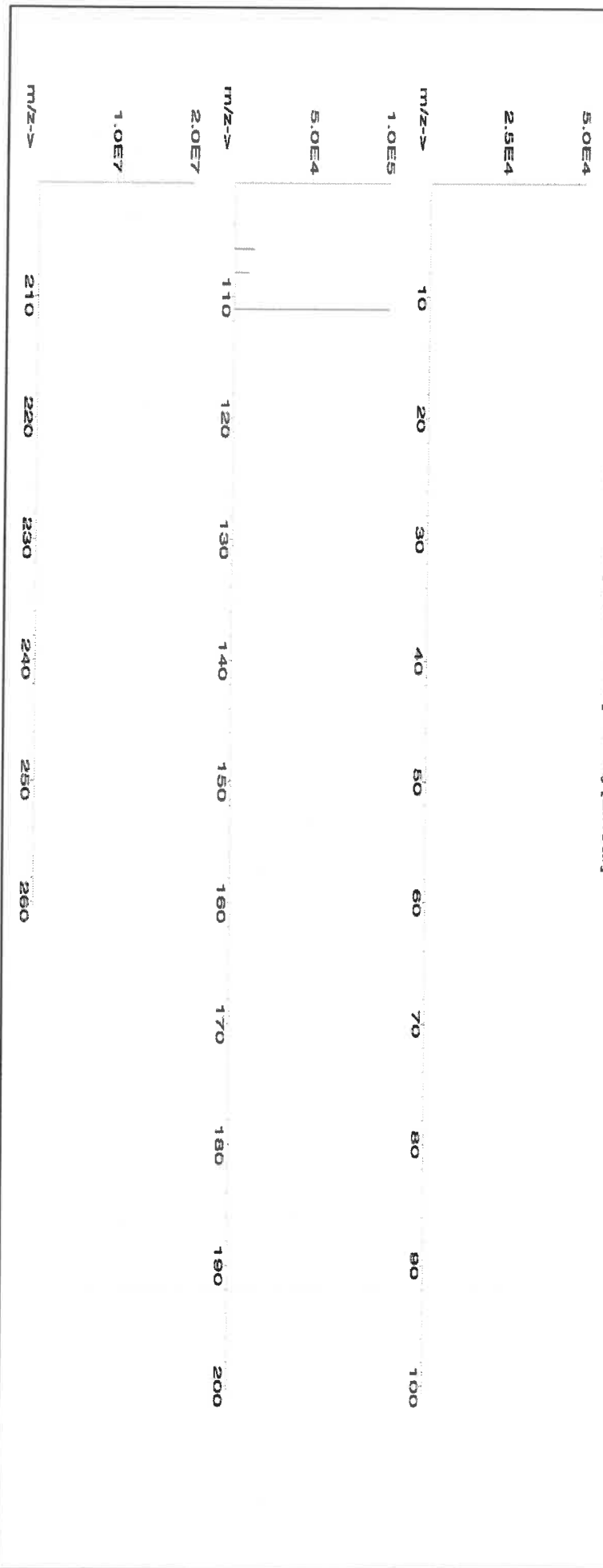
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

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
----------	------------	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

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 orl-rat 60.2mg/kg 3108

[1] 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).



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**

Giovanni Caporale

Formulated By: Giovanni Esposito **051523**

Pedro L. Renias

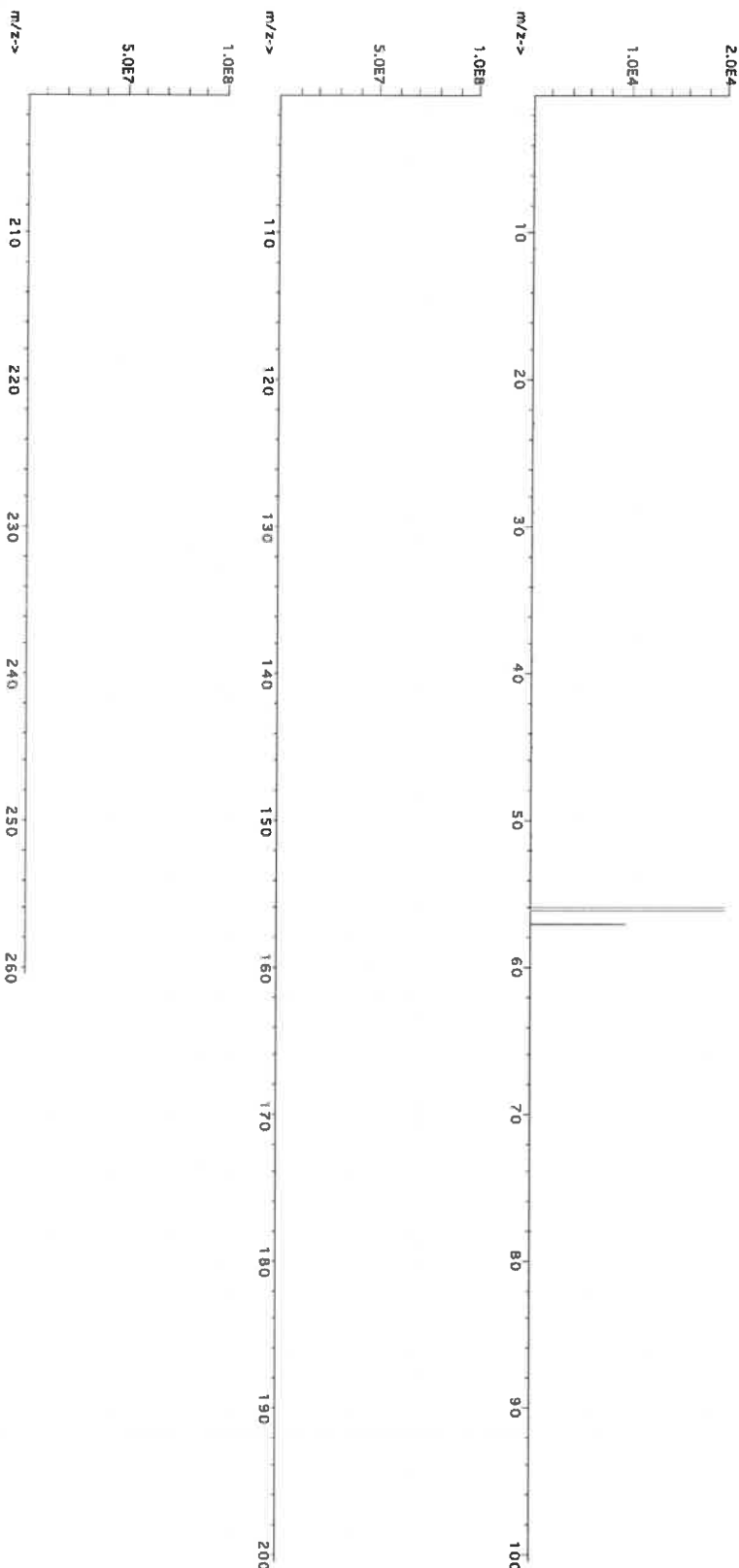
Reviewed By: Pedro L. Renias **051523**

SDS Information

Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Uncertainty	(Solvent Safety Info. On Attached pg.)			
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	SRM

1. Iron (Fe) IN346 2302010-500 10000 99.995 0.10 100.0 50.0034 50.0111 10001.5 20.0 7439-89-6 5 mg/m3 or-tral 7500mg/kg 3126a

[1] Spectrum No.1 [30.763 sec]:58126.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	<0.10	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).



Refine your results. Redefine your industry.

RD:05/14/2024

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:	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

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 30, 2022

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

11.2 Lot Expiration Date

- August 30, 2026

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Refine your results. Redefine your industry.

RD:05/14/2024

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: 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>. 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

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 17, 2023

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

11.2 Lot Expiration Date

- **March 17, 2028**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



M4371

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Rec - 06.07.19



avantortm

Material No.: 2196-01
Batch No.: 0000215387
Manufactured Date: 2018/06/27
Retest Date: 2025/06/25
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (NH ₂ OH · HCl) (by KMnO ₄ titrn)	>= 96.0 %	99.1
Clarity of Alcohol Solution	Passes Test	PT
Residue after Ignition	<= 0.050 %	0.017
Titrate Free Acid (meq/g)	<= 0.25	0.19
Ammonium (NH ₄)	Passes Test	PT
Sulfur Compounds (as SO ₄)	<= 0.005 %	< 0.003
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	4
Trace Impurities - Iron (Fe)	<= 5 ppm	< 3
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	< 0.005

For Laboratory, Research or Manufacturing Use

Country of Origin: CN
Packaging Site: Paris Mfg Ctr & DC

ISO

Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

M4913-16

MS

Certificate of Analysis

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

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

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

Catalog Number	P279	Quality Test / Release Date	01/12/2021
Lot Number	210306		
Description	POTASSIUM PERMANGANATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Jan/2026

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Dark purple to purple green crystals
ASSAY	%	>= 99	99.3
CHLORIDE & CHLORATE	%	<= 0.005	<0.005
IDENTIFICATION	PASS/FAIL	= PASS TEST	pass test
INSOLUBLE MATTER	%	<= 0.2	<0.2
MERCURY (Hg)	ppm	<= 0.05	<0.004
SULFATE (SO4)	%	<= 0.02	<0.02

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
 If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.

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 info@inorganicventures.com

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

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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





AN 5466

Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number: 57058
Lot Number: 061322
Description: Cerium (Ce)

Solvent: 20510011 Nitric Acid

Lot #

Expiration Date: 061325

2% 20.0 Nitric Acid (mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6LUTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

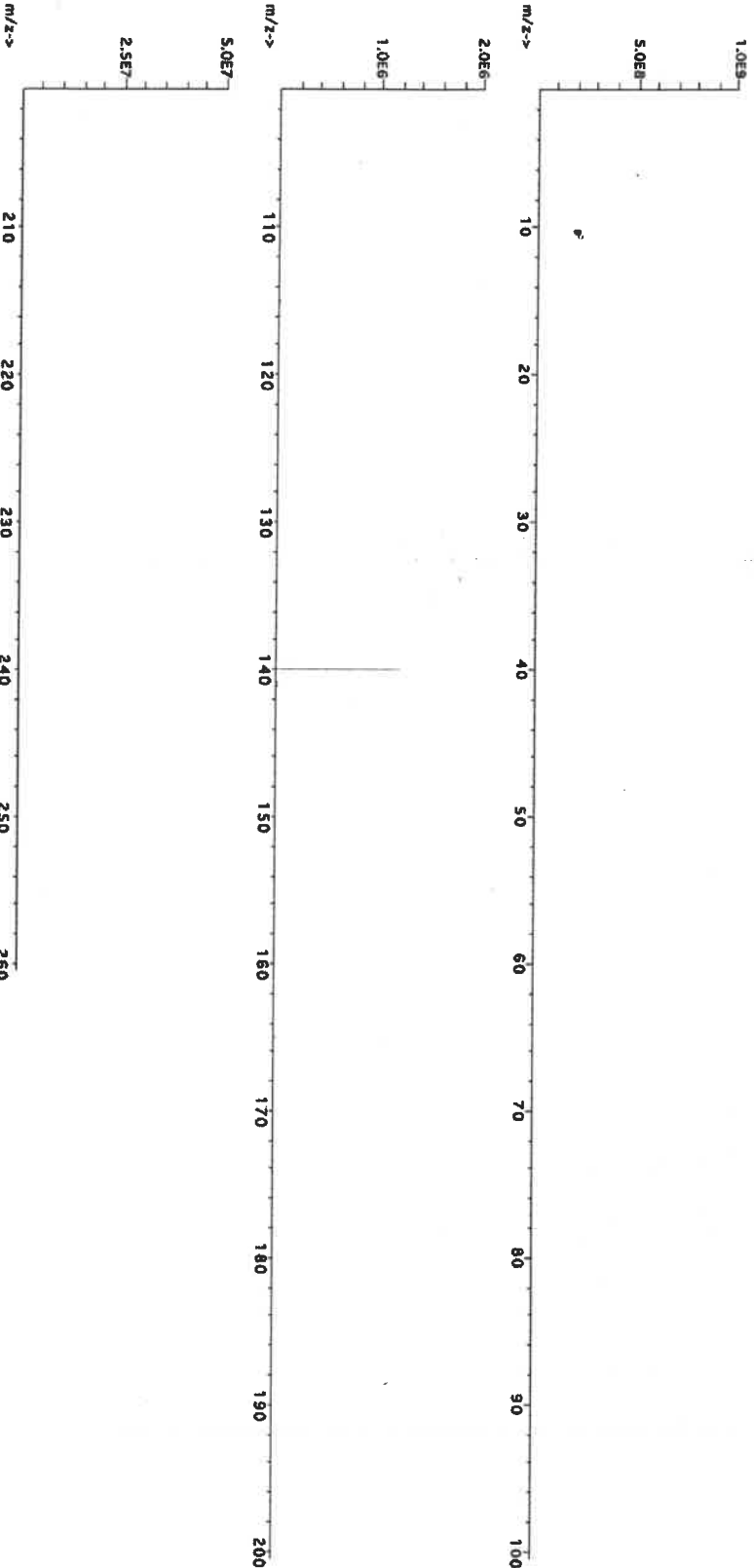
Formulated By:	Lawrence Barry
	061322
Reviewed By:	Pedro L. Renteria
	061322

