

DATA PACKAGE METALS

PROJECT NAME : NWIRP BETHPAGE 112G08005-WE13

TETRA TECH NUS, INC.

661 Andersen Drive

Suite 200

Pittsburgh, PA - 15220-2745

Phone No: 412-921-7090

ORDER ID : Q2604

ATTENTION : Ernie Wu



Laboratory Certification ID # 20012



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Cover Page

Order ID : Q2604

Project ID : NWIRP Bethpage 112G08005-WE13

Client : Tetra Tech NUS, Inc.

Lab Sample Number

Q2604-01
Q2604-02

Client Sample Number

RW8-SP100-20250711
RW8-SP303-20250711

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: 7/21/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

Tetra Tech NUS, Inc.

Project Name: NWIRP Bethpage 112G08005-WE13

Project Manager : Ernie Wu

Order ID # Q2604

Test Name: Metals Group4

A. Number of Samples and Date of Receipt:

2 Water samples were received on 07/15/2025.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Metals Group4, SVOC-SIMGroup1, TDS and TSS. This data package contains results for Metals Group4.

C. Analytical Techniques:

The analysis of Metals Group4 was based on method 6010D and digestion based on method 3010 (waters).

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met criteria for all compounds.

The Duplicate analysis met criteria for all compounds.

The Matrix Spike analysis met criteria for all compounds.

The Matrix Spike Duplicate (RW8-SP100-20250711MSD) analysis met criteria for all compounds except for Iron due to Chemical Interference during digestion Process.

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

The Calibration met the requirements.

The Serial Dilution met the acceptable requirements.

E. Additional Comments:

The laboratory certifies that the all-electronic diskette deliverable exactly match the data summary forms (i.e. Form Is).

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

Signature_____

DATA REPORTING QUALIFIERS- INORGANIC

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

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

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

ORDER ID: Q2604

MATRIX: Water

METHOD: 6010D

	NA	NO	YES
1. Calibration Summary met criteria.			✓
2. ICP Interference Check Sample Results Summary Submitted.			✓
3. Serial Dilution Summary (if applicable) Submitted.			✓
4. Laboratory Control Sample Summary (if applicable) Submitted.			✓
5. Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6. Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
The Matrix Spike analysis met criteria for all compounds. The Matrix Spike Duplicate (RW8-SP100-20250711MSD) analysis met criteria for all compounds except for Iron due to Chemical Interference during digestion Process.			
7. Sample Duplicate Analysis Met QC Criteria			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
8. Digestion Holding Time Met			✓
If not met, list number of days exceeded for each sample:			
9. Analysis Holding Time Met			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

The laboratory certifies that the all-electronic diskette deliverable exactly match the data summary forms (i.e. Form Is).

QA REVIEW

Date

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q2604

Completed

For thorough review, the report must have the following:

GENERAL:

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

✓

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

✓

Is the chain of custody signed and complete

✓

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

✓

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

✓

COVER PAGE:

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

✓

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

✓

CHAIN OF CUSTODY:

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

✓

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

✓

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

✓

Were the samples received within hold time

✓

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

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 07/21/2025

LAB CHRONICLE

OrderID:	Q2604	OrderDate:	7/15/2025 10:29:00 AM
Client:	Tetra Tech NUS, Inc.	Project:	NWIRP Bethpage 112G08005-WE13
Contact:	Ernie Wu	Location:	O11

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2604-01	RW8-SP100-2025071 1	Water			07/11/25			07/15/25
			Metals Group4	6010D		07/16/25	07/17/25	
Q2604-02	RW8-SP303-2025071 1	Water			07/11/25			07/15/25
			Metals Group4	6010D		07/16/25	07/17/25	

Hit Summary Sheet
SW-846

SDG No.:	Q2604	Order ID:	Q2604
Client:	Tetra Tech NUS, Inc.	Project ID:	NWIRP Bethpage 112G08005-WE13

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : RW8-SP100-20250711									
Q2604-01	RW8-SP100-20250711	Water	Iron	770		11.7	40.0	50.0	ug/L
Client ID : RW8-SP303-20250711									
Q2604-02	RW8-SP303-20250711	Water	Iron	101		11.7	40.0	50.0	ug/L



SAMPLE DATA

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Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	07/11/25
Project:	NWIRP Bethpage 112G08005-WE13	Date Received:	07/15/25
Client Sample ID:	RW8-SP100-20250711	SDG No.:	Q2604
Lab Sample ID:	Q2604-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	770	N	1	11.7	40.0	50.0	ug/L	07/16/25 10:05	07/17/25 18:07	6010D	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Metals Group4			

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

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

Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	07/11/25
Project:	NWIRP Bethpage 112G08005-WE13	Date Received:	07/15/25
Client Sample ID:	RW8-SP303-20250711	SDG No.:	Q2604
Lab Sample ID:	Q2604-02	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	101	N	1	11.7	40.0	50.0	ug/L	07/16/25 10:05	07/17/25 17:30	6010D	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Metals Group4			

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

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Iron	4310	4000	108	90 - 110	P	07/17/2025	13:30	LB136533

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Iron	110	100	110	80 - 120	P	07/17/2025	13:37	LB136533

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Iron	5040	5000	101	90 - 110	P	07/17/2025	14:20	LB136533
CCV02	Iron	5080	5000	102	90 - 110	P	07/17/2025	14:58	LB136533
CCV03	Iron	5030	5000	101	90 - 110	P	07/17/2025	15:50	LB136533
CCV04	Iron	5040	5000	101	90 - 110	P	07/17/2025	16:42	LB136533
CCV05	Iron	4970	5000	99	90 - 110	P	07/17/2025	17:58	LB136533
CCV06	Iron	4770	5000	95	90 - 110	P	07/17/2025	19:24	LB136533
CCV07	Iron	4890	5000	98	90 - 110	P	07/17/2025	20:16	LB136533



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

Metals

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CRDL STANDARD FOR AA & ICP

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Initial Calibration Source: _____

Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Iron	103	100	103	65 - 135	P	07/17/2025	13:46	LB136533



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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tetra Tech NUS, Inc. **SDG No.:** Q2604
Contract: TETR06 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	13:41	LB136533

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tetra Tech NUS, Inc. **SDG No.:** Q2604
Contract: TETR06 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	14:25	LB136533
CCB02	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	15:02	LB136533
CCB03	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	15:56	LB136533
CCB04	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	16:46	LB136533
CCB05	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	18:02	LB136533
CCB06	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	19:28	LB136533
CCB07	Iron	23.4	+/-50	U	80.0	100	P	07/17/2025	20:20	LB136533

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB168883BL		WATER		Batch Number:		PB168883		Prep Date:	07/16/2025	
	Iron	18.0	<25	U	37.5	50.0	P	07/17/2025	17:22	LB136533

Metals
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INTERFERENCE CHECK SAMPLE

Client: Tetra Tech NUS, Inc. **SDG No.:** Q2604
Contract: TETR06 **Lab Code:** ACE
ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Iron	98300	101000	97	85600	116500	07/17/2025	13:51	LB136533
ICSAB01	Iron	97600	99300	98	84400	114500	07/17/2025	13:56	LB136533



METAL QC DATA

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metals
- 5a -
MATRIX SPIKE SUMMARY

client: <u>Tetra Tech NUS, Inc.</u>	level: <u>low</u>	sdg no.: <u>Q2604</u>
contract: <u>TETR06</u>		lab code: <u>ACE</u>
matrix: <u>Water</u>	sample id: <u>Q2604-01</u>	client id: <u>RW8-SP100-20250711MS</u>
Percent Solids for Sample: <u>NA</u>	Spiked ID: <u>Q2604-01MS</u>	Percent Solids for Spike Sample: <u>NA</u>

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Iron	ug/L	87 - 115	2260		770		1500	99		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: <u>Tetra Tech NUS, Inc.</u>	level: <u>low</u>	sdg no.: <u>Q2604</u>
contract: <u>TETR06</u>		lab code: <u>ACE</u>
matrix: <u>Water</u>	sample id: <u>Q2604-01</u>	client id: <u>RW8-SP100-20250711MSD</u>
Percent Solids for Sample: <u>NA</u>	Spiked ID: <u>Q2604-01MSD</u>	Percent Solids for Spike Sample: <u>NA</u>

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Iron	ug/L	87 - 115	2540		770		1500	118	N	P

Metals
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POST DIGEST SPIKE SUMMARY

Client: <u>Tetra Tech NUS, Inc.</u>	SDG No.: <u>Q2604</u>	
Contract: <u>TETR06</u>	Lab Code: <u>ACE</u>	
Matrix: <u>Water</u>	Level: <u>LOW</u>	Client ID: <u>RW8-SP100-20250711A</u>
Sample ID: <u>Q2604-01</u>	Spiked ID: <u>Q2604-01A</u>	

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Iron	ug/L	87 - 115	2170		770		1500	93		P

Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Tetra Tech NUS, Inc.</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q2604</u>
Contract:	<u>TETR06</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Water</u>	Sample ID:	<u>Q2604-01</u>	Client ID:	<u>RW8-SP100-20250711DUP</u>
Percent Solids for Sample:	NA	Duplicate ID	Q2604-01DUP	Percent Solids for Spike Sample:	NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Iron	ug/L	20	770		736		5		P

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

Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Tetra Tech NUS, Inc.</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q2604</u>
Contract:	<u>TETR06</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Water</u>	Sample ID:	<u>Q2604-01MS</u>	Client ID:	<u>RW8-SP100-20250711MSD</u>
Percent Solids for Sample:	NA	Duplicate ID	Q2604-01MSD	Percent Solids for Spike Sample:	NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Iron	ug/L	20	2260		2540		12		P

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

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB168883BS Iron	ug/L	1500	1460		97	87 - 115	P

Metals
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ICP SERIAL DILUTIONS

SAMPLE NO.

RW8-SP100-20250711L

Lab Name: Alliance **Contract:** TETR06
Lab Code: ACE **Lb No.:** lb136533 **Lab Sample ID :** Q2604-01L **SDG No.:** Q2604
Matrix (soil/water): Water **Level (low/med):** LOW
Concentration Units: ug/L

Analyte	Initial Sample Result (I) C	Serial Dilution Result (S) C	% Differ- ence	Q	M
Iron	770	762	1		P



METAL PREPARATION & INSTRUMENT DATA

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Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Al	Ca	Fe	Mg	Ag
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interement Correction Factors For:				
		As	Ba	Be	Cd	Co
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	-0.0039600

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Cr	Cu	K	Mn	Mo
Iron	240.488	0.0000000	0.0000000	0.0000730	0.0000000	-0.0015250

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Na	Ni	Pb	Sb	Se
Iron	240.488	0.0000000	-0.0017000	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Sn	Ti	Tl	V	Zn
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

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Metals
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SAMPLE PREPARATION SUMMARY

Client: Tetra Tech NUS, Inc.

SDG No.: Q2604

Contract: TETR06

Lab Code: ACE

Method: _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB168883							
PB168883BL	PB168883BL	MB	WATER	07/16/2025	50.0	25.0	
PB168883BS	PB168883BS	LCS	WATER	07/16/2025	50.0	25.0	
Q2604-01	RW8-SP100-20250711	SAM	WATER	07/16/2025	50.0	25.0	
Q2604-01DUP	RW8-SP100-20250711DUP	DUP	WATER	07/16/2025	50.0	25.0	
Q2604-01MS	RW8-SP100-20250711MS	MS	WATER	07/16/2025	50.0	25.0	
Q2604-01MSD	RW8-SP100-20250711MSD	MSD	WATER	07/16/2025	50.0	25.0	
Q2604-02	RW8-SP303-20250711	SAM	WATER	07/16/2025	50.0	25.0	

metals
- 14 -
ANALYSIS RUN LOG

Client: Tetra Tech NUS, Inc.

Contract: TETR06

Lab code: ACE

Sdg no.: Q2604

Instrument id number:

Method:

Run number: LB136533

Start date: 07/17/2025

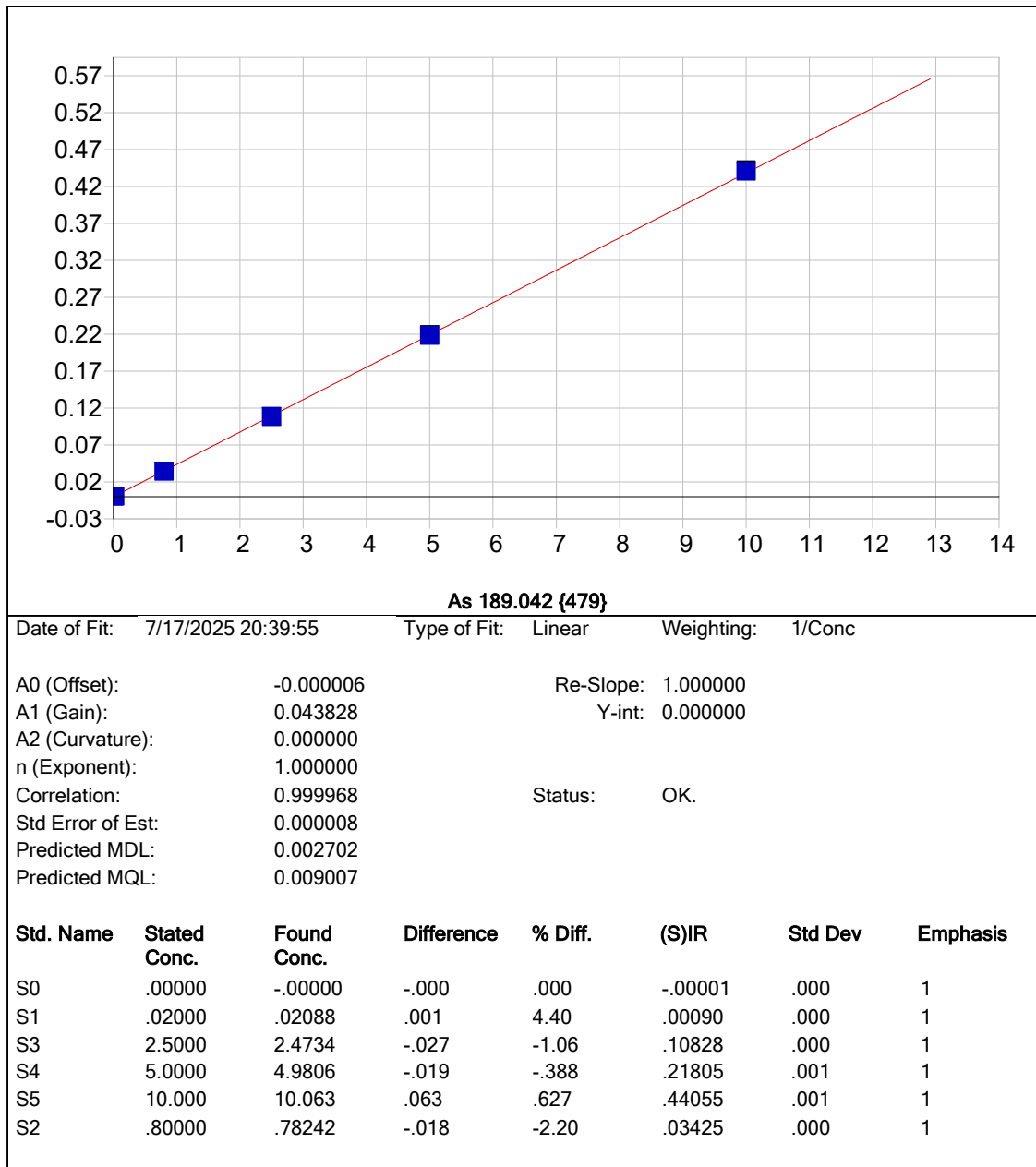
End date: 07/17/2025

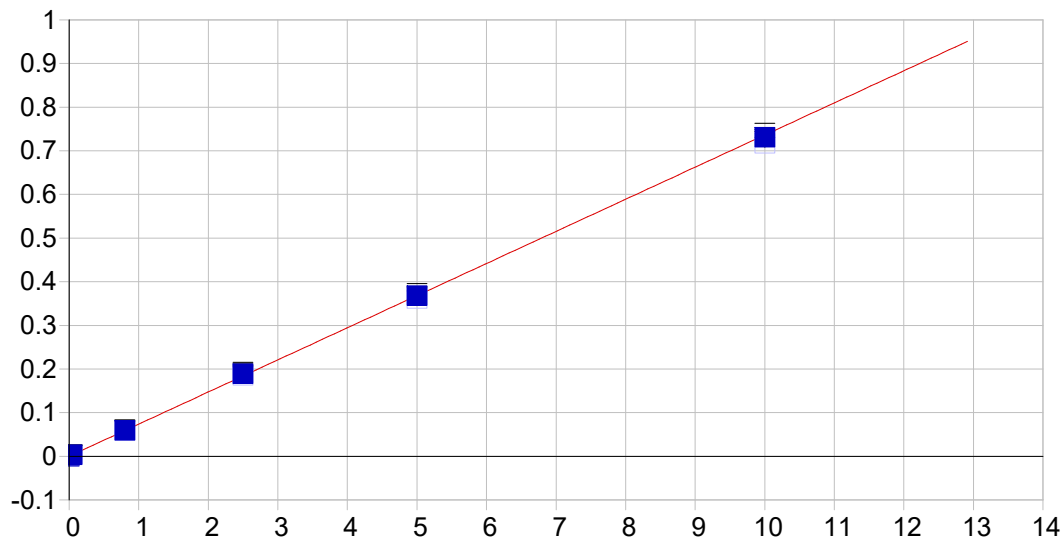
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1305	Fe
S1	S1	1	1309	Fe
S2	S2	1	1313	Fe
S3	S3	1	1318	Fe
S4	S4	1	1322	Fe
S5	S5	1	1326	Fe
ICV01	ICV01	1	1330	Fe
LLICV01	LLICV01	1	1337	Fe
ICB01	ICB01	1	1341	Fe
CRI01	CRI01	1	1346	Fe
ICSA01	ICSA01	1	1351	Fe
ICSAB01	ICSAB01	1	1356	Fe
CCV01	CCV01	1	1420	Fe
CCB01	CCB01	1	1425	Fe
CCV02	CCV02	1	1458	Fe
CCB02	CCB02	1	1502	Fe
CCV03	CCV03	1	1550	Fe
CCB03	CCB03	1	1556	Fe
CCV04	CCV04	1	1642	Fe
CCB04	CCB04	1	1646	Fe
PB168883BL	PB168883BL	1	1722	Fe
PB168883BS	PB168883BS	1	1726	Fe
Q2604-02	RW8-SP303-20250711	1	1730	Fe
CCV05	CCV05	1	1758	Fe
CCB05	CCB05	1	1802	Fe
Q2604-01	RW8-SP100-20250711	1	1807	Fe
Q2604-01DUP	RW8-SP100-20250711DUP	1	1811	Fe
Q2604-01L	RW8-SP100-20250711L	5	1815	Fe
Q2604-01MS	RW8-SP100-20250711MS	1	1820	Fe
Q2604-01MSD	RW8-SP100-20250711MSD	1	1824	Fe
Q2604-01A	RW8-SP100-20250711A	1	1828	Fe
CCV06	CCV06	1	1924	Fe
CCB06	CCB06	1	1928	Fe
CCV07	CCV07	1	2016	Fe
CCB07	CCB07	1	2020	Fe



METAL RAW DATA

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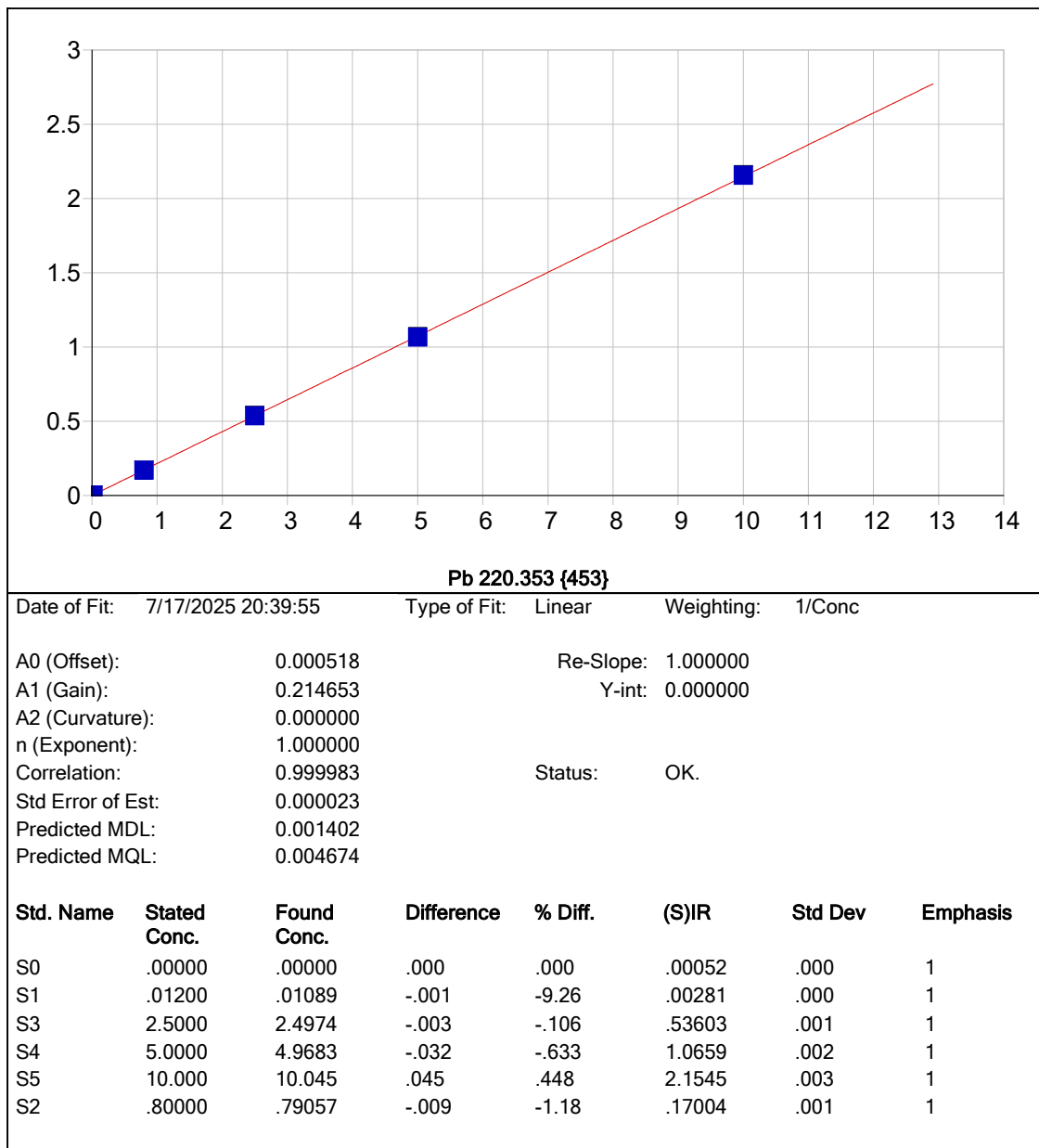


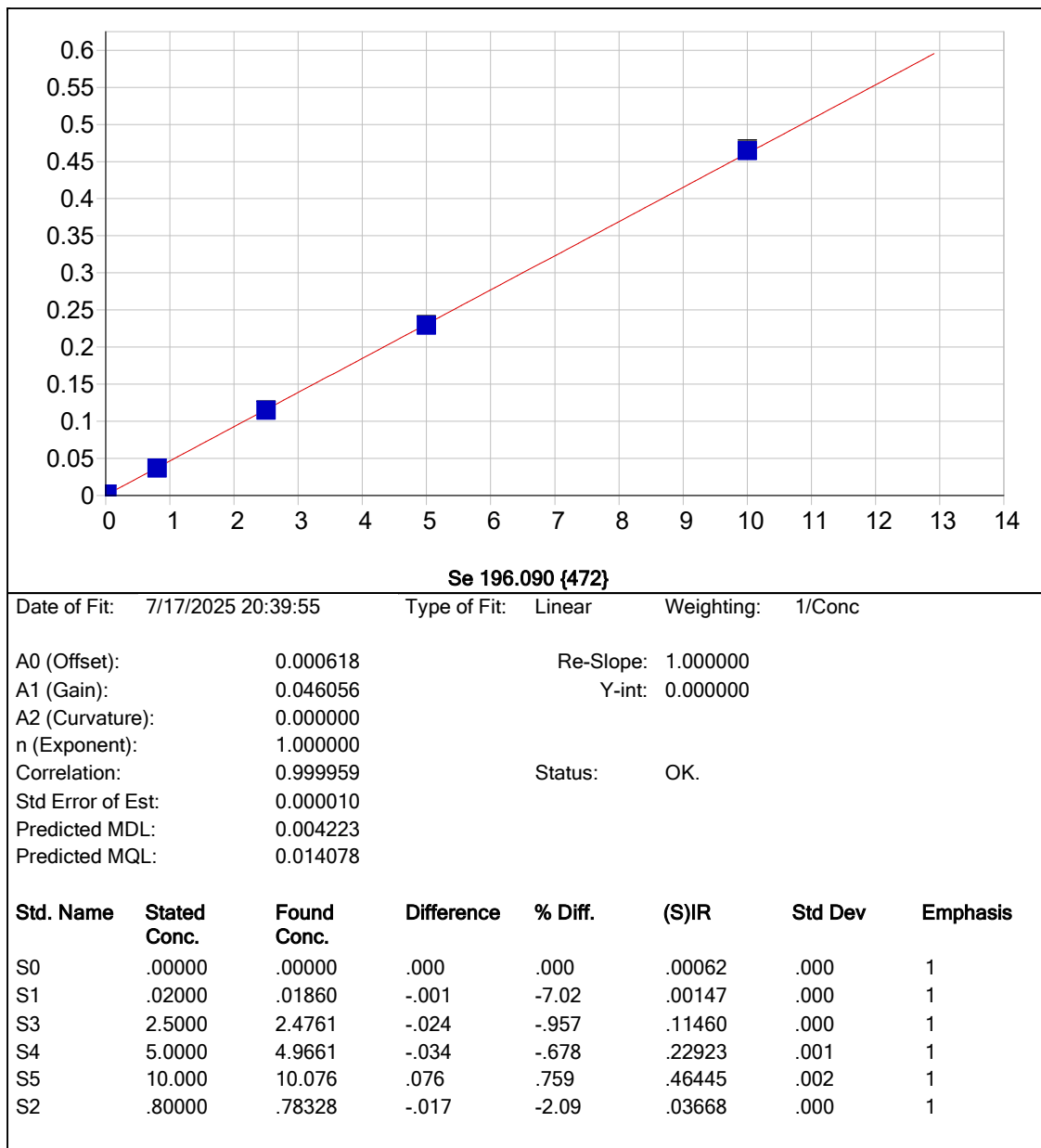
TI 190.856 {477}

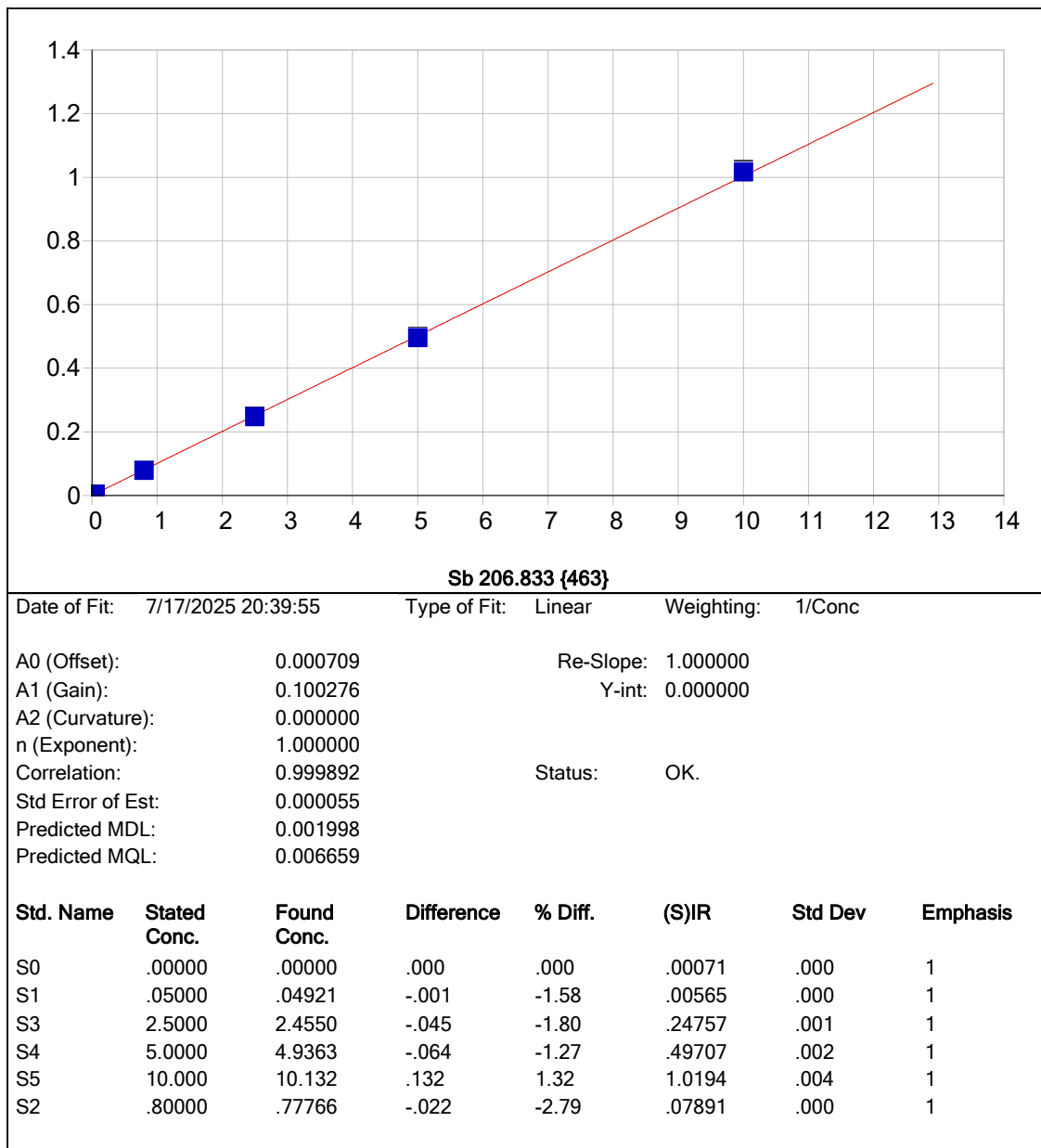
Date of Fit: 7/17/2025 20:39:55 Type of Fit: Linear Weighting: 1/Conc

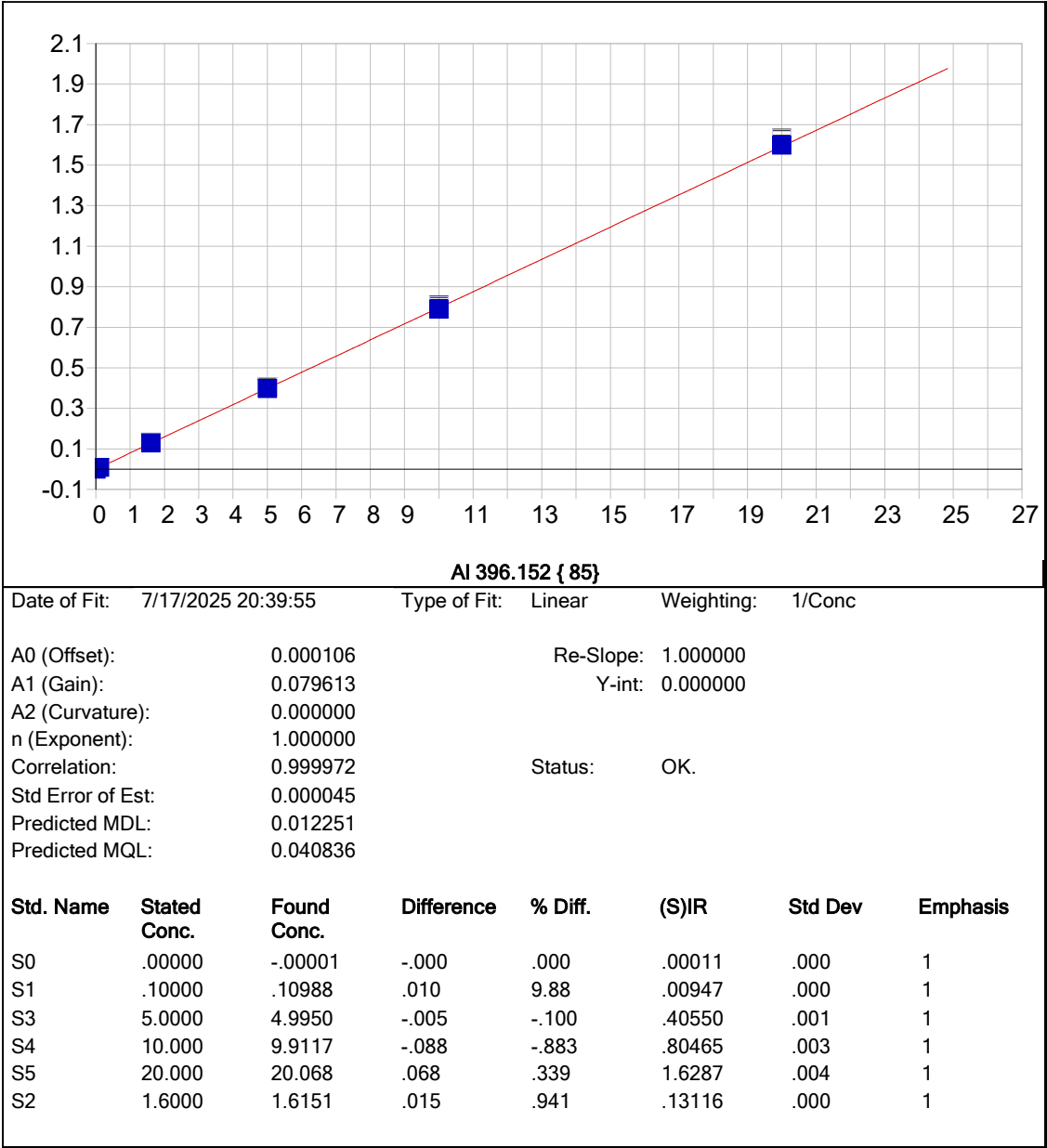
A0 (Offset): 0.000060 Re-Slope: 1.000000
A1 (Gain): 0.073617 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999933 Status: OK.
Std Error of Est: 0.000028
Predicted MDL: 0.001981
Predicted MQL: 0.006603

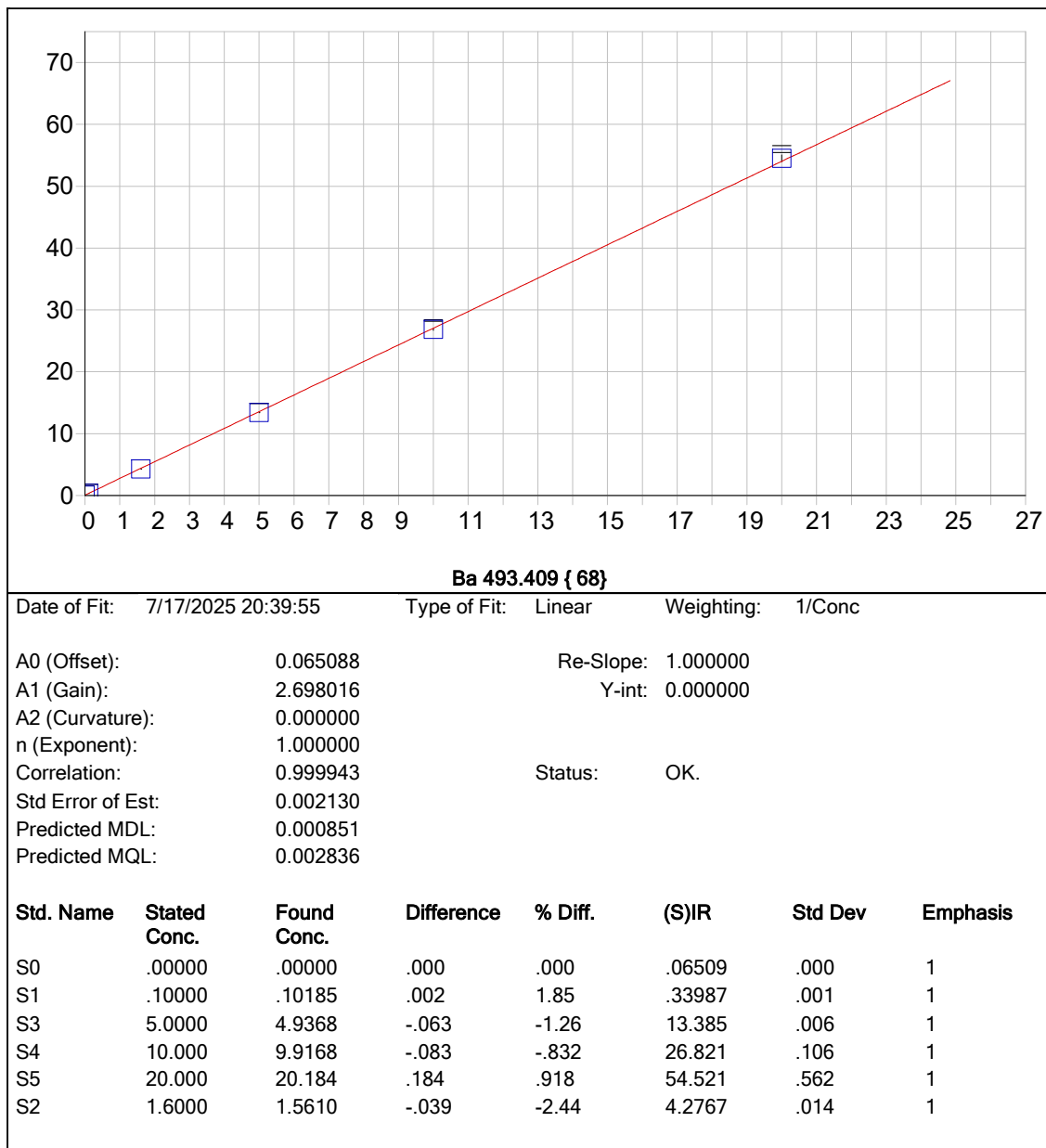
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00006	.000	1
S1	.04000	.04107	.001	2.67	.00289	.000	1
S3	2.5000	2.5664	.066	2.66	.18561	.004	1
S4	5.0000	5.0011	.001	.022	.36146	.005	1
S5	10.000	9.9259	-.074	-.741	.71724	.009	1
S2	.80000	.80556	.006	.695	.05828	.001	1