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	3.04923	1000.0	2.0	10294-41-4	NA	NA	NA
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[1] Spectrum No.1 [43.472 sec:158.00e [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (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	Rc	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	T	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	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

Physical Characterization:

(T) = Target analyte

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:
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)

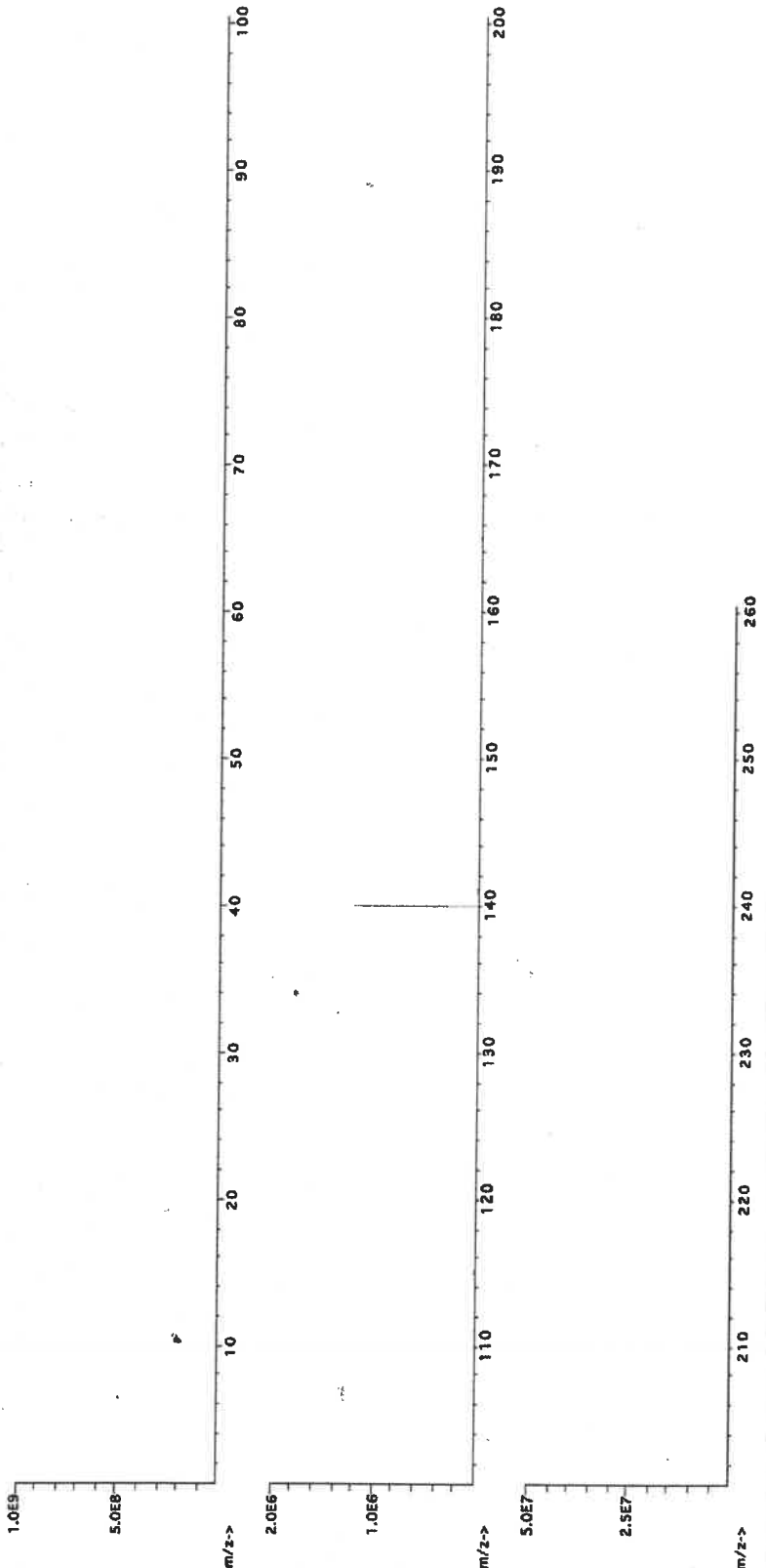
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty
Actual Weight (g)
Actual Conc. (µg/mL)
CAS#
OSHA PEL (TWA)
LD50
SRM
NA
NA
NA

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	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
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
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
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	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	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	Ti	<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:

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: 58024
Lot Number: 060523
Description: Chromium (Cr)

Lot #
21110221
Solvent: Nitric Acid

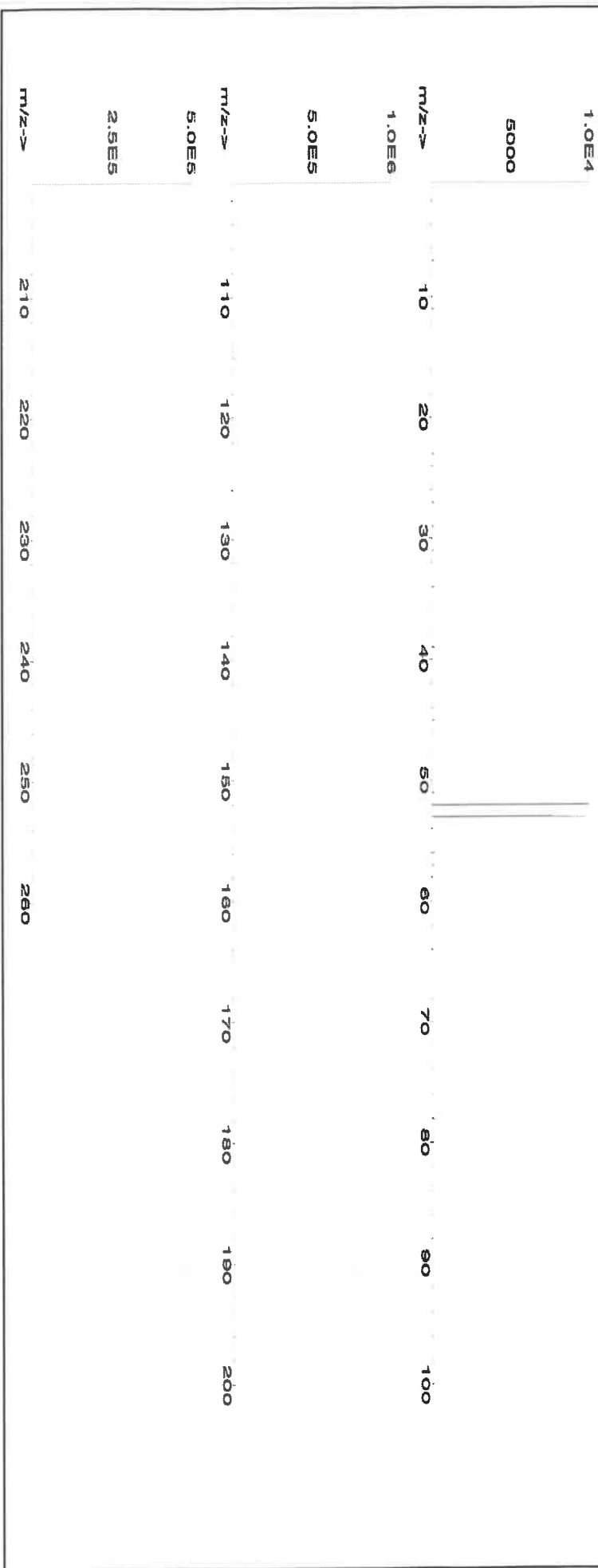
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

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
5E-05 Balance Uncertainty
0.058 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
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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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- * 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

M5697 R: 10/27/23



CERTIFIED WEIGHT REPORT:

Part Number: 58029
Lot Number: 102523
Description: Copper (Cu)

Lot # 24002546
Solvent: Nitric Acid

2.0% 40.0 Nitric Acid (mL)

Expiration Date: 102526
Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

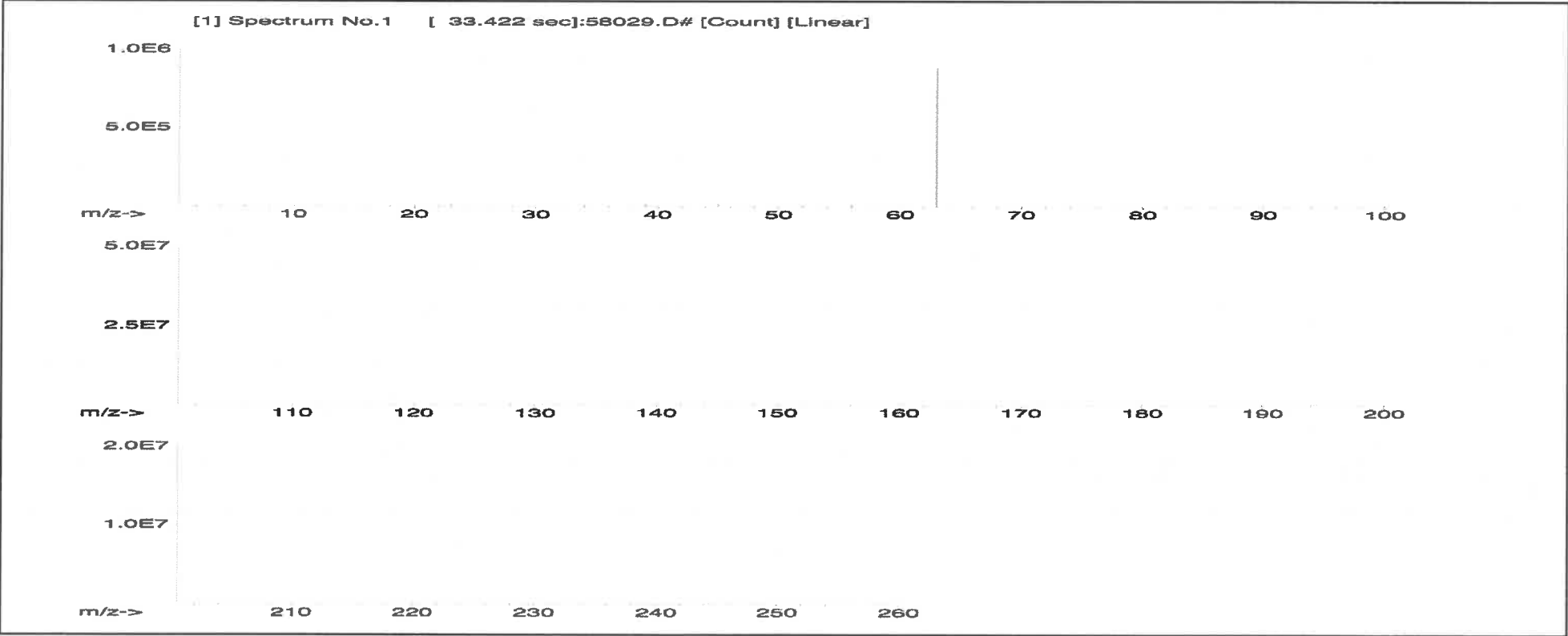
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

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

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded	SDS Information			NIST
									Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)			SRM
										CAS#	OSHA PEL (TWA)	LD50	
Copper(II) nitrate trihydrate (Cu)	58129	100223	0.1000	200.0	0.084	1000	10000.1	1000.0	2.2	10031-43-3	1 mg/m3	ori-rat 794 mg/kg	3114





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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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.
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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 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. Rentas
	100923

Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2% 60.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 3000.41 0.06 Flask Uncertainty

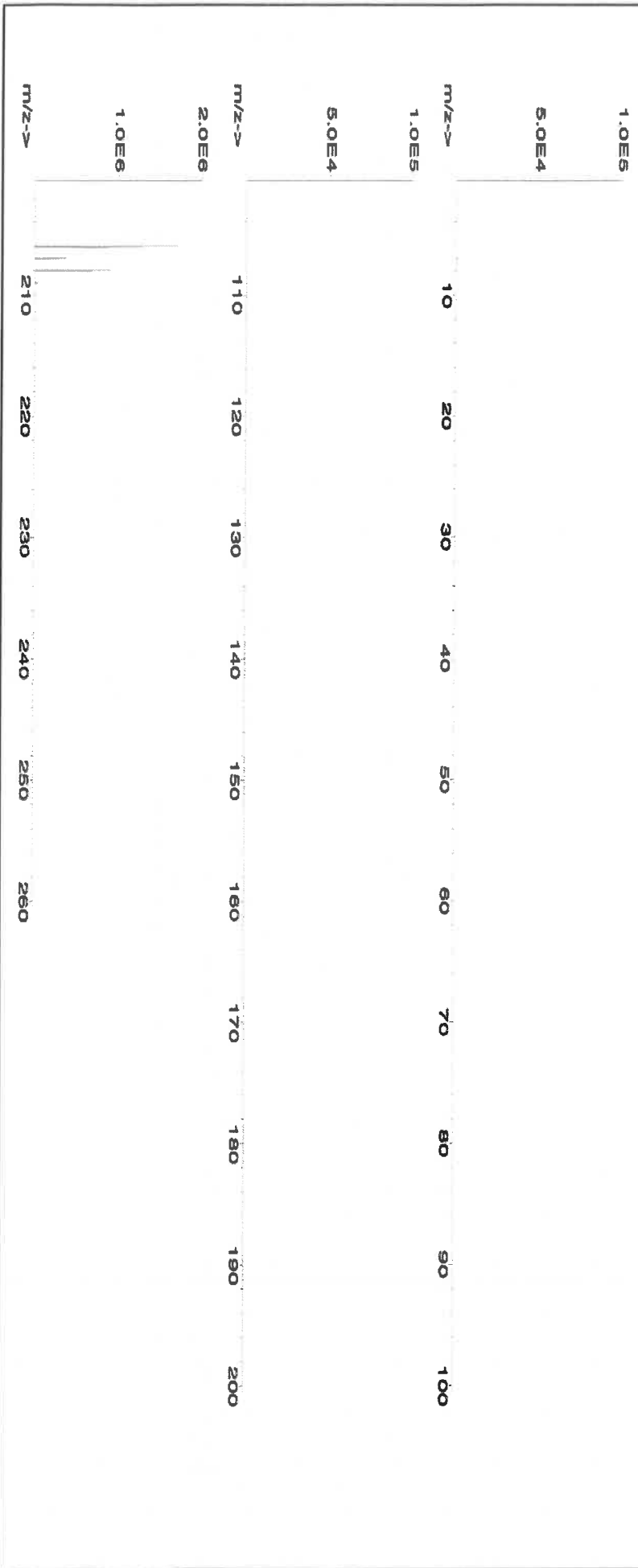
Compound

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

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
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[1] Spectrum No. 1 [14.144 sec]:58082.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	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	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

Physical Characterization:

(T) = Target analyte

Certified by:

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

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



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 (mL) Nitric Acid

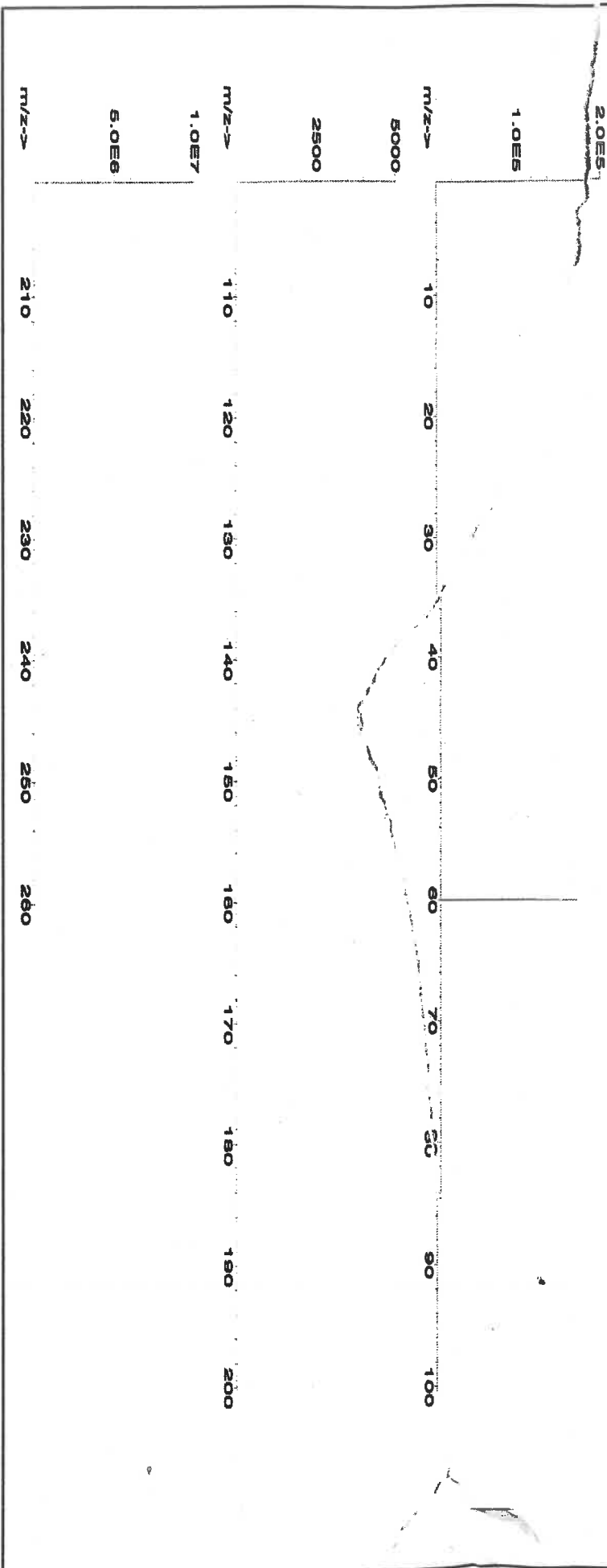
Volume shown below was diluted to (mL): **2000.02** 5E-05 Balance Uncertainty
0.056 Flask Uncertainty

Formulated By:	<i>Lawrence Barry</i>	091223
Reviewed By:	<i>Pedro L. Renteria</i>	091223

Compound	Part Number	Lot Number	Dilution Factor	Initial Vd. (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. 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 WEIGHT REPORT:

Part Number: 57004
Lot Number: 102523
Description: Beryllium (Be)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date:

102526

2.0%

40.0 (mL)

Nitric Acid

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

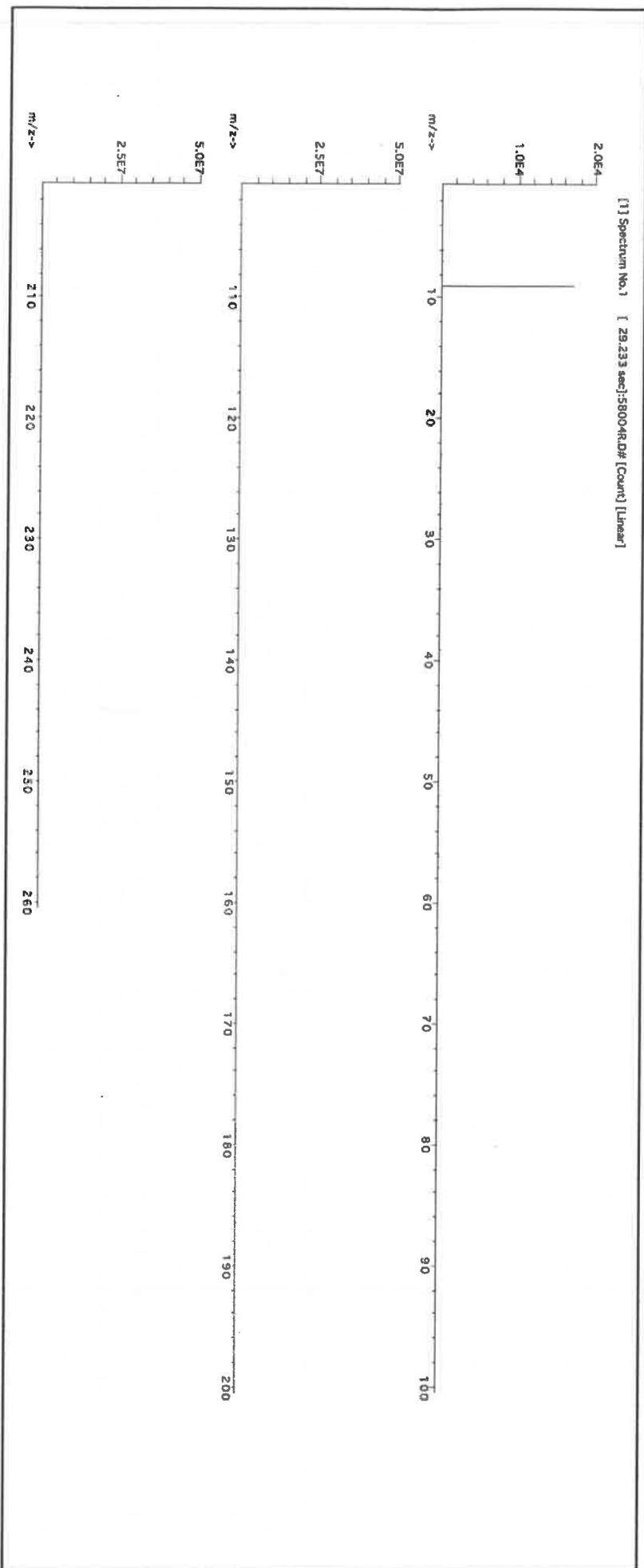
0.058 Flask Uncertainty

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
----------	-------------	-----	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

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	<0.02	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	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.02	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).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot # R-02509124 M599

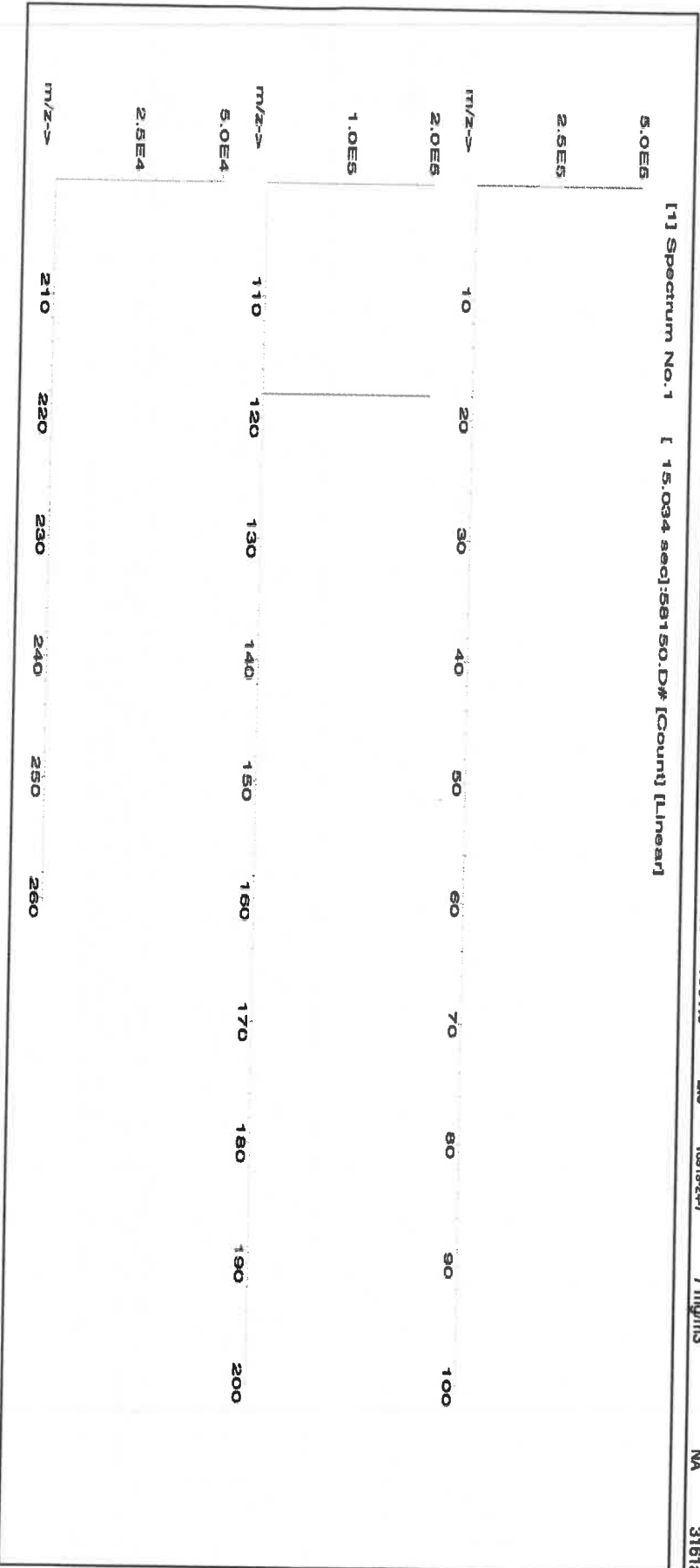
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan
	071123
Reviewed By:	Pedro L. Rentas
	071123

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

1. Ammonium hexafluoroantimonate(V) (Sn) IN010 SMD042023A1 1000 99.999 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a





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	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	<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.
- * 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: 02/09/24 115800 (BA)

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)