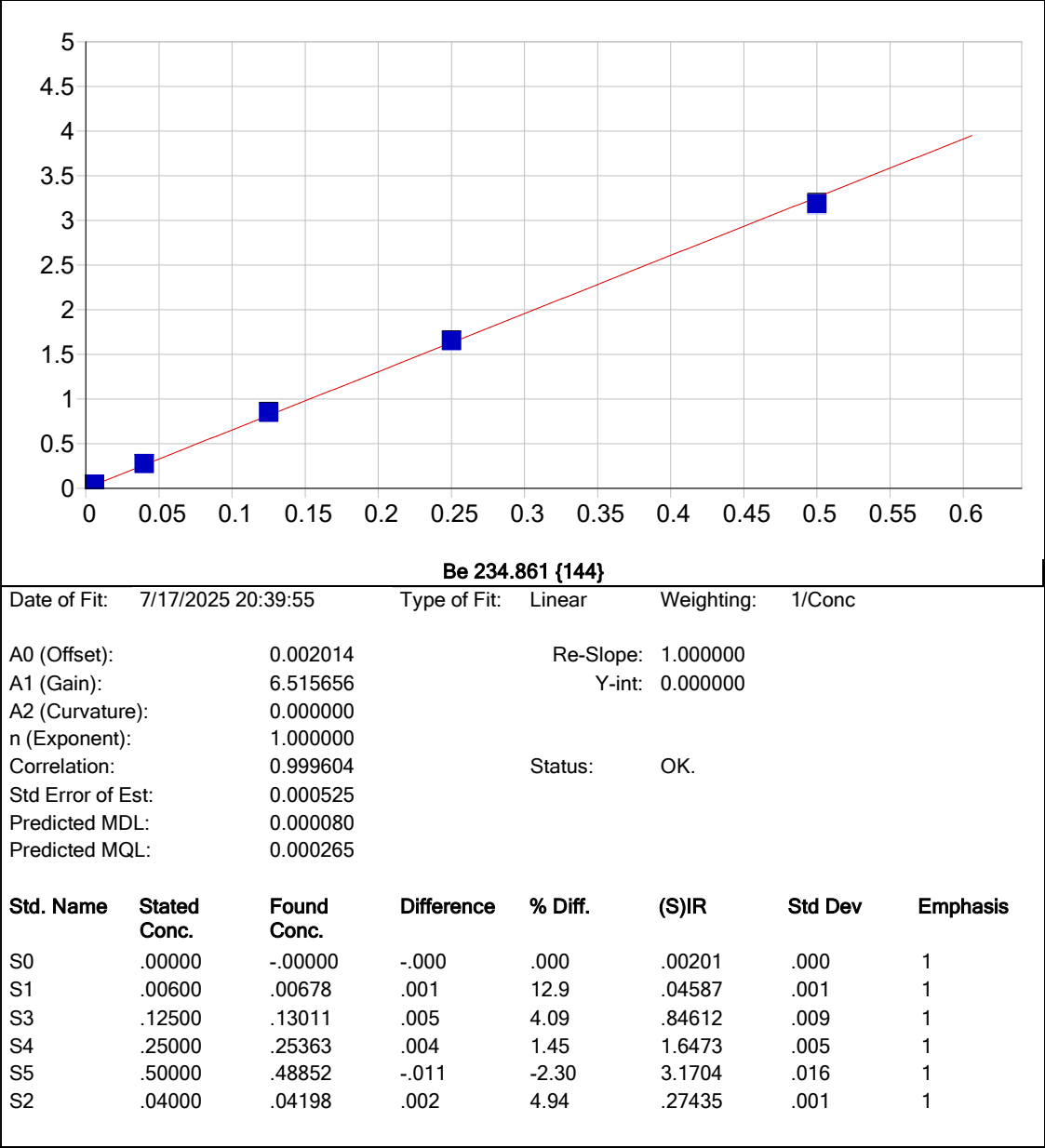


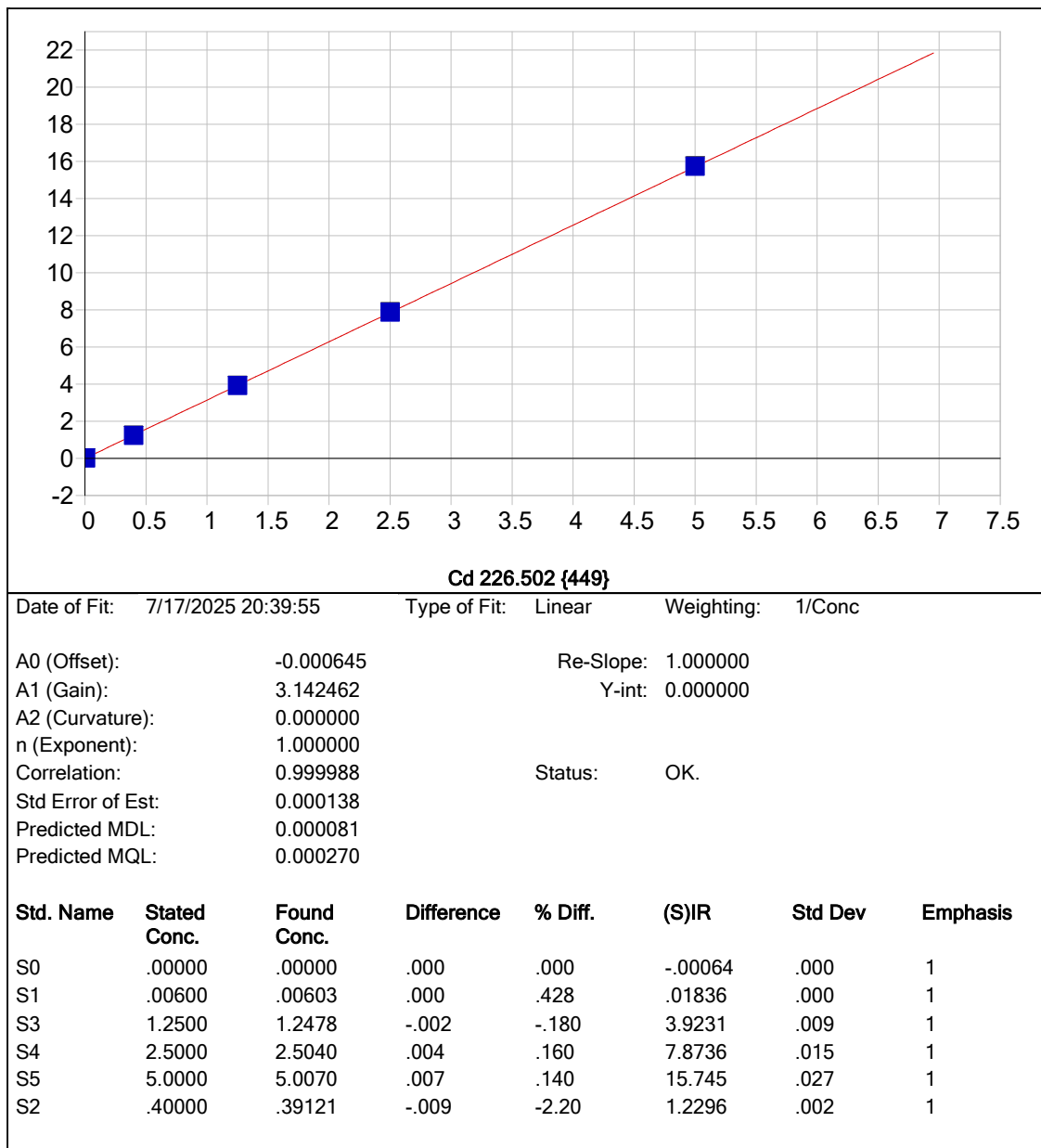


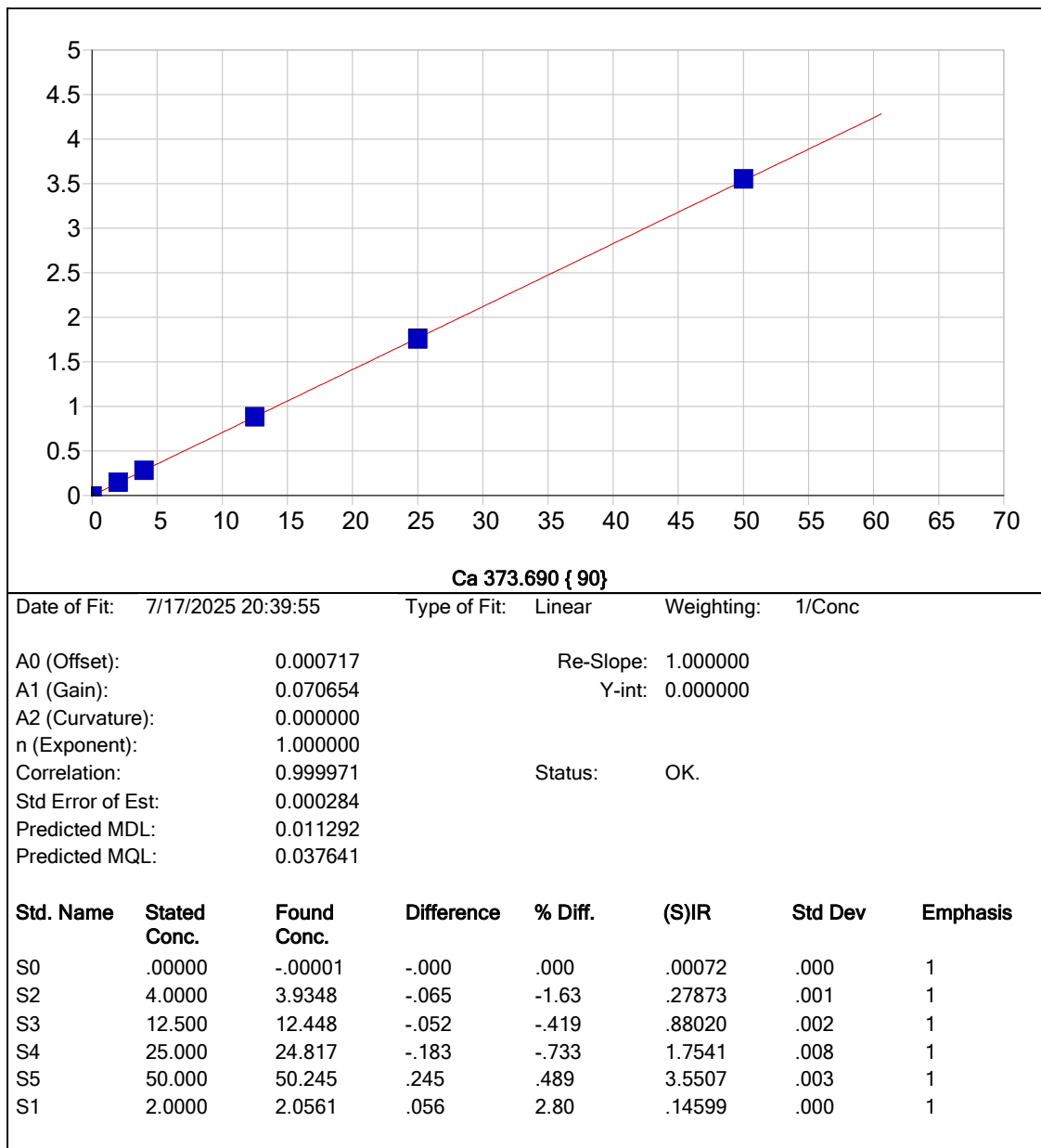


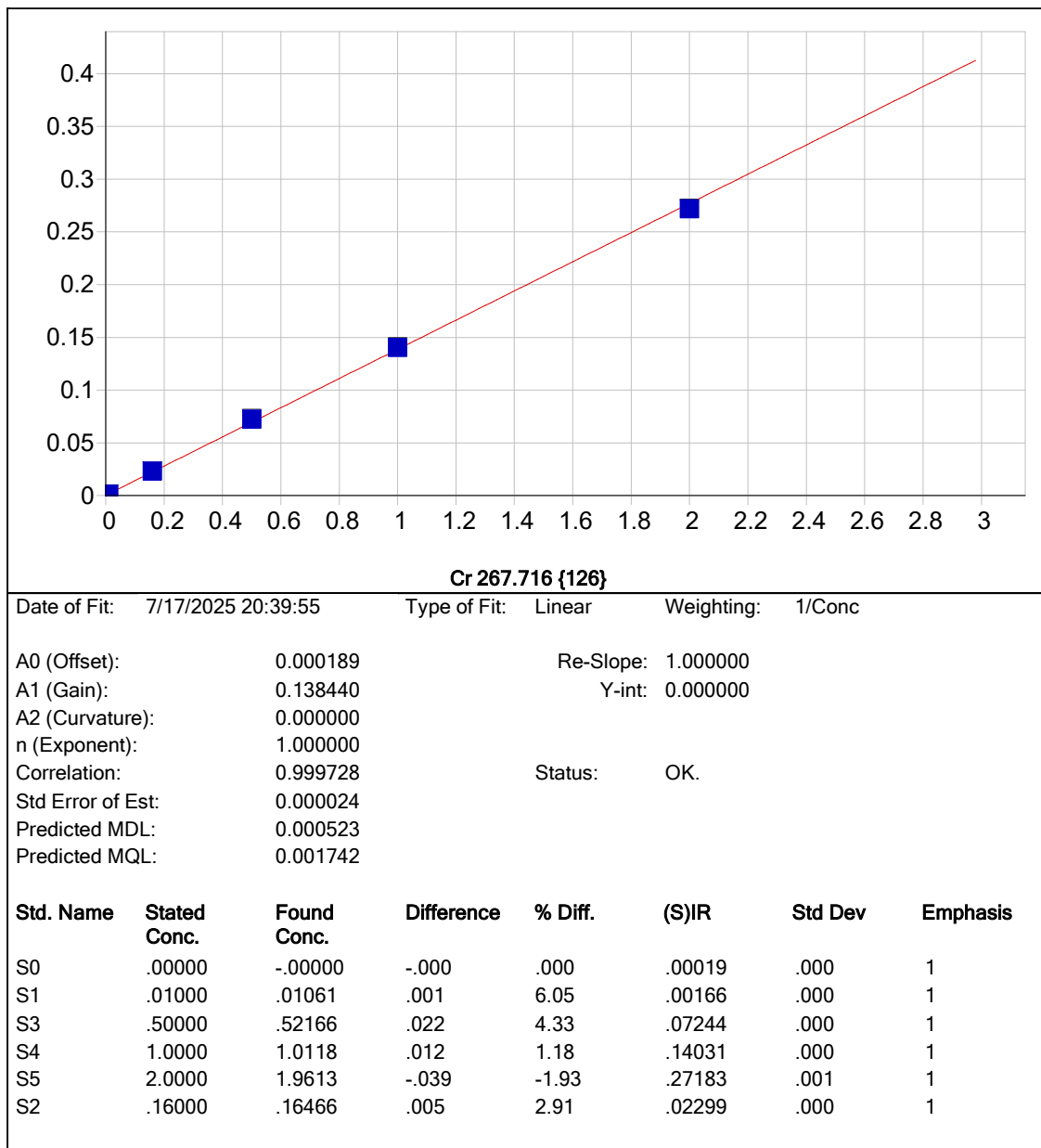


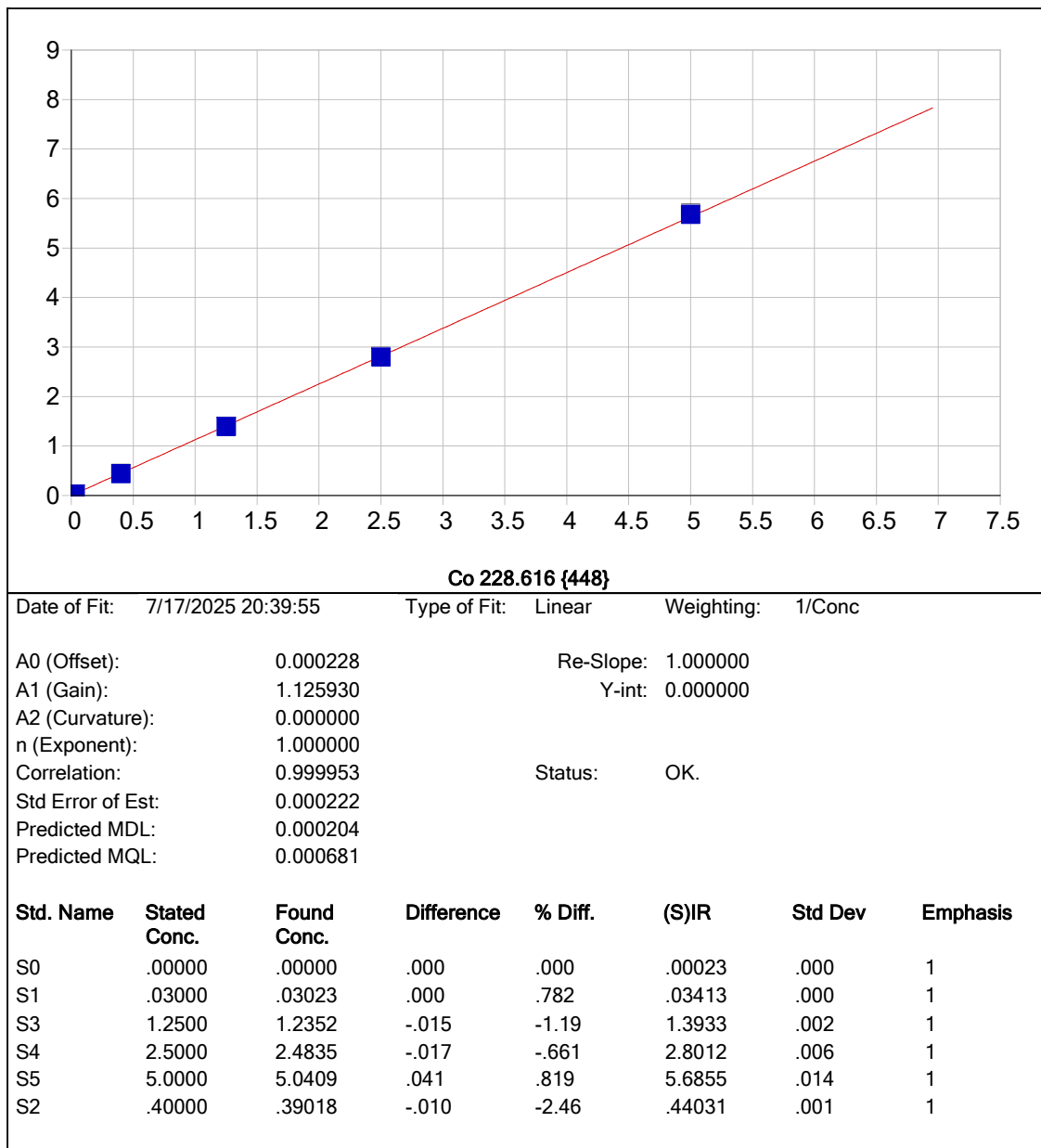


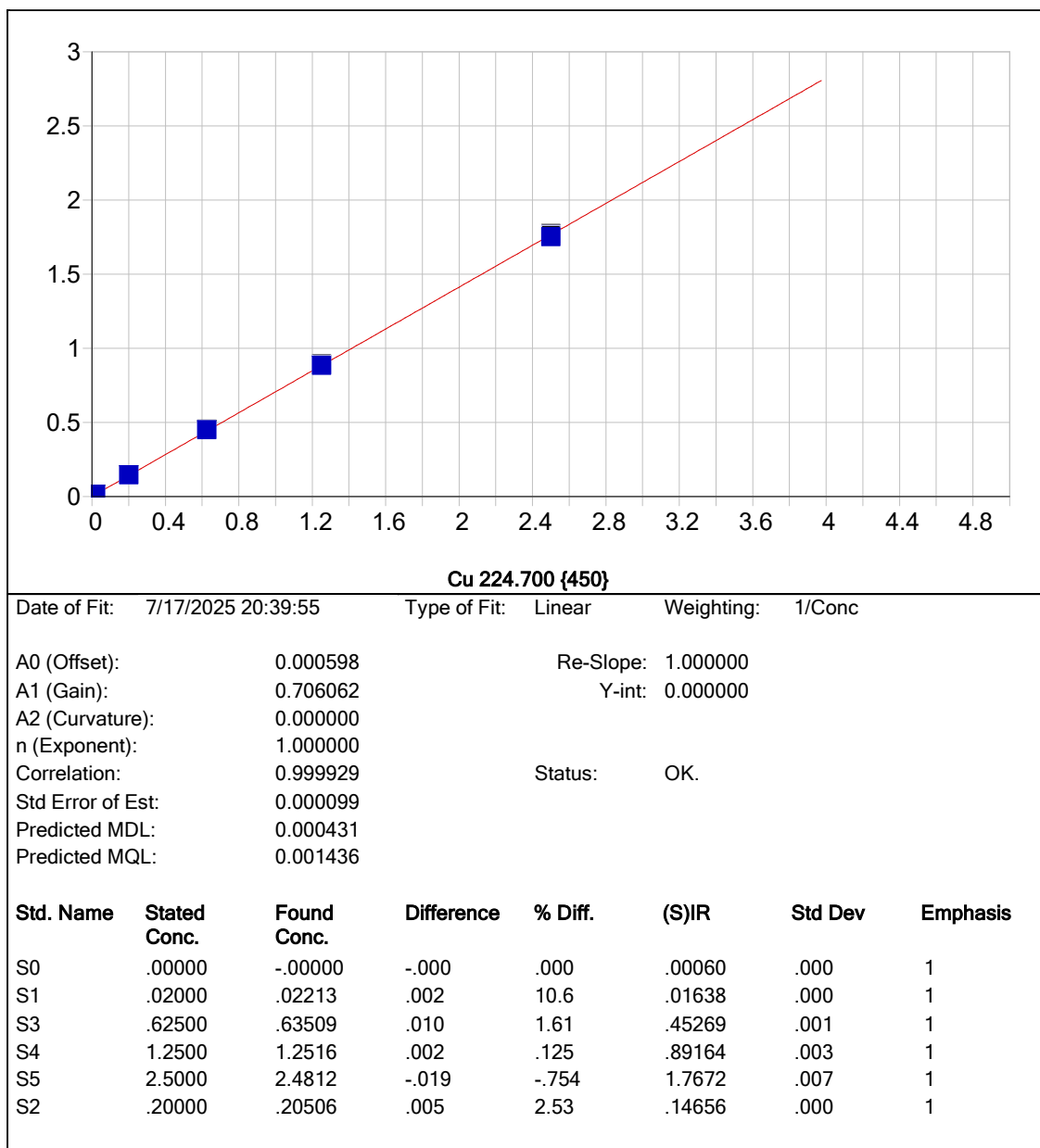


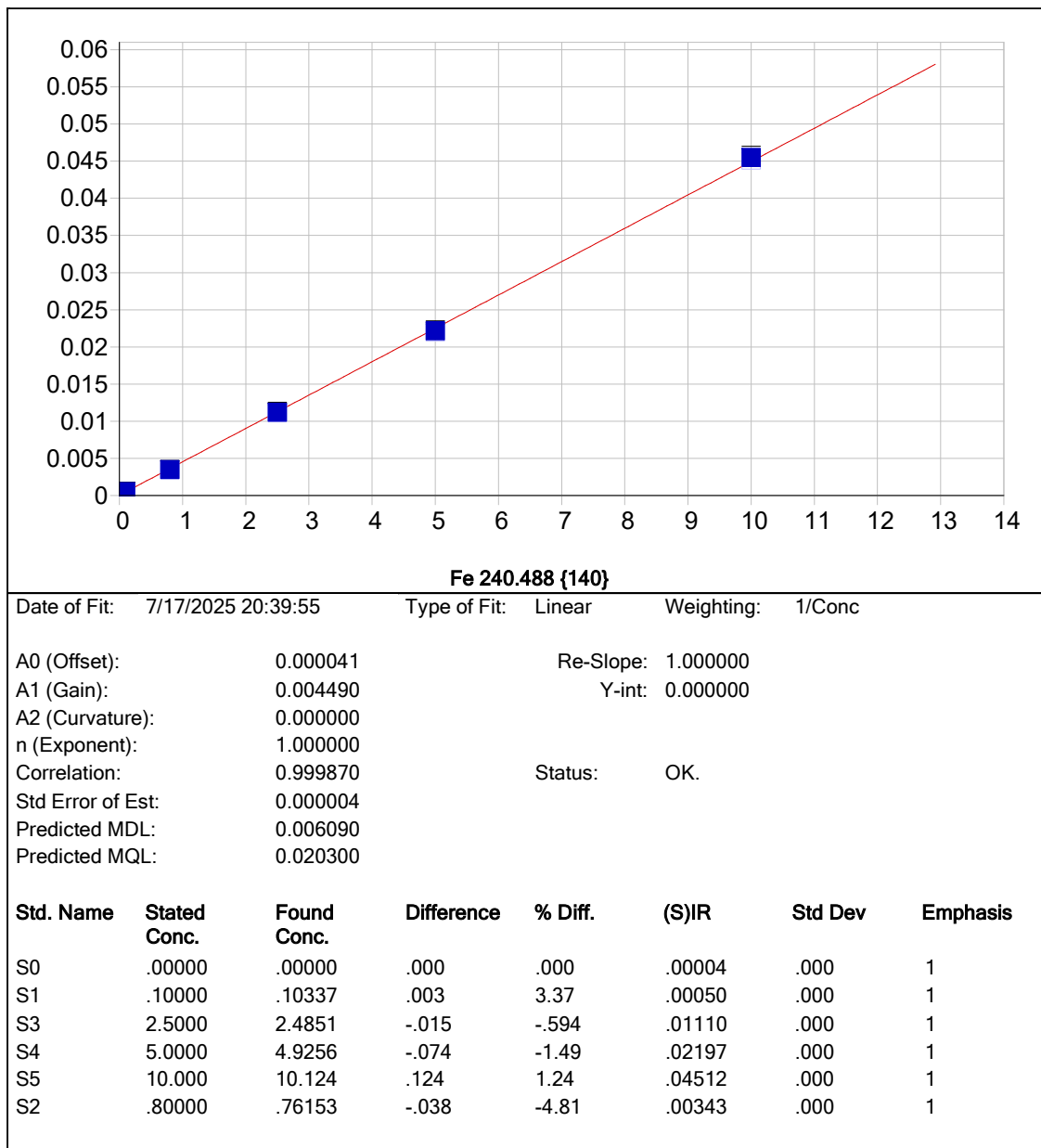


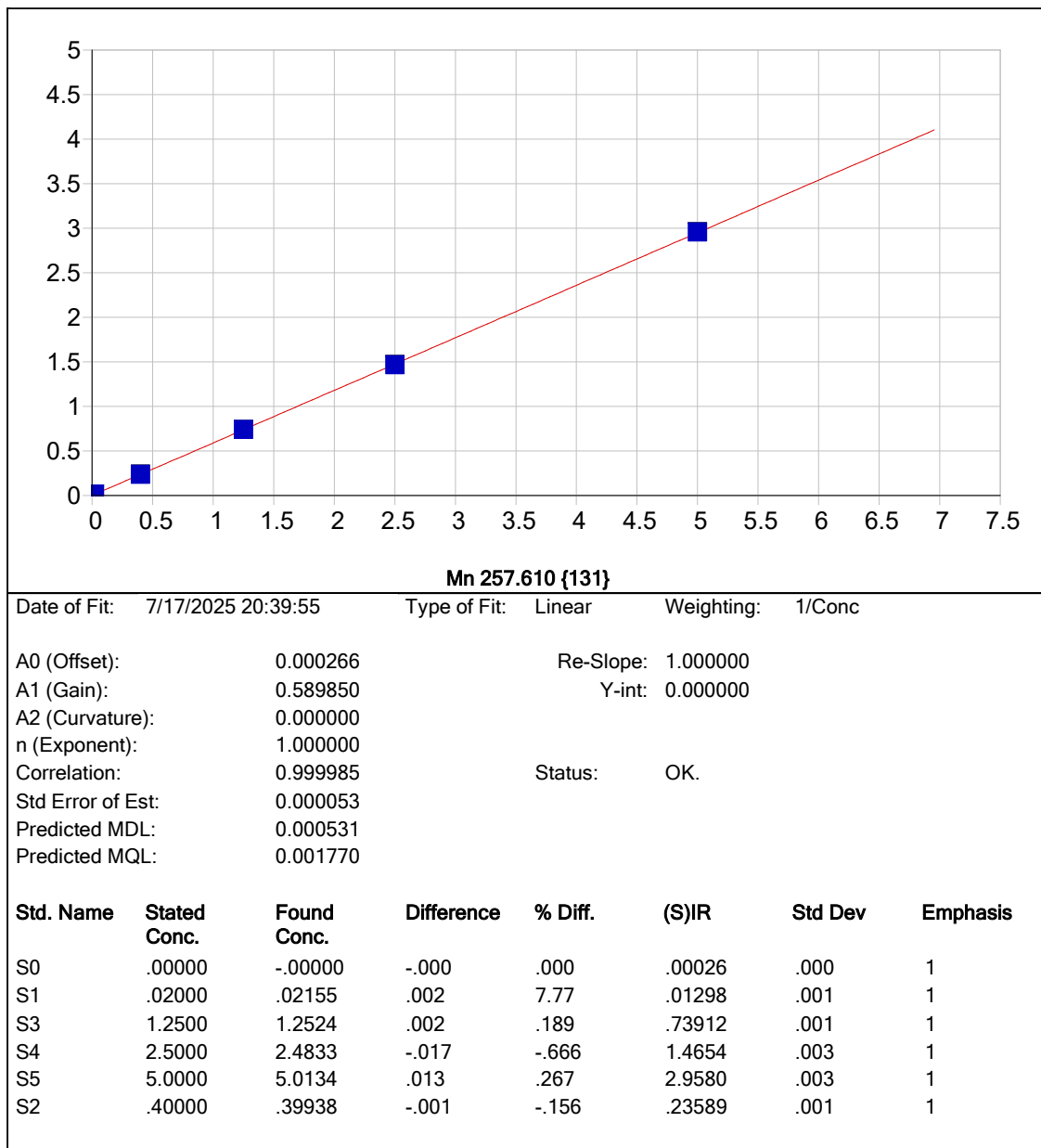


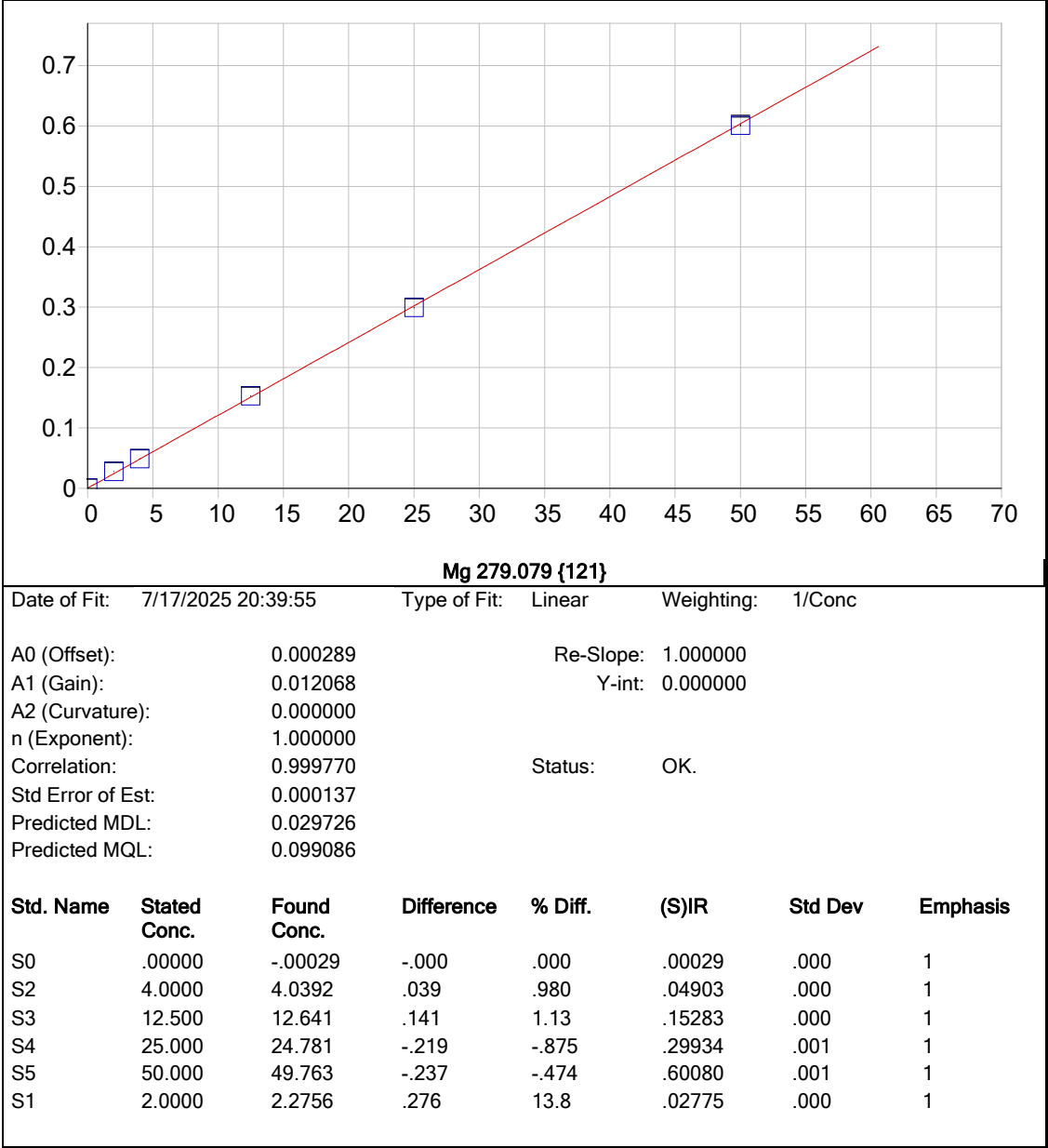


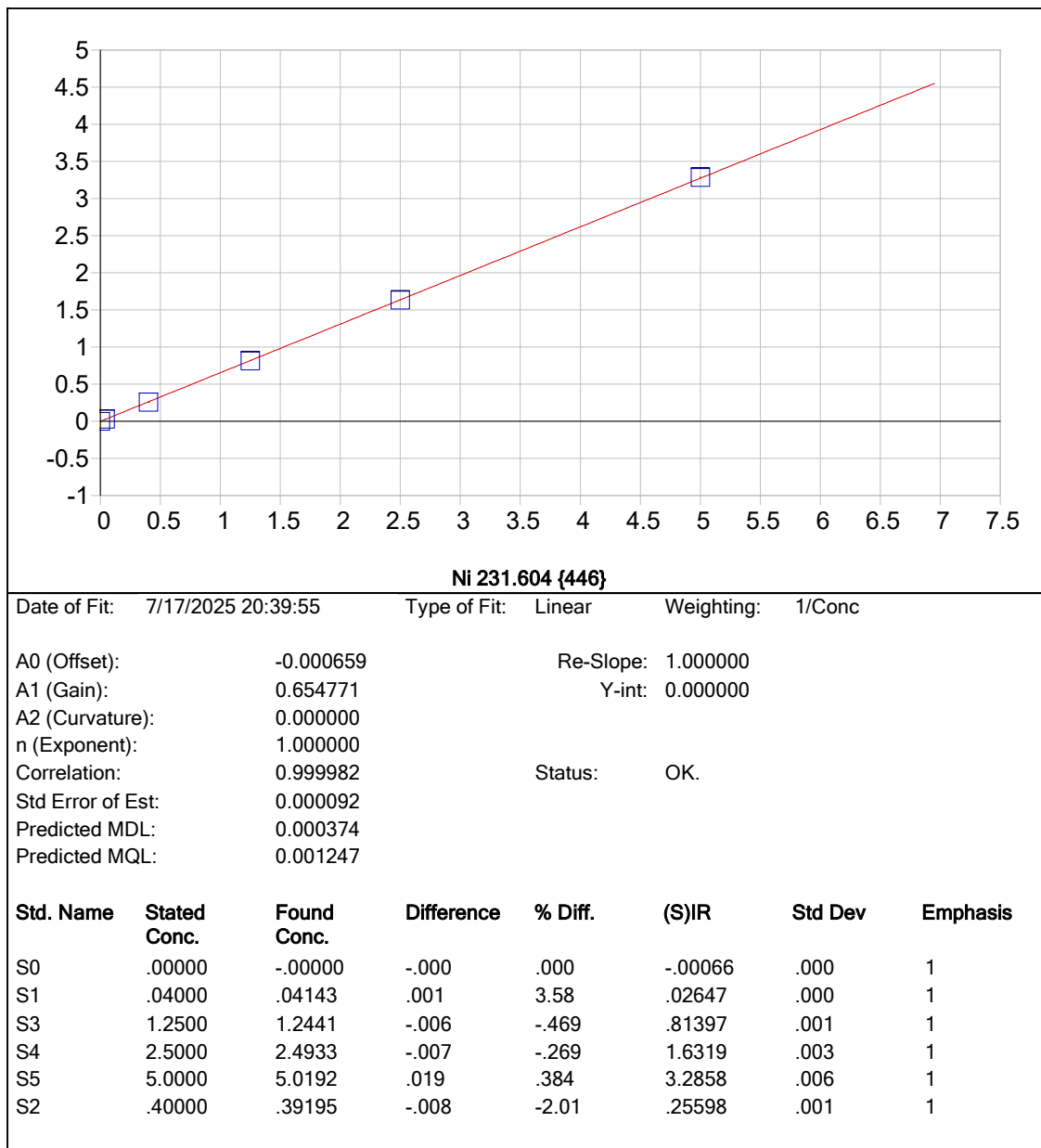