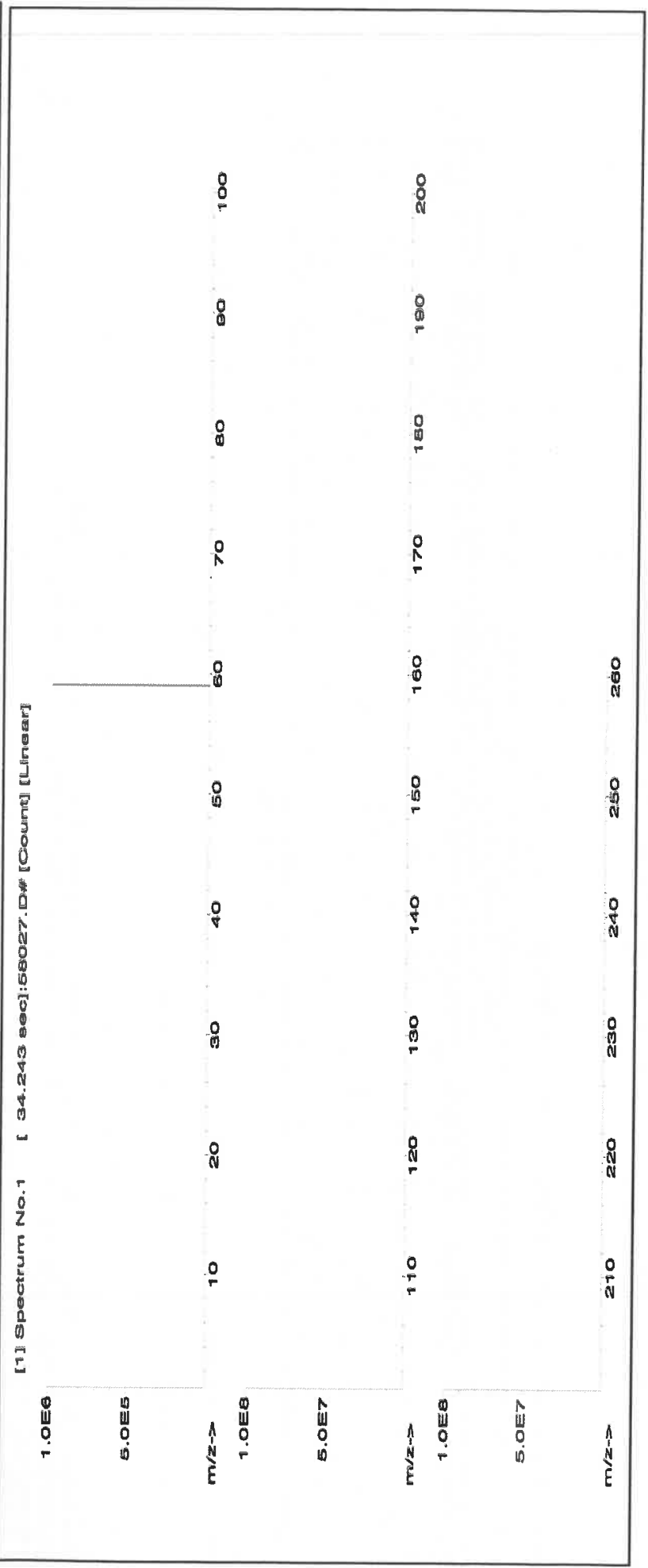
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty +/- (µg/mL)
Final Conc. (µg/mL)
Initial Conc. (µg/mL)
Nominal Conc. (µg/mL)
Pipette (mL)
Initial Vol. (mL)
Dilution Factor
Part Number
Lot Number

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

1. Cobalt(II) nitrate hexahydrate (Co) 58127 050923 0.1000 200.0 0.084 1000 10000.0 1000.0 2.2 10026-22-9 0.02 mg/m3 orl-rat 691 mg/kg 3113





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	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	<0.2	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	T	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:

57033
111323
Arsenic (As)

Lot #
Solvent:

24002546
Nitric Acid

2.0%
80.0 (mL)

Nitric Acid

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

111326
Ambient (20 °C)
1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

4000.0

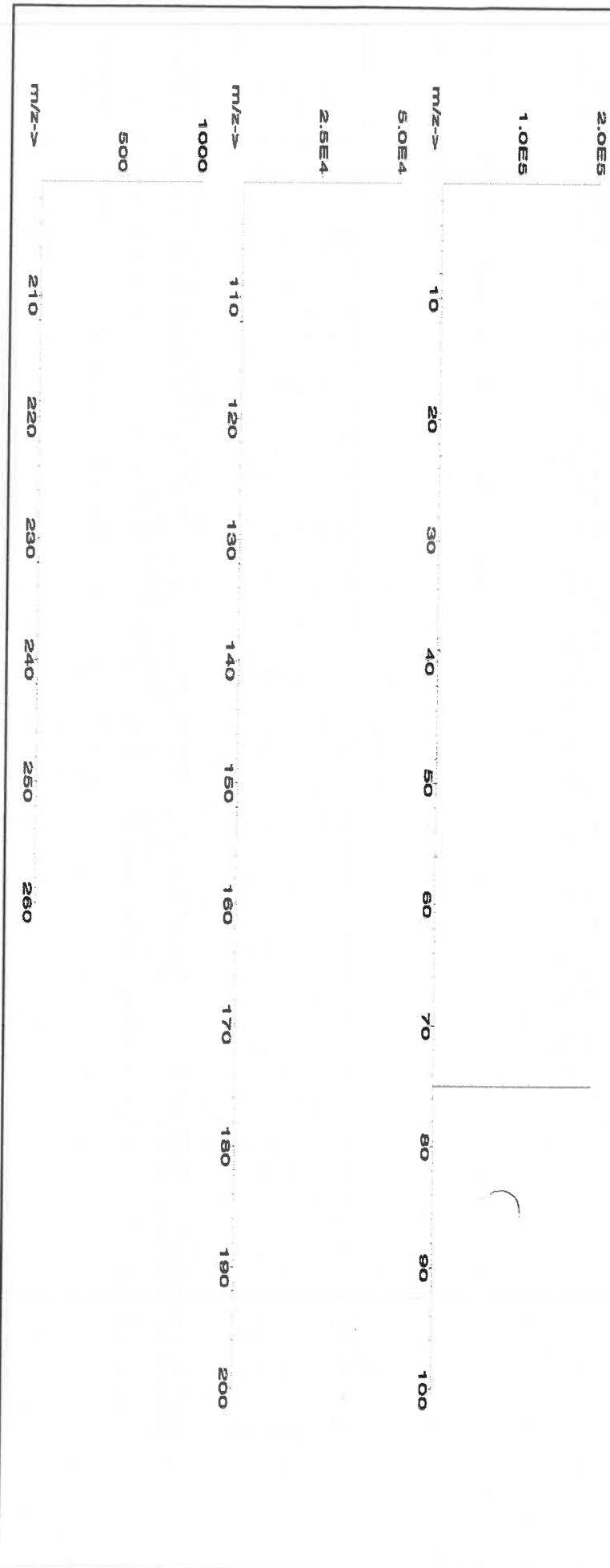
<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
Reviewed By:	<i>Pedro L. Rendas</i>
	Pedro L. Rendas
	111323

Compound

Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	1000.0	2.0	7440-38-2	0.5 mg/m3	or-rat 500 mg/kg	3103a
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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	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tl _h	<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	Pt	<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	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: **57005**
Lot Number: **071123**
Description: **Boron (B)**

Solvent: MKB8697V Ammonium hydroxide

Lot #

AI: 021009124 M5814

	
Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rientas
071123	

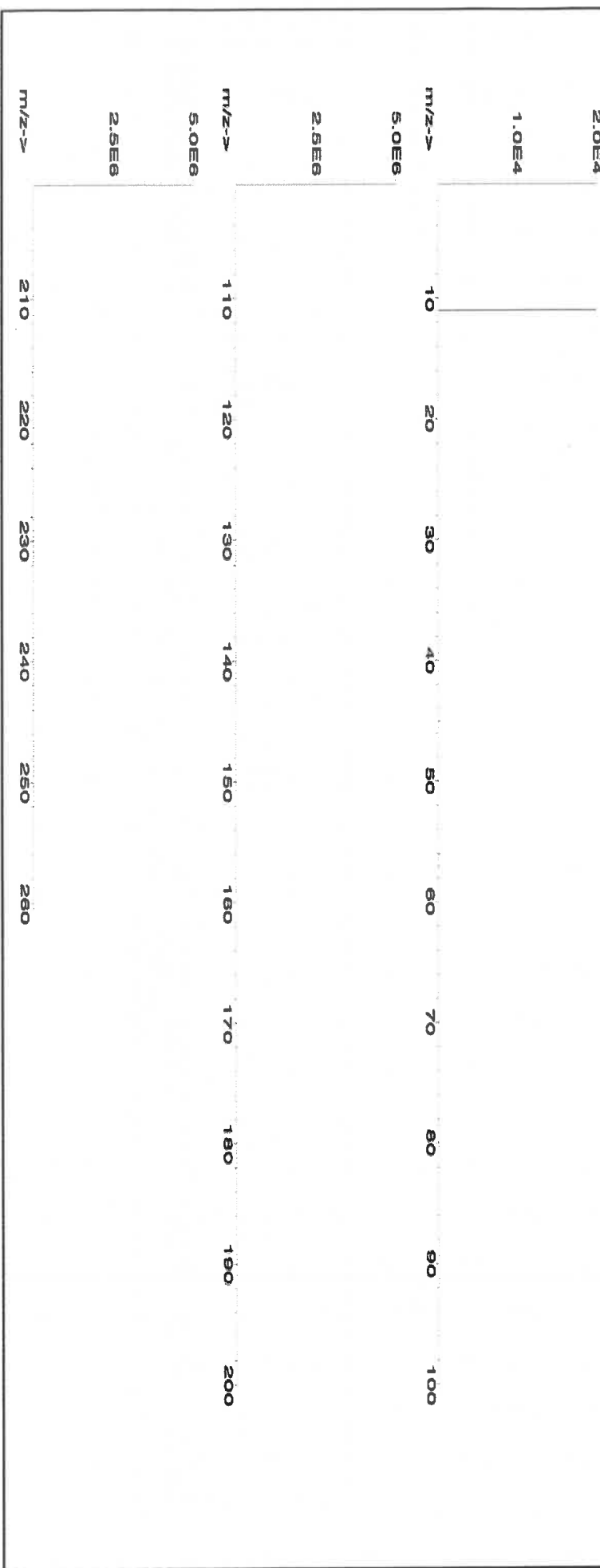
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1999.48
5E-05 Balance Uncertainty
0.058 Flask Uncertainty
2.0% 40.0 Ammonium hydroxide (mL)

SDS Information

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. 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 or-nat 2660 mg/kg 3107

[1] Spectrum No. 1 [12.275 sec]:56105.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	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	T	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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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 WEIGHT REPORT:

Part Number: 57015
Lot Number: 091123
Description: Phosphorous (P)

Solvent: 24002546 Nitric Acid

Lot #

R: 02109124 M5820

Formulated By: Lawrence Barry 091123

Reviewed By: Pedro L. Rentas 091123

2% 40.0 (mL) Nitric Acid

Expiration Date: 091126

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6LJB

5E-05 Balance Uncertainty

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

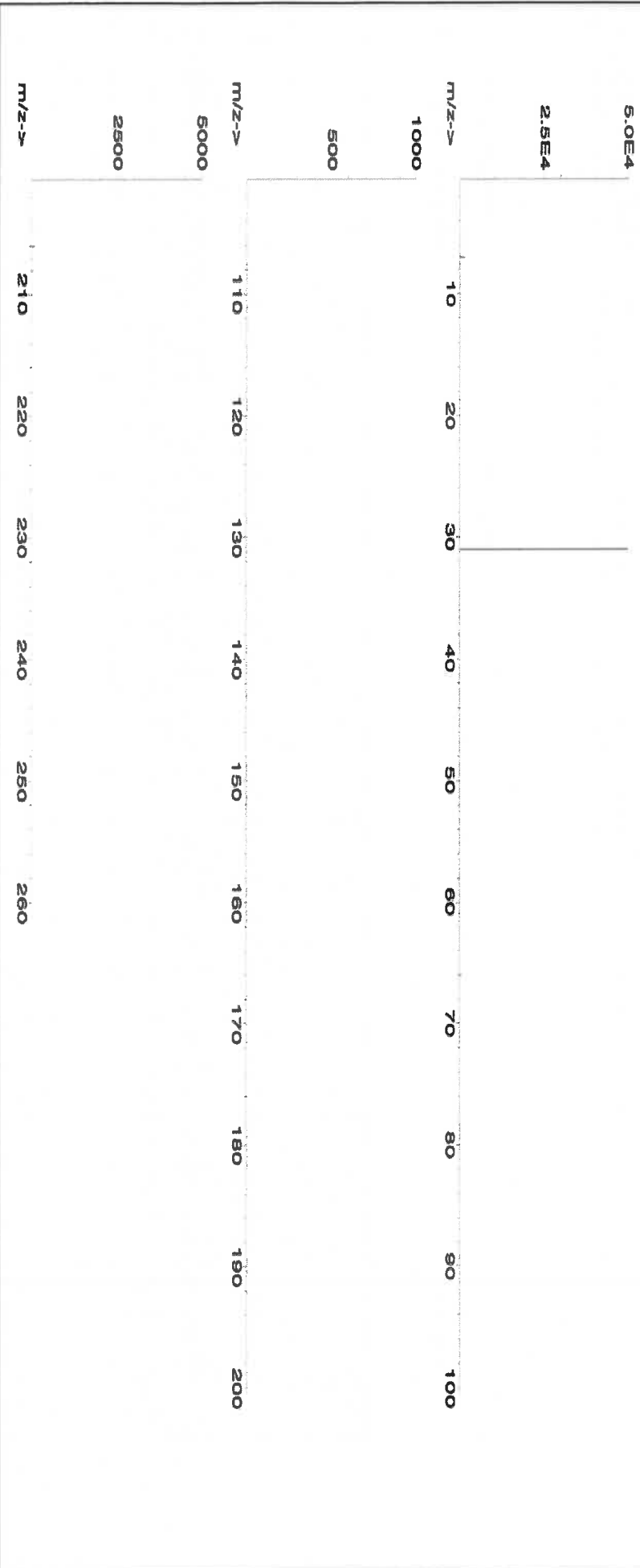
Compound

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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SDS Information

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 ($\mu\text{g/mL}$)

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:

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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).

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



MS824
MB

Material No.: 3624-01

Batch No.: 0000281938

Manufactured Date: 2021-06-07

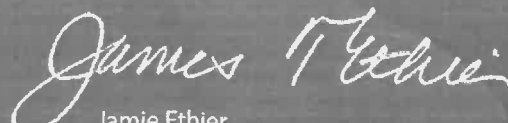
Retest Date: 2026-06-07

Revision No.: 1

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	$\geq 99.0 \%$	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
Insoluble Matter	$\leq 0.005 \%$	0.003 %
Iodide (I)	$\leq 0.002 \%$	< 0.002 %
Bromide (Br)	$\leq 0.01 \%$	< 0.01 %
Chlorate and Nitrate (as NO ₃)	$\leq 0.003 \%$	< 0.001 %
ACS - Phosphate (PO ₄)	$\leq 5 \text{ ppm}$	< 5 ppm
Sulfate (SO ₄)	$\leq 0.004 \%$	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	$\leq 5 \text{ ppm}$	< 5 ppm
Iron (Fe)	$\leq 2 \text{ ppm}$	< 1 ppm
Calcium (Ca)	$\leq 0.002 \%$	< 0.001 %
Magnesium (Mg)	$\leq 0.001 \%$	< 0.001 %
Potassium (K)	$\leq 0.005 \%$	0.001 %

For Laboratory, Research, or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Mansford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

R: 02/22/24 M.5942

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: CGT11
Lot Number: T2-TI719972
Matrix: 2% (v/v) HNO₃
tr. HF
Value / Analyte(s): 1 000 µg/mL ea:
Titanium
Starting Material: Ti Metal
Starting Material Lot#: 2094
Starting Material Purity: 99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL
Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 1002 ± 4 µg/mL
ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, 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	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 chemically stable for years in 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

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

11.2 Lot Expiration Date

- June 17, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

MS962 **R10614124**

Lot # **24002546** Solvent: **Nitric Acid**

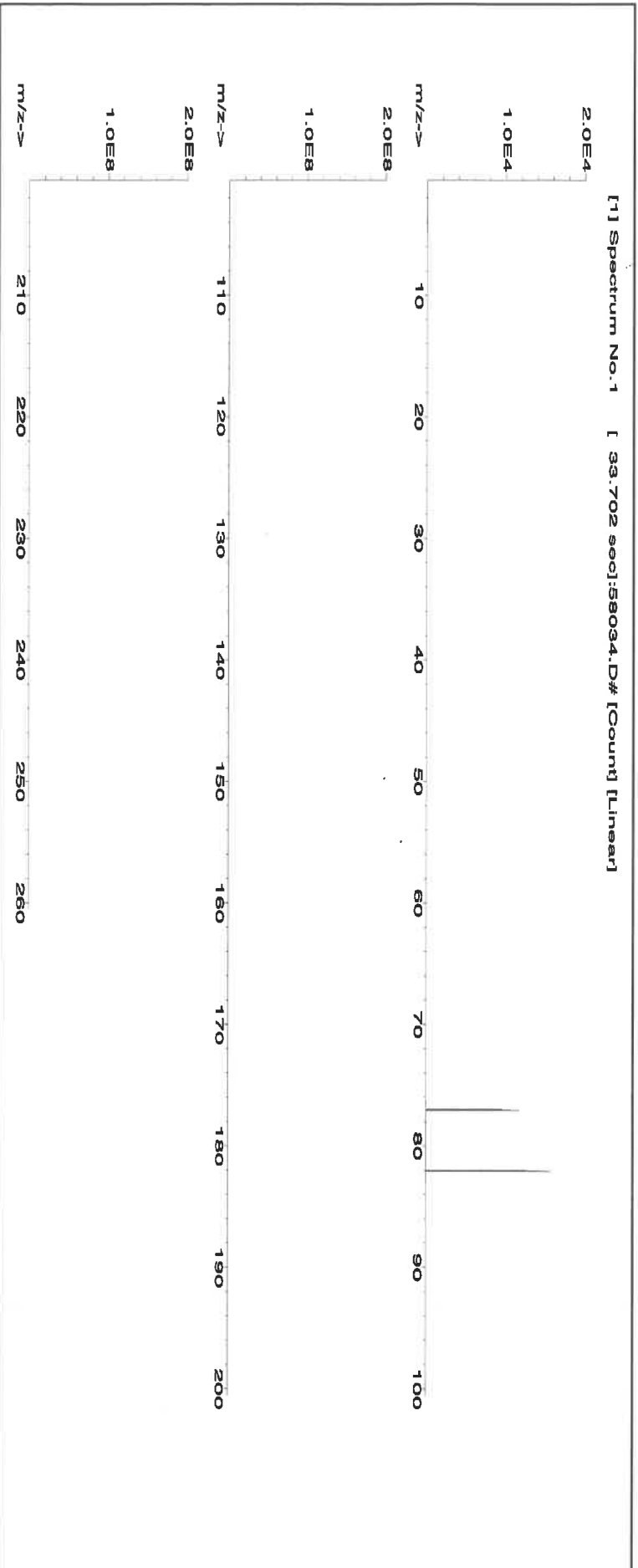
Part Number: **57034**
Lot Number: **060624**
Description: **Selenium (Se)**

2.0% 40.0 (mL) Nitric Acid

Expiration Date: **060627**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Volume shown below was diluted to (mL): **2000.07**
SE-05 Balance Uncertainty **0.100** Flask Uncertainty

Formulated By:	Benson Chan	060624
Reviewed By:	Pedro L. Rantas	060624

SDS Information									
Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
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	31.49





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	Ba	<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	Ru	<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	Sb	<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).



CERTIFIED WEIGHT REPORT:

Part Number: **57016**
Lot Number: **122923**
Description: **Sulfur (S)**

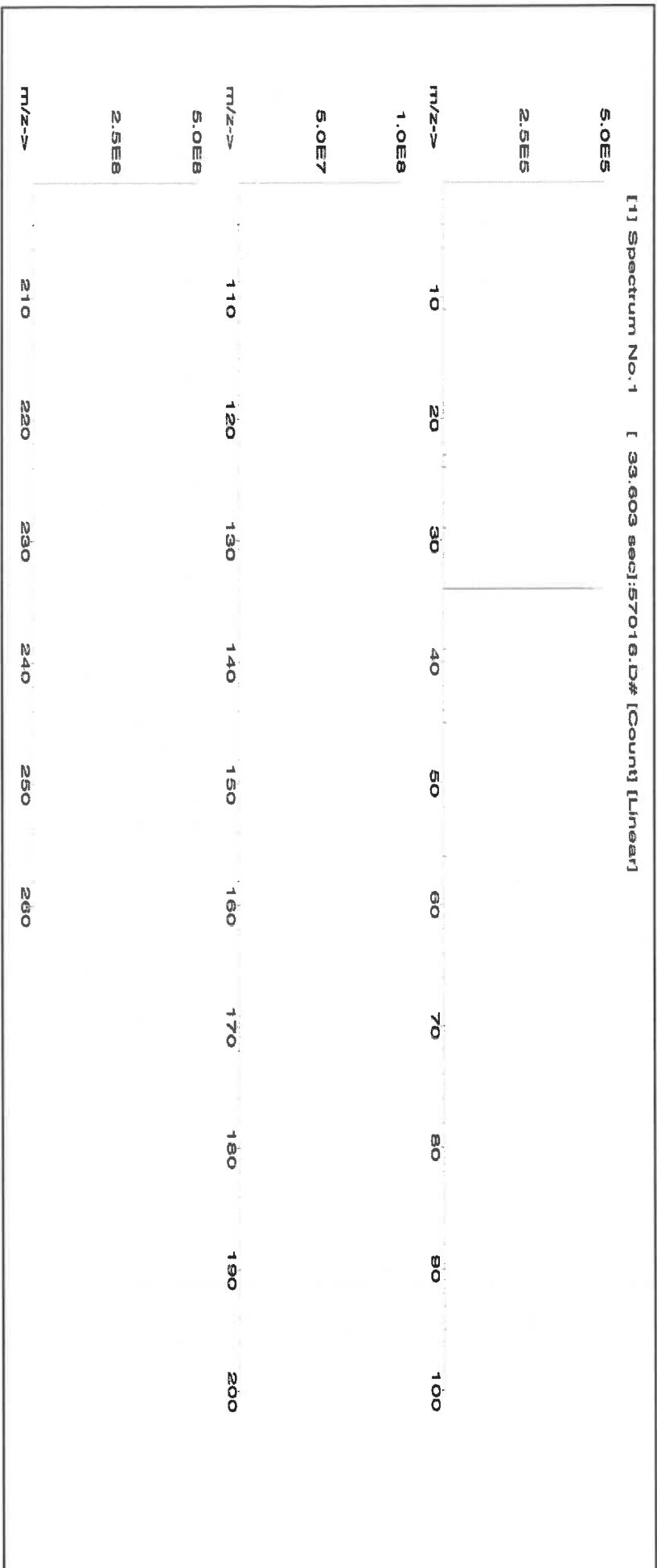
Lot #
Solvent: **122923** ASTM Type 1 Water

Formulated By:	Benson Chan
122923	
Reviewed By:	Pedro L. Rentas
122923	

Expiration Date: **122926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **4000.0**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

Compound	SDS information										NIST SRM	
	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty			
									(Solvent Safety Info. On Attached pg.)			
	RM#								+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50

1. Ammonium sulfate (S) IN117 SLBR725V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA or-rel 4250mg/kg 3181



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:

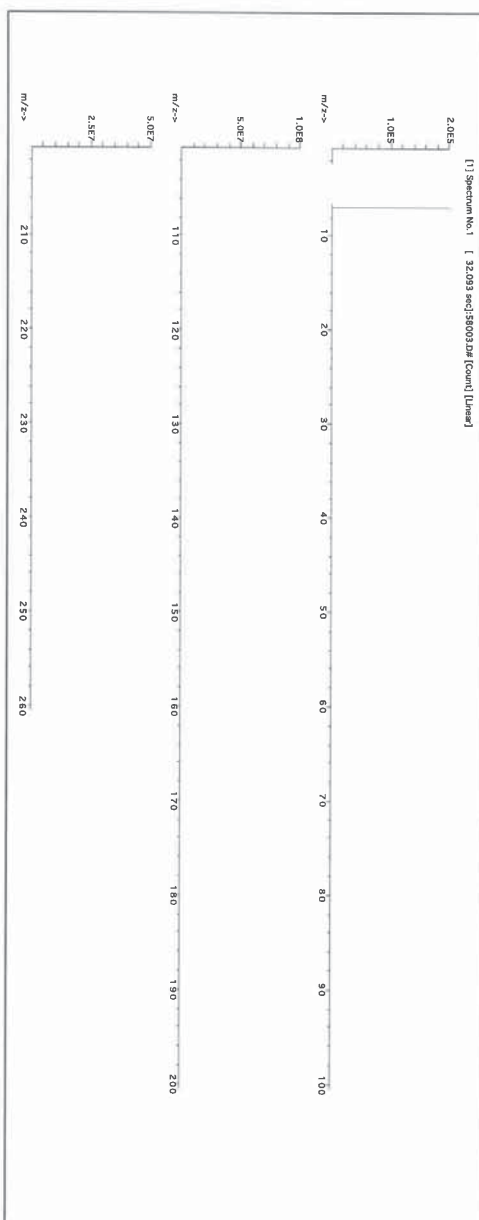
Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 06/127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11
SE-05 Balance Uncertainty
0.016 Flask Uncertainty

Lot # 24002546
Solvent: Nitric Acid

2.0% 5.0 (mL) Nitric Acid

Formulated By:	Giovanni Esposito	062124
Reviewed By:	Pedro L. Parias	062124

Compound		Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty	Initial Conc. (µg/mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty	SDS Information	NIST
1. Lithium nitrate (Li)		58103	070622	0.1000	25.0	0.004	1000	1000.0	10000.4	1000.0	2.0	7790-68-4 5 mg/mL 3 or-hat 1428 mg/kg	NA



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

M5984
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:

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

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

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_{ts} = 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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{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)

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	<u>73Ge</u> <u>16O</u> , <u>178Hf</u> +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

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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



Certificate of Analysis

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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:

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

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

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	<	0.000760	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). <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

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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



Certificate of Analysis

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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: Calcium, Magnesium,	Potassium, Sodium,
	2 000 µg/mL ea: Aluminum,	Barium,
	1 000 µg/mL ea: Iron,	
	500 µg/mL ea: Nickel, Zinc, Manganese,	Vanadium, Cobalt,
	250 µg/mL ea: Silver,	Copper,
	200 µg/mL ea: Chromium,	
	50 µg/mL ea: Beryllium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

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

Assay Information:

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

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, 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 ($\mu\text{g/mL}$)

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° $\pm$ 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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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



Certificate of Analysis

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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-3
Lot Number: T2-MEB727800
Matrix: 7% (v/v) HNO₃
Value / Analyte(s):
1 000 µg/mL ea:
Arsenic, Lead,
Selenium, Thallium,
500 µg/mL ea:
Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	1 000 ± 7 µg/mL	Cadmium, Cd	500.0 ± 2.2 µg/mL
Lead, Pb	1 000 ± 4 µg/mL	Selenium, Se	1 000 ± 6 µg/mL
Thallium, Tl	1 000 ± 7 µg/mL		

Density: 1.042 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	151215

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, 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

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.
- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 21, 2022

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

11.2 Lot Expiration Date

- **December 21, 2027**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™



Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H ₂ SO ₄)	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO ₂)	≤ 2 ppm	< 2 ppm
Ammonium (NH ₄)	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO ₃)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO ₄)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

 **avantor™**

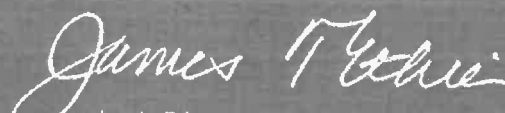


Material No.: 9673-33
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities – Sodium (Na)	≤ 500.0 ppb	5.4 ppb
Trace Impurities – Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.4 ppb

For Laboratory, Research, or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality



Refine your results. Redefine your industry.