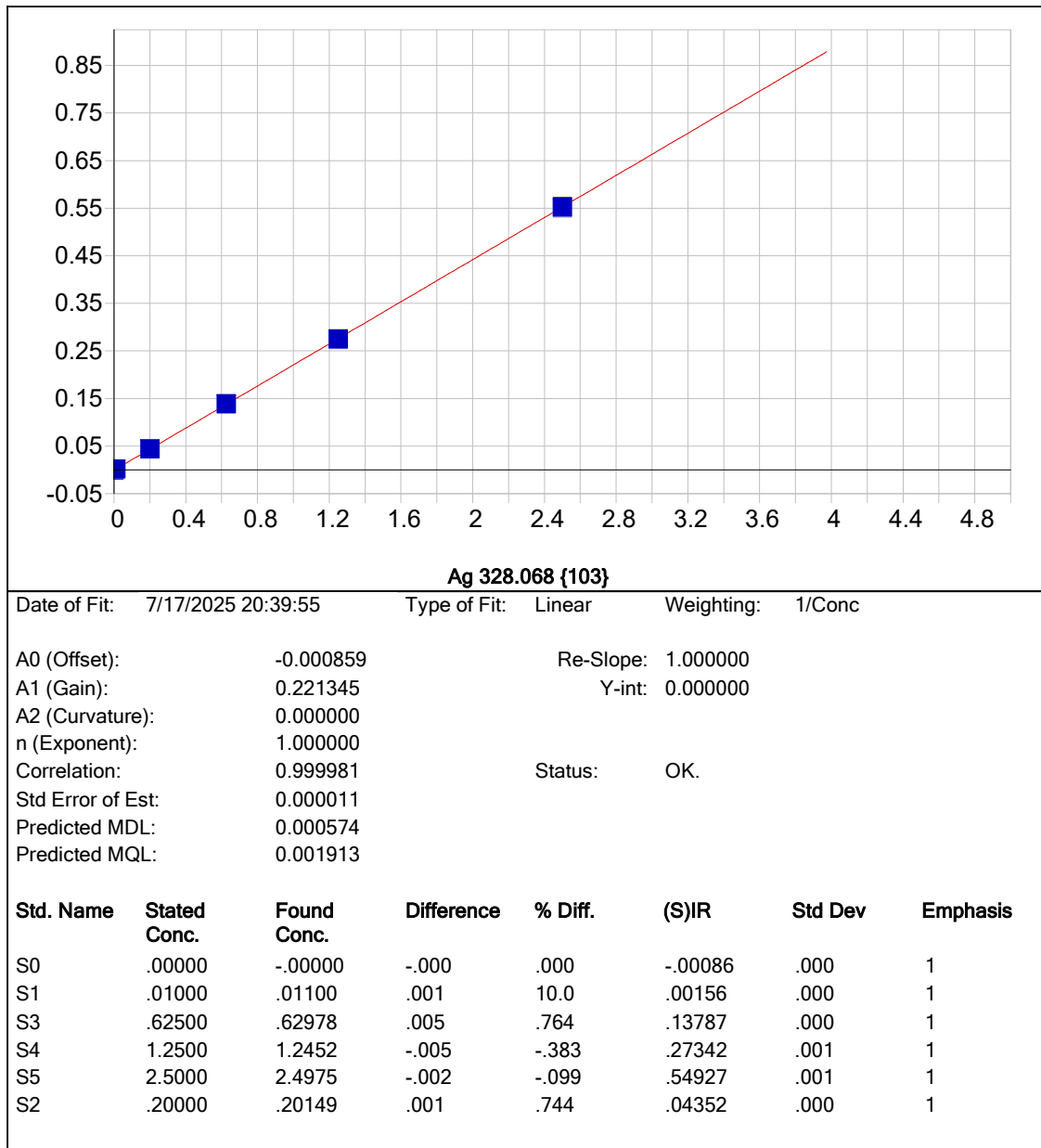


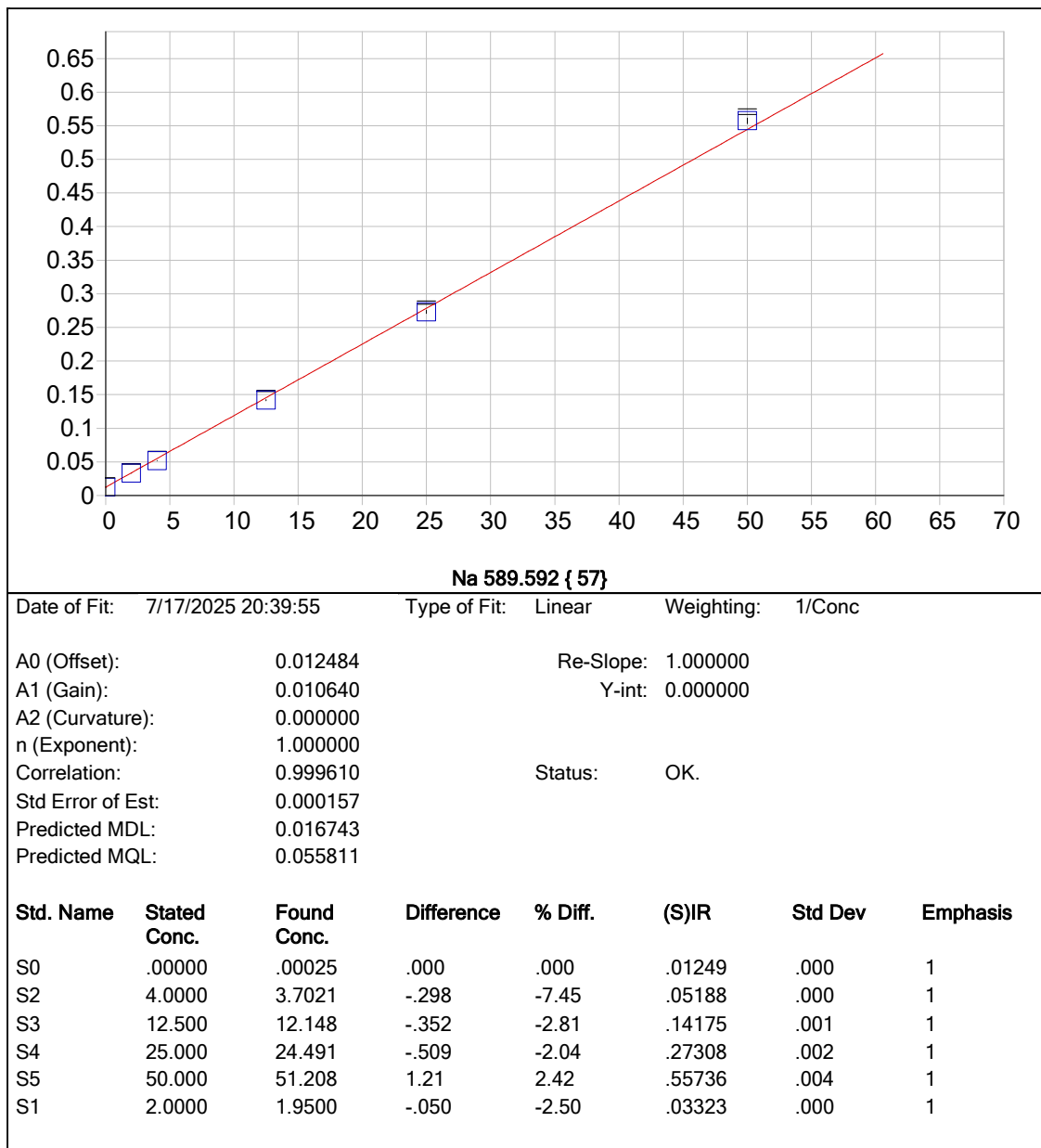


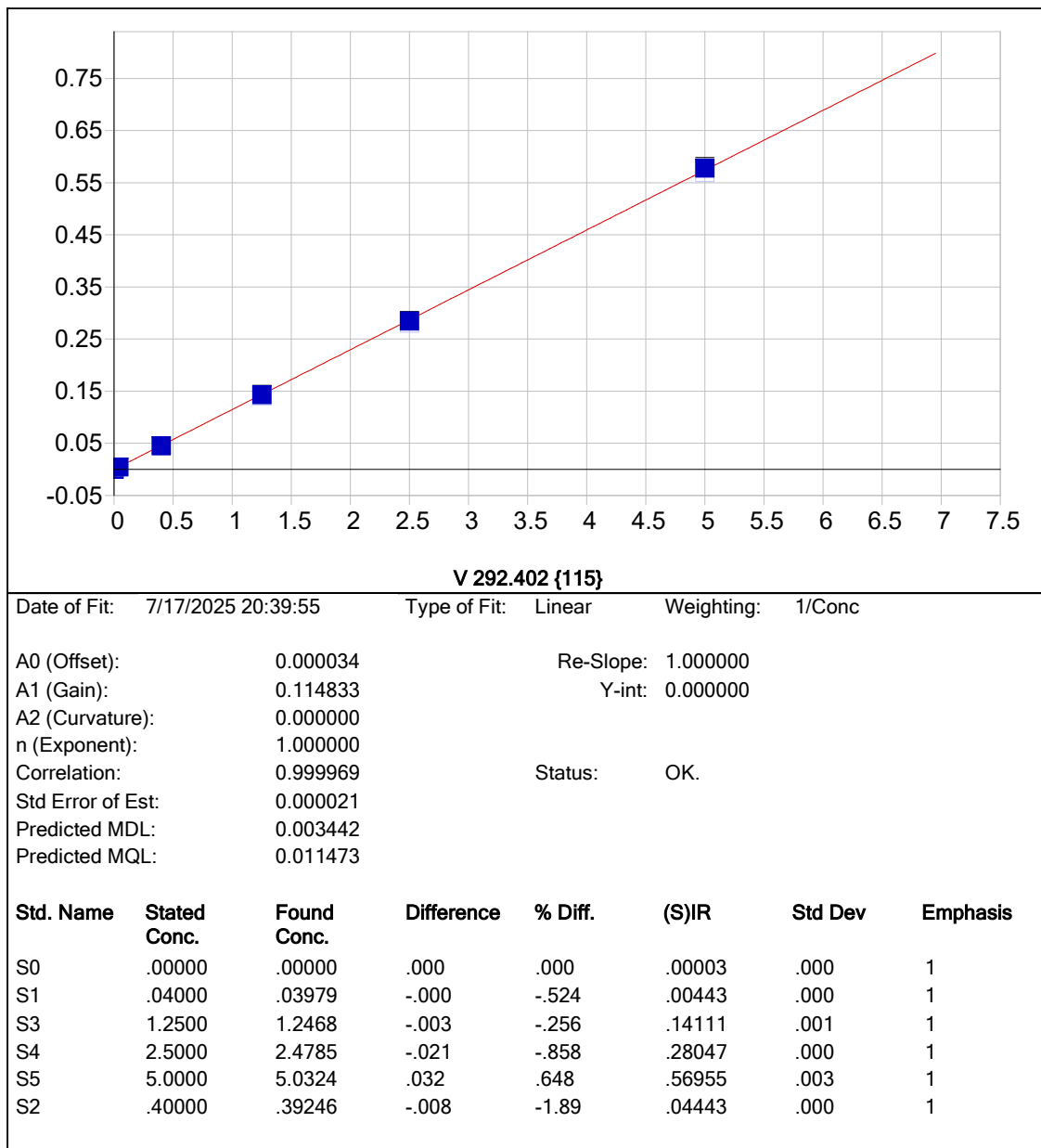




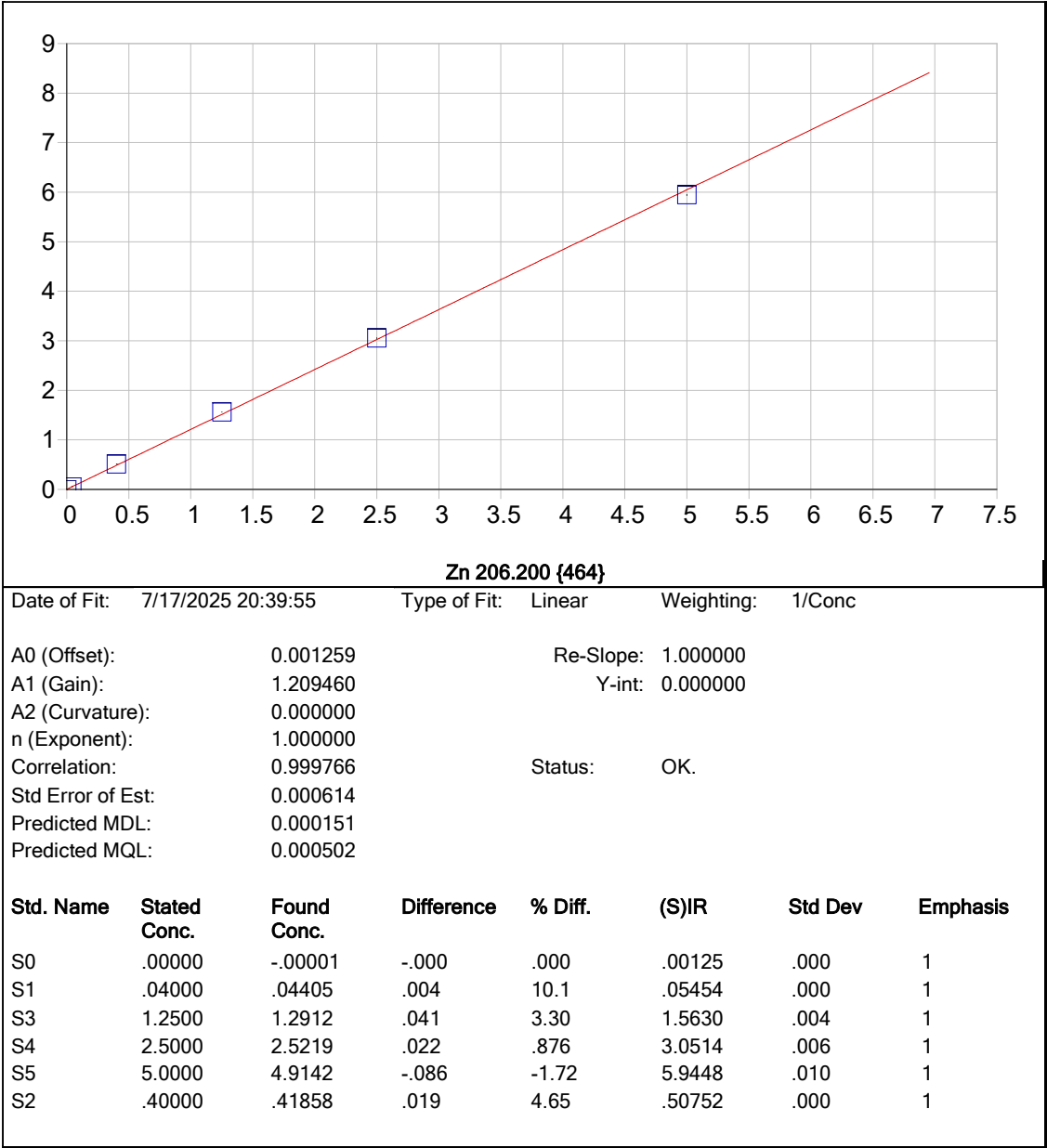


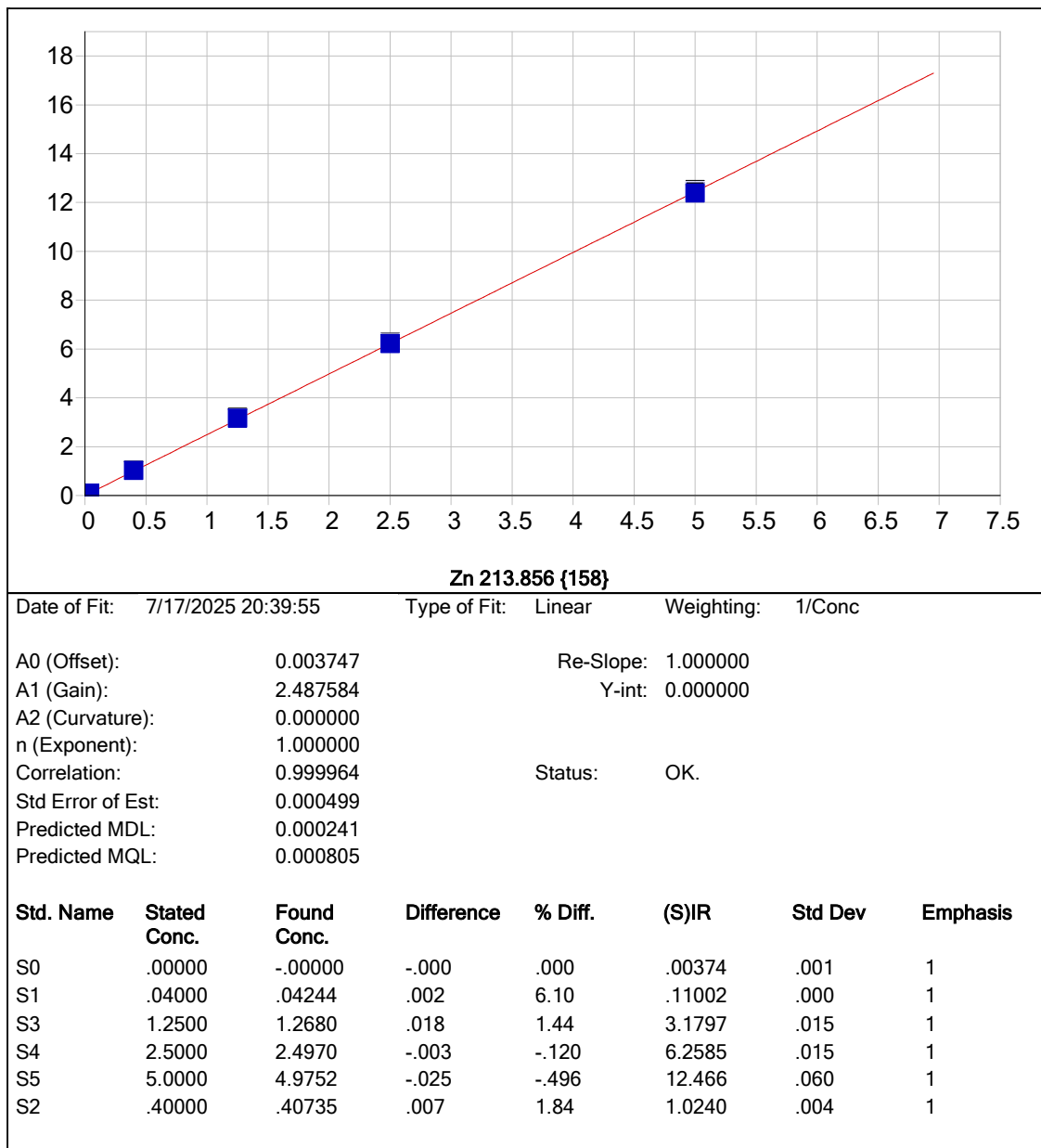


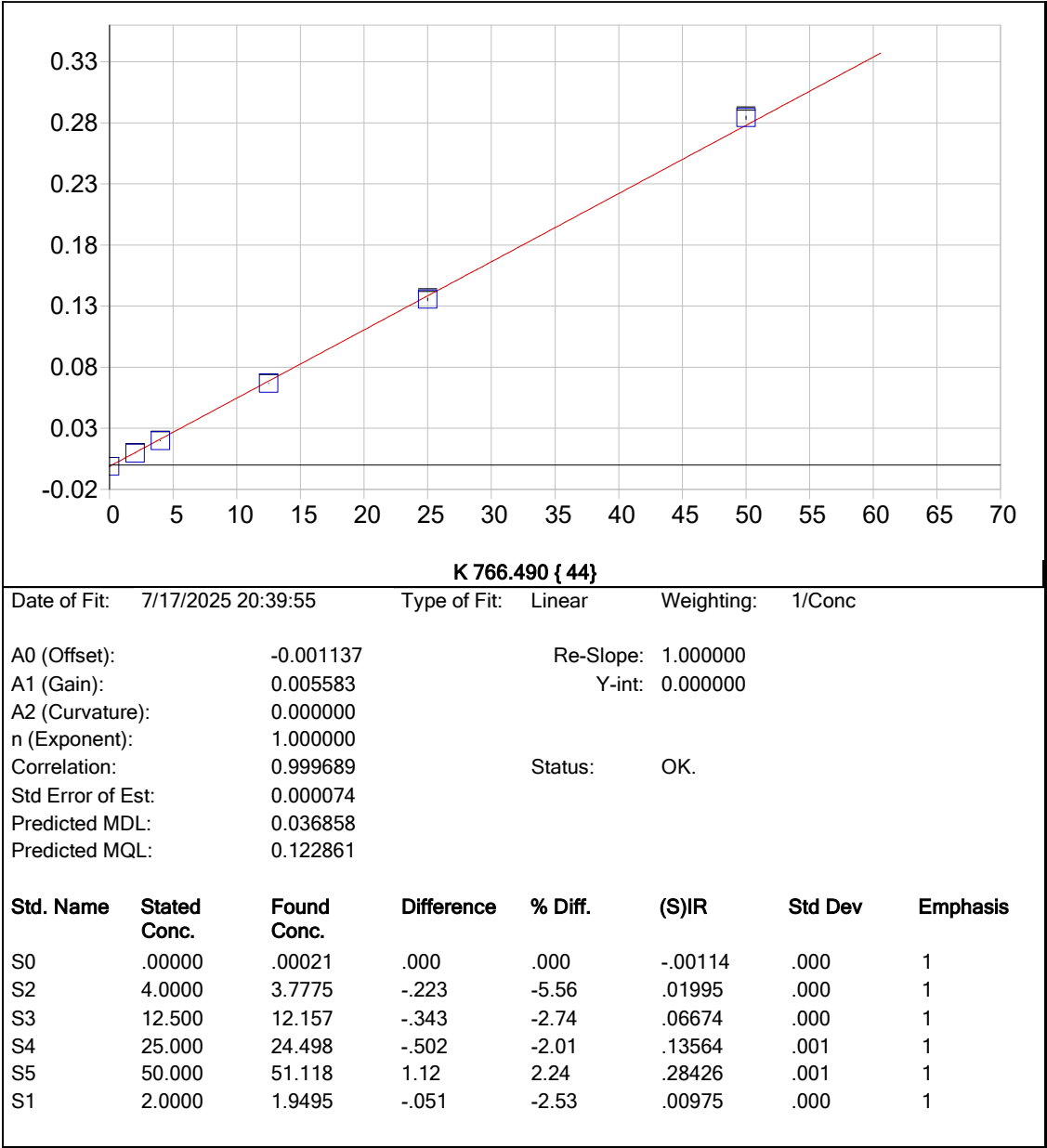


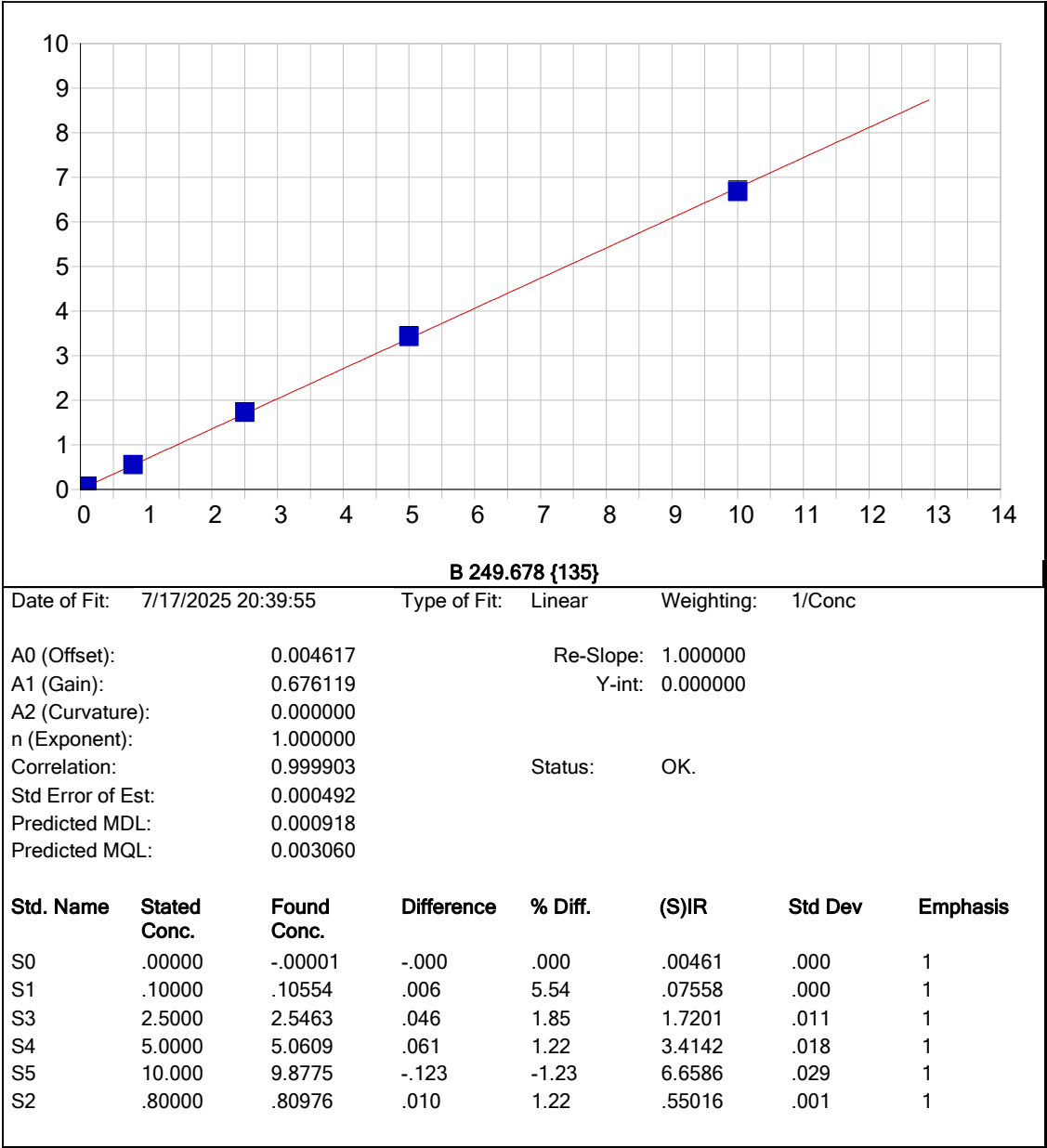


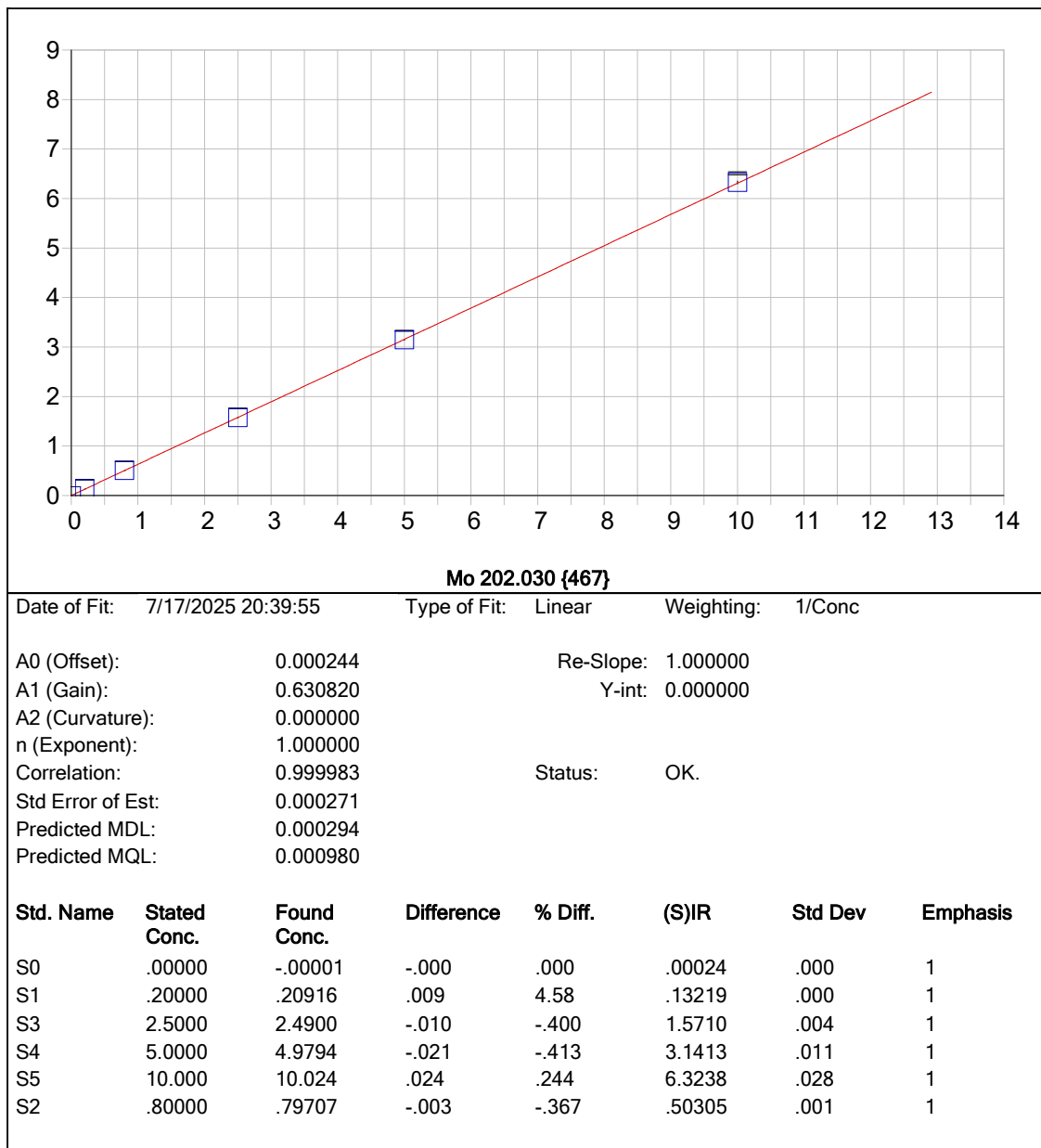
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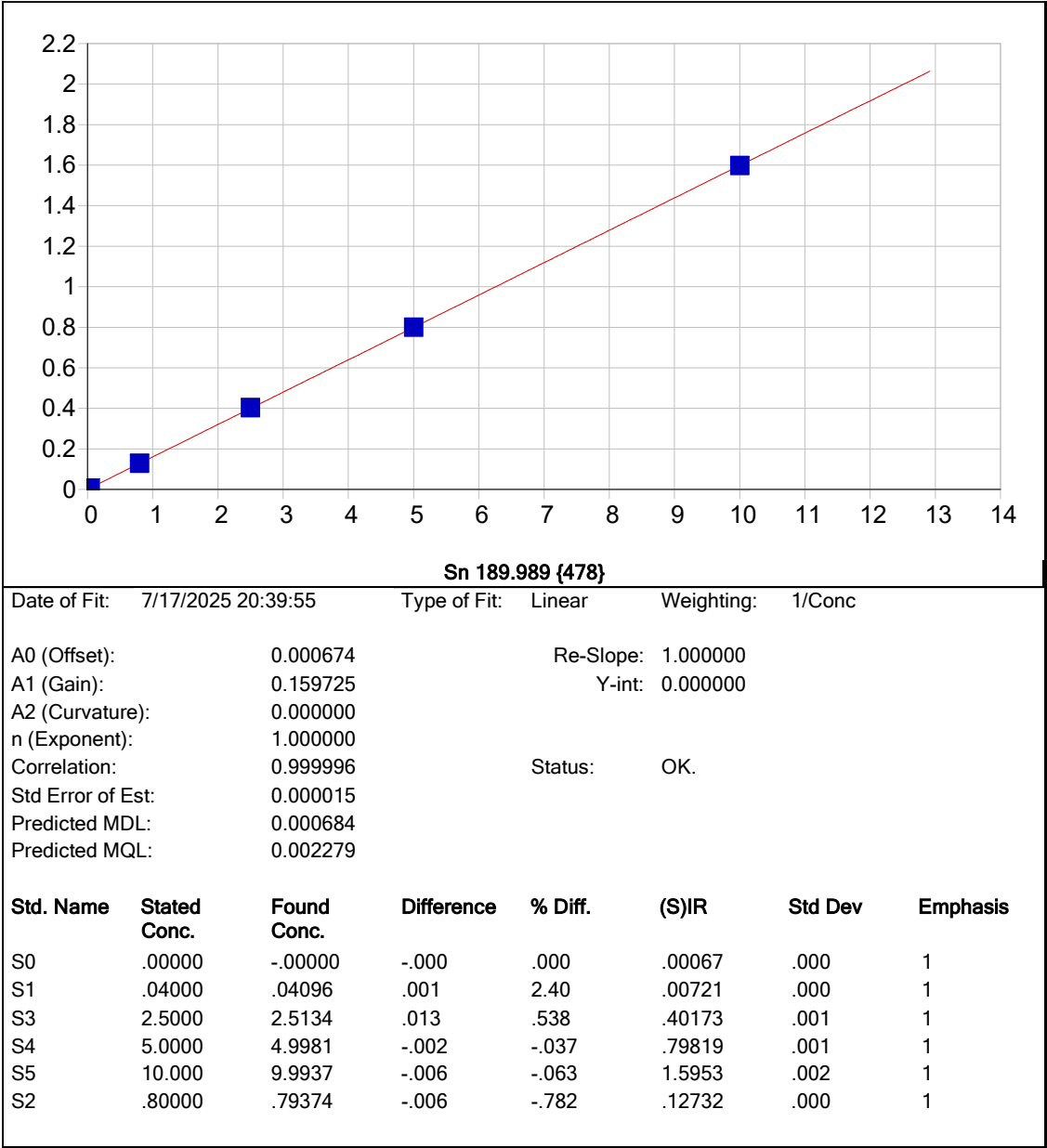