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

M6074
M6075
M6076
M6077

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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





CERTIFIED WEIGHT REPORT:

Part Number: **58112** Lot #
Lot Number: **112124** Solvent: **24012496 Nitric Acid**
Description: **Magnesium (Mg)**

Expiration Date: **112127** 2% 40.0 (mL) Nitric Acid
Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL):

10000

NIST Test Number:

6LUB

5E-05 Balance Uncertainty

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

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Rentas</i>
	112124

Compound

Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
RM#	Number	Conc. (µg/mL)	(%)	Purity (%)	Weight (g)	Weight (g)	Conc. (µg/mL)	± (µg/mL)	(Solvent Safety Info. On Attached pg.)	SRM

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).

Printed: 1/10/2025, 4:51:16 PM



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	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.
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Certificate of Analysis

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M6137
R-71013124

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: CGSI1
Lot Number: V2-SI744713
Matrix: tr. HNO₃
tr. HF
Value / Analyte(s): 1 000 µg/mL ea:
Silicon
Starting Material: Silica
Starting Material Lot#: 1771
Starting Material Purity: 99.9981%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL
Density: 1.003 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	999 ± 5 µg/mL ICP Assay NIST SRM Traceable to 3150 Lot Number: S2-SI702546
Assay Method #2	1000 ± 7 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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.

M	Ag	<	0.000310	M	Eu	<	0.000310	O	Na	0.001656	M	Se	<	0.022000	M	Zn	<	0.002500	
M	Al		0.010787	M	Fe	<	0.027000	M	Nb	<	0.001300	s	Si	<		O	Zr	<	0.001900
M	As	<	0.001900	M	Ga	<	0.001300	M	Nd	<	0.000310	M	Sm	<	0.000310				
M	Au	<	0.000910	M	Gd	<	0.000310	M	Ni	<	0.005500	M	Sn		0.000096				
M	B		0.016180	M	Ge	<	0.001900	M	Os	<	0.000610	O	Sr		0.000092				
M	Ba		0.000096	M	Hf		0.000423	i	P	<		M	Ta		0.002542				
O	Be	<	0.000570	M	Hg	<	0.000610	M	Pb	<	0.000310	M	Tb	<	0.000310				
M	Bi	<	0.000310	M	Ho	<	0.000610	M	Pd	<	0.000610	M	Te	<	0.000910				
O	Ca		0.011557	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.001900				
M	Cd	<	0.000310	M	Ir	<	0.000310	M	Pt	<	0.000310	M	Ti		0.001078				
M	Ce	<	0.000610	O	K		0.000577	M	Rb	<	0.009100	M	Tl	<	0.000310				
M	Co	<	0.001600	M	La	<	0.000310	M	Re	<	0.000310	M	Tm	<	0.000310				
M	Cr	<	0.010000	O	Li	<	0.000460	M	Rh	<	0.000310	M	U	<	0.000310				
M	Cs	<	0.000310	M	Lu	<	0.000310	M	Ru	<	0.000310	O	V	<	0.001300				
M	Cu	<	0.002500	O	Mg		0.001348	O	S	<	0.570000	M	W	<	0.001900				
M	Dy	<	0.000310	M	Mn	<	0.002500	M	Sb	<	0.000310	M	Y	<	0.000310				
M	Er	<	0.000310	M	Mo	<	0.000310	O	Sc	<	0.000590	M	Yb	<	0.000310				

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths, or high levels of transition elements unless they are fluorinated. Stable with most inorganic anions with a tendency to hydrolyze forming silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.

Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphous (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 10, 2024

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

11.2 Lot Expiration Date

- July 10, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





M6138

R → 11/13/25



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58120
121824
Calcium (Ca)

Solvent: Nitric Acid

Lot #

24012496

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

121827
Ambient (20 °C)
10000
6UTB

2% Nitric Acid
(mL)

5E-05 Balance Uncertainty
0.15 Flask Uncertainty

Weight shown below was diluted to (mL):

4000.1

0.15

Formulated By:	Giovanni Esposito	121824
Reviewed By:	Pedro L. Rentas	121824

Expanded

SDS Information

Uncertainty	(Solvent Safety Info. On Attached pg.)	NIST
+/- (µg/mL)	CAS#	LD50
Conc. (µg/mL)	OSHA PEL (TWA)	SRM

Actual	Actual	Actual
Weight (g)	Conc. (µg/mL)	Conc. (µg/mL)
100.2677	10001.4	20.0

Target

Assay

Purity (%)

Purity (%)

Nominal

Conc. (µg/mL)

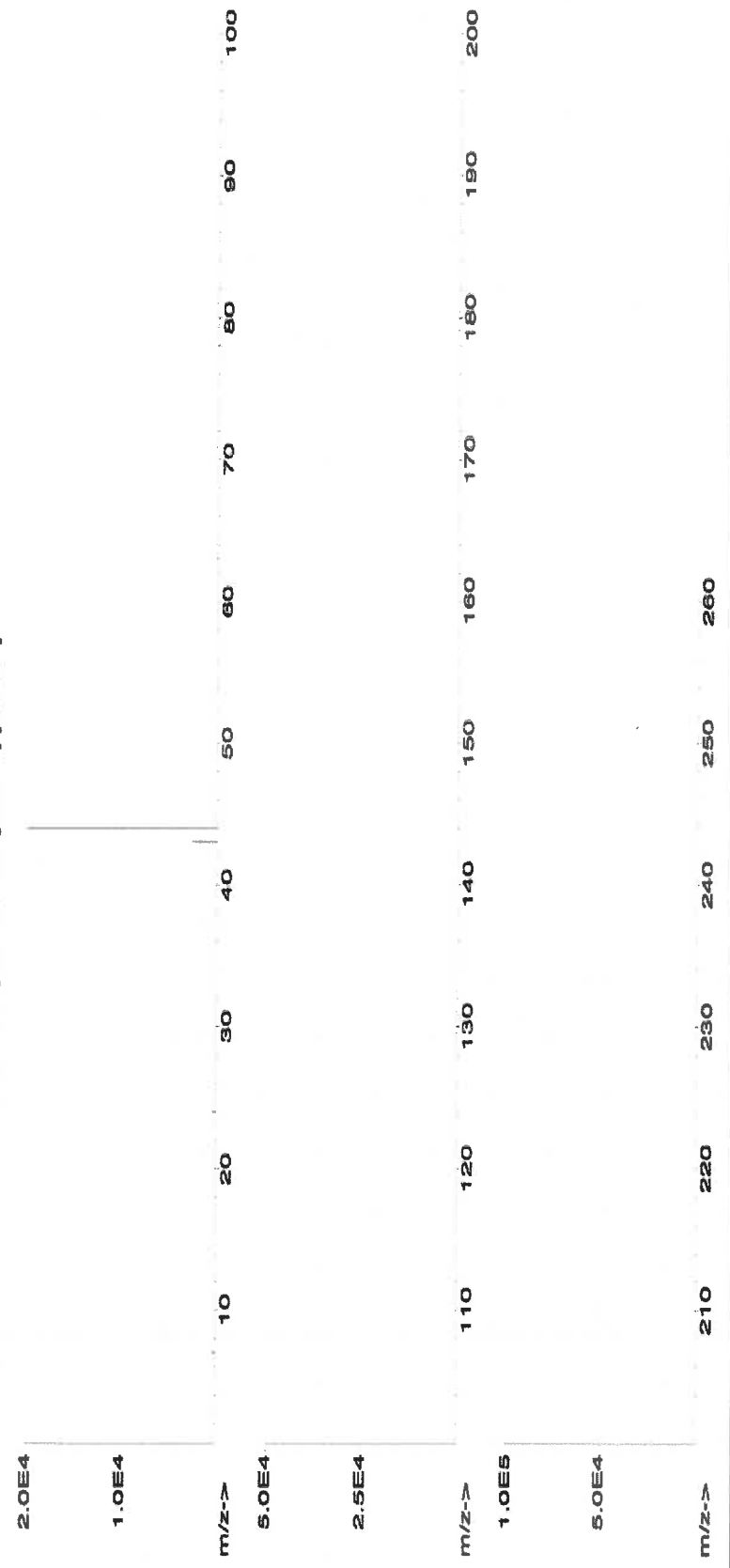
Lot

Number

RM#

1. Calcium carbonate (Ca) IN014 CAD032028B3 10000 99.999 0.10 39.9 100.2537 100.2677 10001.4 20.0 471-34-1 5 mg/m3 otl-rat >2000mg/kg 3109a

[1] Spectrum No. 1 [12.514 sec]:58120.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	Pr	<0.02	Se	<0.2	Tb	<0.02
Sb	<0.02	Ca	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02
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
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	30	Fe	<0.02	Hg	<0.2	P	<0.02	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	Ti	<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).



CERTIFIED WEIGHT REPORT:

Part Number: 57119
Lot Number: 103024
Description: Potassium (K)

R-21113125

Lot # 24002546
Solvent: Nitric Acid

Expiration Date: 103027
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

M6141
M6142
M6143

2% 80.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 4000.1 0.15 Flask Uncertainty

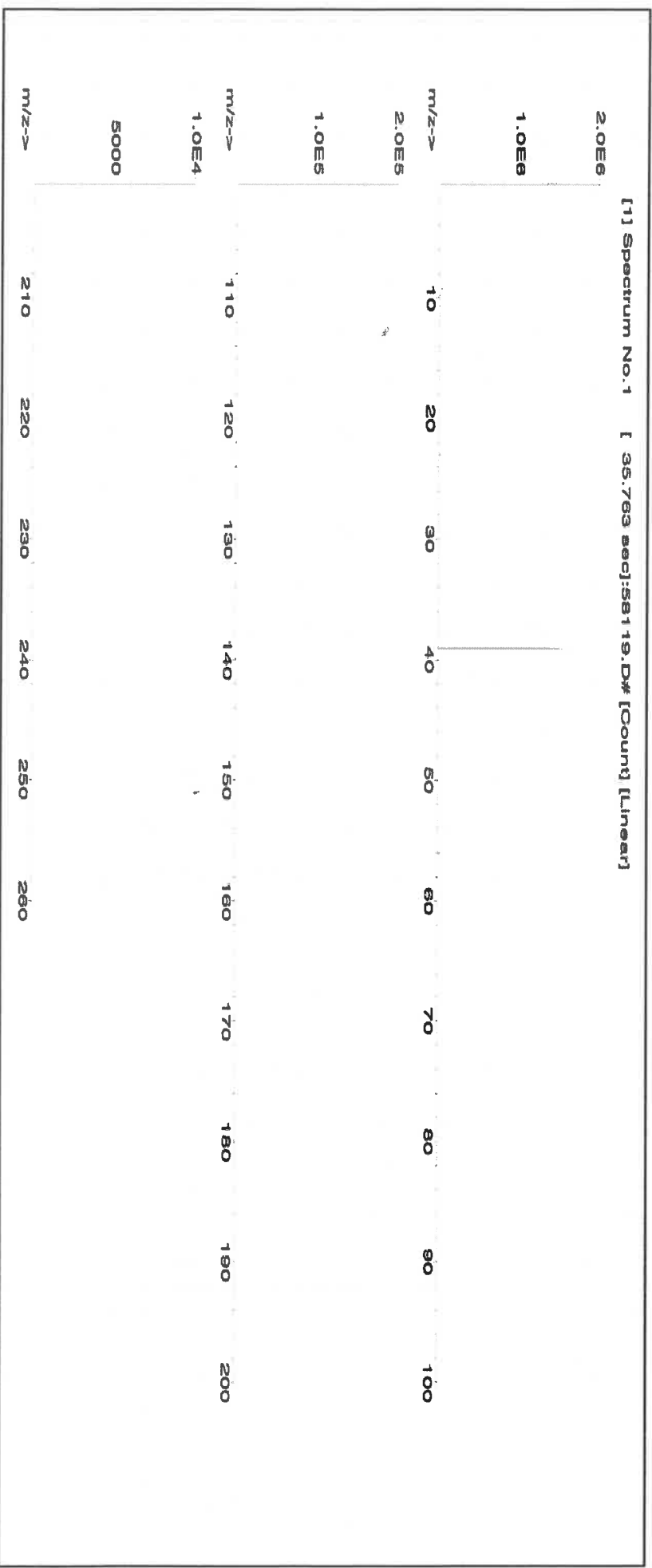
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	103024

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

SDS Information

1. Potassium nitrate (K) IN034 KD062022A1 10000 99.999 0.10 37.7 106.1040 ##### 10001.1 20.0 7757-79-1 5 mg/m3 orl-rat 3750 mg/kg 3141a

[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	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	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	T	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are 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 Number: 072424
Description: Sodium (Na)

Lot # R-1113125
Solvent: 24002546 Nitric Acid

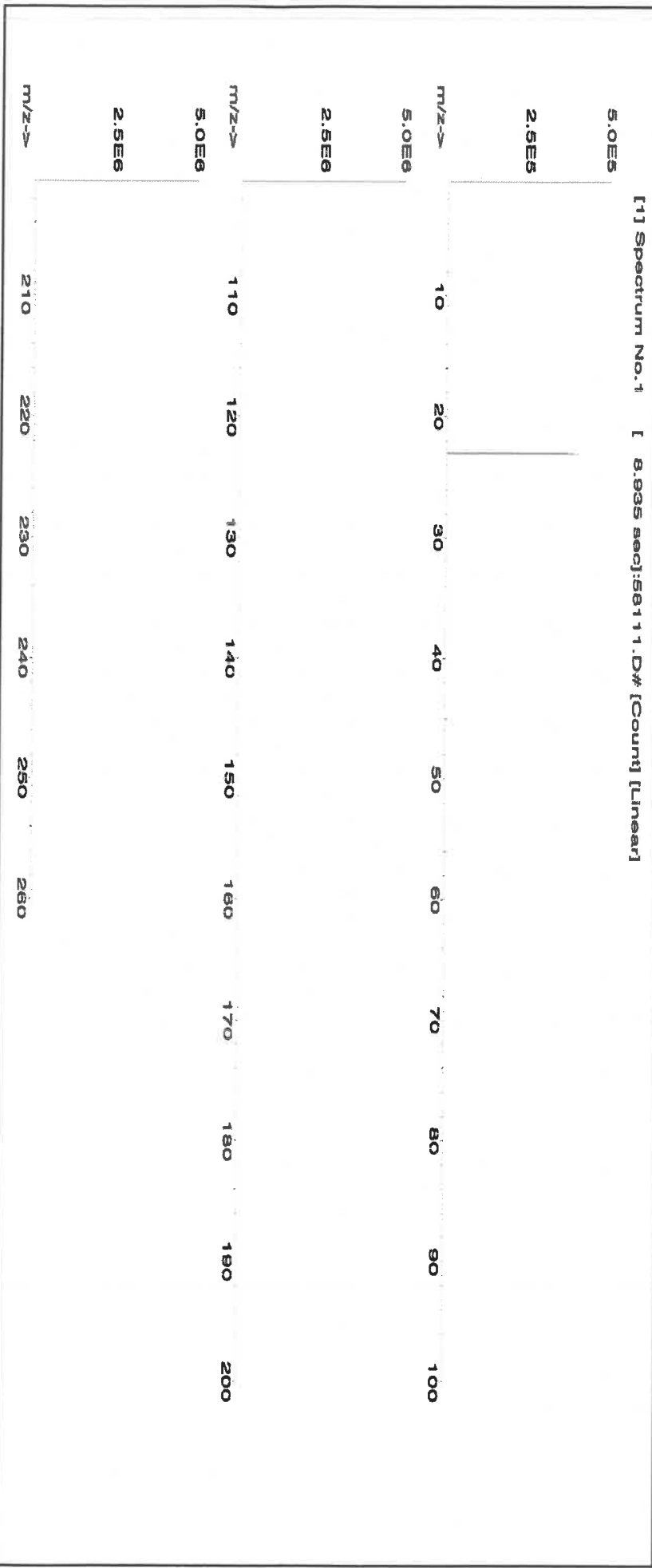
Expiration Date: 072427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

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

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





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	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	T	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<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 # **R → 11/13/25**
Lot Number: **121724** Solvent: **24012496 Nitric Acid**
Description: **Zinc (Zn)**

Expiration Date: **121727** 2% 40.0 (mL) Nitric Acid

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

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6UTB**

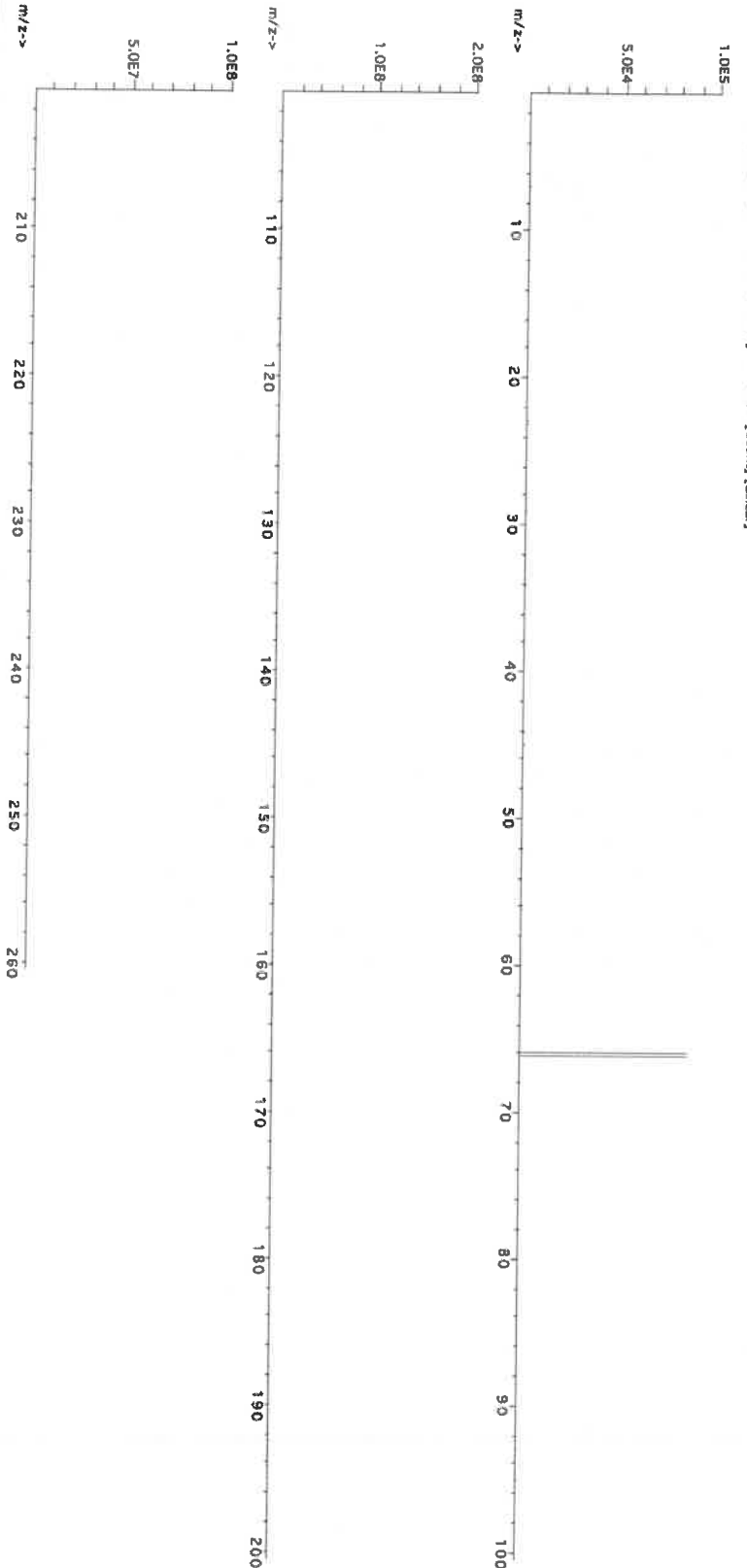
Weight shown below was diluted to (mL): **2000.1** 0.10 Balance Uncertainty
Flask Uncertainty

<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	<i>Pedro L. Rentias</i>
	Pedro L. Rentias
	121724

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. 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

[1] Spectrum No.1 [31.103 sec;58130.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	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).

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

 **avantorsm**



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**™

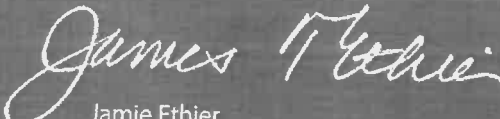


Material No.: 9530-33
Batch No.: 22G2862015

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

Nitric Acid 69%
CMOS

avantor™



R- 0210212025

m - 6158

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
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For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

A handwritten signature in cursive script, appearing to read 'J. Croak'.

Jamie Croak
Director Quality Operations, Bioscience Production

Nitric Acid 69%
CMOS

 **avantorsm**



m-6162

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

R. Date :- 04/27/2025

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	0.1 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	0.1 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 1 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 1 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 1 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	1 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 1.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	13 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	5 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**



Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
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For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Croak
Director Quality Operations, Bioscience Production

300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

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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:	QCP-CICV-1		
Lot Number:	V2-MEB744107		
Matrix:	7% (v/v) HNO ₃		
Value / Analyte(s):	2 500 µg/mL ea:		
	Calcium,		Potassium,
	Magnesium,		Sodium,
	1 000 µg/mL ea:		
	Aluminum,		Barium,
	500 µg/mL ea:		
	Iron,		
	250 µg/mL ea:		
	Nickel,		Vanadium,
	Zinc,		Cobalt,
	Manganese,		
	125 µg/mL ea:		
	Silver,		Copper,
	100 µg/mL ea:		
	Chromium,		
	25 µg/mL ea:		
	Beryllium		

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 000 ± 4 µg/mL	Barium, Ba	1 000 ± 6 µg/mL
Beryllium, Be	24.98 ± 0.12 µg/mL	Calcium, Ca	2 500 ± 8 µg/mL
Chromium, Cr	99.9 ± 0.6 µg/mL	Cobalt, Co	250.2 ± 1.2 µg/mL
Copper, Cu	125.0 ± 0.5 µg/mL	Iron, Fe	500.0 ± 2.2 µg/mL
Magnesium, Mg	2 500 ± 11 µg/mL	Manganese, Mn	249.9 ± 1.1 µg/mL
Nickel, Ni	250.0 ± 1.2 µg/mL	Potassium, K	2 500 ± 11 µg/mL
Silver, Ag	125.0 ± 0.6 µg/mL	Sodium, Na	2 500 ± 11 µg/mL
Vanadium, V	250.0 ± 1.1 µg/mL	Zinc, Zn	249.9 ± 1.1 µg/mL

Density: 1.081 g/mL (measured at 20 ± 4 °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
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, 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), <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>)

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 22, 2024

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

11.2 Lot Expiration Date

- **May 22, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



300 Technology Drive
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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: QCP-CICV-2
Lot Number: U2-MEB733713
Matrix: 3% (w/v) Tartaric acid
1% (v/v) HNO₃
Value / Analyte(s): 500 µg/mL ea:
Antimony

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	500.0 ± 2.8 µg/mL		

Density: 1.017 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Sb	ICP Assay	3102a	140911

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

Characterization of CRM/RM by Two or More Methods

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

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

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)

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

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

June 01, 2023

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

11.2 Lot Expiration Date

- **June 01, 2028**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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: QCP-CICV-3
 Lot Number: V2-MEB749572
 Matrix: 7% (v/v) HNO₃
 Value / Analyte(s):
 500 µg/mL ea:
 Arsenic, Lead,
 Selenium, Thallium,
 250 µg/mL ea:
 Cadmium

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	500.0 ± 3.1 µg/mL	Cadmium, Cd	250.1 ± 1.1 µg/mL
Lead, Pb	500.0 ± 2.3 µg/mL	Selenium, Se	500.0 ± 3.2 µg/mL
Thallium, Tl	500.0 ± 3.0 µg/mL		

Density: 1.040 g/mL (measured at 20 ± 4 °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

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.