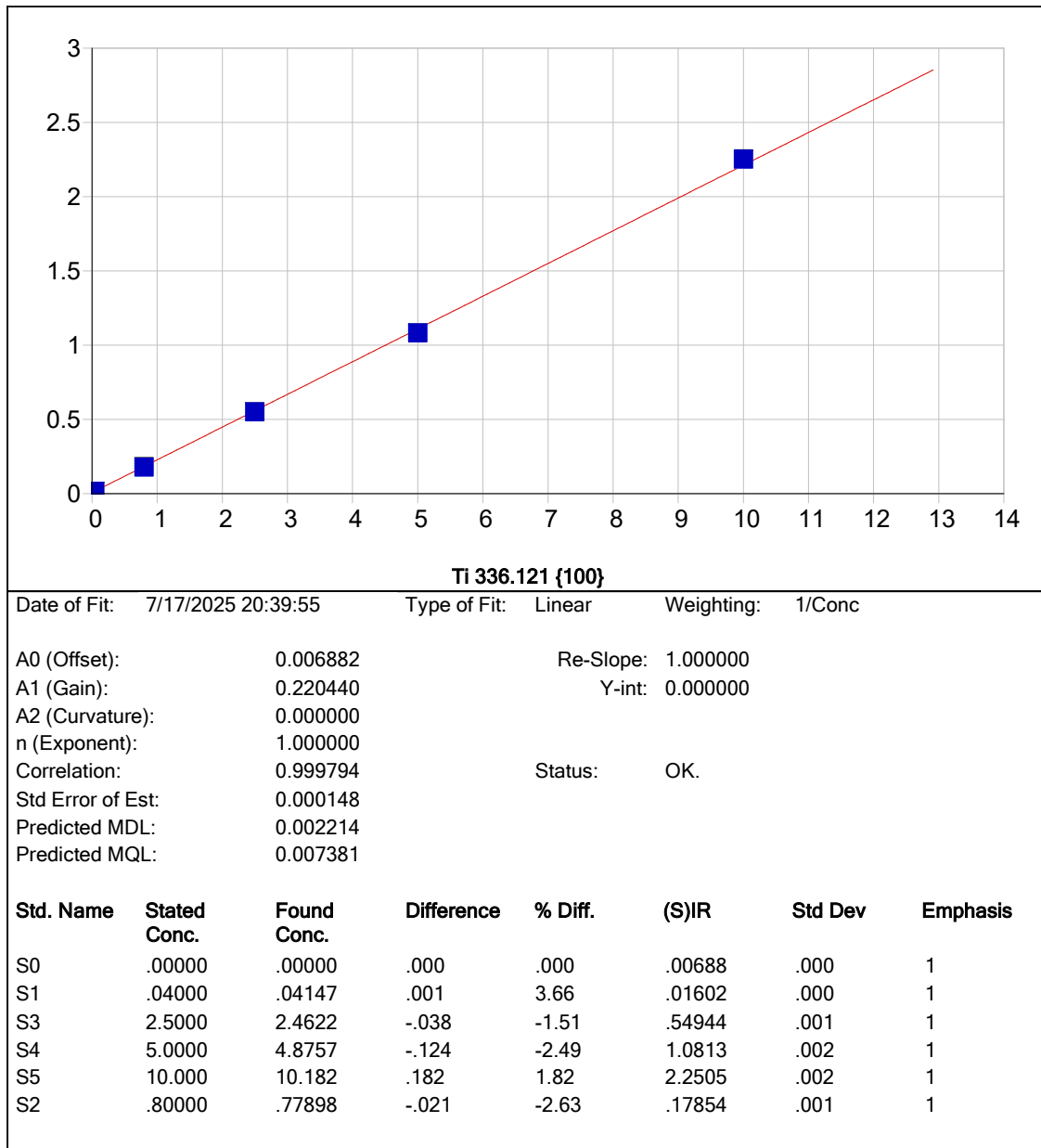


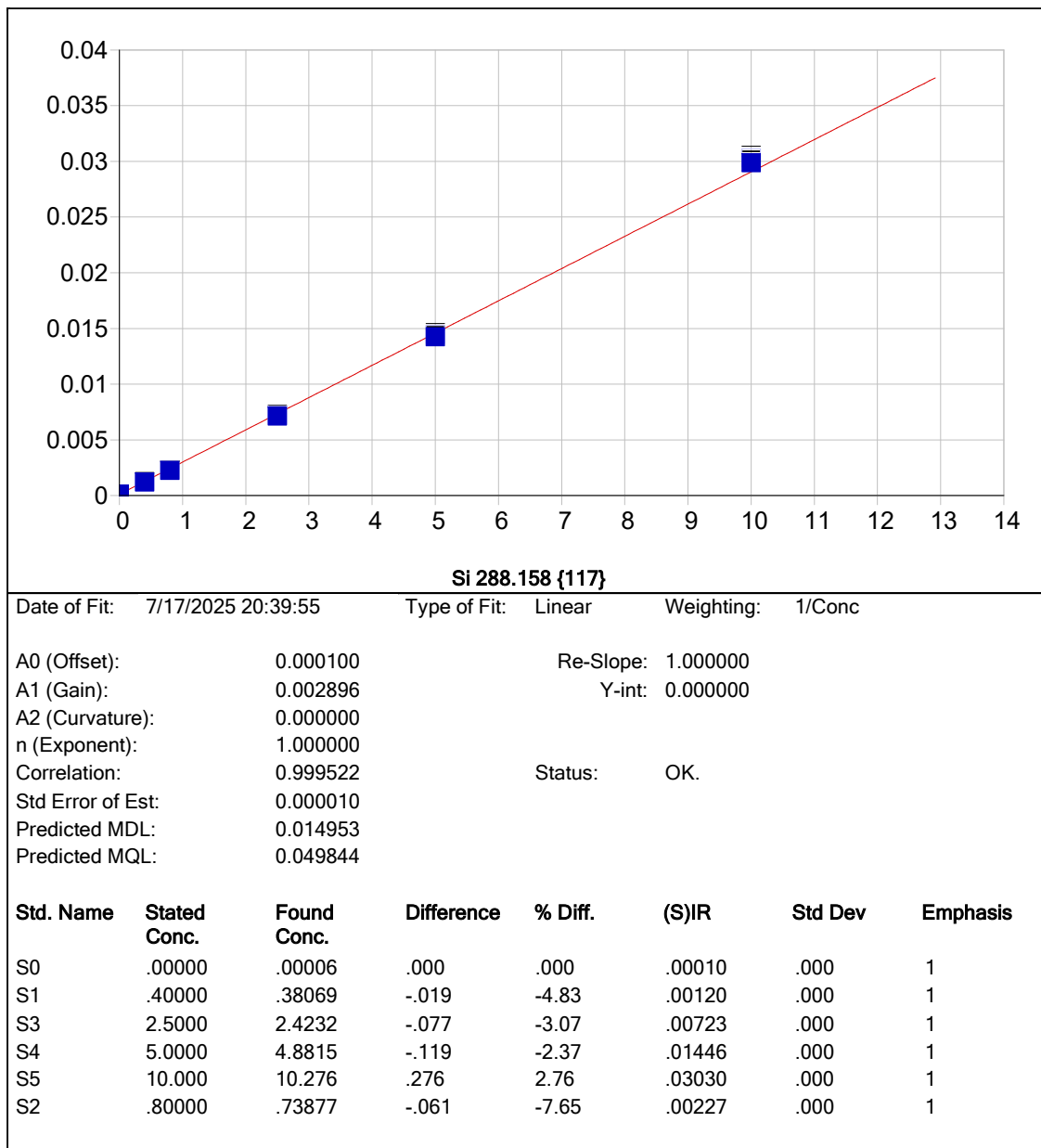


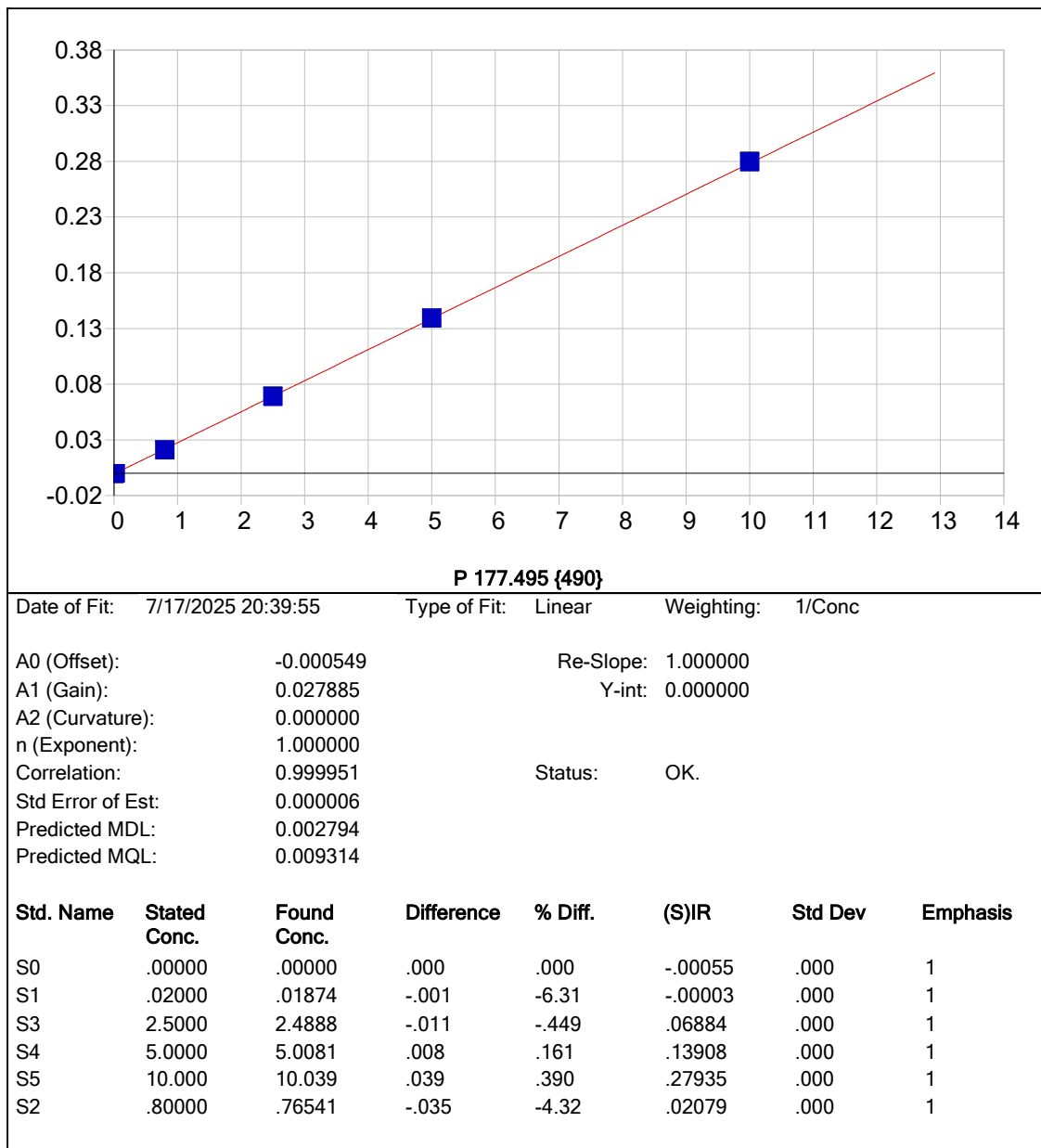


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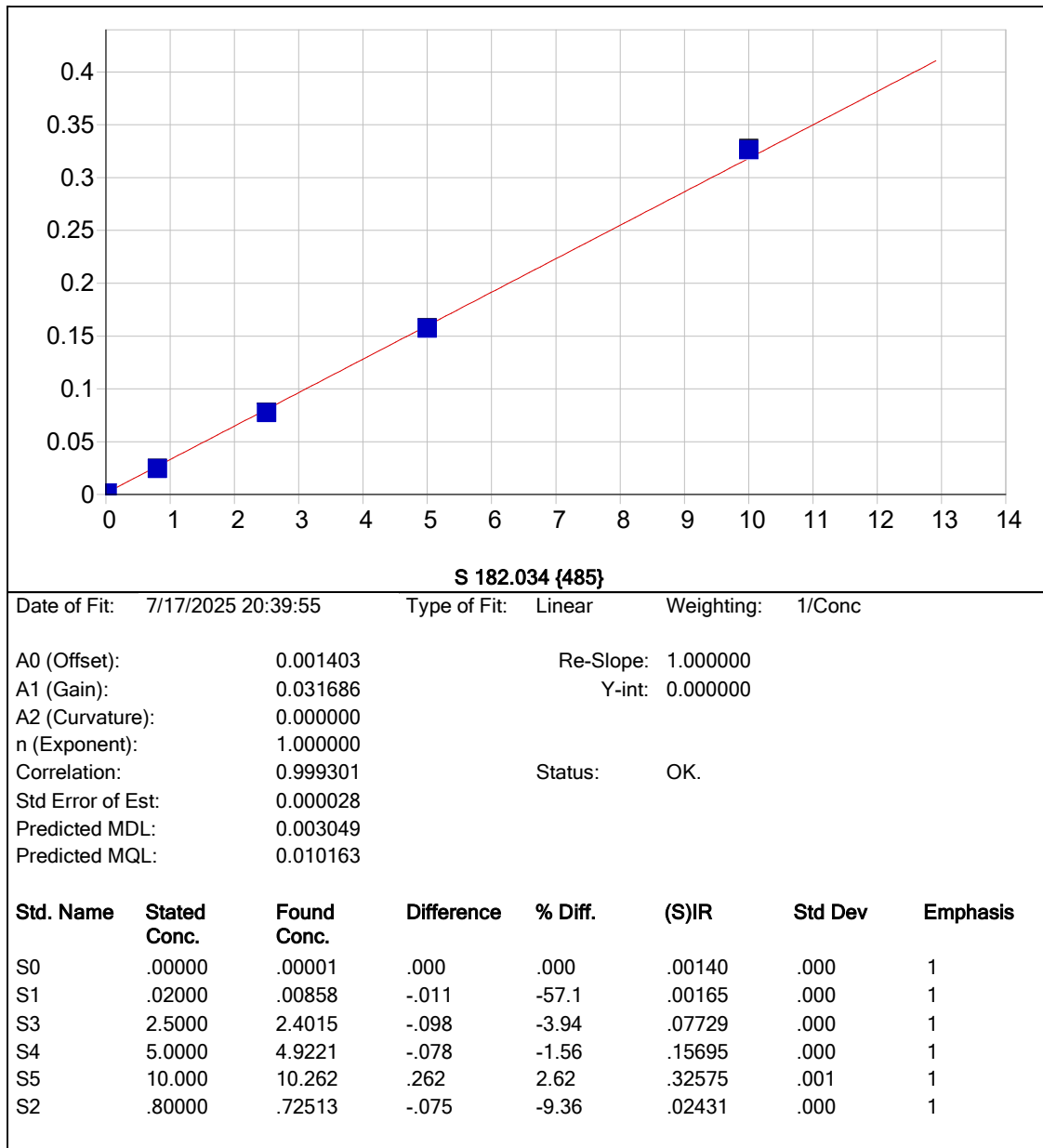


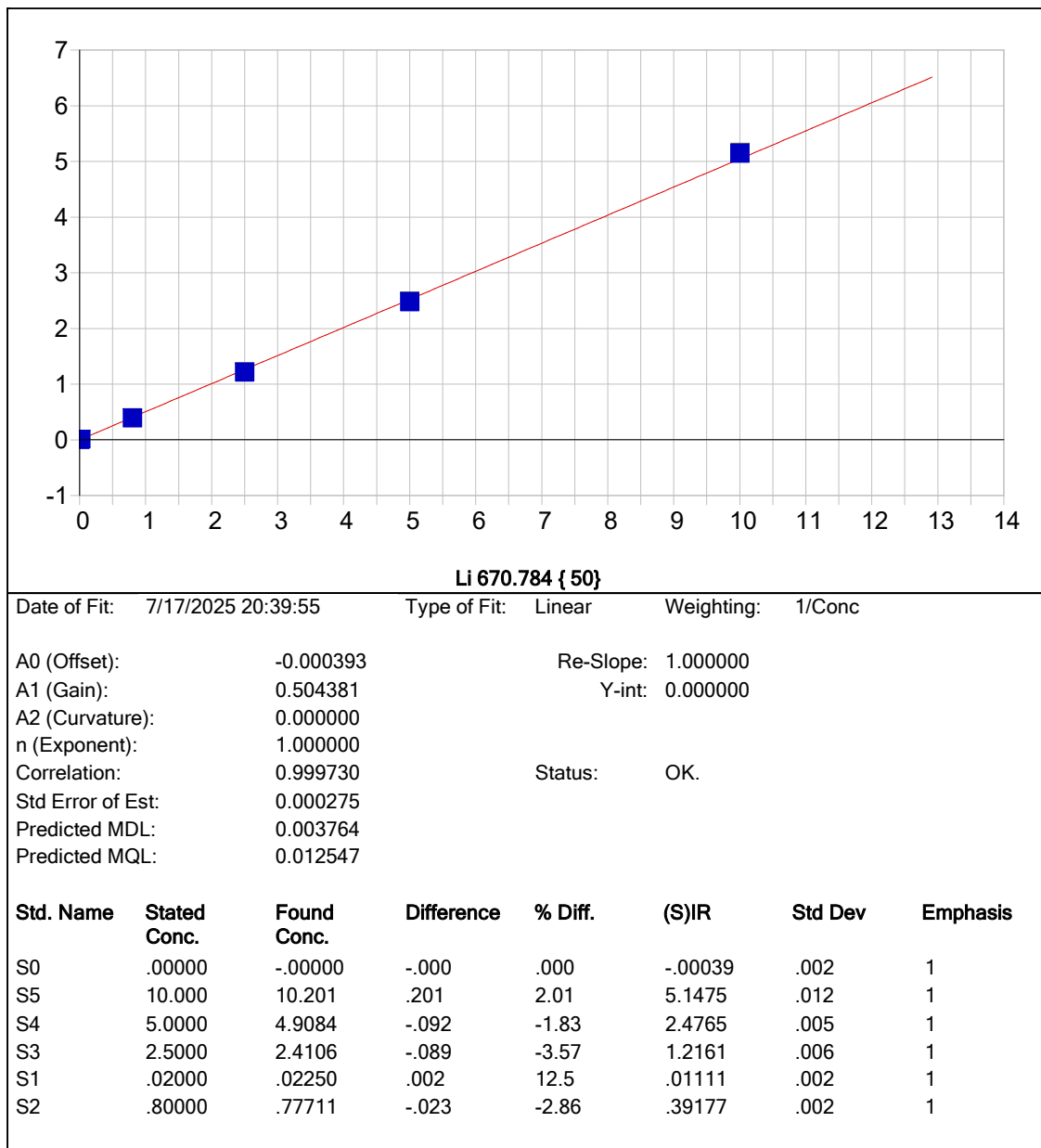


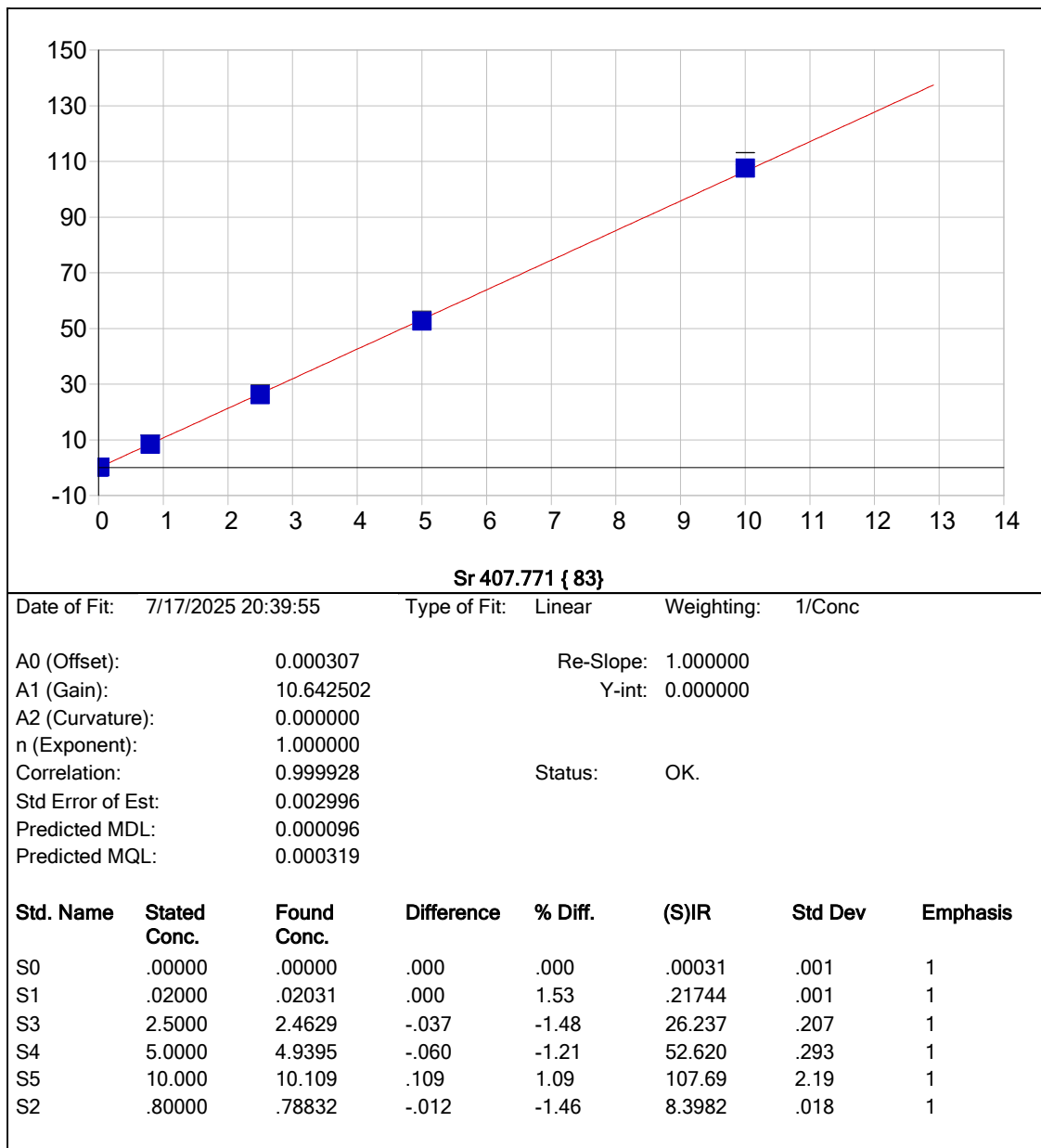


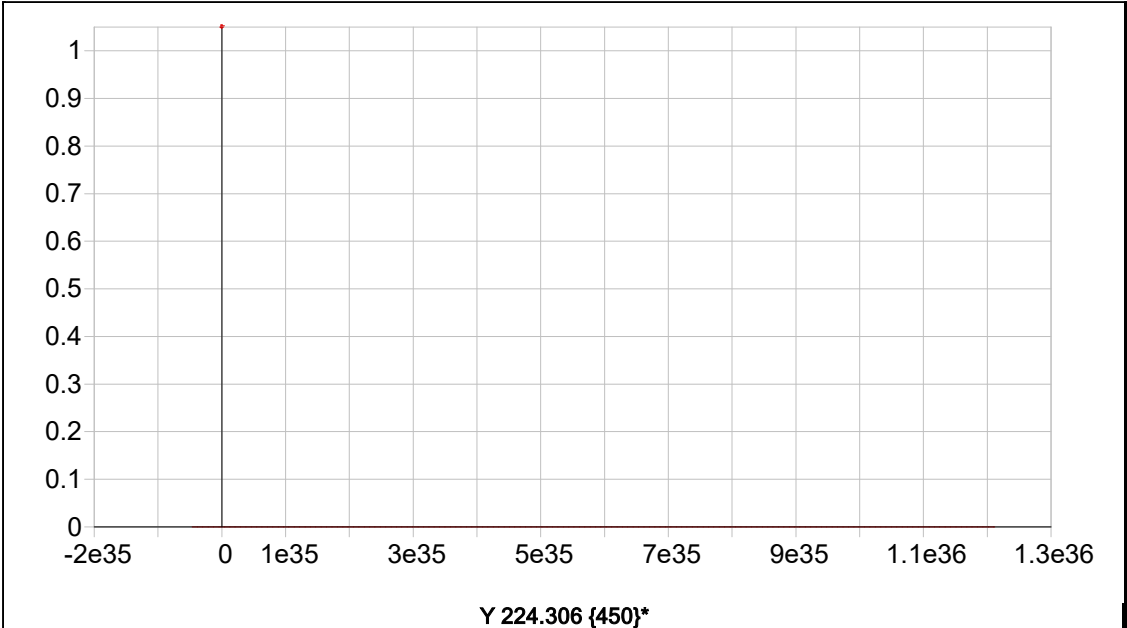


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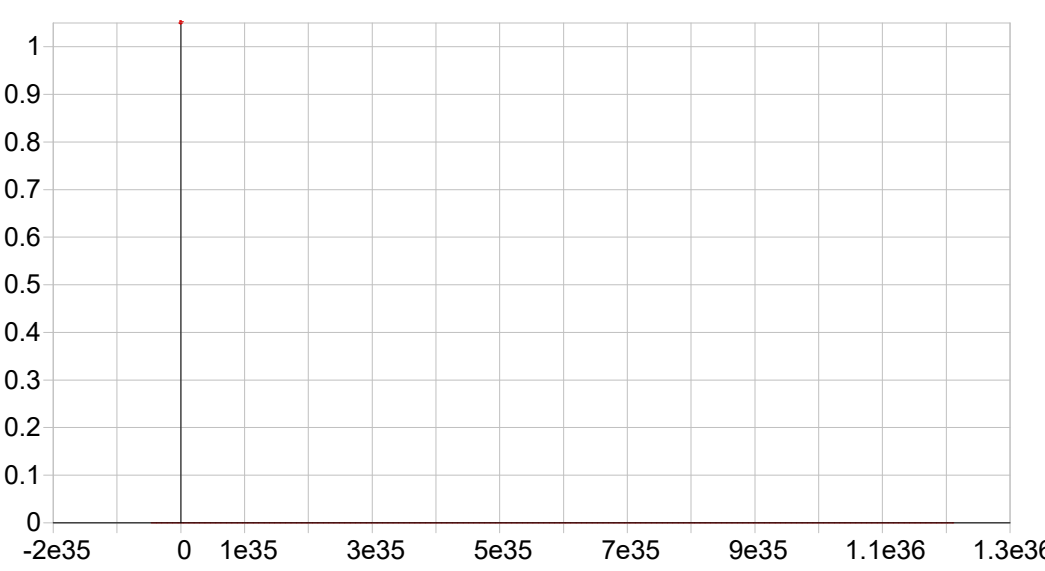




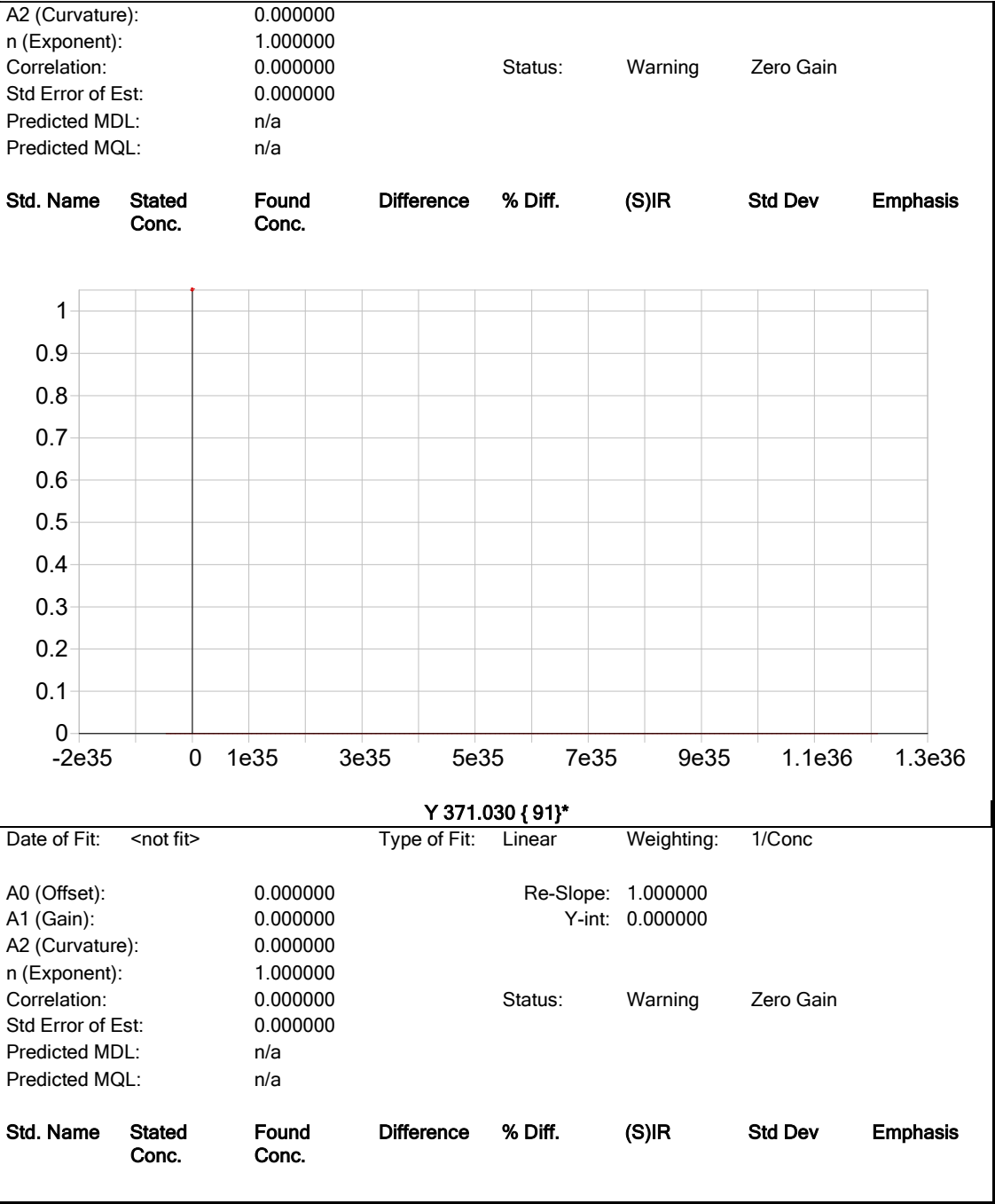


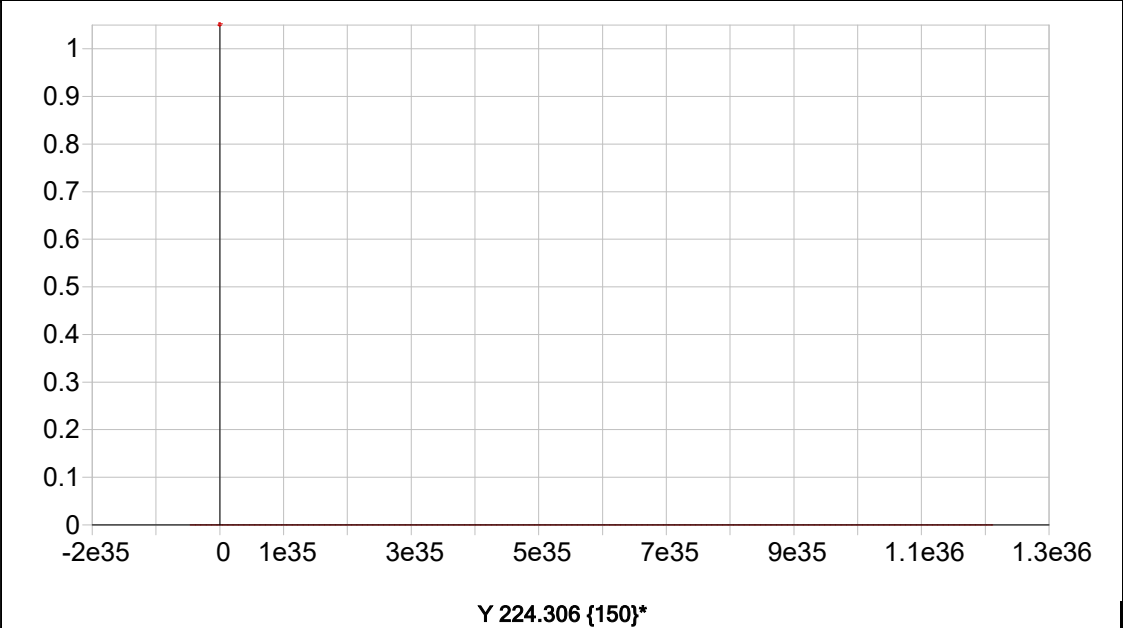


Date of Fit:	7/17/2025 20:39:55	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

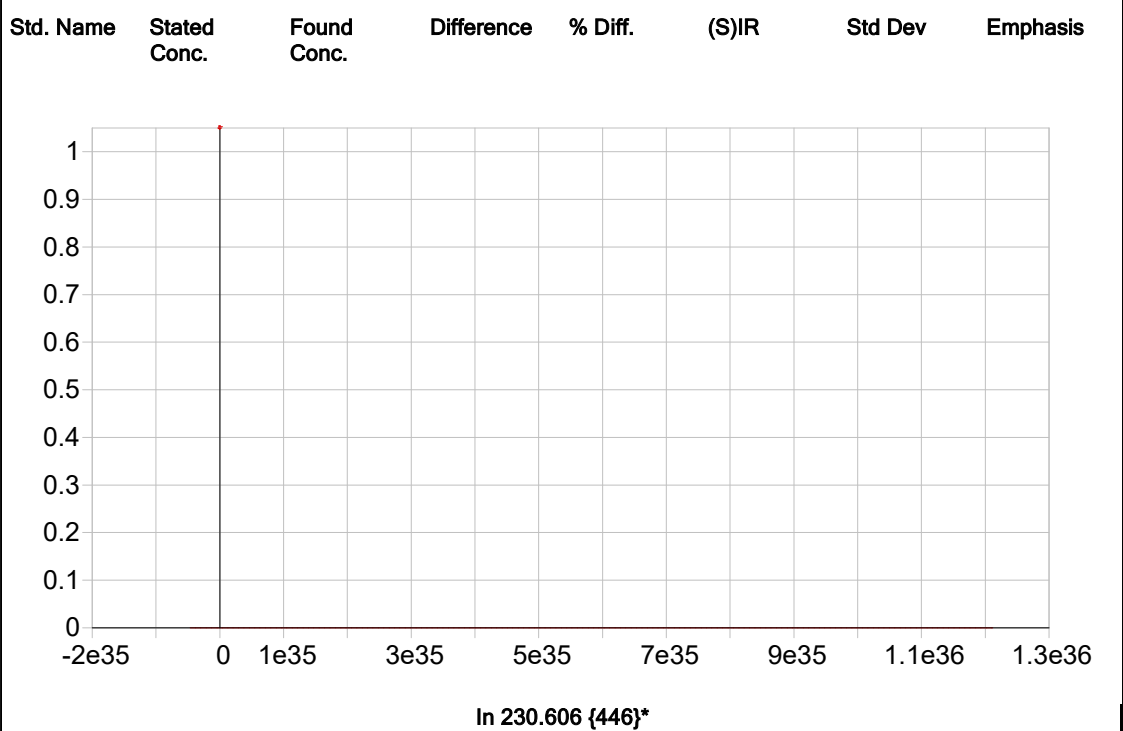
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
							
Y 360.073 { 94}*							

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		





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						



Date of Fit:	<not fit>		Type of Fit:	Linear	Weighting:	1/Conc	
A0 (Offset):	0.000000		Re-Slope:	1.000000			
A1 (Gain):	0.000000		Y-int:	0.000000			

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.000000		Status:	Warning	Zero Gain	
Std Error of Est:		0.000000					
Predicted MDL:		n/a					
Predicted MQL:		n/a					
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis

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Sample Name: S0 Acquired: 7/17/2025 13:05:14 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00001	.00006	.00052	.00062	.00071	.00011	.06509	.00201
Stddev	.00004	.00009	.00013	.00008	.00008	.00034	.00017	.00003
%RSD	626.82	144.39	25.226	12.522	10.842	318.29	.25576	1.5053
#1	-.00001	.00003	.00058	.00063	.00079	.00007	.06521	.00204
#2	.00003	.00016	.00061	.00069	.00070	.00046	.06517	.00198
#3	-.00005	-.00001	.00037	.00054	.00064	-.00021	.06490	.00199
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00064	.00072	.00019	.00023	.00060	.00004	.00026	.00029
Stddev	.00015	.00017	.00003	.00015	.00013	.00001	.00004	.00027
%RSD	23.414	23.315	16.786	66.216	22.533	27.643	15.943	92.970
#1	-.00081	.00073	.00016	.00008	.00050	.00003	.00028	.00023
#2	-.00062	.00087	.00018	.00038	.00075	.00005	.00022	.00005
#3	-.00051	.00054	.00022	.00022	.00054	.00004	.00029	.00057
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00066	-.00086	.01249	.00003	.00374	-.00114	.00461	.00024
Stddev	.00016	.00005	.00026	.00015	.00063	.00019	.00033	.00010
%RSD	24.571	6.1476	2.0724	436.12	16.919	16.867	7.0676	43.215
#1	-.00058	-.00082	.01266	.00007	.00335	-.00116	.00433	.00022
#2	-.00055	-.00084	.01261	-.00013	.00447	-.00093	.00497	.00015
#3	-.00085	-.00092	.01219	.00016	.00340	-.00131	.00453	.00035
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00067	.00688	.00010	-.00055	.00140	-.00039	.00031	
Stddev	.00012	.00034	.00001	.00006	.00009	.00218	.00091	
%RSD	17.207	4.9005	12.724	11.469	6.6429	552.98	292.15	
#1	.00075	.00652	.00009	-.00054	.00148	-.00251	-.00073	
#2	.00073	.00693	.00009	-.00049	.00143	.00184	.00089	
#3	.00054	.00719	.00011	-.00062	.00130	-.00051	.00078	

Sample Name: S0 Acquired: 7/17/2025 13:05:14 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5474.9	85439.	8237.0	4827.3	6572.1
Stddev	14.1	490.	60.6	21.6	22.2
%RSD	.25748	.57403	.73569	.44803	.33810
#1	5483.0	85894.	8184.2	4824.9	6575.8
#2	5483.0	85504.	8303.1	4850.0	6592.2
#3	5458.6	84920.	8223.6	4806.9	6548.3

Sample Name: S1 Acquired: 7/17/2025 13:09:39 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00090	.00289	.00281	.00147	.00565	.00947	.33987	.04587
Stddev	.00007	.00007	.00021	.00009	.00007	.00037	.00139	.00059
%RSD	8.1978	2.4344	7.6264	5.7863	1.3249	3.9219	.40778	1.2833
#1	.00082	.00296	.00257	.00157	.00561	.00972	.33865	.04548
#2	.00096	.00282	.00299	.00144	.00561	.00966	.34138	.04655
#3	.00093	.00291	.00286	.00141	.00574	.00904	.33958	.04558
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01836	.14599	.00166	.03413	.01638	.00050	.01298	.02775
Stddev	.00017	.00024	.00006	.00021	.00015	.00000	.00054	.00027
%RSD	.93998	.16282	3.5144	.61076	.93459	.80348	4.1222	.96512
#1	.01855	.14623	.00160	.03395	.01654	.00050	.01281	.02752
#2	.01831	.14598	.00166	.03408	.01635	.00050	.01358	.02804
#3	.01822	.14575	.00172	.03436	.01624	.00050	.01256	.02769
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02647	.00156	.03323	.00443	.11002	.00975	.07558	.13219
Stddev	.00024	.00009	.00029	.00024	.00030	.00007	.00044	.00024
%RSD	.89854	5.8695	.88418	5.4238	.27685	.70405	.57699	.17807
#1	.02670	.00162	.03345	.00417	.11036	.00983	.07517	.13194
#2	.02622	.00159	.03335	.00463	.10991	.00971	.07604	.13241
#3	.02649	.00145	.03290	.00450	.10978	.00970	.07552	.13220
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00721	.01602	.00120	-.00003	.00165	.01111	.21744	
Stddev	.00008	.00031	.00002	.00008	.00007	.00241	.00062	
%RSD	1.0737	1.9243	1.4378	291.69	4.5319	21.642	.28413	
#1	.00730	.01637	.00122	.00004	.00173	.00835	.21724	
#2	.00715	.01587	.00119	-.00011	.00162	.01275	.21814	
#3	.00719	.01581	.00121	-.00000	.00159	.01224	.21695	

Sample Name: S1 Acquired: 7/17/2025 13:09:39 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5512.8	83937.	8128.5	4729.5	6593.1
Stddev	8.7	531.	43.9	5.8	18.5
%RSD	.15837	.63282	.53964	.12318	.27986
#1	5511.8	83616.	8129.9	4723.4	6579.4
#2	5522.0	83645.	8084.0	4730.1	6614.1
#3	5504.6	84550.	8171.7	4735.0	6585.8

Sample Name: S2 Acquired: 7/17/2025 13:13:59 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Ti1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03425	.05828	.17004	.03668	.07891	.13116	4.2767	.27435
Stddev	.00004	.00102	.00060	.00021	.00013	.00037	.0139	.00058
%RSD	.11295	1.7458	.35048	.56989	.16869	.28077	.32605	.21001
#1	.03422	.05945	.16994	.03653	.07898	.13090	4.2687	.27473
#2	.03424	.05782	.16950	.03658	.07899	.13158	4.2687	.27462
#3	.03429	.05758	.17068	.03691	.07875	.13099	4.2929	.27368
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.2296	.27873	.02299	.44031	.14656	.00343	.23589	.04903
Stddev	.0020	.00096	.00020	.00089	.00034	.00002	.00080	.00048
%RSD	.16219	.34425	.88400	.20150	.23305	.51998	.33960	.97850
#1	1.2289	.27835	.02306	.44045	.14646	.00342	.23529	.04877
#2	1.2280	.27801	.02315	.43935	.14628	.00342	.23557	.04874
#3	1.2318	.27982	.02276	.44111	.14694	.00345	.23680	.04959
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.25598	.04352	.05188	.04443	1.0240	.01995	.55016	.50305
Stddev	.00059	.00007	.00032	.00023	.0038	.00023	.00123	.00066
%RSD	.23032	.15428	.62452	.52571	.37226	1.1329	.22360	.13103
#1	.25563	.04360	.05151	.04445	1.0206	.01975	.55150	.50312
#2	.25565	.04347	.05199	.04419	1.0232	.01991	.54909	.50235
#3	.25666	.04350	.05212	.04465	1.0281	.02020	.54989	.50367
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.12732	.17854	.00227	.02079	.02431	.39177	8.3982	
Stddev	.00014	.00060	.00001	.00021	.00011	.00204	.0185	
%RSD	.11192	.33424	.22360	.99570	.43956	.52055	.22027	
#1	.12737	.17817	.00227	.02073	.02435	.38942	8.3941	
#2	.12716	.17822	.00228	.02062	.02419	.39309	8.3821	
#3	.12744	.17923	.00228	.02102	.02439	.39279	8.4184	

Sample Name: S2 Acquired: 7/17/2025 13:13:59 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5472.8	84696.	8127.5	4721.9	6462.4
Stddev	7.7	126.	33.0	26.9	8.7
%RSD	.14018	.14881	.40583	.56947	.13432
#1	5473.1	84635.	8111.9	4748.8	6459.0
#2	5480.3	84613.	8105.2	4721.7	6472.2
#3	5465.0	84841.	8165.4	4695.1	6455.8

Sample Name: S3 Acquired: 7/17/2025 13:18:04 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.10828	.18561	.53603	.11460	.24757	.40550	13.385	.84612
Stddev	.00024	.00360	.00105	.00032	.00104	.00072	.006	.00901
%RSD	.21839	1.9422	.19666	.28070	.42092	.17827	.04467	1.0643
#1	.10818	.18355	.53649	.11424	.24680	.40600	13.378	.85145
#2	.10812	.18977	.53482	.11484	.24715	.40581	13.389	.83572
#3	.10855	.18351	.53678	.11473	.24876	.40467	13.387	.85118
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.9231	.88020	.07244	1.3933	.45269	.01110	.73912	.15283
Stddev	.0094	.00208	.00039	.0018	.00103	.00010	.00108	.00047
%RSD	.23842	.23680	.54228	.13162	.22792	.86397	.14608	.30792
#1	3.9128	.87789	.07286	1.3917	.45198	.01110	.73931	.15254
#2	3.9255	.88074	.07208	1.3929	.45223	.01120	.73795	.15258
#3	3.9310	.88195	.07237	1.3953	.45388	.01101	.74009	.15338
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.81397	.13787	.14175	.14111	3.1797	.06674	1.7201	1.5710
Stddev	.00138	.00027	.00094	.00072	.0152	.00018	.0105	.0044
%RSD	.16957	.19943	.66110	.51025	.47766	.26253	.61193	.28089
#1	.81281	.13761	.14171	.14056	3.1700	.06681	1.7194	1.5672
#2	.81360	.13816	.14270	.14086	3.1718	.06686	1.7100	1.5699
#3	.81550	.13783	.14083	.14193	3.1972	.06654	1.7310	1.5758
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.40173	.54944	.00723	.06884	.07729	1.2161	26.237	
Stddev	.00108	.00116	.00005	.00023	.00025	.0055	.207	
%RSD	.26901	.21052	.72709	.34129	.32691	.45497	.78974	
#1	.40050	.55063	.00717	.06858	.07702	1.2154	26.324	
#2	.40255	.54937	.00727	.06889	.07752	1.2220	26.001	
#3	.40213	.54832	.00724	.06905	.07733	1.2110	26.387	

Sample Name: S3 Acquired: 7/17/2025 13:18:04 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5391.7	82861.	8073.6	4584.3	6228.2
Stddev	12.3	306.	35.6	19.5	9.9
%RSD	.22728	.36897	.44118	.42632	.15913
#1	5395.2	82649.	8053.1	4606.7	6234.2
#2	5401.8	82722.	8114.7	4570.8	6233.6
#3	5378.1	83211.	8053.0	4575.4	6216.8

Sample Name: S4 Acquired: 7/17/2025 13:22:09 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.21805	.36146	1.0659	.22923	.49707	.80465	26.821	1.6473
Stddev	.00098	.00498	.0015	.00066	.00222	.00277	.106	.0054
%RSD	.44817	1.3777	.14519	.28631	.44617	.34431	.39405	.32637

#1	.21692	.35666	1.0661	.22878	.49478	.80770	26.708	1.6527
#2	.21852	.36113	1.0642	.22892	.49721	.80397	26.837	1.6471
#3	.21869	.36660	1.0673	.22998	.49921	.80229	26.918	1.6419

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7.8736	1.7541	.14031	2.8012	.89164	.02197	1.4654	.29934
Stddev	.0155	.0078	.00043	.0064	.00279	.00012	.0033	.00052
%RSD	.19632	.44483	.30904	.22761	.31328	.55182	.22272	.17447

#1	7.8735	1.7626	.13993	2.8003	.88877	.02193	1.4691	.29928
#2	7.8582	1.7473	.14022	2.7954	.89181	.02187	1.4642	.29988
#3	7.8891	1.7525	.14078	2.8080	.89435	.02210	1.4629	.29884

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.6319	.27342	.27308	.28047	6.2585	.13564	3.4142	3.1413
Stddev	.0033	.00054	.00248	.00038	.0151	.00109	.0184	.0113
%RSD	.20444	.19696	.90789	.13601	.24143	.80202	.53748	.35917

#1	1.6322	.27384	.27046	.28018	6.2437	.13498	3.4279	3.1289
#2	1.6284	.27281	.27339	.28031	6.2579	.13503	3.4214	3.1443
#3	1.6350	.27361	.27539	.28090	6.2739	.13689	3.3934	3.1508

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.79819	1.0813	.01446	.13908	.15695	2.4765	52.620
Stddev	.00132	.0017	.00015	.00026	.00032	.0053	.293
%RSD	.16533	.15665	1.0678	.18409	.20079	.21370	.55744

#1	.79796	1.0814	.01428	.13928	.15706	2.4708	52.947
#2	.79699	1.0795	.01450	.13879	.15660	2.4776	52.379
#3	.79960	1.0829	.01458	.13917	.15720	2.4812	52.535

Sample Name: S4 Acquired: 7/17/2025 13:22:09 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5354.1	83976.	8161.4	4562.0	6091.5
Stddev	12.2	323.	82.2	16.9	12.2
%RSD	.22735	.38487	1.0070	.37131	.20042
#1	5366.0	83604.	8076.7	4543.6	6091.7
#2	5354.6	84190.	8166.6	4577.0	6103.7
#3	5341.7	84133.	8240.9	4565.4	6079.3

Sample Name: S5 Acquired: 7/17/2025 13:26:21 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.44055	.71724	2.1545	.46445	1.0194	1.6287	54.521	3.1704
Stddev	.00149	.00928	.0032	.00200	.0042	.0042	.562	.0159
%RSD	.33894	1.2936	.14787	.43096	.41359	.25722	1.0307	.50113

#1	.44022	.72204	2.1510	.46486	1.0188	1.6275	53.897	3.1794
#2	.43925	.70655	2.1552	.46228	1.0155	1.6333	54.676	3.1797
#3	.44218	.72315	2.1572	.46622	1.0239	1.6252	54.989	3.1521

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	15.745	3.5507	.27183	5.6855	1.7672	.04512	2.9580	.60080
Stddev	.027	.0033	.00054	.0144	.0066	.00028	.0030	.00140
%RSD	.16942	.09230	.19745	.25266	.37522	.62862	.10269	.23230

#1	15.717	3.5522	.27243	5.6766	1.7631	.04502	2.9615	.60164
#2	15.747	3.5529	.27141	5.6778	1.7636	.04490	2.9567	.59919
#3	15.770	3.5469	.27163	5.7021	1.7748	.04544	2.9558	.60158

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.2858	.54927	.55736	.56955	12.466	.28426	6.6586	6.3238
Stddev	.0063	.00103	.00411	.00267	.060	.00134	.0292	.0281
%RSD	.19095	.18776	.73685	.46922	.48345	.47072	.43906	.44366

#1	3.2824	.54944	.55809	.57190	12.475	.28321	6.6705	6.3165
#2	3.2819	.54817	.55294	.56664	12.403	.28381	6.6800	6.3002
#3	3.2930	.55021	.56106	.57009	12.522	.28577	6.6253	6.3548

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.5953	2.2505	.03030	.27935	.32575	5.1475	107.69
Stddev	.0016	.0023	.00024	.00048	.00102	.0120	2.19
%RSD	.10291	.10215	.78338	.17247	.31197	.23382	2.0292

#1	1.5935	2.2512	.03026	.27909	.32555	5.1596	105.67
#2	1.5956	2.2524	.03008	.27905	.32485	5.1473	107.38
#3	1.5968	2.2480	.03055	.27990	.32685	5.1356	110.01

Sample Name: S5 Acquired: 7/17/2025 13:26:21 Type: Cal
Method: 6010-200.7 NEW(v42) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5190.9	83253.	8237.5	4371.0	5817.4
Stddev	21.1	343.	21.8	24.0	16.2
%RSD	.40726	.41154	.26468	.54969	.27919
#1	5201.6	83211.	8220.8	4373.4	5828.6
#2	5204.5	83615.	8229.5	4393.7	5824.8
#3	5166.5	82933.	8262.1	4345.8	5798.7

Sample Name: ICV01 Acquired: 7/17/2025 13:30:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.982428	3.759010	3.889112	4.022321	4.222178	8.025030
Stddev	.005920	.044678	.010265	.010723	.005441	.042233
%RSD	.1486543	1.188566	.2639329	.2665997	.1288740	.5262605
#1	3.975709	3.782005	3.877983	4.009942	4.217310	8.041161
#2	3.984698	3.787506	3.891147	4.028243	4.221172	7.977109
#3	3.986877	3.707517	3.898207	4.028777	4.228052	8.056819
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.276738	.2018729	1.975449	20.25463	.8650662	2.019605
Stddev	.053557	.0010478	.003252	.17072	.0034248	.003736
%RSD	.6470786	.5190634	.1646323	.8428446	.3959013	.1849931
#1	8.317665	.2006758	1.972136	20.06494	.8627569	2.016056
#2	8.296425	.2026237	1.975573	20.30304	.8634406	2.019256
#3	8.216124	.2023192	1.978637	20.39591	.8690011	2.023504
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.036289	4.308268	2.029542	19.85413	2.059569	1.065642
Stddev	.001319	.057293	.006372	.02881	.004427	.002540
%RSD	.1272699	1.329837	.3139605	.1451240	.2149518	.2383958
#1	1.035242	4.333874	2.022957	19.85342	2.055576	1.065217
#2	1.035855	4.242638	2.029993	19.82568	2.058803	1.063342
#3	1.037771	4.348293	2.035677	19.88329	2.064330	1.068369
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.44991	2.029357	2.044843	20.13821	F .0156351	F .0115267
Stddev	.17703	.004810	.006507	.12642	.0005027	.0001864
%RSD	.9101699	.2370350	.3181941	.6277390	3.215166	1.616814
#1	19.53968	2.030461	2.040815	20.12977	.0150681	.0115736
#2	19.24598	2.024090	2.052350	20.01622	.0158111	.0113213
#3	19.56406	2.033519	2.041365	20.26863	.0160261	.0116851

Sample Name: ICV01 Acquired: 7/17/2025 13:30:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0036721	F .0043289	F -.047984	F .0055525	F -.014700	F .0024372
Stddev	.0004718	.0006429	.009032	.0007243	.001278	.0048973
%RSD	12.84892	14.85157	18.82295	13.04511	8.696970	200.9419

#1	.0040366	.0038329	-.057771	.0047742	-.013725	.0044976
#2	.0038406	.0040986	-.046212	.0056763	-.014227	.0059676
#3	.0031392	.0050553	-.039970	.0062069	-.016147	-.003154

Elem	Sr4077
Units	ppm
Avg	F -.003638
Stddev	.000061
%RSD	1.682353

#1	-.003708
#2	-.003604
#3	-.003600

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5276.537	84016.89	8253.799	4438.903	6117.618
Stddev	17.191	277.41	77.469	14.540	14.690
%RSD	.3257972	.3301878	.9385851	.3275695	.2401208

#1	5280.657	84250.89	8335.342	4452.785	6125.506
#2	5291.293	84089.33	8181.176	4423.783	6126.678
#3	5257.661	83710.44	8244.879	4440.141	6100.669

Sample Name: LLICV01 Acquired: 7/17/2025 13:37:17 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0233318	.0412924	.0097032	.0193530	.0518769	.1038487
Stddev	.0004869	.0016134	.0000814	.0015717	.0016169	.0015432
%RSD	2.086785	3.907297	.8393411	8.121084	3.116827	1.485962
#1	.0238916	.0423014	.0097884	.0192230	.0526056	.1029304
#2	.0230965	.0421441	.0096261	.0178503	.0500239	.1029854
#3	.0230072	.0394316	.0096951	.0209855	.0530012	.1056303
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1039542	.0062642	.0059498	2.144913	.0093999	.0305242
Stddev	.0007025	.0000351	.0000279	.002000	.0003746	.0000552
%RSD	.6757701	.5609238	.4686099	.0932553	3.985306	.1807228
#1	.1037896	.0062898	.0059815	2.143378	.0097426	.0304680
#2	.1047244	.0062786	.0059387	2.147175	.0094573	.0305782
#3	.1033486	.0062241	.0059292	2.144185	.0089999	.0305263
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0218091	.1100971	.0221772	2.151952	.0417073	.0109796
Stddev	.0004534	.0064844	.0002558	.010019	.0006586	.0002409
%RSD	2.078758	5.889693	1.153356	.4655995	1.579208	2.194214
#1	.0216496	.1069639	.0219586	2.162659	.0411799	.0109634
#2	.0223206	.1057744	.0224585	2.142802	.0414965	.0107472
#3	.0214569	.1175531	.0221145	2.150396	.0424455	.0112283
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.892571	.0373510	.0436040	2.048612	.1168567	.2123177
Stddev	.018626	.0005233	.0003981	.019752	.0005867	.0006599
%RSD	.9841423	1.401127	.9130281	.9641706	.5021019	.3107865
#1	1.908522	.0374075	.0440348	2.042484	.1164370	.2119166
#2	1.872102	.0368016	.0432497	2.032651	.1175271	.2119572
#3	1.897088	.0378437	.0435276	2.070702	.1166059	.2130793

Sample Name: LLICV01 Acquired: 7/17/2025 13:37:17 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0401011	F .0483022	.3618367	.0214472	F -.008140	F .0261294
Stddev	.0006679	.0024139	.0108773	.0014458	.001597	.0021978
%RSD	1.665457	4.997549	3.006145	6.741254	19.61962	8.411025

#1	.0408618	.0494820	.3711660	.0213290	-.006335	.0256402
#2	.0398300	.0498994	.3498893	.0229484	-.009368	.0242175
#3	.0396113	.0455253	.3644549	.0200641	-.008719	.0285305

Elem	Sr4077
Units	ppm
Avg	.0212513
Stddev	.0000842
%RSD	.3960943

#1	.0211616
#2	.0213285
#3	.0212639

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5474.605	88338.23	8427.739	4598.888	6626.575
Stddev	11.860	280.90	61.005	7.284	9.705
%RSD	.2166306	.3179861	.7238655	.1583932	.1464617

#1	5477.950	88016.24	8428.612	4603.423	6635.767
#2	5484.433	88533.16	8366.301	4602.755	6627.532
#3	5461.432	88465.27	8488.303	4590.485	6616.427

Sample Name: ICB01 Acquired: 7/17/2025 13:41:33 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001223	-.000355	-.001065	.0014762	.0002956	.0030413
Stddev	.001014	.002246	.000445	.0008160	.0000806	.0133058
%RSD	82.85685	631.8235	41.75369	55.27797	27.28422	437.5013
#1	-.002360	-.002908	-.001472	.0016792	.0002467	.0004351
#2	-.000895	.001319	-.000590	.0005779	.0002514	-.008769
#3	-.000415	.000522	-.001131	.0021716	.0003886	.017457
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001813	-.000083	-.000001	.0003119	-.000360	.0000991
Stddev	.001228	.000116	.000055	.0058549	.000570	.0001802
%RSD	67.69985	140.1836	5944.705	1877.381	158.3891	181.9391
#1	-.000714	-.000135	.000042	-.005860	-.000392	.0001476
#2	-.003138	.000050	-.000062	.005788	-.000912	.0002501
#3	-.001589	-.000164	.000018	.001007	.000225	-.000100
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000560	.0008537	.0000984	-.030526	.0002145	.0006848
Stddev	.000144	.0021168	.0001894	.011712	.0000651	.0003564
%RSD	25.73072	247.9476	192.4031	38.36546	30.34697	52.04872
#1	-.000695	.0026551	.0003142	-.026901	.0001750	.0004610
#2	-.000575	-.001478	-.000041	-.021056	.0002896	.0010959
#3	-.000408	.001384	.000022	-.043622	.0001789	.0004976
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.338142	-.002087	-.000331	.0199203	.0066941	.0002072
Stddev	.013911	.002359	.000159	.0092673	.0005682	.0001793
%RSD	4.113832	113.0265	48.01451	46.52158	8.488304	86.51807
#1	-.341445	-.001139	-.000148	.0300009	.0073489	.0003588
#2	-.350104	-.000350	-.000435	.0179895	.0064016	.0000094
#3	-.322877	-.004772	-.000409	.0117706	.0063317	.0002534

Sample Name: ICB01 Acquired: 7/17/2025 13:41:33 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000438	.0104001	-.003279	.0003721	F -.031053	.0023082
Stddev	.0003262	.0003697	.009442	.0033172	.000229	.0042008
%RSD	744.2959	3.554334	287.9962	891.6131	.7371406	181.9953
#1	-.000332	.0099870	-.005436	.0040930	-.030936	.0052049
#2	.000245	.0106996	-.011456	-.002276	-.030906	.0042293
#3	.000219	.0105136	.007056	-.000701	-.031317	-.002510
Elem	Sr4077					
Units	ppm					
Avg	-.000007					
Stddev	.000047					
%RSD	679.7438					
#1	-.000009					
#2	-.000052					
#3	.000041					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5417.990	88698.05	8493.265	4594.631	6625.766	
Stddev	5.692	172.84	75.039	20.949	14.238	
%RSD	.1050613	.1948626	.8835103	.4559434	.2148869	
#1	5411.815	88694.88	8409.644	4571.363	6613.782	
#2	5419.129	88526.82	8554.734	4611.994	6622.010	
#3	5423.027	88872.46	8515.418	4600.535	6641.505	

Sample Name: CRI01 Acquired: 7/17/2025 13:46:28 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0189492	.0411911	.0110999	.0187207	.0512800	.1145389
Stddev	.0032661	.0023548	.0010911	.0039186	.0021879	.0083135
%RSD	17.23609	5.716764	9.829510	20.93166	4.266577	7.258188

#1	.0157246	.0435054	.0100696	.0168690	.0511360	.1063056
#2	.0222553	.0412703	.0122430	.0232220	.0491676	.1229302
#3	.0188678	.0387978	.0109871	.0160712	.0535363	.1143808

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1031455	.0060505	.0059439	2.135623	.0090630	.0306468
Stddev	.0008997	.0000555	.0000682	.009568	.0001761	.0001032
%RSD	.8722421	.9178978	1.146581	.4480003	1.943495	.3368045

#1	.1023216	.0059888	.0059263	2.138214	.0091273	.0305537
#2	.1041054	.0060662	.0060191	2.143628	.0091979	.0306289
#3	.1030096	.0060964	.0058862	2.125026	.0088637	.0307578

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0216259	.1032450	.0220513	2.110819	.0410264	.0107736
Stddev	.0003554	.0013948	.0006804	.005384	.0003733	.0001534
%RSD	1.643431	1.350979	3.085764	.2550784	.9098335	1.424021

#1	.0212542	.1016857	.0218943	2.104617	.0406063	.0106455
#2	.0219625	.1036753	.0227965	2.113551	.0413199	.0107317
#3	.0216609	.1043739	.0214630	2.114291	.0411531	.0109436

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.844893	.0370735	.0425557	2.052058	.1103406	.2120429
Stddev	.024817	.0028621	.0004038	.038316	.0007405	.0001756
%RSD	1.345161	7.719998	.9488152	1.867206	.6711393	.0828363

#1	1.869456	.0389253	.0428836	2.008392	.1096510	.2118462
#2	1.819830	.0337770	.0426788	2.080061	.1111232	.2121841
#3	1.845392	.0385180	.0421047	2.067722	.1102474	.2120983

Sample Name: CRI01 Acquired: 7/17/2025 13:46:28 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0393820	.0497864	.3582958	.0192501	F -.011191	F .0288416
Stddev	.0006695	.0011258	.0062079	.0014990	.000908	.0025196
%RSD	1.700040	2.261199	1.732607	7.787222	8.110775	8.735922
#1	.0391336	.0494190	.3633564	.0201369	-.010172	.0310335
#2	.0388721	.0510500	.3601622	.0175193	-.011913	.0294025
#3	.0401402	.0488903	.3513689	.0200940	-.011488	.0260889
Elem	Sr4077					
Units	ppm					
Avg	.0213526					
Stddev	.0000642					
%RSD	.3008608					
#1	.0213169					
#2	.0213141					
#3	.0214268					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5363.418	89788.51	8553.948	4616.167	6448.495	
Stddev	5.613	161.09	62.803	6.053	10.553	
%RSD	.1046600	.1794149	.7341970	.1311303	.1636526	
#1	5369.392	89858.87	8613.763	4610.247	6455.245	
#2	5362.609	89604.20	8488.533	4622.345	6453.906	
#3	5358.253	89902.44	8559.548	4615.910	6436.334	

Sample Name: ICSA01 Acquired: 7/17/2025 13:51:42 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097688	.0095927	-.004863	.0103496	-.003295	253.5776
Stddev	.0034153	.0025939	.001337	.0042109	.000783	5.3811
%RSD	34.96179	27.04087	27.48284	40.68671	23.77709	2.122057
#1	.0119292	.0070277	-.004647	.0083513	-.002815	247.8114
#2	.0115459	.0122146	-.006295	.0075099	-.002871	258.4655
#3	.0058313	.0095358	-.003648	.0151876	-.004199	254.4560
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017746	.0004591	-.001315	244.0744	.0513988	.0023106
Stddev	.0010834	.0000996	.000086	.7177	.0002178	.0001527
%RSD	61.04948	21.69766	6.575360	.2940339	.4237622	6.609172
#1	.0008791	.0005518	-.001399	243.3662	.0511577	.0024847
#2	.0014658	.0004715	-.001226	244.8011	.0514573	.0021993
#3	.0029788	.0003538	-.001321	244.0559	.0515813	.0022478
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065222	98.25468	.0084818	249.4304	.0030475	.0027145
Stddev	.0002054	.39565	.0003391	.3419	.0001457	.0003895
%RSD	3.148957	.4026766	3.997946	.1370844	4.779993	14.34785
#1	.0066769	98.54487	.0080909	249.1741	.0028804	.0029663
#2	.0066005	97.80400	.0086575	249.8187	.0031144	.0022659
#3	.0062892	98.41516	.0086969	249.2985	.0031477	.0029113
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0230132	.0005131	.0018686	.0681168	.0238318	.0005155
Stddev	.0072082	.0031797	.0000825	.0275804	.0048673	.0000742
%RSD	31.32188	619.6650	4.414737	40.48990	20.42334	14.38638
#1	.0312466	-.001617	.0019520	.0622238	.0262594	.0005730
#2	.0178398	.004168	.0017870	.0981674	.0182282	.0005418
#3	.0199532	-.001012	.0018670	.0439591	.0270078	.0004318

Sample Name: ICSA01 Acquired: 7/17/2025 13:51:42 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002027	.0045307	.0187158	.0056808	F -.038470	F .0588462
Stddev	.000273	.0010693	.0097722	.0031210	.004202	.0008673
%RSD	13.45312	23.60091	52.21352	54.93931	10.92220	1.473772
#1	-.001901	.0049196	.0074373	.0090077	-.036761	.0589700
#2	-.002339	.0033214	.0246587	.0028177	-.043257	.0596448
#3	-.001839	.0053511	.0240515	.0052168	-.035392	.0579236
Elem	Sr4077					
Units	ppm					
Avg	.0085953					
Stddev	.0006283					
%RSD	7.310091					
#1	.0082027					
#2	.0093200					
#3	.0082631					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	4927.366	80808.00	8393.604	4172.868	5455.462	
Stddev	8.570	163.47	63.314	5.745	14.553	
%RSD	.1739345	.2022955	.7543155	.1376750	.2667607	
#1	4922.892	80984.58	8454.294	4178.923	5465.690	
#2	4937.248	80777.48	8327.957	4167.494	5461.895	
#3	4921.959	80661.93	8398.559	4172.188	5438.801	

Sample Name: ICSAB01 Acquired: 7/17/2025 13:56:59 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1094404	.1026995	.0410818	.0577949	.6204009	251.4521
Stddev	.0010101	.0044998	.0012092	.0032237	.0016546	5.0559
%RSD	.9229926	4.381532	2.943333	5.577809	.2666952	2.010699
#1	.1105503	.0977069	.0423742	.0544233	.6186556	253.1199
#2	.1085750	.1064422	.0408931	.0581144	.6206006	245.7730
#3	.1091958	.1039495	.0399781	.0608469	.6219466	255.4635
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5195272	.4861632	.9760823	244.8156	.5118203	.5021326
Stddev	.0010460	.0040466	.0017697	.6900	.0010733	.0002933
%RSD	.2013327	.8323637	.1813040	.2818607	.2096926	.0584043
#1	.5207111	.4871012	.9740420	245.2450	.5130565	.5023032
#2	.5191423	.4817299	.9772003	244.0197	.5111256	.5023005
#3	.5187282	.4896584	.9770046	245.1822	.5112790	.5017939
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4925950	97.59312	.5075430	249.2251	.9884359	.2180528
Stddev	.0010140	.66050	.0012458	.4868	.0014014	.0004664
%RSD	.2058488	.6767883	.2454624	.1953298	.1417841	.2138755
#1	.4919734	97.80444	.5070604	249.6594	.9870805	.2179837
#2	.4920464	98.12210	.5066106	249.3170	.9883479	.2185499
#3	.4937651	96.85282	.5089579	248.6989	.9898793	.2176249
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0376086	.4769222	1.060106	.0558164	.9788038	1.014958
Stddev	.0105361	.0037382	.001377	.0384408	.0019567	.002854
%RSD	28.01498	.7838114	.1298766	68.86995	.1999061	.2811828
#1	.0481564	.4727112	1.058762	.0857739	.9779971	1.013601
#2	.0375852	.4798490	1.061513	.0692033	.9773795	1.013036
#3	.0270843	.4782064	1.060043	.0124722	.9810349	1.018238

Sample Name: ICSAB01 Acquired: 7/17/2025 13:56:59 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9944091	.9714193	.9468986	F .0118804	F -.031893	F 1.168117
Stddev	.0007749	.0033424	.0052907	.0015111	.003392	.003079
%RSD	.0779251	.3440744	.5587401	12.71911	10.63419	.2635738
#1	.9935146	.9693835	.9511199	.0133788	-.030920	1.171510
#2	.9948382	.9752768	.9486125	.0119055	-.035664	1.167339
#3	.9948744	.9695977	.9409634	.0103569	-.029094	1.165501

Elem	Sr4077
Units	ppm
Avg	1.074983
Stddev	.002462
%RSD	.2290273
#1	1.076188
#2	1.072150
#3	1.076610

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4914.723	80627.55	8298.157	4134.534	5445.406
Stddev	5.227	27.10	47.924	8.815	4.606
%RSD	.1063545	.0336155	.5775265	.2132137	.0845831
#1	4910.101	80628.41	8296.208	4142.695	5440.850
#2	4920.396	80600.02	8347.027	4125.185	5445.308
#3	4913.673	80654.21	8251.238	4135.724	5450.060

Sample Name: ICSADLX20 Acquired: 7/17/2025 14:01:09 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003276	-.000286	-.003061	-.000066	-.002076	12.49118	-.001980
Stddev	.000461	.001782	.002252	.003018	.000090	.05323	.001513
%RSD	14.07341	623.9458	73.58150	4539.517	4.351619	.4261683	76.40638

#1	-.003140	.000018	-.003485	-.000516	-.002032	12.46611	-.002476
#2	-.003790	.001325	-.000627	.003151	-.002016	12.45511	-.003183
#3	-.002899	-.002201	-.005071	-.002834	-.002180	12.55232	-.000281

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000239	-.000087	12.82095	.0025789	.0000741	.0002593	4.821810
Stddev	.0000510	.000021	.07712	.0003805	.0001647	.0001982	.028503
%RSD	212.8204	24.10101	.6015409	14.75521	222.4165	76.45001	.5911256

#1	-.000002	-.000063	12.76481	.0029584	-.000116	.0003833	4.853364
#2	-.000009	-.000101	12.78916	.0021973	.000166	.0003638	4.797929
#3	.000083	-.000096	12.90889	.0025811	.000173	.0000307	4.814137

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006933	12.57563	.0005422	.0009499	-.316069	-.003798	.0003623
Stddev	.0002793	.13797	.0002248	.0003367	.015343	.001055	.0000768
%RSD	40.29229	1.097141	41.45367	35.44438	4.854330	27.77374	21.19870

#1	.0003944	12.45689	.0005808	.0013386	-.314972	-.003739	.0004351
#2	.0009478	12.54301	.0007452	.0007484	-.331931	-.002774	.0002820
#3	.0007377	12.72699	.0003007	.0007627	-.301304	-.004881	.0003699

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013310	.0020073	.0003509	-.000203	.0109562	-.006922	.0020940
Stddev	.0194657	.0001894	.0001122	.000531	.0017332	.006461	.0014492
%RSD	1462.446	9.434502	31.96937	262.1763	15.81968	93.33580	69.20905

#1	-.003884	.0021388	.0003209	.000349	.0089822	-.008446	.0021571
#2	-.014996	.0020930	.0004750	-.000712	.0116576	.000165	.0006142
#3	.022873	.0017903	.0002567	-.000245	.0122288	-.012484	.0035106

Sample Name: ICSADLX20 Acquired: 7/17/2025 14:01:09 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.032796	.0011974	.0006685
Stddev	.001269	.0014405	.0000759
%RSD	3.868886	120.2980	11.34971

#1	-.032594	.0022771	.0005931
#2	-.031640	-.000438	.0006675
#3	-.034154	.001753	.0007449

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5380.000	88945.90	8518.318	4557.052	6479.368
Stddev	12.685	236.60	99.383	25.641	16.530
%RSD	.2357875	.2659998	1.166698	.5626703	.2551169

#1	5393.520	88975.69	8597.864	4528.008	6494.511
#2	5378.122	89166.19	8550.179	4576.552	6481.859
#3	5368.358	88695.82	8406.912	4566.597	6461.734

Sample Name: ICSABDLX20 Acquired: 7/17/2025 14:05:26 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041105	.0061110	.0007428	.0003292	.0288318	12.37382	.0248949
Stddev	.0018521	.0016178	.0006692	.0022252	.0010475	.01066	.0005573
%RSD	45.05671	26.47348	90.08945	675.9137	3.633181	.0861472	2.238453
#1	.0024382	.0063640	.0010486	.0021659	.0277244	12.36506	.0255351
#2	.0061011	.0043815	.0012046	-.002145	.0289643	12.38569	.0245190
#3	.0037922	.0075873	-.000025	.000967	.0298068	12.37069	.0246304
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0245227	.0472412	12.72218	.0257894	.0242654	.0259574	4.813797
Stddev	.0001173	.0001580	.05096	.0003819	.0001184	.0002018	.030530
%RSD	.4784597	.3345342	.4005703	1.480867	.4879094	.7775952	.6342083
#1	.0245424	.0473193	12.70314	.0261187	.0241332	.0257788	4.829236
#2	.0243967	.0470594	12.68348	.0253707	.0243617	.0259172	4.833523
#3	.0246289	.0473451	12.77992	.0258786	.0243013	.0261764	4.778631
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0260921	12.47415	.0486696	.0108911	-.370343	.0216944	.0524745
Stddev	.0003227	.02565	.0005178	.0005190	.001696	.0012519	.0000458
%RSD	1.236669	.2055858	1.063871	4.765421	.4580374	5.770355	.0873138
#1	.0262013	12.45589	.0488305	.0114033	-.372294	.0220141	.0524621
#2	.0257290	12.50347	.0480904	.0103655	-.369512	.0227555	.0524361
#3	.0263460	12.46309	.0490878	.0109044	-.369222	.0203137	.0525252
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004420	.0505095	.0516900	.0481093	.0572976	.0448742	.0029924
Stddev	.003829	.0002946	.0002674	.0003141	.0011496	.0026308	.0021017
%RSD	86.62578	.5832897	.5173558	.6528854	2.006294	5.862663	70.23292
#1	-.007712	.0503947	.0517562	.0484638	.0576825	.0477216	.0054028
#2	-.000218	.0502895	.0513957	.0478655	.0582054	.0443674	.0020314
#3	-.005330	.0508442	.0519181	.0479986	.0560050	.0425337	.0015431

Sample Name: ICSABDLX20 Acquired: 7/17/2025 14:05:26 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.034112	.0557269	.0538177
Stddev	.001811	.0025445	.0002531
%RSD	5.309206	4.566050	.4703365