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- 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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 02, 2025

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

11.2 Lot Expiration Date

- **January 02, 2030**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM

M6030



CERTIFIED WEIGHT REPORT:

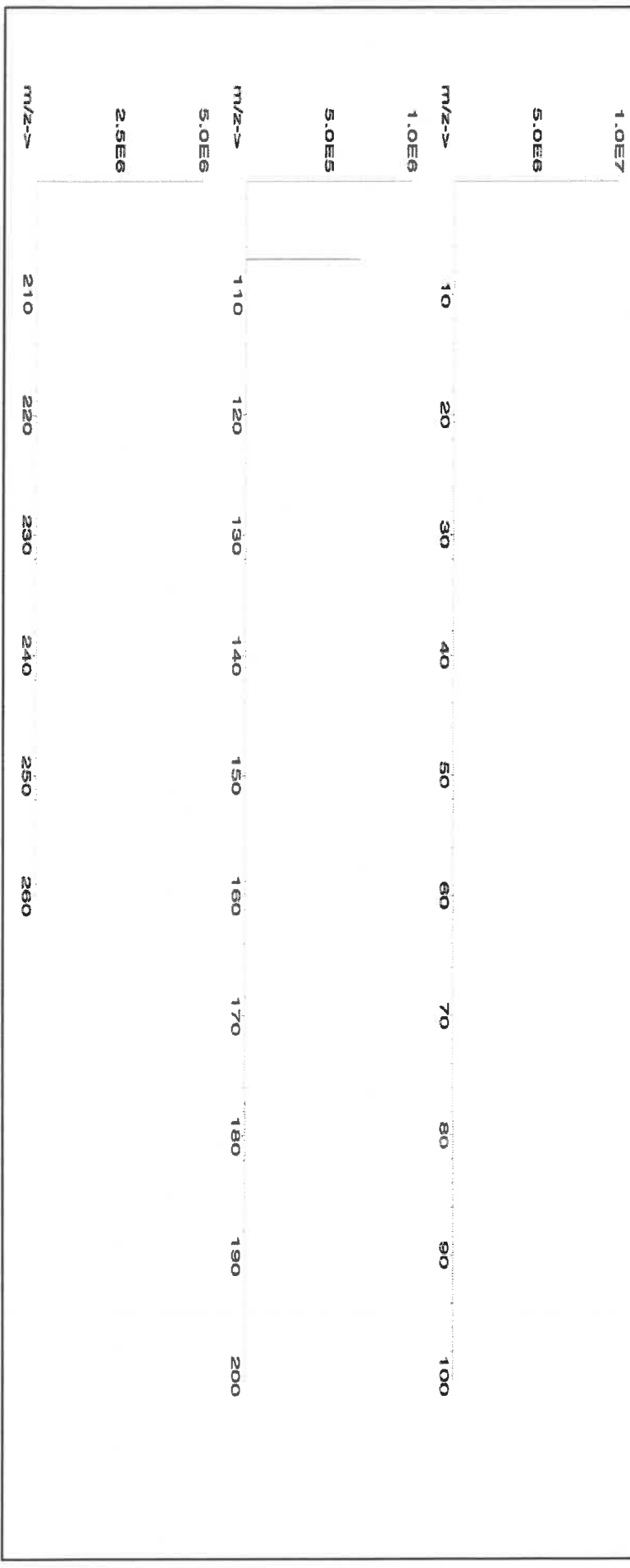
Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**
Solvent: 24002546 Nitric Acid
Lot #

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	

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. Silver nitrate (Ag)	IN035	J0612AG1	1000.0	99.999	0.10	63.7	6.27992	6.27998	1000.0
							2.0	7761-88-8	10 µg/mL
									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 meghom 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 CRM



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

CERTIFIED WEIGHT REPORT:

Part Number:

57051

Lot #
24002546

Solvent:
Nitric Acid

Lot Number:

071724

Me146

2.0%

Expiration Date:

071727

40.0 (mL)

Nitric Acid

Recommended Storage:
Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6U7B

Balance Uncertainty

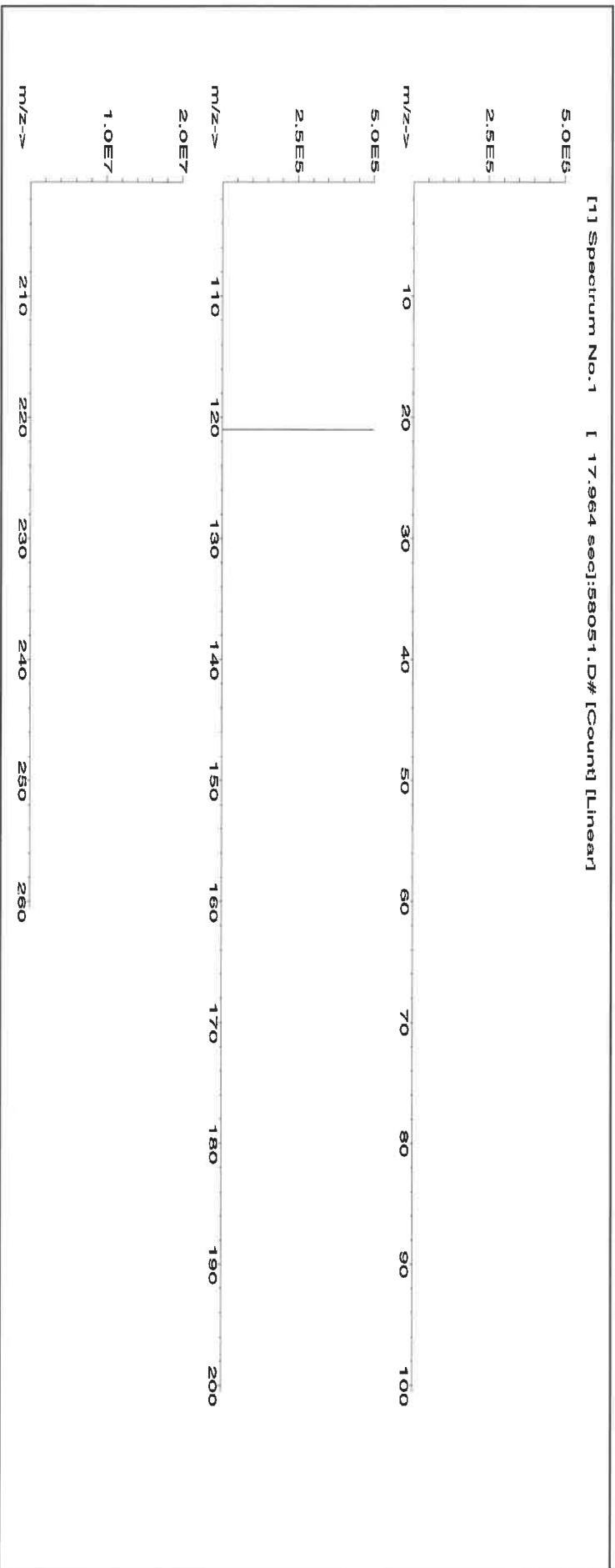
Volume shown below was diluted to (mL):

2000.26

0.058 Flask Uncertainty

Formulated By:	Giovanni Esposito	071724
<i>Giovanni Esposito</i>		
Reviewed By:	Pedro L. Rentas	071724
<i>Pedro Rentas</i>		

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. 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





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	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	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).



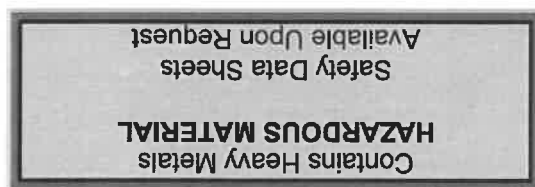
QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

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) interfering 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 (µg/L) +Part B	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 $\pm$ 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value $\pm$ 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,





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

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.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: 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:

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

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

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_{ts} = 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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{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)

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 WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Lot #

Solvent: 24002546 Nitric Acid

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

5E-05 Balance Uncertainty
0.10 Flask Uncertainty

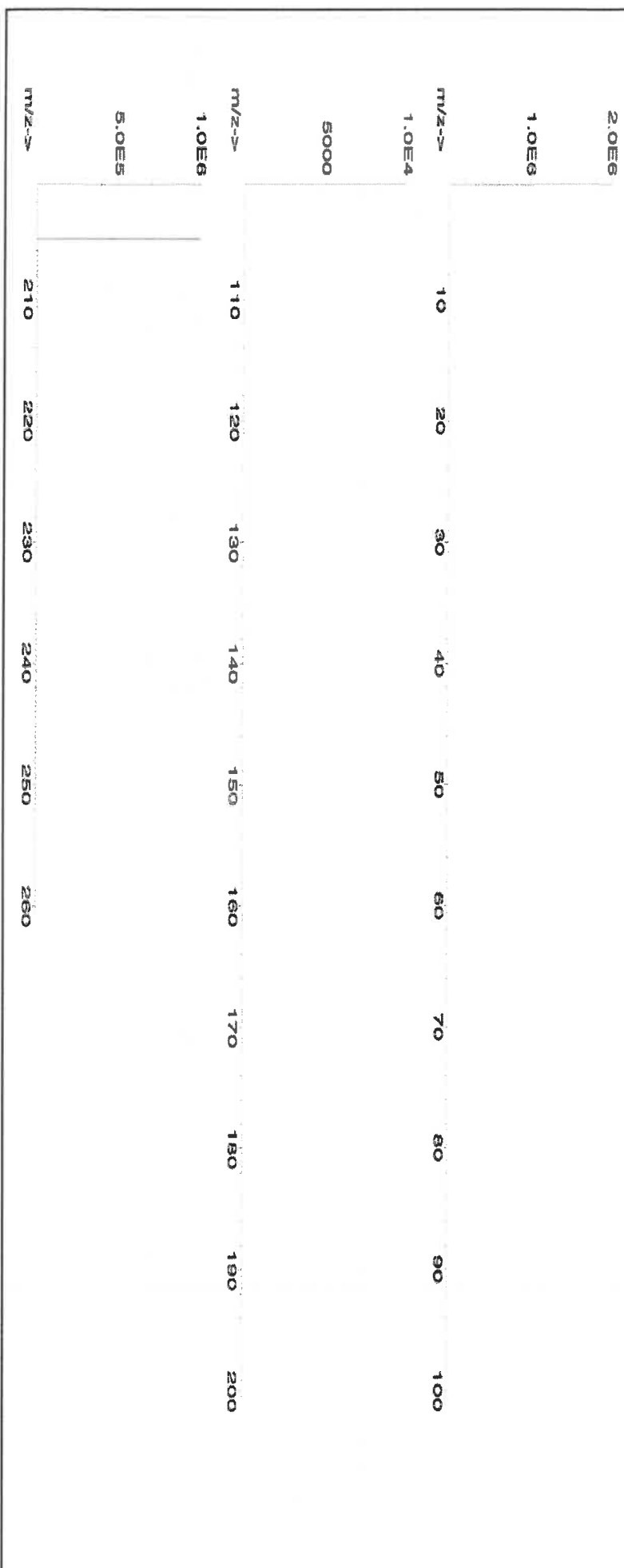
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	062724
Reviewed By:	<i>Pedro L. Renias</i>
	Pedro L. Renias
	062724

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
----------	------------	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

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 orl-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	Sc	<0.02	Ta	<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 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

2.0% 40.0 (mL) Nitric Acid

Expiration Date: 062427

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.3 0.06 Flask Uncertainty

Aleah O'Brady	
Formulated By:	Aleah O'Brady
	062424
Reviewed By:	Pedro L. Rantas
	062424

Compound	SDS Information											
	Expanded											NIST SRM
	(Solvent Safety Info. On Attached pg.)											
	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)	

1. Ammonium metavanadate (V) 58123 021224 0.1000 200.0 0.084 1000 10000.3 10000.0 2.2 7803-55-6 0.05 mg/m3 or-at 58.1mg/kg 3165

[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]

2.0E6	10	20	30	40	50	60	70	80	90	100
1.0E6	10	20	30	40	50	60	70	80	90	100
2.0E7	10	20	30	40	50	60	70	80	90	100
1.0E7	10	20	30	40	50	60	70	80	90	100
5.0E8	110	120	130	140	150	160	170	180	190	200
2.5E8	110	120	130	140	150	160	170	180	190	200
m/z-->	210	220	230	240	250	260				



SHIPPING DOCUMENTS

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: FIRST ENVIRONMENT INC
ADDRESS: 10 PARK PL
CITY: BUTLER STATE: N.J. ZIP: 07405
ATTENTION:
PHONE: 973-334-0003 FAX: 973-334-0928

CLIENT PROJECT INFORMATION

PROJECT NAME: EDGEWOOD
PROJECT NO.: LOCATION: EDGEWOOD N.J.
PROJECT MANAGER: KEN Cwirka
e-mail: KMCC@FIRSTENVIRONMENT.COM
PHONE: FAX:

CLIENT BILLING INFORMATION

BILL TO: FIRST ENVIRONMENT PO#:
ADDRESS: 10 PARK PL Suite 504
CITY: BUTLER STATE: N.J. ZIP: 07405
ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: STD DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☒ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other _____
☒ EDD FORMAT

1. CORROSION
2. TENSILE
3. REACTIVE
4. REACTIVE
5. REACTIVE
6. REACTIVE
7. REACTIVE
8. REACTIVE
9. REACTIVE

PRESERVATIVES

COMMENTS

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES										COMMENTS ← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	
1.	WC	S	X		6-13	0930	3	X	X	X	X	X	X	X	X	X	
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>GARY McLEOD</u>	DATE/TIME: <u>6/13/25/11:35</u>	RECEIVED BY: 1. <u>[Signature]</u>	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP <u>2.8</u> °C
RELINQUISHED BY SAMPLER: 2.	DATE/TIME:	RECEIVED BY: 2.	Comments: <u>IR-Gun #1</u>
RELINQUISHED BY SAMPLER: 3.	DATE/TIME:	RECEIVED BY: 3.	Page ____ of CLIENT: ☐ Hand Delivered ☐ Other Shipment Complete ☐ YES ☐ NO

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