#1	-.032823	.0583542	.0538344
#2	-.036183	.0555523	.0535567
#3	-.033330	.0532741	.0540621

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5354.506	87918.26	8474.915	4501.102	6473.511
Stddev	17.677	393.13	30.056	9.610	19.950
%RSD	.3301278	.4471506	.3546503	.2135049	.3081758

#1	5365.741	87761.24	8477.248	4491.907	6485.527
#2	5363.646	87627.90	8503.737	4500.320	6484.525
#3	5334.130	88365.62	8443.761	4511.079	6450.483

Sample Name: CCV01 Acquired: 7/17/2025 14:20:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.143306	5.008334	4.942209	5.191795	5.213152	10.08750	10.44375
Stddev	.019037	.119866	.023893	.003043	.008530	.07427	.18425
%RSD	.3701268	2.393328	.4834551	.0586171	.1636251	.7362198	1.764204
#1	5.130237	5.146101	4.928885	5.195230	5.205098	10.04597	10.35596
#2	5.134533	4.950984	4.927949	5.189434	5.222089	10.04328	10.31980
#3	5.165147	4.927916	4.969794	5.190722	5.212269	10.17324	10.65547
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2410163	2.478408	26.11207	.9479562	2.501235	1.284238	5.042390
Stddev	.0020452	.007736	.18715	.0021946	.007648	.003475	.024054
%RSD	.8485686	.3121489	.7167328	.2315127	.3057882	.2705584	.4770358
#1	.2390080	2.477527	26.09048	.9471001	2.498539	1.282054	5.065744
#2	.2409446	2.471150	25.93664	.9463188	2.495299	1.282416	5.017692
#3	.2430964	2.486547	26.30908	.9504499	2.509866	1.288245	5.043734
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.569899	24.47431	2.516293	1.266331	23.62657	2.503334	2.554982
Stddev	.015829	.25445	.009418	.002923	.04112	.016826	.008639
%RSD	.6159285	1.039671	.3742945	.2308548	.1740433	.6721520	.3381234
#1	2.564539	24.33732	2.512496	1.269181	23.64121	2.498457	2.564824
#2	2.557446	24.31771	2.509366	1.266474	23.58013	2.489486	2.548651
#3	2.587712	24.76791	2.527018	1.263340	23.65836	2.522060	2.551472
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.64066	5.105856	5.184169	4.966228	4.995643	4.826289	4.863050
Stddev	.14208	.028827	.005517	.011992	.043930	.015214	.014773
%RSD	.5541017	.5645905	.1064153	.2414663	.8793758	.3152274	.3037710
#1	25.72108	5.080920	5.185091	4.962577	4.977980	4.829895	4.862439
#2	25.47662	5.099227	5.178249	4.956486	4.963293	4.809596	4.848592
#3	25.72429	5.137420	5.189166	4.979621	5.045656	4.839376	4.878118

Sample Name: CCV01 Acquired: 7/17/2025 14:20:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.973394	5.063061	5.260958
Stddev	.002744	.057108	.106770
%RSD	.0551674	1.127932	2.029470

#1	4.972779	5.039272	5.236266
#2	4.976393	5.021693	5.168697
#3	4.971010	5.128218	5.377910

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5179.167	87468.23	8447.577	4405.850	6002.780
Stddev	14.750	251.32	29.512	28.669	19.219
%RSD	.2847867	.2873290	.3493525	.6507072	.3201668

#1	5190.936	87306.75	8480.916	4376.792	6015.664
#2	5183.945	87340.16	8437.016	4406.645	6011.985
#3	5162.621	87757.79	8424.799	4434.114	5980.690

Sample Name: CCB01 Acquired: 7/17/2025 14:25:07 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001101	.0002972	-.001435	-.001609	-.001594	-.004553
Stddev	.000999	.0020824	.000703	.001519	.002051	.005962
%RSD	90.79164	700.5979	48.99374	94.40630	128.6663	130.9470
#1	-.000651	.0009748	-.002227	-.000046	-.003956	-.010817
#2	-.002246	-.002040	-.001189	-.003080	-.000560	.001053
#3	-.000406	.001956	-.000887	-.001702	-.000266	-.003896
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002773	-.000089	.0000493	.0092692	-.000169	-.000055
Stddev	.000412	.000063	.0000642	.0078441	.000299	.000112
%RSD	14.84570	70.52455	130.2078	84.62555	177.2900	202.0257
#1	-.002715	-.000124	.0001112	.0020045	-.000072	.000018
#2	-.003211	-.000127	-.000017	.0082168	-.000504	-.000184
#3	-.002394	-.000017	.000054	.0175865	.000070	-.000000
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000318	.0022374	-.000110	-.031503	.0003007	.0001824
Stddev	.000151	.0036672	.000282	.012898	.0002677	.0004229
%RSD	47.37713	163.9043	257.2286	40.94284	89.05308	231.7566
#1	-.000215	-.000722	.000095	-.037168	.0000748	.0002456
#2	-.000491	.001095	-.000431	-.040600	.0002308	-.000268
#3	-.000249	.006340	.000007	-.016742	.0005964	.000570
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.437089	-.002637	-.000103	.0684925	.0085290	.0007203
Stddev	.023900	.001672	.000127	.0243494	.0008149	.0002295
%RSD	5.467907	63.42351	123.8715	35.55054	9.554457	31.85712
#1	-.423259	-.004388	.000026	.0506661	.0093353	.0008592
#2	-.423323	-.002464	-.000106	.0585759	.0077057	.0008464
#3	-.464686	-.001057	-.000228	.0962354	.0085459	.0004554

Sample Name: CCB01 Acquired: 7/17/2025 14:25:07 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000997	.0115200	.0020751	.0020383	F -.035165	-.002642
Stddev	.0005568	.0016100	.0053387	.0014536	.001266	.002761
%RSD	558.2084	13.97553	257.2711	71.31223	3.598820	104.5150
#1	-.000063	.0109486	-.003979	.0035500	-.036613	-.000160
#2	.000720	.0133377	.006107	.0006509	-.034611	-.005616
#3	-.000358	.0102736	.004098	.0019139	-.034270	-.002149
Elem	Sr4077					
Units	ppm					
Avg	.0000895					
Stddev	.0000398					
%RSD	44.46711					
#1	.0000742					
#2	.0000595					
#3	.0001346					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5438.365	89109.32	8628.341	4546.828	6718.425	
Stddev	18.555	161.27	45.287	9.966	30.412	
%RSD	.3411883	.1809830	.5248654	.2191796	.4526676	
#1	5417.118	89288.59	8619.297	4552.218	6683.420	
#2	5451.377	89063.32	8677.468	4535.328	6738.350	
#3	5446.601	88976.04	8588.259	4552.938	6733.506	

Sample Name: Q2606-01 Acquired: 7/17/2025 14:32:24 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003503	-.005623	-.001563	.0003643	.0013529	.4163402
Stddev	.001844	.001775	.000991	.0028096	.0009816	.0122331
%RSD	52.63520	31.55963	63.39311	771.1866	72.55532	2.938246
#1	-.004144	-.003680	-.001824	-.000714	.0008574	.4084054
#2	-.001424	-.007158	-.000468	.003553	.0024834	.4304282
#3	-.004940	-.006031	-.002397	-.001747	.0007178	.4101868
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1455369	-.000271	-.000050	109.7589	.0031179	.0016575
Stddev	.0004813	.000053	.000034	.9650	.0002448	.0000910
%RSD	.3307287	19.60152	68.97338	.8792398	7.852268	5.487545
#1	.1460338	-.000221	-.000011	110.7588	.0033254	.0016187
#2	.1455043	-.000265	-.000076	109.6850	.0028479	.0015923
#3	.1450728	-.000327	-.000062	108.8330	.0031803	.0017614
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002398	.0142259	.0056241	32.45348	.0127413	-.000041
Stddev	.0004472	.0101862	.0003883	.29696	.0000542	.000074
%RSD	186.5175	71.60332	6.904848	.9150414	.4252922	183.2480
#1	.0005471	.0257733	.0059645	32.73983	.0127005	-.000072
#2	-.000273	.0103894	.0057066	32.47369	.0128028	-.000094
#3	.000445	.0065150	.0052011	32.14693	.0127206	.000044
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	362.7543	.0018276	.0659282	22.45818	.3589018	.0116214
Stddev	2.8497	.0026805	.0001658	.17564	.0055340	.0000413
%RSD	.7855767	146.6639	.2514967	.7820868	1.541916	.3550673
#1	359.4923	.0047109	.0657381	22.32595	.3634387	.0115800
#2	364.0110	.0013606	.0660036	22.39110	.3605303	.0116218
#3	364.7597	-.000589	.0660429	22.65747	.3527362	.0116625

Sample Name: Q2606-01 Acquired: 7/17/2025 14:32:24 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004239	.0085449	12.04620	.0654145	F 37.10071	.0199479
Stddev	.000976	.0006504	.02831	.0009821	.04642	.0015254
%RSD	23.02811	7.611231	.2350261	1.501337	.1251177	7.646984
#1	-.003603	.0079029	12.05334	.0665255	37.04879	.0198136
#2	-.003752	.0092033	12.01500	.0650557	37.13821	.0184941
#3	-.005363	.0085285	12.07026	.0646623	37.11513	.0215360
Elem	Sr4077					
Units	ppm					
Avg	1.147512					
Stddev	.002232					
%RSD	.1945468					
#1	1.150049					
#2	1.145845					
#3	1.146643					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	4865.242	82400.11	8404.397	4128.596	5538.689	
Stddev	3.455	305.99	112.652	2.826	9.650	
%RSD	.0710155	.3713421	1.340397	.0684389	.1742225	
#1	4867.603	82049.95	8299.686	4131.737	5548.488	
#2	4866.848	82616.02	8389.916	4126.261	5538.381	
#3	4861.277	82534.37	8523.590	4127.791	5529.196	

Sample Name: Q2600-02 Acquired: 7/17/2025 14:36:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067985	-.004003	.1069061	.0024816	.0049740	.1272954	.6478059
Stddev	.0008509	.001699	.0002303	.0011249	.0002024	.0109630	.0016017
%RSD	12.51626	42.44656	.2154043	45.33103	4.070228	8.612272	.2472456
#1	.0073990	-.002583	.1066967	.0037526	.0049221	.1397499	.6460496
#2	.0058248	-.003540	.1068689	.0020784	.0048026	.1191054	.6481822
#3	.0071717	-.005885	.1071527	.0016138	.0051974	.1230310	.6491860
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000266	-.000040	117.0497	.0000017	.0041141	.0030169	9.455366
Stddev	.000022	.000045	.5184	.0004417	.0000772	.0002090	.112391
%RSD	8.226170	111.3624	.4429121	26829.90	1.876313	6.927349	1.188649
#1	-.000241	-.000008	116.7646	-.000166	.0040337	.0029065	9.325971
#2	-.000277	-.000092	116.7365	-.000332	.0041209	.0028862	9.511430
#3	-.000280	-.000021	117.6482	.000503	.0041877	.0032579	9.528696
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.338693	2.151519	.0115939	.0008031	337.1423	-.003499	.4877826
Stddev	.001578	.015058	.0003322	.0004212	5.1929	.002897	.0028623
%RSD	.1178632	.6998750	2.865429	52.44967	1.540259	82.78792	.5868021
#1	1.337370	2.136119	.0115476	.0003186	331.9979	-.000399	.4857937
#2	1.338268	2.166210	.0119468	.0010827	342.3823	-.006137	.4910631
#3	1.340439	2.152227	.0112873	.0010078	337.0467	-.003960	.4864911
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.811123	.0363123	.0017285	-.004835	.0099079	.7679331	.0302089
Stddev	.044974	.0003780	.0003221	.000272	.0044472	.0174223	.0007393
%RSD	2.483223	1.040907	18.63447	5.618898	44.88547	2.268730	2.447215
#1	1.774493	.0359983	.0015826	-.005020	.0064782	.7516160	.0299282
#2	1.797559	.0367318	.0020978	-.004962	.0083129	.7862824	.0296511
#3	1.861318	.0362069	.0015053	-.004523	.0149327	.7659009	.0310474

Sample Name: Q2600-02 Acquired: 7/17/2025 14:36:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5241136	.0117077	.3325591
Stddev	.0026144	.0024766	.0008825
%RSD	.4988170	21.15355	.2653547

#1	.5231650	.0122428	.3316891
#2	.5221060	.0138731	.3325348
#3	.5270699	.0090074	.3334535

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4979.533	84069.48	8256.717	4198.944	5682.606
Stddev	9.869	692.85	15.364	25.646	11.101
%RSD	.1982005	.8241359	.1860828	.6107705	.1953518

#1	4990.884	84858.05	8239.253	4220.890	5685.407
#2	4974.733	83558.35	8268.156	4170.752	5692.038
#3	4972.981	83792.03	8262.740	4205.189	5670.372

Sample Name: Q2600-06 Acquired: 7/17/2025 14:41:11 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0080183	-.003558	.2782996	.0036087	.0054602	.1280618	.4176404
Stddev	.0015287	.002007	.0009786	.0017234	.0010554	.0112555	.0019385
%RSD	19.06481	56.40852	.3516302	47.75614	19.32864	8.789146	.4641552

#1	.0062655	-.003423	.2780187	.0016517	.0052395	.1151479	.4154839
#2	.0087145	-.001622	.2793879	.0048995	.0066085	.1332494	.4181990
#3	.0090750	-.005630	.2774921	.0042750	.0045327	.1357879	.4192383

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000165	.0012045	52.64911	.0017809	.0081355	.0026165	16.92009
Stddev	.000047	.0000580	.20947	.0003777	.0001157	.0003833	.14067
%RSD	28.65558	4.813146	.3978591	21.21130	1.421891	14.65103	.8314066

#1	-.000172	.0012633	52.47015	.0021951	.0080181	.0022322	16.91932
#2	-.000115	.0012028	52.87951	.0016920	.0081389	.0029989	17.06115
#3	-.000209	.0011473	52.59768	.0014555	.0082494	.0026183	16.77980

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7408927	1.555016	.0273450	.0010991	333.1463	-.003264	1.060735
Stddev	.0022951	.009436	.0001616	.0000870	3.7156	.001619	.001929
%RSD	.3097734	.6067988	.5907844	7.916848	1.115299	49.58806	.1818475

#1	.7382600	1.564797	.0275257	.0011183	333.0638	-.001396	1.059601
#2	.7424719	1.545968	.0272144	.0010041	336.9025	-.004140	1.062962
#3	.7419464	1.554285	.0272949	.0011749	329.4727	-.004256	1.059641

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.622690	.0266214	.0007327	-.004529	.0099976	.6771471	.0158154
Stddev	.027874	.0009944	.0001467	.000354	.0017536	.0112619	.0034418
%RSD	1.717746	3.735509	20.02524	7.808126	17.54061	1.663135	21.76231

#1	1.623080	.0261823	.0005636	-.004419	.0098410	.6875253	.0118604
#2	1.650367	.0277598	.0008082	-.004244	.0118243	.6651720	.0174544
#3	1.594624	.0259220	.0008263	-.004925	.0083275	.6787439	.0181313

Sample Name: Q2600-06 Acquired: 7/17/2025 14:41:11 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4534891	.0095009	.1337187
Stddev	.0044252	.0010049	.0002673
%RSD	.9758010	10.57716	.1999168

#1	.4536216	.0106203	.1334178
#2	.4489992	.0086766	.1338098
#3	.4578465	.0092058	.1339287

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5101.101	85572.26	8727.090	4304.552	5849.959
Stddev	9.295	403.21	44.643	25.328	13.709
%RSD	.1822077	.4711981	.5115446	.5884105	.2343478

#1	5098.977	85592.63	8761.980	4295.198	5849.917
#2	5111.274	85159.25	8742.509	4285.232	5863.690
#3	5093.052	85964.91	8676.782	4333.228	5836.271

Sample Name: Q2600-10 Acquired: 7/17/2025 14:45:33 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003454	-.004934	.4292368	.0006095	.0023704	.1467064	.2837892
Stddev	.004648	.000480	.0008063	.0045859	.0013726	.0061976	.0010471
%RSD	134.5804	9.724916	.1878463	752.3890	57.90694	4.224496	.3689671

#1	-.000184	-.005301	.4283644	.0039016	.0011900	.1435292	.2844468
#2	-.001403	-.005111	.4299546	.0025554	.0038767	.1538483	.2825817
#3	-.008774	-.004391	.4293913	-.004629	.0020446	.1427417	.2843390

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000168	.0042222	23.15560	.0020416	.0055219	.0129029	3.484306
Stddev	.000084	.0000413	.02256	.0000510	.0000512	.0001136	.051283
%RSD	50.29449	.9777821	.0974300	2.497297	.9264566	.8803015	1.471838

#1	-.000131	.0041747	23.16689	.0020196	.0055354	.0129002	3.515696
#2	-.000108	.0042422	23.12963	.0020052	.0055649	.0127906	3.512097
#3	-.000265	.0042496	23.17029	.0020998	.0054653	.0130177	3.425126

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6444785	2.058383	.0119626	.0005019	349.7596	-.003800	2.990895
Stddev	.0031004	.020864	.0002303	.0002328	5.4866	.001738	.004267
%RSD	.4810770	1.013591	1.925574	46.38737	1.568682	45.74421	.1426626

#1	.6455562	2.066741	.0121230	.0002816	345.5178	-.005788	2.988660
#2	.6409830	2.034636	.0120661	.0004786	355.9558	-.002561	2.988211
#3	.6468963	2.073772	.0116986	.0007455	347.8052	-.003053	2.995816

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7679229	.0118545	-.000271	-.003698	.0123087	.3558698	.0230625
Stddev	.0273896	.0005409	.000067	.000209	.0003252	.0179186	.0012598
%RSD	3.566718	4.562910	24.64676	5.647205	2.641721	5.035163	5.462589

#1	.7951488	.0122742	-.000235	-.003868	.0126094	.3567194	.0217690
#2	.7682474	.0120452	-.000348	-.003761	.0123531	.3733485	.0242857
#3	.7403724	.0112441	-.000230	-.003465	.0119637	.3375415	.0231329

Sample Name: Q2600-10 Acquired: 7/17/2025 14:45:33 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.6454954	.0022310	.0529430
Stddev	.0009525	.0010537	.0000852
%RSD	.1475598	47.23009	.1609519
#1	.6447256	.0017858	.0529251
#2	.6465606	.0034342	.0530358
#3	.6452000	.0014730	.0528683

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5168.186	85594.63	8943.317	4308.558	5935.537
Stddev	3.226	154.62	124.767	17.244	14.526
%RSD	.0624202	.1806385	1.395092	.4002309	.2447365
#1	5171.845	85595.84	8971.451	4327.706	5949.350
#2	5165.750	85439.41	9051.615	4303.715	5936.871
#3	5166.964	85748.64	8806.885	4294.254	5920.390

Sample Name: Q2611-01 Acquired: 7/17/2025 14:49:56 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0733029	.0006434	.7486596	.0118588	-.009168	94.26990	1.590388
Stddev	.0032198	.0009976	.0042076	.0049303	.002467	.02219	.002909
%RSD	4.392428	155.0457	.5620230	41.57529	26.91022	.0235425	.1829335

#1	.0726203	-.000428	.7534940	.0140098	-.012011	94.29383	1.589510
#2	.0768093	.000813	.7466616	.0062184	-.007905	94.24999	1.593636
#3	.0704792	.001545	.7458233	.0153482	-.007588	94.26588	1.588019

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061486	.0028796	101.9841	.1951435	.1079784	.3736532	203.7857
Stddev	.0000902	.0000482	.3203	.0009520	.0006474	.0007975	.3425
%RSD	1.467314	1.673629	.3140258	.4878390	.5995762	.2134443	.1680643

#1	.0061440	.0028779	102.1728	.1949432	.1086401	.3734134	204.1394
#2	.0060608	.0029287	101.6143	.1943076	.1079486	.3745431	203.4556
#3	.0062410	.0028323	102.1652	.1961797	.1073463	.3730031	203.7621

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.288434	29.06728	.2068529	.0066405	12.90898	.3410617	.8795793
Stddev	.008095	.06808	.0006066	.0002938	.08948	.0011991	.0023837
%RSD	.1530678	.2342228	.2932526	4.424994	.6931503	.3515836	.2710092

#1	5.294866	29.14523	.2071774	.0065052	12.82215	.3423915	.8787899
#2	5.279345	29.03709	.2072283	.0069776	12.90390	.3400627	.8776904
#3	5.291092	29.01951	.2061531	.0064387	13.00090	.3407309	.8822576

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.085982	.0043912	.0037021	.0538942	1.945080	2.176809	8.398981
Stddev	.014363	.0039623	.0002835	.0007863	.002757	.006833	.036918
%RSD	.1776257	90.23368	7.658358	1.458968	.1417631	.3138856	.4395499

#1	8.101679	.0082082	.0038093	.0547796	1.948249	2.173844	8.436888
#2	8.073498	.0046673	.0039163	.0532775	1.943761	2.171959	8.396918
#3	8.082770	.0002980	.0033806	.0536253	1.943229	2.184623	8.363139

Sample Name: Q2611-01 Acquired: 7/17/2025 14:49:56 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.825351	.2149643	.2399958
Stddev	.015801	.0013988	.0005744
%RSD	.4130496	.6507154	.2393536

#1	3.843383	.2164356	.2393941
#2	3.818744	.2136515	.2405384
#3	3.813927	.2148059	.2400548

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6046.417	102306.7	10501.73	5114.261	5811.654
Stddev	14.093	302.5	32.15	9.833	23.595
%RSD	.2330854	.2957137	.3061268	.1922685	.4059967

#1	6034.672	102275.8	10500.90	5110.813	5784.560
#2	6062.044	102623.5	10534.28	5106.615	5827.683
#3	6042.533	102020.8	10470.00	5125.353	5822.720

Sample Name: Q2622-01 Acquired: 7/17/2025 14:54:00 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0474270	-.004804	3.337175	.0082942	.0086325	99.69212
Stddev	.0015395	.000712	.005890	.0018245	.0014209	.37137
%RSD	3.245989	14.82964	.1764971	21.99694	16.46027	.3725129

#1	.0492046	-.005243	3.340701	.0078107	.0071444	99.78234
#2	.0465211	-.005186	3.340449	.0067602	.0087781	100.0101
#3	.0465554	-.003982	3.330376	.0103117	.0099751	99.2840

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6777919	.0117220	.0062056	71.89185	.3068113	.1327051
Stddev	.0006754	.0000901	.0000611	.13504	.0009270	.0000193
%RSD	.0996453	.7685170	.9851668	.1878373	.3021322	.0145811

#1	.6774072	.0118014	.0062361	72.00282	.3067768	.1327272
#2	.6785717	.0116241	.0062454	71.93125	.3059020	.1326912
#3	.6773967	.0117405	.0061352	71.74150	.3077550	.1326969

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2493019	139.5833	2.806917	82.42554	.2166154	.0038916
Stddev	.0007346	.9679	.006415	.40226	.0006100	.0007469
%RSD	.2946806	.6934034	.2285561	.4880335	.2816143	19.19272

#1	.2495090	139.3940	2.813437	82.77389	.2169343	.0035098
#2	.2499108	138.7241	2.806703	82.51745	.2170000	.0034128
#3	.2484860	140.6319	2.800612	81.98527	.2159120	.0047522

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.333125	.3792596	1.216472	13.24229	.0214649	.0084093
Stddev	.027400	.0034214	.000987	.11900	.0045422	.0004236
%RSD	.8220475	.9021272	.0811664	.8986642	21.16115	5.037222

#1	3.321037	.3823085	1.216692	13.19563	.0215657	.0079682
#2	3.313849	.3799111	1.215393	13.15369	.0168731	.0084468
#3	3.364491	.3755593	1.217330	13.37755	.0259559	.0088130

Sample Name: Q2622-01 Acquired: 7/17/2025 14:54:00 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0435116	1.736879	2.901612	F 21.37172	7.327392	.1448511
Stddev	.0006469	.008284	.020606	.02569	.038455	.0014368
%RSD	1.486747	.4769714	.7101415	.1201857	.5248121	.9918844
#1	.0431827	1.742160	2.881597	21.34269	7.288505	.1463393
#2	.0442569	1.741147	2.900479	21.38094	7.328270	.1447419
#3	.0430953	1.727331	2.922761	21.39152	7.365400	.1434720

Elem	Sr4077
Units	ppm
Avg	.1378132
Stddev	.0011526
%RSD	.8363746

#1	.1382117
#2	.1387138
#3	.1365142

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6332.994	105619.7	10833.76	5311.464	5834.935
Stddev	23.727	555.5	82.85	30.067	19.876
%RSD	.3746508	.5259501	.7647474	.5660825	.3406365

#1	6317.666	106225.4	10867.96	5345.767	5818.068
#2	6320.993	105499.8	10739.28	5289.672	5829.890
#3	6360.324	105134.0	10894.03	5298.953	5856.847

Sample Name: CCV02 Acquired: 7/17/2025 14:58:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.114447	5.028033	4.872001	5.185559	5.212571	10.05685	10.57531
Stddev	.015825	.121086	.036243	.023234	.010803	.00813	.18521
%RSD	.3094081	2.408224	.7439075	.4480442	.2072409	.0808827	1.751318
#1	5.131911	5.149764	4.913173	5.211651	5.222010	10.05076	10.58818
#2	5.101058	4.907602	4.844916	5.167109	5.214915	10.06609	10.75375
#3	5.110374	5.026735	4.857914	5.177917	5.200789	10.05371	10.38401
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2438318	2.437385	26.27241	.9472949	2.479536	1.274937	5.076160
Stddev	.0013750	.014224	.15431	.0051833	.007507	.003405	.042319
%RSD	.5639317	.5835917	.5873453	.5471707	.3027735	.2670927	.8336804
#1	.2423446	2.451854	26.34233	.9504423	2.487230	1.278624	5.124120
#2	.2440938	2.423418	26.37939	.9413124	2.472231	1.271910	5.060290
#3	.2450570	2.436882	26.09552	.9501300	2.479147	1.274276	5.044070
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.574303	24.30881	2.488747	1.290527	22.87298	2.477764	2.590504
Stddev	.007978	.07194	.008640	.003201	.16831	.009009	.011494
%RSD	.3098961	.2959314	.3471577	.2480444	.7358360	.3636077	.4436892
#1	2.577883	24.24969	2.497378	1.294190	23.02981	2.488159	2.577462
#2	2.579863	24.38890	2.480098	1.288266	22.69517	2.472206	2.594893
#3	2.565162	24.28784	2.488766	1.289125	22.89397	2.472928	2.599157
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.99860	5.214517	5.168206	4.888631	4.949532	4.813270	4.804761
Stddev	.22836	.028668	.009025	.039992	.018726	.038588	.041994
%RSD	.8783606	.5497717	.1746210	.8180609	.3783471	.8017064	.8740132
#1	26.26172	5.185755	5.162125	4.933141	4.971126	4.852280	4.847444
#2	25.88199	5.243090	5.163917	4.855723	4.939701	4.775118	4.763491
#3	25.85208	5.214707	5.178575	4.877028	4.937768	4.812414	4.803348

Sample Name: CCV02 Acquired: 7/17/2025 14:58:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.918676	5.008604	5.386780
Stddev	.052002	.018306	.103044
%RSD	1.057229	.3654942	1.912900

#1	4.973840	5.020713	5.458472
#2	4.870555	4.987545	5.433172
#3	4.911634	5.017553	5.268695

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5155.912	85780.46	8337.390	4323.434	5992.196
Stddev	2.338	208.62	64.987	29.373	10.764
%RSD	.0453544	.2432033	.7794664	.6793909	.1796386

#1	5157.311	85602.99	8393.891	4351.142	5981.495
#2	5157.212	85728.13	8266.372	4292.640	6003.023
#3	5153.212	86010.27	8351.907	4326.520	5992.069

Sample Name: CCB02 Acquired: 7/17/2025 15:02:14 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000858	-.000591	-.001809	-.000237	-.000908	-.001128
Stddev	.002761	.001059	.000286	.000408	.000650	.008326
%RSD	321.9894	179.2362	15.79951	171.8291	71.58261	737.9839
#1	.001380	-.000827	-.002037	-.000668	-.001502	-.010124
#2	-.000009	-.001513	-.001489	.000143	-.000213	.000432
#3	-.003944	.000566	-.001902	-.000187	-.001009	.006307
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004243	-.000099	.0000024	.0059718	-.000337	.0000374
Stddev	.000747	.000042	.0000492	.0064493	.000208	.0001364
%RSD	17.59394	42.40506	2019.104	107.9958	61.80665	364.3885
#1	-.004045	-.000148	-.000005	.0002870	-.000565	.0000023
#2	-.003615	-.000080	.000055	.0129803	-.000288	-.000078
#3	-.005069	-.000070	-.000042	.0046483	-.000157	.000188
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000104	-.000390	-.000132	-.025753	.0001872	.0009021
Stddev	.000219	.003508	.000309	.017951	.0002695	.0006574
%RSD	210.6320	900.5026	233.9007	69.70498	144.0025	72.87564
#1	-.000357	-.004071	-.000303	-.030669	.0004362	.0012157
#2	.000024	.002914	-.000319	-.040733	.0002242	.0013440
#3	.000021	-.000012	.000225	-.005856	-.000099	.0001466
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.253049	-.001068	-.000147	.0966507	.0057590	.0008904
Stddev	.013423	.001577	.000127	.0059386	.0005215	.0001353
%RSD	5.304314	147.6812	86.77793	6.144362	9.056012	15.19120
#1	-.262717	-.002826	-.000011	.1007528	.0058018	.0009974
#2	-.237724	-.000600	-.000165	.0898409	.0052174	.0007384
#3	-.258707	.000222	-.000263	.0993585	.0062578	.0009354

Sample Name: CCB02 Acquired: 7/17/2025 15:02:14 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000073	.0151079	.0496644	.0015236	F -.032538	-.003399
Stddev	.000195	.0018594	.0531182	.0007052	.000880	.002693
%RSD	266.1839	12.30750	106.9544	46.28098	2.703357	79.23787

#1	.000027	.0131135	.0134786	.0007599	-.033412	-.005840
#2	-.000298	.0167937	.1106465	.0016611	-.032549	-.000510
#3	.000051	.0154165	.0248681	.0021500	-.031653	-.003846

Elem	Sr4077
Units	ppm
Avg	.0000852
Stddev	.0000357
%RSD	41.85985

#1	.0000443
#2	.0001015
#3	.0001098

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5372.489	88788.44	8386.837	4429.980	6719.208
Stddev	13.318	168.42	66.488	17.278	22.008
%RSD	.2478833	.1896897	.7927633	.3900163	.3275376

#1	5378.510	88981.86	8324.417	4431.978	6740.711
#2	5381.732	88674.19	8379.338	4411.790	6720.185
#3	5357.224	88709.27	8456.757	4446.172	6696.728

Sample Name: Q2592-02 Acquired: 7/17/2025 15:07:55 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005813	-.003541	.0043055	.0027115	-.000030	.0998584	.1416334
Stddev	.000826	.000624	.0004286	.0034891	.002244	.0096876	.0003937
%RSD	14.21458	17.63063	9.954971	128.6769	7405.171	9.701339	.2779368

#1	-.005029	-.004261	.0045072	-.001313	.001855	.0888506	.1419758
#2	-.006676	-.003222	.0038132	.004887	-.002513	.1070859	.1417213
#3	-.005733	-.003141	.0045961	.004561	.000567	.1036387	.1412033

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000230	.0020382	72.58829	.0001506	.0048562	.0398175	.0323611
Stddev	.000027	.0001345	.13434	.0002283	.0001332	.0002375	.0071670
%RSD	11.58298	6.598748	.1850733	151.6377	2.742465	.5963425	22.14697

#1	-.000260	.0021401	72.68336	-.000094	.0049725	.0399946	.0395693
#2	-.000209	.0020887	72.64691	.000358	.0048853	.0395477	.0252361
#3	-.000220	.0018857	72.43460	.000187	.0047109	.0399102	.0322778

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3917584	19.61335	.0082914	.0007321	317.0479	-.004005	1.417445
Stddev	.0008650	.05960	.0000774	.0002963	2.1350	.001272	.003096
%RSD	.2208044	.3038792	.9332434	40.47451	.6733937	31.74461	.2184279

#1	.3910126	19.68157	.0083630	.0003905	315.6078	-.003922	1.415818
#2	.3927067	19.58712	.0083020	.0009206	319.5008	-.002778	1.421015
#3	.3915558	19.57137	.0082093	.0008851	316.0351	-.005317	1.415502

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6669007	.0299427	.0004056	-.004426	.0124650	1.852516	.0570199
Stddev	.0202233	.0005296	.0003235	.000487	.0011159	.021589	.0034505
%RSD	3.032432	1.768654	79.76732	11.01198	8.952182	1.165372	6.051408

#1	.6480222	.0294165	.0000395	-.004983	.0114541	1.874120	.0561248
#2	.6882431	.0299360	.0006533	-.004214	.0136624	1.830943	.0541051
#3	.6644368	.0304756	.0005240	-.004080	.0122785	1.852486	.0608298

Sample Name: Q2592-02 Acquired: 7/17/2025 15:07:55 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.307479	.0100585	.1932721
Stddev	.000512	.0025744	.0002696
%RSD	.0081105	25.59391	.1395122

#1	6.308066	.0113073	.1932557
#2	6.307126	.0117703	.1935496
#3	6.307245	.0070979	.1930110

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4965.826	84532.57	8241.257	4123.115	5711.569
Stddev	10.604	146.78	23.350	17.709	8.487
%RSD	.2135476	.1736341	.2833317	.4295025	.1485858

#1	4959.341	84426.24	8215.309	4109.003	5704.056
#2	4978.064	84471.45	8260.576	4117.355	5720.774
#3	4960.074	84700.04	8247.885	4142.987	5709.877

Sample Name: Q2614-06 Acquired: 7/17/2025 15:12:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003081	-.004096	.0020794	.0025791	-.000405	.1071784	.1553727
Stddev	.001432	.001587	.0020200	.0007196	.002024	.0054566	.0001395
%RSD	46.46713	38.75041	97.14042	27.90005	500.2716	5.091107	.0897915

#1	-.001451	-.005869	.0042334	.0030044	.001932	.1134732	.1555328
#2	-.004133	-.002807	.0017773	.0029847	-.001534	.1037948	.1553077
#3	-.003661	-.003612	.0002276	.0017483	-.001611	.1042672	.1552774

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000296	.0002214	48.74616	-.000077	.0005801	.0108468	.1153094
Stddev	.000029	.0000787	.12771	.000350	.0001892	.0002418	.0024691
%RSD	9.914796	35.55741	.2619948	452.9926	32.62114	2.229580	2.141237

#1	-.000275	.0003034	48.67209	.000247	.0004473	.0108734	.1129855
#2	-.000330	.0001465	48.67275	-.000449	.0004962	.0105928	.1179016
#3	-.000285	.0002143	48.89362	-.000031	.0007967	.0110743	.1150410

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5474385	2.689558	.0012274	.0008243	287.1110	-.002012	.1880130
Stddev	.0008571	.015279	.0000489	.0001044	2.5784	.002650	.0011352
%RSD	.1565648	.5680738	3.982976	12.66881	.8980592	131.7320	.6037912

#1	.5484165	2.697200	.0011893	.0009250	290.0130	.001041	.1891619
#2	.5468180	2.699507	.0012825	.0007165	285.0838	-.003355	.1879852
#3	.5470810	2.671966	.0012105	.0008316	286.2361	-.003721	.1868921

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.314050	.0353902	.0007252	-.004385	.0137609	.6366596	.3719331
Stddev	.018528	.0009607	.0002561	.000433	.0006584	.0037046	.0024746
%RSD	1.409982	2.714716	35.30911	9.881117	4.784519	.5818722	.6653422

#1	1.296305	.0346099	.0010111	-.004885	.0133089	.6362488	.3729839
#2	1.333272	.0350973	.0005169	-.004162	.0134575	.6405524	.3691065
#3	1.312573	.0364632	.0006477	-.004109	.0145163	.6331776	.3737089

Sample Name: Q2614-06 Acquired: 7/17/2025 15:12:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5173461	.0038070	.2518866
Stddev	.0032755	.0038583	.0002083
%RSD	.6331361	101.3474	.0827100

#1	.5156063	.0059007	.2521014
#2	.5153076	-.000646	.2516854
#3	.5211244	.006166	.2518730

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5032.703	86157.05	8543.222	4228.954	5813.632
Stddev	9.458	232.35	56.802	11.122	7.304
%RSD	.1879267	.2696828	.6648788	.2630078	.1256291

#1	5029.538	86111.08	8551.417	4222.268	5810.696
#2	5043.337	85951.12	8595.481	4222.800	5821.946
#3	5025.233	86408.95	8482.767	4241.793	5808.253

Sample Name: Q2612-01 Acquired: 7/17/2025 15:16:42 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1041664	.0037766	.4579143	.0181233	.0111553	132.0663	.7388516
Stddev	.0021249	.0012976	.0032388	.0036056	.0015327	.1396	.0019293
%RSD	2.039942	34.35965	.7072852	19.89483	13.73957	.1056774	.2611144

#1	.1024950	.0037181	.4609178	.0207185	.0119402	132.2273	.7410098
#2	.1065578	.0025092	.4583422	.0196451	.0093891	131.9930	.7372942
#3	.1034463	.0051024	.4544828	.0140063	.0121366	131.9788	.7382508

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0086383	.0001484	34.50495	.1894975	.1491373	.3462546	277.6668
Stddev	.0000742	.0001275	.10933	.0009840	.0004818	.0013660	1.8762
%RSD	.8592380	85.89025	.3168400	.5192575	.3230529	.3945128	.6757004

#1	.0087120	.0002674	34.63016	.1887360	.1493115	.3471060	275.7609
#2	.0085636	.0001641	34.45635	.1906085	.1495078	.3469788	277.7278
#3	.0086392	.0000139	34.42836	.1891480	.1485926	.3446789	279.5118

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.649851	46.45185	.2593744	.0074435	11.36744	.3345518	.7242512
Stddev	.018108	.19023	.0004773	.0005723	.09228	.0019074	.0015503
%RSD	.2723107	.4095259	.1840379	7.689113	.8117983	.5701246	.2140513

#1	6.664590	46.54895	.2598265	.0069548	11.27034	.3361710	.7228250
#2	6.655327	46.57393	.2588753	.0073025	11.37800	.3324492	.7259012
#3	6.629637	46.23266	.2594214	.0080731	11.45399	.3350351	.7240274

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.02889	.0041342	.0056585	.3840165	3.022215	2.043393	6.360451
Stddev	.11330	.0093699	.0001088	.0025674	.000230	.014203	.015695
%RSD	.7539066	226.6429	1.923002	.6685701	.0076144	.6950604	.2467648

#1	14.98131	-.005131	.0056538	.3861745	3.022372	2.038344	6.378490
#2	14.94713	.003927	.0055520	.3846978	3.022322	2.032404	6.352938
#3	15.15822	.013606	.0057695	.3811771	3.021951	2.059430	6.349924

Sample Name: Q2612-01 Acquired: 7/17/2025 15:16:42 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.327315	.3370326	-.038115
Stddev	.003288	.0039161	.002245
%RSD	.2476826	1.161928	5.889499

#1	1.329706	.3329665	-.035599
#2	1.323566	.3373521	-.038834
#3	1.328674	.3407791	-.039912

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5907.232	101093.6	10053.88	5014.709	5703.677
Stddev	10.565	566.1	48.50	14.956	11.069
%RSD	.1788511	.5599785	.4823754	.2982434	.1940621

#1	5910.734	101743.5	10036.26	5030.950	5701.096
#2	5895.361	100830.1	10016.66	5011.674	5694.127
#3	5915.602	100707.3	10108.73	5001.503	5715.808

Sample Name: Q2614-01 Acquired: 7/17/2025 15:20:46 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0861103	.0024670	1.729214	.0132227	.0035311	79.82431	1.612553
Stddev	.0017998	.0006935	.009703	.0028908	.0007509	.04679	.003398
%RSD	2.090141	28.10953	.5611380	21.86278	21.26602	.0586201	.2106917

#1	.0862724	.0032303	1.737569	.0161708	.0042345	79.80251	1.614664
#2	.0842350	.0022950	1.718571	.0131045	.0036184	79.87803	1.608634
#3	.0878237	.0018758	1.731501	.0103927	.0027403	79.79240	1.614361

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044924	.0113569	212.7945	.2934755	.1219046	1.320694	216.4401
Stddev	.0000945	.0001548	.9027	.0010542	.0003840	.004905	1.7431
%RSD	2.103956	1.362895	.4242319	.3592228	.3149910	.3714016	.8053725

#1	.0045437	.0113235	212.4539	.2927074	.1221901	1.323301	217.2127
#2	.0043834	.0112215	212.1116	.2946774	.1214680	1.315036	217.6635
#3	.0045502	.0115256	213.8180	.2930416	.1220556	1.323745	214.4442

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.632906	42.51726	.2945621	.0124679	5.764476	.3075101	3.236093
Stddev	.004965	.08146	.0007804	.0006128	.073656	.0008969	.010946
%RSD	.0748563	.1915916	.2649275	4.914658	1.277760	.2916669	.3382450

#1	6.627873	42.44592	.2953637	.0131608	5.809052	.3070958	3.235472
#2	6.633044	42.60602	.2938049	.0119976	5.804918	.3085392	3.247336
#3	6.637800	42.49983	.2945176	.0122451	5.679459	.3068952	3.225471

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.88209	.2505523	.0166503	.1195805	3.174109	4.250686	17.58973
Stddev	.03983	.0048938	.0002942	.0007953	.004765	.065642	.03247
%RSD	.3660043	1.953197	1.766664	.6650776	.1501295	1.544279	.1845770

#1	10.88589	.2529769	.0168108	.1200521	3.173753	4.283238	17.57140
#2	10.91988	.2537604	.0168293	.1200271	3.179042	4.293691	17.57058
#3	10.84049	.2449196	.0163108	.1186622	3.169532	4.175129	17.62722

Sample Name: Q2614-01 Acquired: 7/17/2025 15:20:46 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	18.98174	.2058533	.7251207
Stddev	.07550	.0020755	.0034883
%RSD	.3977555	1.008221	.4810599
#1	19.06507	.2057707	.7256611
#2	18.91788	.2079688	.7213937
#3	18.96228	.2038203	.7283072

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5701.700	96945.21	9886.578	4739.896	5706.089
Stddev	20.025	497.41	51.531	8.370	23.667
%RSD	.3512069	.5130798	.5212260	.1765847	.4147619
#1	5681.376	96997.27	9939.140	4740.438	5681.422
#2	5721.411	96423.82	9884.453	4731.268	5728.610
#3	5702.314	97414.54	9836.142	4747.982	5708.235

Sample Name: Q2608-01 Acquired: 7/17/2025 15:24:48 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1187337	-.006542	.0021843	-.001282	.0011827	.3657214
Stddev	.0022204	.000730	.0014277	.003560	.0014416	.0188956
%RSD	1.870068	11.15235	65.36117	277.7215	121.8956	5.166660
#1	.1171850	-.006462	.0016057	-.004597	.0000951	.3439671
#2	.1177384	-.005856	.0011368	-.001730	.0028178	.3751474
#3	.1212776	-.007308	.0038105	.002481	.0006351	.3780497
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.665995	-.000281	-.000166	236.8432	.0018449	.0016613
Stddev	.004805	.000051	.000125	.2594	.0005416	.0002280
%RSD	.1029802	18.26886	75.44766	.1095355	29.35500	13.72503
#1	4.664914	-.000294	-.000125	237.0726	.0024695	.0014022
#2	4.671248	-.000325	-.000067	236.8954	.0015061	.0018314
#3	4.661822	-.000225	-.000307	236.5617	.0015591	.0017503
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0034881	4.671771	2.099034	62.76302	.0074385	.0004894
Stddev	.0000402	.022996	.001494	.23202	.0004200	.0004889
%RSD	1.152973	.4922421	.0711747	.3696780	5.646422	99.88044
#1	.0034423	4.655342	2.097357	62.73222	.0076102	.0010532
#2	.0035043	4.661919	2.099523	63.00890	.0077455	.0001823
#3	.0035177	4.698052	2.100222	62.54794	.0069599	.0002329
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	459.3537	.0012380	.0696669	45.11741	1.167689	.0145003
Stddev	5.4678	.0008007	.0003778	.10801	.004467	.0001155
%RSD	1.190315	64.67631	.5422361	.2393952	.3825212	.7962098
#1	453.9321	.0006123	.0692378	44.99361	1.163260	.0146196
#2	459.2623	.0009613	.0699493	45.19239	1.172192	.0144922
#3	464.8665	.0021403	.0698137	45.16622	1.167615	.0143891

Sample Name: Q2608-01 Acquired: 7/17/2025 15:24:48 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.004169	.0126832	F 27.04961	1.379145	F 44.53765	.1426894
Stddev	.000679	.0005011	.05530	.003536	.17414	.0016603
%RSD	16.27664	3.950966	.2044316	.2564160	.3909853	1.163577

#1	-0.004584	.0122276	26.98654	1.375786	44.56060	.1408758
#2	-0.004537	.0132199	27.07255	1.378815	44.69918	.1441345
#3	-0.003386	.0126020	27.08976	1.382835	44.35318	.1430578

Elem	Sr4077
Units	ppm
Avg	1.896829
Stddev	.001859
%RSD	.0979906

#1	1.896729
#2	1.898737
#3	1.895023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4721.214	80874.82	8286.842	3955.690	5350.574
Stddev	4.669	374.71	16.628	29.486	7.632
%RSD	.0989002	.4633199	.2006593	.7453981	.1426348

#1	4726.488	81302.73	8305.534	3989.407	5354.765
#2	4717.607	80605.37	8273.695	3934.736	5341.765
#3	4719.547	80716.38	8281.295	3942.926	5355.193

Sample Name: Q2585-04 Acquired: 7/17/2025 15:29:09 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003299	-.004294	.0034703	.0036355	-.000222	.1688241	.0173051
Stddev	.000186	.000910	.0003703	.0003873	.002107	.0104873	.0007557
%RSD	5.647876	21.19082	10.66992	10.65439	950.0046	6.211983	4.366699

#1	-.003369	-.005332	.0034306	.0040822	-.002652	.1808291	.0171692
#2	-.003088	-.003630	.0031215	.0033933	.001085	.1614453	.0181195
#3	-.003440	-.003921	.0038589	.0034310	.000902	.1641979	.0166266

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000218	.0001014	31.42793	.0005880	-.000078	.2382506	.7794338
Stddev	.000011	.0000589	.08610	.0001749	.000103	.0001629	.0065915
%RSD	5.016259	58.06181	.2739668	29.74134	132.1410	.0683800	.8456736

#1	-.000205	.0000344	31.44783	.0003875	.000018	.2381808	.7767120
#2	-.000224	.0001250	31.33362	.0006670	-.000187	.2384368	.7746391
#3	-.000224	.0001448	31.50234	.0007093	-.000065	.2381342	.7869503

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0773728	7.164475	.0017208	.0007471	65.18949	-.002692	.3683972
Stddev	.0003812	.057303	.0001934	.0000753	.16807	.002742	.0003878
%RSD	.4926332	.7998155	11.24153	10.07834	.2578137	101.8546	.1052551

#1	.0774013	7.099560	.0016955	.0008087	65.08885	-.001871	.3680886
#2	.0769782	7.208029	.0019256	.0007693	65.38352	-.000454	.3688325
#3	.0777390	7.185835	.0015412	.0006632	65.09612	-.005751	.3682706

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.934159	.0214570	.0012647	-.004361	.0152201	3.620172	1.746828
Stddev	.025822	.0006177	.0000235	.000300	.0005755	.010924	.005363
%RSD	.2599351	2.878716	1.857798	6.880344	3.780969	.3017625	.3069937

#1	9.910984	.0220563	.0012918	-.004680	.0148281	3.608976	1.752089
#2	9.929499	.0208225	.0012503	-.004320	.0149515	3.630802	1.747026
#3	9.961994	.0214923	.0012520	-.004084	.0158808	3.620736	1.741369

Sample Name: Q2585-04 Acquired: 7/17/2025 15:29:09 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.384344	.0004348	.1048838
Stddev	.043127	.0028393	.0002721
%RSD	.5840334	652.9603	.2594277

#1	7.433989	.0012654	.1049645
#2	7.356131	.0027662	.1045805
#3	7.362913	-.002727	.1051064

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5122.364	85577.51	8516.350	4191.202	6191.338
Stddev	3.868	379.54	17.377	22.675	3.424
%RSD	.0755119	.4435081	.2040450	.5410121	.0553109

#1	5125.101	85982.65	8528.495	4217.324	6188.676
#2	5124.053	85230.21	8524.110	4179.682	6190.136
#3	5117.939	85519.68	8496.445	4176.599	6195.201

Sample Name: Q2606-01DUP Acquired: 7/17/2025 15:33:23 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003717	-.003336	-.002072	.0017101	.0011512	.3104442
Stddev	.001629	.003626	.000883	.0032110	.0006044	.0205095
%RSD	43.81585	108.6900	42.62372	187.7698	52.49877	6.606491
#1	-.003101	-.001125	-.001658	.0049840	.0007921	.2954384
#2	-.005564	-.001363	-.001471	.0015803	.0018489	.3338140
#3	-.002487	-.007522	-.003085	-.001434	.0008125	.3020802
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1422331	-.000226	-.000040	109.8202	.0022674	.0016377
Stddev	.0013580	.000048	.000026	.3562	.0003210	.0000902
%RSD	.9547990	21.35672	65.93673	.3243315	14.15865	5.510993
#1	.1414300	-.000172	-.000070	109.4463	.0026379	.0016725
#2	.1414683	-.000265	-.000029	109.8590	.0020917	.0015352
#3	.1438011	-.000242	-.000021	110.1555	.0020725	.0017054
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000112	.0346084	.0053936	32.06164	.0123793	.0005216
Stddev	.000361	.0037918	.0004722	.08829	.0001864	.0000538
%RSD	322.6433	10.95635	8.754994	.2753788	1.505932	10.31474
#1	.000242	.0388992	.0051986	32.05019	.0125193	.0005837
#2	-.000097	.0317080	.0050502	31.97964	.0121677	.0004908
#3	-.000480	.0332181	.0059321	32.15510	.0124510	.0004902
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	347.1671	-.000012	.0644439	21.95801	.3563153	.0117050
Stddev	6.6413	.001660	.0009132	.37582	.0020866	.0000917
%RSD	1.913002	13663.41	1.417041	1.711558	.5856154	.7831292
#1	339.5782	.001761	.0634260	21.57078	.3571348	.0117890
#2	351.9174	-.000267	.0651912	22.32128	.3539433	.0117188
#3	350.0056	-.001530	.0647145	21.98198	.3578678	.0116072

Sample Name: Q2606-01DUP Acquired: 7/17/2025 15:33:23 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004407	.0104859	11.57358	.0636372	F 36.03736	.0211894
Stddev	.000290	.0004334	.15495	.0016767	.22738	.0025407
%RSD	6.586458	4.133133	1.338823	2.634747	.6309594	11.99063

#1	-.004104	.0101898	11.42696	.0653570	35.85036	.0222768
#2	-.004435	.0109833	11.73570	.0635472	36.29047	.0230054
#3	-.004683	.0102846	11.55809	.0620073	35.97126	.0182859

Elem	Sr4077
Units	ppm
Avg	1.150986
Stddev	.001033
%RSD	.0897862

#1	1.150084
#2	1.152114
#3	1.150760

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4900.948	83395.48	8270.642	4105.168	5619.477
Stddev	6.482	1236.07	39.783	46.029	14.596
%RSD	.1322550	1.482180	.4810119	1.121255	.2597313

#1	4894.038	84756.35	8303.109	4158.291	5610.642
#2	4901.912	82342.36	8282.554	4080.074	5611.466
#3	4906.893	83087.73	8226.265	4077.139	5636.324

Sample Name: Q2606-01LX5 Acquired: 7/17/2025 15:37:44 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002128	.0006552	-.002691	-.000250	-.001625	.0741533	.0272022
Stddev	.001306	.0010237	.001140	.003564	.001497	.0046081	.0012955
%RSD	61.34637	156.2501	42.35915	1425.945	92.08996	6.214254	4.762664
#1	-.003445	.0004535	-.002522	.002916	-.002646	.0752341	.0285536
#2	-.002107	-.000253	-.003906	-.004111	-.002324	.0691009	.0259708
#3	-.000834	.001765	-.001645	.000445	.000093	.0781249	.0270821
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000087	-.000045	23.71908	.0001961	.0001985	-.000316	.0024176
Stddev	.000024	.000049	.16915	.0002754	.0002368	.000327	.0028178
%RSD	27.49077	109.7935	.7131242	140.4248	119.3087	103.6746	116.5516
#1	-.000109	-.000012	23.89836	.0001337	.0002451	-.000275	-.000465
#2	-.000062	-.000021	23.56232	-.000043	-.000058	-.000661	.005166
#3	-.000091	-.000102	23.69657	.000497	.000409	-.000011	.002552
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011611	6.878910	.0027384	.0011587	61.26426	-.000129	.0131463
Stddev	.0002688	.043746	.0004195	.0005233	.16822	.002656	.0000853
%RSD	23.14717	.6359377	15.31941	45.16094	.2745793	2060.320	.6486488
#1	.0009180	6.912536	.0027505	.0015696	61.12647	-.000932	.0132108
#2	.0014497	6.894740	.0023130	.0005696	61.45172	.002836	.0131785
#3	.0011155	6.829452	.0031517	.0013368	61.21459	-.002291	.0130497
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.580396	.0827674	.0024699	.0002872	.0144160	2.349040	.0104909
Stddev	.051979	.0006772	.0002839	.0005193	.0022120	.014737	.0016513
%RSD	1.134808	.8181819	11.49364	180.8106	15.34384	.6273732	15.74025
#1	4.602373	.0834363	.0021507	-.000276	.0169379	2.347949	.0088743
#2	4.617776	.0827835	.0026940	.000747	.0135054	2.364292	.0121748
#3	4.521039	.0820822	.0025652	.000390	.0128047	2.334878	.0104237

Sample Name: Q2606-01LX5 Acquired: 7/17/2025 15:37:44 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.230779	.0012980	.2433403
Stddev	.073305	.0010153	.0016161
%RSD	1.013798	78.22131	.6641101
#1	7.314652	.0019917	.2450739
#2	7.198723	.0017697	.2430717
#3	7.178961	.0001326	.2418754

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5136.048	86112.26	8202.623	4256.163	6088.459
Stddev	13.263	120.11	40.209	11.494	10.899
%RSD	.2582374	.1394807	.4901953	.2700460	.1790145
#1	5122.518	86076.66	8156.215	4264.922	6076.371
#2	5149.027	86013.98	8227.055	4260.418	6091.472
#3	5136.601	86246.15	8224.598	4243.148	6097.536

Sample Name: Q2606-01MS Acquired: 7/17/2025 15:42:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8217122	1.870102	.9147352	2.042397	.8488802	2.305365
Stddev	.0017957	.039532	.0011263	.011100	.0030504	.012095
%RSD	.2185251	2.113875	.1231241	.5434911	.3593459	.5246352

#1	.8196767	1.907827	.9144148	2.053954	.8516615	2.318539
#2	.8223880	1.828983	.9159869	2.031818	.8456178	2.302795
#3	.8230719	1.873496	.9138038	2.041418	.8493612	2.294762

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3477321	.1840838	.1910561	110.9892	.3606330	.1993508
Stddev	.0010069	.0014034	.0003157	.1538	.0025808	.0003379
%RSD	.2895673	.7623448	.1652172	.1385516	.7156291	.1694903

#1	.3479608	.1826932	.1908946	111.1113	.3592942	.1992349
#2	.3486050	.1840586	.1914198	111.0398	.3589967	.1997314
#3	.3466305	.1854996	.1908537	110.8165	.3636081	.1990861

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2954825	2.964503	.2072546	33.89574	.5057056	.0765805
Stddev	.0006526	.005587	.0008383	.21552	.0005939	.0003212
%RSD	.2208620	.1884574	.4044544	.6358218	.1174476	.4193885

#1	.2960376	2.960796	.2072589	34.09395	.5051737	.0762330
#2	.2956462	2.961784	.2080907	33.66632	.5063465	.0768664
#3	.2947636	2.970929	.2064142	33.92693	.5055966	.0766421

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	348.6673	.2973274	.2840869	32.19467	.6364677	.4424868
Stddev	2.3313	.0019289	.0016512	.07864	.0039377	.0012358
%RSD	.6686451	.6487513	.5812360	.2442533	.6186823	.2792753

#1	351.3583	.2995513	.2847357	32.28415	.6333790	.4437943
#2	347.3873	.2963210	.2822098	32.13655	.6351223	.4413381
#3	347.2564	.2961098	.2853152	32.16332	.6409018	.4423281

Sample Name: Q2606-01MS Acquired: 7/17/2025 15:42:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6898676	.2029582	12.35157	6.177689	F 36.49660	.2212666
Stddev	.0004027	.0006342	.09145	.016470	.11378	.0060706
%RSD	.0583765	.3124623	.7403819	.2665997	.3117609	2.743565

#1	.6899249	.2022517	12.44590	6.164045	36.57679	.2210124
#2	.6902386	.2031446	12.26330	6.195984	36.36638	.2153270
#3	.6894393	.2034782	12.34550	6.173038	36.54664	.2274602

Elem	Sr4077
Units	ppm
Avg	1.364283
Stddev	.002753
%RSD	.2017841

#1	1.365962
#2	1.365780
#3	1.361105

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4846.763	83092.28	8155.468	4062.819	5532.497
Stddev	18.704	477.67	37.900	18.938	15.615
%RSD	.3859085	.5748643	.4647248	.4661324	.2822371

#1	4826.825	83003.68	8172.326	4050.096	5521.013
#2	4849.542	83608.05	8182.014	4084.584	5526.201
#3	4863.922	82665.12	8112.063	4053.779	5550.277

Sample Name: Q2606-01MSD Acquired: 7/17/2025 15:46:08 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8068001	1.844138	.8977606	2.018734	.8347533	2.248973
Stddev	.0021561	.013034	.0013362	.008097	.0039204	.004514
%RSD	.2672443	.7067702	.1488380	.4010936	.4696543	.2007112

#1	.8054680	1.830617	.8992514	2.009510	.8366227	2.249873
#2	.8092877	1.845175	.8973595	2.024668	.8302480	2.244077
#3	.8056447	1.856623	.8966708	2.022024	.8373890	2.252970

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3374058	.1781919	.1877485	106.5767	.3537915	.1955123
Stddev	.0007707	.0011248	.0001062	.3120	.0023179	.0004594
%RSD	.2284294	.6312052	.0565787	.2927148	.6551668	.2349584

#1	.3382606	.1774101	.1876837	106.8993	.3531826	.1956840
#2	.3371928	.1794810	.1876908	106.5540	.3563531	.1949918
#3	.3367639	.1776847	.1878711	106.2767	.3518388	.1958611

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2890668	2.946089	.2030329	32.56203	.4953206	.0749636
Stddev	.0003599	.031950	.0009830	.16518	.0010241	.0003203
%RSD	.1245061	1.084485	.4841719	.5072684	.2067460	.4272020

#1	.2886750	2.975451	.2029609	32.60348	.4948654	.0753134
#2	.2891427	2.912063	.2040500	32.38007	.4946031	.0746848
#3	.2893828	2.950754	.2020879	32.70253	.4964934	.0748925

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	333.7379	.2914938	.2764178	31.55016	.6075943	.4369223
Stddev	5.7132	.0010468	.0004495	.13583	.0017696	.0000502
%RSD	1.711896	.3591085	.1626149	.4305193	.2912439	.0114827

#1	339.2943	.2926902	.2766621	31.70681	.6091338	.4369249
#2	327.8797	.2907464	.2758990	31.47847	.6056610	.4368709
#3	334.0396	.2910448	.2766922	31.46518	.6079881	.4369712

Sample Name: Q2606-01MSD Acquired: 7/17/2025 15:46:08 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6788049	.2022817	12.00882	6.032963	F 34.76876	.2133374
Stddev	.0015653	.0025288	.06492	.013423	.07285	.0016330
%RSD	.2306009	1.250159	.5406125	.2224972	.2095188	.7654707
#1	.6775322	.2050445	12.06258	6.018241	34.70871	.2116840
#2	.6805528	.2017189	11.93670	6.036127	34.74778	.2133788
#3	.6783299	.2000816	12.02719	6.044522	34.84980	.2149493
Elem	Sr4077					
Units	ppm					
Avg	1.308446					
Stddev	.004798					
%RSD	.3667167					
#1	1.312321					
#2	1.309939					
#3	1.303079					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	4885.902	82898.12	8260.683	4066.132	5583.455	
Stddev	3.797	337.10	8.156	28.687	3.457	
%RSD	.0777050	.4066434	.0987352	.7055051	.0619122	
#1	4889.776	82611.14	8251.689	4043.473	5584.149	
#2	4882.188	83269.35	8262.760	4098.387	5586.513	
#3	4885.741	82813.86	8267.600	4056.536	5579.704	

Sample Name: CCV03 Acquired: 7/17/2025 15:50:13 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.096795	5.135008	4.873552	5.156212	5.203268	10.06865	10.52412
Stddev	.018779	.124146	.004072	.019290	.028223	.03430	.20172
%RSD	.3684499	2.417642	.0835449	.3741135	.5424060	.3406558	1.916695

#1	5.086550	5.226331	4.878236	5.160467	5.182798	10.09054	10.74203
#2	5.085367	5.185041	4.870859	5.135150	5.191543	10.02912	10.34393
#3	5.118469	4.993653	4.871561	5.173020	5.235464	10.08630	10.48639

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2418835	2.438429	26.39556	.9402416	2.479683	1.271193	5.028662
Stddev	.0044202	.003192	.15363	.0047375	.005639	.004278	.057459
%RSD	1.827407	.1309199	.5820479	.5038559	.2274197	.3365552	1.142622

#1	.2469173	2.439807	26.53588	.9436227	2.479109	1.267856	4.968710
#2	.2386357	2.434779	26.23140	.9422752	2.474352	1.269707	5.083251
#3	.2400976	2.440701	26.41940	.9348268	2.485587	1.276016	5.034024

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.590024	24.28646	2.493581	1.273519	22.92100	2.489368	2.574040
Stddev	.016230	.29161	.006934	.005147	.28644	.010554	.005370
%RSD	.6266392	1.200694	.2780807	.4041670	1.249692	.4239752	.2086375

#1	2.603404	24.54912	2.491661	1.273244	22.63939	2.501211	2.579739
#2	2.571970	23.97267	2.487810	1.278798	23.21204	2.485936	2.573308
#3	2.594698	24.33760	2.501273	1.268514	22.91157	2.480957	2.569073

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.88697	5.172115	5.195197	4.900634	4.965927	4.741709	4.927482
Stddev	.31637	.074347	.018554	.011163	.022494	.038379	.009723
%RSD	1.222125	1.437464	.3571419	.2277821	.4529676	.8093901	.1973265

#1	25.62225	5.257303	5.186120	4.913227	4.988824	4.697529	4.936284
#2	26.23735	5.120312	5.182928	4.891957	4.943858	4.760794	4.917045
#3	25.80130	5.138730	5.216542	4.896718	4.965100	4.766804	4.929119

Sample Name: CCV03 Acquired: 7/17/2025 15:50:13 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.928736	5.010876	5.365335
Stddev	.013942	.008502	.107051
%RSD	.2828660	.1696728	1.995234

#1	4.944411	5.019279	5.455727
#2	4.924077	5.002278	5.247120
#3	4.917721	5.011070	5.393159

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5117.593	85034.54	8166.182	4272.035	5948.298
Stddev	21.831	537.73	115.607	11.563	17.835
%RSD	.4265821	.6323666	1.415682	.2706713	.2998284

#1	5131.814	85048.94	8033.709	4281.821	5955.262
#2	5128.507	84489.76	8246.676	4259.275	5961.601
#3	5092.457	85564.93	8218.160	4275.008	5928.033

Sample Name: CCB03 Acquired: 7/17/2025 15:56:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001801	.0004195	-.001852	-.001539	-.000052	-.000000
Stddev	.000468	.0017739	.000170	.002997	.001023	.004240
%RSD	25.99260	422.8355	9.175722	194.6887	1982.533	1175633.
#1	-.001447	.0017011	-.001949	-.004800	.001065	.004080
#2	-.001624	-.001605	-.001952	-.000910	-.000942	-.004383
#3	-.002331	.001163	-.001656	.001093	-.000278	.000301
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003559	-.000083	.0000357	.0383470	-.000534	-.000006
Stddev	.000507	.000049	.0000382	.0041345	.000402	.000129
%RSD	14.24466	59.36112	106.9892	10.78181	75.33377	2114.736
#1	-.003017	-.000026	-.000007	.0430049	-.000070	-.000149
#2	-.003637	-.000108	.000067	.0369249	-.000744	.000100
#3	-.004022	-.000115	.000047	.0351113	-.000788	.000031
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000412	.0002232	.0002552	-.022654	.0002953	.0010922
Stddev	.000093	.0043963	.0001782	.034211	.0002009	.0001169
%RSD	22.52344	1969.784	69.83163	151.0204	68.04203	10.70119
#1	-.000488	.0051546	.0000616	.013200	.0005263	.0009808
#2	-.000308	-.001199	.0002915	-.026218	.0001991	.0012139
#3	-.000440	-.003286	.0004125	-.054943	.0001606	.0010819
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.083058	-.004014	-.000130	.1409582	.0033342	.0004794
Stddev	.012463	.001741	.000080	.0297643	.0003069	.0001281
%RSD	15.00463	43.38415	61.30370	21.11568	9.204321	26.71387
#1	-.068914	-.005183	-.000223	.1291625	.0030132	.0005723
#2	-.087837	-.004847	-.000082	.1748124	.0033647	.0003333
#3	-.092425	-.002013	-.000087	.1188996	.0036247	.0005324

Sample Name: CCB03 Acquired: 7/17/2025 15:56:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016067	.0141509	-.001589	.0014370	F -.031243	-.003033
Stddev	.0004440	.0028784	.006538	.0021340	.000862	.001802
%RSD	27.63667	20.34070	411.5359	148.5023	2.760089	59.41357
#1	.0015276	.0174744	-.004570	.0008619	-.030324	-.003322
#2	.0012076	.0124568	-.006104	.0037996	-.031369	-.001104
#3	.0020850	.0125215	.005908	-.000350	-.032035	-.004674
Elem	Sr4077					
Units	ppm					
Avg	-.000052					
Stddev	.000057					
%RSD	108.9490					
#1	-.000116					
#2	-.000035					
#3	-.000006					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5287.072	86926.45	8166.481	4350.006	6590.541	
Stddev	17.474	207.24	37.554	11.344	18.607	
%RSD	.3304982	.2384091	.4598596	.2607824	.2823248	
#1	5272.317	87165.74	8179.136	4344.646	6573.503	
#2	5306.368	86808.81	8196.073	4342.335	6610.396	
#3	5282.531	86804.81	8124.234	4363.037	6587.724	

Sample Name: Q2606-01A Acquired: 7/17/2025 16:00:22 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8487185	1.886354	.9358504	2.108429	.8770983	2.359181
Stddev	.0020446	.016946	.0014672	.004594	.0021355	.013529
%RSD	.2409025	.8983246	.1567775	.2179074	.2434778	.5734445
#1	.8510429	1.868306	.9365127	2.103274	.8747094	2.359671
#2	.8471983	1.901925	.9341688	2.109921	.8777629	2.345414
#3	.8479143	1.888831	.9368697	2.112092	.8788225	2.372458
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3526122	.1866353	.1959232	109.0690	.3735216	.2050620
Stddev	.0004172	.0006649	.0005290	.0894	.0012364	.0003742
%RSD	.1183257	.3562715	.2700204	.0819768	.3310196	.1824889
#1	.3530940	.1859331	.1958049	109.0799	.3734789	.2054302
#2	.3523750	.1872553	.1954633	108.9747	.3747788	.2046820
#3	.3523676	.1867174	.1965014	109.1525	.3723070	.2050736
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3043856	3.126863	.2147969	33.26806	.5195430	.0758856
Stddev	.0001831	.008785	.0006299	.03954	.0008058	.0004560
%RSD	.0601560	.2809367	.2932317	.1188651	.1551047	.6008378
#1	.3044206	3.128366	.2143013	33.23119	.5196083	.0756110
#2	.3041876	3.134799	.2145836	33.30982	.5187065	.0764119
#3	.3045487	3.117424	.2155057	33.26317	.5203141	.0756339
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	341.1549	.3052959	.2896268	32.37700	.6302333	.4578701
Stddev	3.6505	.0009766	.0011086	.05119	.0015449	.0001710
%RSD	1.070038	.3199044	.3827588	.1581198	.2451354	.0373377
#1	343.9585	.3043060	.2891360	32.39097	.6315658	.4577304
#2	342.4791	.3062588	.2908960	32.41976	.6305942	.4580607
#3	337.0271	.3053228	.2888483	32.32027	.6285398	.4578192

Sample Name: Q2606-01A Acquired: 7/17/2025 16:00:22 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7063546	.2091041	12.28718	6.269808	F 35.33740	.2262490
Stddev	.0017331	.0012644	.02332	.018458	.04906	.0011696
%RSD	.2453661	.6046950	.1898290	.2943871	.1388409	.5169529
#1	.7067325	.2089076	12.29586	6.290928	35.38779	.2257835
#2	.7044637	.2079494	12.30493	6.261727	35.28978	.2253838
#3	.7078676	.2104553	12.26077	6.256770	35.33464	.2275797

Elem	Sr4077
Units	ppm
Avg	1.344035
Stddev	.001623
%RSD	.1207806
#1	1.345280
#2	1.342199
#3	1.344625

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4842.463	82978.57	8255.909	4062.932	5552.854
Stddev	4.472	378.20	19.938	20.167	8.965
%RSD	.0923591	.4557771	.2415027	.4963768	.1614486
#1	4842.182	82665.01	8236.189	4042.404	5551.999
#2	4847.070	82872.10	8255.479	4063.675	5562.216
#3	4838.138	83398.59	8276.058	4082.718	5544.347

Sample Name: PB168881BL Acquired: 7/17/2025 16:04:28 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000940	-.000089	-.001919	-.002049	-.001072	-.007137
Stddev	.001692	.000493	.000513	.002082	.001879	.005324
%RSD	179.9288	552.2236	26.72640	101.5857	175.2122	74.59344
#1	-.000013	.000464	-.002475	-.001025	-.002090	-.012553
#2	.000085	-.000482	-.001815	-.000679	-.002222	-.001910
#3	-.002893	-.000250	-.001466	-.004445	.001096	-.006948
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003470	-.000062	.0000125	.0619720	-.000922	.0000106
Stddev	.001076	.000019	.0000139	.0056567	.000127	.0000123
%RSD	31.02150	31.23228	110.5768	9.127772	13.82379	116.5808
#1	-.003664	-.000041	.0000284	.0679757	-.000934	-.000002
#2	-.002309	-.000065	.0000068	.0567421	-.001043	.000023
#3	-.004436	-.000079	.0000025	.0611982	-.000789	.000011
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000415	-.001472	.0003323	-.031709	.0004534	.0010557
Stddev	.000106	.003938	.0002437	.007455	.0000992	.0000829
%RSD	25.42174	267.5771	73.34573	23.51090	21.87837	7.849423
#1	-.000344	-.005722	.0000523	-.033002	.0003475	.0011047
#2	-.000537	.002051	.0004967	-.038432	.0005442	.0009600
#3	-.000366	-.000743	.0004478	-.023692	.0004684	.0011024
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.040712	-.003246	-.000208	.1375481	.0014503	.0001876
Stddev	.001773	.001852	.000159	.0094714	.0004214	.0002836
%RSD	4.355461	57.04906	76.34329	6.885910	29.05723	151.2053
#1	-.041715	-.003906	-.000063	.1399275	.0010180	.0005149
#2	-.041756	-.001155	-.000184	.1456029	.0014729	.0000152
#3	-.038664	-.004677	-.000378	.1271138	.0018599	.0000326

Sample Name: PB168881BL Acquired: 7/17/2025 16:04:28 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024731	.0154502	-.004216	.0005261	F -.025846	-.001673
Stddev	.0001971	.0013816	.008478	.0008603	.003628	.001923
%RSD	7.968422	8.942285	201.0890	163.5167	14.03830	114.9424

#1	.0026985	.0140505	.003264	.0003837	-.023992	-.003891
#2	.0023334	.0168129	-.002487	-.000254	-.030027	-.000660
#3	.0023874	.0154871	-.013425	.001449	-.023519	-.000469

Elem	Sr4077
Units	ppm
Avg	-.000025
Stddev	.000084
%RSD	339.5901

#1	-.000005
#2	.000048
#3	-.000117

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5196.984	89624.76	7978.818	4413.501	6399.518
Stddev	7.330	234.00	28.796	5.997	11.568
%RSD	.1410401	.2610830	.3609088	.1358860	.1807667

#1	5196.724	89409.03	7993.711	4414.940	6392.892
#2	5189.787	89873.51	7997.117	4418.649	6412.875
#3	5204.440	89591.73	7945.625	4406.916	6392.785

Sample Name: PB168881BS Acquired: 7/17/2025 16:08:48 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8118528	2.027064	.9628973	2.076209	.8540056	2.070158
Stddev	.0023020	.074732	.0023899	.008966	.0034354	.005622
%RSD	.2835454	3.686704	.2481978	.4318369	.4022633	.2715971
#1	.8125640	1.953097	.9609060	2.065985	.8521127	2.068885
#2	.8092791	2.102538	.9622384	2.079906	.8519330	2.065282
#3	.8137152	2.025558	.9655475	2.082735	.8579710	2.076309
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2127631	.2048841	.1920959	1.177944	.3747394	.2005345
Stddev	.0011241	.0014333	.0000355	.006697	.0024850	.0003254
%RSD	.5283393	.6995839	.0185034	.5685659	.6631344	.1622550
#1	.2140382	.2050064	.1921299	1.180320	.3775501	.2001964
#2	.2119152	.2033935	.1920990	1.183129	.3728336	.2005614
#3	.2123358	.2062523	.1920590	1.170382	.3738346	.2008455
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3209223	2.860055	.2150943	1.963689	.5042208	.0775025
Stddev	.0007349	.014499	.0007572	.033773	.0003646	.0003359
%RSD	.2289958	.5069619	.3520129	1.719876	.0723009	.4334364
#1	.3201851	2.876742	.2154168	1.963853	.5040137	.0778723
#2	.3209269	2.852891	.2142293	1.929835	.5040069	.0774189
#3	.3216549	2.850532	.2156368	1.997380	.5046417	.0772163
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.430961	.3005317	.2149979	10.08119	.3266729	.4271119
Stddev	.007428	.0036998	.0005466	.04975	.0006071	.0012196
%RSD	.3055462	1.231087	.2542525	.4935323	.1858313	.2855512
#1	2.439525	.3003439	.2149614	10.07554	.3262280	.4258034
#2	2.426276	.2969294	.2144704	10.13353	.3264262	.4273151
#3	2.427082	.3043219	.2155618	10.03450	.3273645	.4282171

Sample Name: PB168881BS Acquired: 7/17/2025 16:08:48 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6878227	.2097598	.7918588	5.732682	F -.028719	.2113220
Stddev	.0017458	.0026235	.0102059	.014665	.002653	.0017910
%RSD	.2538100	1.250697	1.288855	.2558140	9.238341	.8475369
#1	.6860514	.2100439	.7936242	5.718480	-.026004	.2094929
#2	.6878749	.2070058	.8010669	5.731796	-.028847	.2130724
#3	.6895418	.2122296	.7808854	5.747770	-.031306	.2114009
Elem	Sr4077					
Units	ppm					
Avg	.2168217					
Stddev	.0003332					
%RSD	.1536641					
#1	.2170153					
#2	.2164370					
#3	.2170128					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5223.364	88713.53	7995.579	4398.149	6367.972	
Stddev	8.784	174.62	58.320	14.335	12.701	
%RSD	.1681604	.1968396	.7293983	.3259294	.1994475	
#1	5221.903	88831.04	8031.423	4413.885	6359.428	
#2	5232.786	88796.68	8027.028	4385.834	6382.566	
#3	5215.402	88512.87	7928.285	4394.728	6361.921	

Sample Name: Q2614-06DUP Acquired: 7/17/2025 16:12:48 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001579	-.002508	.0023620	.0021541	-.000328	.1158906	.1589114
Stddev	.000946	.001433	.0005269	.0022227	.001303	.0052328	.0008170
%RSD	59.87003	57.10678	22.30668	103.1887	397.3498	4.515283	.5141383

#1	-.002638	-.001715	.0019769	.0025195	-.001811	.1111936	.1595115
#2	-.001281	-.001648	.0021466	-.000229	.000634	.1149472	.1592417
#3	-.000819	-.004162	.0029624	.004171	.000194	.1215309	.1579809

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000315	.0002481	49.91588	.0000414	.0005436	.0113308	.1224148
Stddev	.000034	.0000318	.16050	.0002661	.0000596	.0000881	.0030541
%RSD	10.79645	12.82385	.3215340	642.4287	10.95832	.7775776	2.494896

#1	-.000310	.0002212	49.84499	-.000266	.0005158	.0112642	.1250276
#2	-.000350	.0002399	50.09961	.000195	.0005030	.0112975	.1190572
#3	-.000283	.0002832	49.80303	.000196	.0006120	.0114307	.1231596

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5577936	2.745744	.0010326	.0007048	287.2117	-.002031	.1913229
Stddev	.0007091	.018490	.0001407	.0005974	1.8244	.002604	.0010295
%RSD	.1271171	.6734065	13.62728	84.76064	.6351936	128.1899	.5380968

#1	.5585733	2.766809	.0010240	.0008659	285.3566	-.004777	.1903931
#2	.5576203	2.732199	.0011775	.0012051	289.0036	-.001719	.1911464
#3	.5571873	2.738223	.0008964	.0000434	287.2751	.000403	.1924293

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.321743	.0368788	.0008906	-.004290	.0143057	.6444364	.3823433
Stddev	.040786	.0002656	.0002474	.000725	.0001974	.0077516	.0006972
%RSD	3.085777	.7201792	27.77514	16.90267	1.380187	1.202853	.1823618

#1	1.275020	.0367640	.0009867	-.005106	.0141245	.6378006	.3824014
#2	1.339983	.0371825	.0006096	-.004045	.0142763	.6529564	.3830097
#3	1.350225	.0366899	.0010755	-.003719	.0145161	.6425520	.3816189

Sample Name: Q2614-06DUP Acquired: 7/17/2025 16:12:48 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5133153	.0047494	.2573994
Stddev	.0043558	.0014547	.0000757
%RSD	.8485694	30.62888	.0294193

#1	.5082862	.0050855	.2573845
#2	.5158955	.0031560	.2574815
#3	.5157643	.0060066	.2573323

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5011.230	85517.81	8292.238	4178.752	5785.651
Stddev	9.314	603.99	15.542	16.044	8.285
%RSD	.1858660	.7062772	.1874326	.3839337	.1432059

#1	5004.375	85729.84	8281.319	4185.524	5779.640
#2	5021.834	85987.21	8285.361	4160.433	5795.102
#3	5007.480	84836.40	8310.032	4190.299	5782.210

Sample Name: Q2614-06LX5 Acquired: 7/17/2025 16:17:13 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001557	-.001730	-.000777	-.005059	-.002872	.0251941	.0301063
Stddev	.002365	.000833	.001002	.001588	.001823	.0052531	.0003419
%RSD	151.8911	48.14132	129.0578	31.38672	63.49021	20.85047	1.135635
#1	-.004277	-.000944	.000090	-.003299	-.004913	.0193052	.0303926
#2	.000013	-.001643	-.000545	-.006383	-.001404	.0268795	.0301987
#3	-.000407	-.002603	-.001874	-.005495	-.002299	.0293976	.0297277
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000155	.0000990	10.65326	-.000482	.0001448	.0019394	.0228141
Stddev	.000071	.0000532	.03923	.000160	.0000932	.0004565	.0026068
%RSD	45.82055	53.78903	.3682724	33.15028	64.38895	23.53625	11.42635
#1	-.000199	.0000478	10.66870	-.000605	.0001939	.0024510	.0199818
#2	-.000193	.0000950	10.68243	-.000541	.0002031	.0015737	.0251128
#3	-.000073	.0001541	10.60866	-.000301	.0000373	.0017936	.0233478
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1168029	.5550529	.0004755	.0007506	51.04677	-.001499	.0383529
Stddev	.0000312	.0177408	.0002785	.0001487	.57747	.000703	.0005080
%RSD	.0267189	3.196233	58.55884	19.80631	1.131256	46.88945	1.324591
#1	.1167683	.5400785	.0007965	.0009151	51.59706	-.002032	.0385670
#2	.1168289	.5504339	.0002990	.0007109	51.09777	-.001763	.0387188
#3	.1168115	.5746463	.0003310	.0006259	50.44550	-.000702	.0377729
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3843736	.0079310	.0004447	.0009060	.0169655	.1291781	.0762724
Stddev	.0396211	.0004246	.0001833	.0005532	.0012450	.0094104	.0006835
%RSD	10.30796	5.353870	41.21515	61.05790	7.338295	7.284803	.8961795
#1	.4279878	.0080510	.0005556	.0004160	.0171851	.1312365	.0767604
#2	.3506008	.0082826	.0005454	.0015058	.0180861	.1373889	.0754911
#3	.3745323	.0074592	.0002331	.0007961	.0156253	.1189089	.0765655

Sample Name: Q2614-06LX5 Acquired: 7/17/2025 16:17:13 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0809428	.0002470	.0543370
Stddev	.0013877	.0039218	.0001387
%RSD	1.714429	1587.968	.2552193
#1	.0801538	-.001235	.0544922
#2	.0825452	-.002718	.0542933
#3	.0801295	.004694	.0542254

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5074.393	86946.35	8238.887	4275.237	6015.572
Stddev	6.177	213.91	50.800	10.598	2.969
%RSD	.1217351	.2460218	.6165913	.2479035	.0493497
#1	5070.439	86699.36	8289.724	4277.433	6012.480
#2	5081.511	87068.20	8238.813	4284.565	6015.834
#3	5071.228	87071.49	8188.123	4263.712	6018.400

Sample Name: Q2614-06MS Acquired: 7/17/2025 16:21:31 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8188416	1.828163	.9242572	2.072733	.8425872	2.115713	.3992978
Stddev	.0019712	.036389	.0030239	.005927	.0025687	.018829	.0005630
%RSD	.2407316	1.990448	.3271752	.2859416	.3048647	.8899380	.1409944
#1	.8167861	1.861470	.9228610	2.066046	.8418444	2.107144	.3989793
#2	.8190227	1.833694	.9221836	2.077337	.8404717	2.137302	.3999478
#3	.8207160	1.789326	.9277270	2.074817	.8454455	2.102693	.3989662
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1819005	.1928457	61.17222	.3604271	.1998396	.3119106	3.139811
Stddev	.0004148	.0000482	.09284	.0031360	.0002278	.0003804	.044033
%RSD	.2280302	.0249941	.1517655	.8700809	.1139733	.1219614	1.402403
#1	.1823287	.1928377	61.14593	.3570135	.2000982	.3116138	3.091349
#2	.1818722	.1928020	61.27537	.3610872	.1997519	.3117786	3.150720
#3	.1815006	.1928974	61.09537	.3631804	.1996687	.3123394	3.177364
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8777669	5.171009	.4990681	.0755347	356.9981	.2946707	.4478756
Stddev	.0012006	.010736	.0006956	.0001877	7.5738	.0045031	.0011104
%RSD	.1367749	.2076142	.1393708	.2484982	2.121515	1.528195	.2479277
#1	.8766316	5.179705	.4996291	.0755482	348.2825	.2965422	.4488255
#2	.8776457	5.159010	.4982898	.0753406	361.9809	.2979364	.4481465
#3	.8790235	5.174313	.4992855	.0757153	360.7309	.2895336	.4466548
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.21848	.3140816	.4338925	.6851978	.2075509	1.649861	6.498607
Stddev	.19858	.0031209	.0010815	.0017656	.0022695	.014276	.008073
%RSD	1.625274	.9936756	.2492456	.2576711	1.093485	.8652728	.1242279
#1	11.99858	.3176812	.4327192	.6866348	.2054174	1.635265	6.502274
#2	12.27214	.3124325	.4341092	.6832269	.2072999	1.650524	6.489351
#3	12.38472	.3121312	.4348493	.6857318	.2099356	1.663793	6.504196

Sample Name: Q2614-06MS Acquired: 7/17/2025 16:21:31 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.6447661	.2058917	.5174034
Stddev	.0027229	.0021696	.0016945
%RSD	.4223016	1.053739	.3275085
#1	.6453308	.2066776	.5154468
#2	.6471624	.2034387	.5183655
#3	.6418052	.2075588	.5183979

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4937.959	84542.95	8358.568	4156.063	5652.191
Stddev	4.388	965.08	12.892	6.271	1.971
%RSD	.0888634	1.141529	.1542347	.1508874	.0348748
#1	4942.990	85423.73	8345.635	4152.961	5654.156
#2	4934.924	84693.79	8358.651	4151.947	5652.204
#3	4935.963	83511.33	8371.418	4163.280	5650.213

Sample Name: Q2614-06MSD Acquired: 7/17/2025 16:25:39 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8089937	1.818693	.9031425	2.043356	.8355520	2.082437	.3852495
Stddev	.0016608	.024173	.0038798	.005723	.0027568	.005243	.0003316
%RSD	.2052888	1.329121	.4295891	.2800758	.3299358	.2517636	.0860795
#1	.8075361	1.834714	.9056428	2.038302	.8323705	2.085703	.3855232
#2	.8086432	1.830477	.8986730	2.042196	.8372339	2.085218	.3848807
#3	.8108017	1.790888	.9051119	2.049571	.8370517	2.076389	.3853446
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1804551	.1889213	57.30179	.3558339	.1963312	.3053435	3.078384
Stddev	.0009549	.0004796	.11751	.0021414	.0002522	.0003634	.004069
%RSD	.5291423	.2538708	.2050744	.6017869	.1284698	.1190064	.1321800
#1	.1815551	.1893365	57.34491	.3579868	.1965660	.3050799	3.073706
#2	.1799700	.1883963	57.16881	.3537043	.1960646	.3057580	3.081106
#3	.1798401	.1890311	57.39165	.3558107	.1963632	.3051926	3.080339
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8343695	4.956111	.4894891	.0741999	329.8022	.2944122	.4313906
Stddev	.0053937	.045990	.0008881	.0007663	1.4882	.0041762	.0012562
%RSD	.6464398	.9279363	.1814289	1.032703	.4512314	1.418473	.2912059
#1	.8350336	4.983882	.4898713	.0749932	331.5175	.2978439	.4324489
#2	.8286745	4.903026	.4884739	.0741427	328.8559	.2956301	.4300023
#3	.8394004	4.981425	.4901221	.0734639	329.0331	.2897624	.4317207
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.90655	.3080070	.4342350	.6774623	.2062489	1.578437	6.267699
Stddev	.07408	.0013031	.0009413	.0001447	.0003570	.007521	.009083
%RSD	.6221665	.4230699	.2167640	.0213629	.1730962	.4765129	.1449234
#1	11.98067	.3085467	.4338748	.6773457	.2066565	1.574436	6.273691
#2	11.83251	.3065208	.4335271	.6774169	.2060989	1.573762	6.257248
#3	11.90647	.3089535	.4353032	.6776242	.2059914	1.587114	6.272159

Sample Name: Q2614-06MSD Acquired: 7/17/2025 16:25:39 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5827757	.2011013	.4946444
Stddev	.0063332	.0010204	.0004398
%RSD	1.086723	.5074079	.0889178
#1	.5833903	.2001341	.4951387
#2	.5887792	.2010023	.4942963
#3	.5761577	.2021676	.4944982

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5009.276	85327.51	8342.709	4159.104	5766.103
Stddev	3.563	500.79	40.418	11.493	7.571
%RSD	.0711267	.5869083	.4844649	.2763226	.1313008
#1	5010.505	84761.82	8296.085	4150.267	5763.205
#2	5012.061	85714.25	8364.232	4172.096	5774.695
#3	5005.261	85506.45	8367.810	4154.948	5760.410

Sample Name: Q2614-06A Acquired: 7/17/2025 16:29:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8225881	1.866347	.9234162	2.079453	.8518723	2.106697	.3648297
Stddev	.0035394	.037940	.0014049	.004521	.0022750	.011837	.0014218
%RSD	.4302796	2.032847	.1521446	.2173932	.2670557	.5618718	.3897236
#1	.8260545	1.879091	.9220365	2.080956	.8542266	2.118645	.3664695
#2	.8227297	1.896274	.9233671	2.074372	.8496860	2.106471	.3639398
#3	.8189799	1.823676	.9248450	2.083031	.8517044	2.094975	.3640798
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1846061	.1922632	49.57916	.3641761	.1999849	.3104450	3.102867
Stddev	.0004618	.0004574	.05433	.0021500	.0002828	.0002589	.013395
%RSD	.2501646	.2379249	.1095830	.5903782	.1413935	.0834012	.4317110
#1	.1848606	.1918303	49.60229	.3637247	.1998451	.3104752	3.099102
#2	.1848847	.1927418	49.51709	.3665159	.1997993	.3101722	3.117742
#3	.1840730	.1922174	49.61810	.3622876	.2003103	.3106874	3.091756
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7533541	4.532170	.4988103	.0752824	281.6283	.3006509	.4046264
Stddev	.0005858	.002820	.0003832	.0000853	.3705	.0020090	.0006172
%RSD	.0777564	.0622307	.0768308	.1133533	.1315482	.6682074	.1525293
#1	.7540252	4.534629	.4984635	.0753614	282.0516	.2998992	.4039138
#2	.7530920	4.529091	.4987457	.0752938	281.3633	.3029273	.4049830
#3	.7529451	4.532789	.4992217	.0751919	281.4700	.2991262	.4049825
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.83379	.3097375	.4455662	.6946254	.2086843	1.492429	6.268068
Stddev	.02886	.0002063	.0008473	.0020194	.0019498	.024652	.010744
%RSD	.2438789	.0666151	.1901587	.2907235	.9343464	1.651805	.1714047
#1	11.80175	.3098277	.4464956	.6941655	.2087031	1.475081	6.265930
#2	11.85774	.3095014	.4448368	.6928755	.2067252	1.520648	6.279720
#3	11.84189	.3098834	.4453663	.6968351	.2106247	1.481557	6.258554

Sample Name: Q2614-06A Acquired: 7/17/2025 16:29:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5020811	.2069087	.4620495
Stddev	.0028703	.0011571	.0007267
%RSD	.5716736	.5592272	.1572743

#1	.5053617	.2062586	.4628758
#2	.5000325	.2082446	.4615101
#3	.5008491	.2062229	.4617626

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5048.082	86113.14	8344.002	4217.518	5827.885
Stddev	23.811	76.14	22.118	9.767	23.854
%RSD	.4716749	.0884219	.2650817	.2315783	.4093046

#1	5026.033	86182.73	8325.217	4216.261	5807.617
#2	5044.882	86031.81	8368.380	4227.853	5821.868
#3	5073.330	86124.88	8338.410	4208.441	5854.172

Sample Name: PB168888BL Acquired: 7/17/2025 16:33:55 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000491	.0008566	-.001778	-.001379	-.001094	.0047426
Stddev	.001338	.0009216	.000878	.002470	.001419	.0098391
%RSD	272.2948	107.5876	49.34658	179.0997	129.6890	207.4614
#1	-.002011	.0018793	-.002653	-.001135	.000110	.0016673
#2	.000031	.0000903	-.001785	-.003961	-.000734	-.003191
#3	.000506	.0006003	-.000897	.000960	-.002658	.015752
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004331	-.000069	.0000375	.0630553	-.000137	.0000407
Stddev	.001003	.000037	.0000489	.0068582	.000231	.0001584
%RSD	23.15221	53.59732	130.3622	10.87641	168.8067	389.1488
#1	-.003183	-.000060	.0000133	.0554125	-.000298	-.000141
#2	-.005036	-.000110	.0000055	.0686725	-.000242	.000111
#3	-.004775	-.000038	.0000939	.0650810	.000128	.000152
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000391	-.001421	-.000046	-.003702	.0002993	.0009261
Stddev	.000291	.004052	.000628	.019365	.0001157	.0003098
%RSD	74.44936	285.0492	1354.186	523.1130	38.67614	33.44469
#1	-.000064	-.001490	.000236	.018031	.0001698	.0012196
#2	-.000487	-.005438	.000391	-.019127	.0003353	.0006023
#3	-.000623	.002664	-.000766	-.010009	.0003927	.0009565
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1925287	-.003488	.0000984	.1752411	-.001339	.0003646
Stddev	.0341988	.003432	.0000551	.0080981	.000151	.0002625
%RSD	17.76294	98.37652	56.02070	4.621132	11.29465	71.98373
#1	.2283456	.000311	.0001129	.1726573	-.001485	.0000827
#2	.1890225	-.004414	.0001449	.1843159	-.001348	.0006019
#3	.1602182	-.006362	.0000375	.1687502	-.001183	.0004093

Sample Name: PB168888BL Acquired: 7/17/2025 16:33:55 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024690	.0152037	.0023867	-.000273	F -.031445	-.001842
Stddev	.0007615	.0006288	.0029718	.001460	.001988	.002083
%RSD	30.84358	4.135860	124.5131	534.0183	6.321735	113.0401

#1	.0017653	.0155043	.0020849	.000410	-.033699	-.003399
#2	.0032775	.0144810	.0054979	.000720	-.029945	-.002652
#3	.0023641	.0156258	-.000423	-.001950	-.030690	.000523

Elem	Sr4077
Units	ppm
Avg	.0000076
Stddev	.0000338
%RSD	446.3591

#1	.0000383
#2	-.000029
#3	.000013

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5307.800	88352.42	8169.991	4378.940	6618.700
Stddev	11.106	209.45	109.474	15.165	15.149
%RSD	.2092477	.2370614	1.339957	.3463233	.2288829

#1	5306.465	88299.84	8075.101	4366.537	6620.084
#2	5319.513	88583.15	8145.106	4395.847	6633.109
#3	5297.420	88174.27	8289.766	4374.438	6602.906

Sample Name: PB168888BS Acquired: 7/17/2025 16:38:15 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8130767	1.938651	.9625782	2.082472	.8393491	2.043012
Stddev	.0019672	.022476	.0023835	.002501	.0023187	.010175
%RSD	.2419427	1.159386	.2476143	.1200884	.2762478	.4980370

#1	.8109406	1.961098	.9652454	2.083541	.8367802	2.047148
#2	.8148139	1.938708	.9606568	2.084261	.8399800	2.050468
#3	.8134755	1.916145	.9618323	2.079615	.8412870	2.031420

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2107854	.1933347	.1936425	1.154428	.3692368	.2008314
Stddev	.0018196	.0019475	.0004296	.013542	.0011520	.0004268
%RSD	.8632664	1.007323	.2218600	1.173088	.3119898	.2125092

#1	.2100382	.1943275	.1937910	1.142800	.3692360	.2012510
#2	.2128597	.1945858	.1931583	1.169297	.3680852	.2008454
#3	.2094582	.1910909	.1939781	1.151187	.3703891	.2003978

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3211233	2.980406	.2134042	1.960608	.5070249	.0767026
Stddev	.0006391	.018151	.0011094	.018226	.0007804	.0001934
%RSD	.1990341	.6090161	.5198616	.9295875	.1539171	.2521653

#1	.3213111	2.969972	.2141807	1.942278	.5072177	.0767073
#2	.3204113	2.969880	.2138984	1.978727	.5061662	.0765069
#3	.3216475	3.001365	.2121336	1.960819	.5076908	.0768937

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.549276	.2989573	.2138508	10.29193	.3100773	.4179048
Stddev	.020167	.0020033	.0002506	.09148	.0033900	.0007969
%RSD	.7910887	.6701107	.1171693	.8888427	1.093275	.1906820

#1	2.567655	.3008797	.2136633	10.18704	.3121441	.4178886
#2	2.527703	.2991105	.2141354	10.33356	.3119229	.4171161
#3	2.552471	.2968818	.2137539	10.35520	.3061650	.4187096

Sample Name: PB168888BS Acquired: 7/17/2025 16:38:15 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6779591	.2078707	.8076252	5.777137	F -.033011	.2034180
Stddev	.0028995	.0017754	.0084642	.015055	.001877	.0015168
%RSD	.4276820	.8540786	1.048030	.2605900	5.687256	.7456729
#1	.6802944	.2064063	.8013726	5.787133	-.035165	.2020902
#2	.6747137	.2098453	.8042462	5.759822	-.031723	.2050711
#3	.6788691	.2073605	.8172569	5.784456	-.032145	.2030928
Elem	Sr4077					
Units	ppm					
Avg	.2127119					
Stddev	.0009358					
%RSD	.4399525					
#1	.2120801					
#2	.2137870					
#3	.2122686					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5193.567	89868.40	8467.204	4415.797	6294.595	
Stddev	9.196	192.83	67.709	9.221	10.225	
%RSD	.1770708	.2145734	.7996582	.2088163	.1624343	
#1	5199.624	89809.12	8427.153	4413.238	6297.034	
#2	5198.092	90083.92	8429.079	4426.027	6303.379	
#3	5182.985	89712.17	8545.379	4408.126	6283.371	

Sample Name: CCV04 Acquired: 7/17/2025 16:42:16 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.098741	5.010192	4.854151	5.170354	5.222136	9.946854	10.43477
Stddev	.008284	.015173	.007324	.018762	.016479	.009928	.09456
%RSD	.1624753	.3028523	.1508913	.3628710	.3155605	.0998143	.9061745

#1	5.090191	5.027605	4.851095	5.156563	5.210525	9.957464	10.50052
#2	5.099300	4.999807	4.848848	5.162780	5.214886	9.937788	10.47738
#3	5.106732	5.003164	4.862508	5.191719	5.240997	9.945309	10.32640

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2307374	2.430751	25.91593	.9228037	2.470103	1.272099	5.037358
Stddev	.0011366	.003997	.04051	.0057544	.005478	.003396	.017929
%RSD	.4925783	.1644327	.1563237	.6235743	.2217636	.2669684	.3559108

#1	.2319834	2.429383	25.96271	.9289907	2.467445	1.270367	5.035271
#2	.2297575	2.427618	25.89278	.9218089	2.466462	1.269918	5.020564
#3	.2304712	2.435252	25.89231	.9176117	2.476403	1.276012	5.056238

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.553274	23.86656	2.488046	1.254848	23.50683	2.470740	2.552825
Stddev	.007047	.10109	.004972	.002565	.10220	.009586	.002925
%RSD	.2759816	.4235831	.1998554	.2043978	.4347884	.3879877	.1145732

#1	2.557826	23.95161	2.487361	1.255198	23.60149	2.481010	2.551363
#2	2.545158	23.75479	2.483451	1.252125	23.52054	2.462028	2.556193
#3	2.556840	23.89327	2.493326	1.257219	23.39847	2.469183	2.550920

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.92869	4.965403	5.186133	4.876623	4.944607	4.744151	4.878310
Stddev	.02573	.023885	.011247	.008759	.012771	.018271	.010613
%RSD	.0992229	.4810195	.2168628	.1796049	.2582887	.3851226	.2175483

#1	25.90535	4.968385	5.177602	4.883556	4.954308	4.759227	4.886294
#2	25.95628	4.940168	5.181918	4.866780	4.930137	4.723832	4.866267
#3	25.92445	4.987657	5.198878	4.879535	4.949375	4.749394	4.882368

Sample Name: CCV04 Acquired: 7/17/2025 16:42:16 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.917705	4.999379	5.249576
Stddev	.005905	.003108	.002872
%RSD	.1200704	.0621664	.0547121

#1	4.912419	5.000949	5.247020
#2	4.924078	4.995800	5.252684
#3	4.916617	5.001390	5.249023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5091.437	86336.27	8444.506	4258.028	5922.150
Stddev	15.360	299.03	20.723	17.375	15.441
%RSD	.3016864	.3463583	.2454058	.4080529	.2607246

#1	5100.476	86118.13	8423.698	4269.702	5927.451
#2	5100.134	86213.52	8444.674	4238.060	5934.242
#3	5073.702	86677.14	8465.144	4266.322	5904.757

Sample Name: CCB04 Acquired: 7/17/2025 16:46:27 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000887	-.001091	-.001221	-.002324	-.001325	.0022222
Stddev	.001479	.001137	.000869	.002472	.000590	.0046994
%RSD	166.7608	104.1624	71.13693	106.3690	44.55582	211.4725
#1	.000771	-.002359	-.002213	-.005010	-.001895	-.003092
#2	-.002069	-.000164	-.000595	-.001815	-.000717	.005828
#3	-.001363	-.000750	-.000855	-.000146	-.001362	.003931
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005523	-.000097	.0000603	.0444561	-.000314	.0000548
Stddev	.000954	.000069	.0000352	.0044928	.000110	.0001310
%RSD	17.27675	70.56519	58.34196	10.10607	35.11450	239.3523
#1	-.006601	-.000172	.0000235	.0480029	-.000431	-.000096
#2	-.005183	-.000037	.0000935	.0459614	-.000211	.000137
#3	-.004785	-.000083	.0000639	.0394039	-.000300	.000123
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000240	.0039342	.0001790	-.027333	.0004158	.0011116
Stddev	.000193	.0031079	.0003684	.021362	.0002738	.0001696
%RSD	80.27768	78.99833	205.8230	78.15526	65.83806	15.25483
#1	-.000032	.0061219	.0005031	-.028143	.0004987	.0009751
#2	-.000277	.0003767	.0002556	-.048279	.0006385	.0013014
#3	-.000412	.0053040	-.000222	-.005577	.0001102	.0010582
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.326096	-.003463	.0000539	.0970016	.0035046	.0009420
Stddev	.002011	.001278	.0000839	.0254296	.0003146	.0003045
%RSD	.6166489	36.90980	155.7841	26.21561	8.975899	32.32159
#1	-.325807	-.004883	-.000038	.1230623	.0031430	.0012743
#2	-.328236	-.002405	.000127	.0722541	.0036550	.0008752
#3	-.324245	-.003102	.000072	.0956885	.0037156	.0006764

Sample Name: CCB04 Acquired: 7/17/2025 16:46:27 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013009	.0153794	-.002143	.0022319	F -.032858	-.000938
Stddev	.0000511	.0015589	.001949	.0011440	.000799	.002198
%RSD	3.930219	10.13623	90.92072	51.25786	2.431191	234.2429
#1	.0013166	.0170215	.000089	.0009249	-.032344	-.003323
#2	.0012438	.0151968	-.003012	.0030518	-.032453	.001007
#3	.0013424	.0139198	-.003506	.0027189	-.033779	-.000499
Elem	Sr4077					
Units	ppm					
Avg	.0001049					
Stddev	.0000712					
%RSD	67.93452					
#1	.0001439					
#2	.0001480					
#3	.0000226					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5254.222	88969.03	8341.791	4417.158	6516.727	
Stddev	17.599	164.26	50.055	26.918	20.273	
%RSD	.3349556	.1846216	.6000550	.6093905	.3110890	
#1	5271.091	89134.78	8399.581	4397.699	6532.581	
#2	5255.602	88806.30	8313.780	4405.898	6523.717	
#3	5235.974	88966.02	8312.011	4447.877	6493.885	

Sample Name: PB168847TB Acquired: 7/17/2025 16:50:46 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002677	-.003692	-.001798	.0035584	-.000558	.0018234	-.007120
Stddev	.001899	.000953	.000689	.0030886	.001040	.0050907	.000654
%RSD	70.93196	25.81588	38.34841	86.79689	186.3411	279.1887	9.178239

#1	-.004838	-.004688	-.002084	.0070629	-.001712	.0067141	-.007841
#2	-.001916	-.002789	-.002298	.0012332	.000305	.0022021	-.006567
#3	-.001277	-.003599	-.001011	.0023791	-.000267	-.003446	-.006952

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000262	-.000073	.0047827	-.000210	-.000371	-.000594	-.001791
Stddev	.000043	.000034	.0021883	.000320	.000135	.000404	.002394
%RSD	16.23820	46.57951	45.75420	152.6021	36.43797	68.11355	133.6634

#1	-.000282	-.000085	.0022564	.000135	-.000373	-.001043	-.003329
#2	-.000213	-.000035	.0060879	-.000498	-.000235	-.000258	-.003012
#3	-.000291	-.000100	.0060040	-.000267	-.000505	-.000480	.000967

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010433	-.028524	.0008543	.0005163	462.6419	-.003034	.0023797
Stddev	.0004996	.007432	.0001277	.0000644	3.5254	.002358	.0000915
%RSD	47.88652	26.05362	14.94916	12.48052	.7620082	77.72142	3.843361

#1	.0013437	-.036722	.0009850	.0005145	466.2638	-.003783	.0024588
#2	.0004666	-.022228	.0007298	.0004528	459.2217	-.000392	.0024009
#3	.0013195	-.026624	.0008481	.0005816	462.4402	-.004926	.0022795

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1428931	.0000713	.0008991	-.002241	.0152401	.0106850	.0170682
Stddev	.0200663	.0001640	.0001702	.000507	.0019273	.0068808	.0022668
%RSD	14.04287	229.8693	18.93305	22.61420	12.64620	64.39652	13.28108

#1	.1432154	.0002607	.0010652	-.001658	.0130518	.0168077	.0151281
#2	.1627964	-.000024	.0007250	-.002497	.0166847	.0032385	.0165165
#3	.1226676	-.000023	.0009070	-.002570	.0159839	.0120090	.0195599

Sample Name: PB168847TB Acquired: 7/17/2025 16:50:46 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.015109	-.002100	.0000254
Stddev	.000970	.004991	.0000438
%RSD	6.423299	237.6027	172.7534

#1	-.016208	-.007836	.0000397
#2	-.014748	.000277	-.000024
#3	-.014370	.001257	.000060

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4937.879	83688.63	8441.168	4108.671	5707.341
Stddev	6.330	57.45	59.510	14.492	17.565
%RSD	.1281868	.0686494	.7049982	.3527067	.3077628

#1	4941.933	83746.56	8418.765	4112.876	5718.012
#2	4941.118	83631.67	8396.111	4120.595	5716.943
#3	4930.585	83687.66	8508.628	4092.542	5687.068

Sample Name: Q2605-01 Acquired: 7/17/2025 16:55:15 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001013	-.003170	.0007665	.0014062	.0025616	.6027968	.2837845
Stddev	.001829	.001823	.0015015	.0030714	.0006238	.0158708	.0007728
%RSD	180.4583	57.50155	195.8998	218.4136	24.35129	2.632859	.2723224

#1	-.001038	-.004860	-.000240	-.001507	.0018481	.6073978	.2829194
#2	.000828	-.001238	.002492	.004615	.0028328	.5851339	.2844066
#3	-.002829	-.003412	.000047	.001111	.0030038	.6158588	.2840274

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000253	.0010710	45.97562	.0013724	.0008113	.0068438	1.522906
Stddev	.000033	.0000170	.22574	.0000634	.0000542	.0001784	.008942
%RSD	13.17089	1.586334	.4910101	4.620418	6.677402	2.606242	.5871437

#1	-.000284	.0010639	45.74347	.0013242	.0007688	.0066458	1.532899
#2	-.000218	.0010904	46.19436	.0013487	.0008723	.0068935	1.515661
#3	-.000258	.0010587	45.98904	.0014442	.0007928	.0069920	1.520157

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2205850	2.131006	.0025423	.0007919	337.5389	-.003822	16.39394
Stddev	.0009993	.009014	.0001347	.0000909	5.2205	.001514	.08726
%RSD	.4530230	.4229690	5.299081	11.47509	1.546642	39.61172	.5322632

#1	.2197928	2.121416	.0023927	.0008567	334.2207	-.002236	16.49311
#2	.2217077	2.132299	.0025801	.0006880	334.8396	-.005252	16.35979
#3	.2202544	2.139303	.0026541	.0008310	343.5565	-.003978	16.32892

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5172572	.0147886	-.004309	-.004473	.0149035	.9183700	.0229166
Stddev	.0222178	.0011691	.000056	.000880	.0008593	.0014972	.0020398
%RSD	4.295304	7.905290	1.299978	19.67511	5.766051	.1630264	8.901042

#1	.5040861	.0145292	-.004246	-.005451	.0153393	.9189625	.0251102
#2	.5047765	.0160656	-.004354	-.004221	.0154577	.9166672	.0225628
#3	.5429089	.0137710	-.004327	-.003746	.0139136	.9194802	.0210768

Sample Name: Q2605-01 Acquired: 7/17/2025 16:55:15 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.8334098	.0039825	.2174090
Stddev	.0024216	.0018956	.0006008
%RSD	.2905680	47.59690	.2763202

#1	.8333432	.0048537	.2167823
#2	.8310222	.0052858	.2179799
#3	.8358640	.0018080	.2174648

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5010.526	85036.89	8406.107	4157.850	5755.676
Stddev	4.988	297.30	45.208	11.965	6.019
%RSD	.0995594	.3496104	.5378044	.2877585	.1045836

#1	5007.626	84891.98	8443.448	4152.734	5757.235
#2	5016.286	85378.86	8355.845	4171.522	5760.764
#3	5007.667	84839.83	8419.028	4149.293	5749.031

Sample Name: Q2605-02 Acquired: 7/17/2025 16:59:44 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005906	-.003621	-.000725	.0022545	-.003281	.3873891
Stddev	.0014942	.001367	.000863	.0023076	.001162	.0082448
%RSD	252.9908	37.75363	118.9512	102.3565	35.41168	2.128296
#1	.0018525	-.004111	.000051	.0025334	-.003127	.3955693
#2	-.001059	-.004676	-.000572	.0044101	-.002204	.3875168
#3	.000979	-.002077	-.001654	-.000180	-.004513	.3790812
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5018224	-.000231	.0006268	47.37925	.0013616	.0011956
Stddev	.0004938	.000020	.0001051	.31830	.0003125	.0000209
%RSD	.0983945	8.512264	16.76067	.6718050	22.94819	1.746184
#1	.5018848	-.000254	.0007440	47.72400	.0010233	.0011724
#2	.5022820	-.000221	.0005409	47.31722	.0016393	.0012130
#3	.5013004	-.000219	.0005956	47.09654	.0014224	.0012014
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0087853	1.459478	.1925591	2.182487	.0032789	.0009612
Stddev	.0006219	.003145	.0008172	.011146	.0000380	.0003095
%RSD	7.079350	.2154605	.4244021	.5106864	1.159413	32.20093
#1	.0092758	1.460963	.1933045	2.195300	.0032471	.0010759
#2	.0080858	1.461606	.1926877	2.175031	.0032687	.0011969
#3	.0089943	1.455866	.1916853	2.177131	.0033210	.0006107
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	378.6444	-.002575	F 21.64609	.4950136	.0153635	-.006185
Stddev	2.1946	.000963	.14263	.0031717	.0008983	.000072
%RSD	.5795831	37.41026	.6589132	.6407276	5.847183	1.157438
#1	380.4088	-.003024	21.72261	.4943096	.0163576	-.006252
#2	379.3374	-.001469	21.73413	.4984782	.0146098	-.006194
#3	376.1870	-.003231	21.48153	.4922531	.0151231	-.006110

Sample Name: Q2605-02 Acquired: 7/17/2025 16:59:44 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003561	.0144367	.6767697	.0283461	.4780319	.0042202
Stddev	.000380	.0003836	.0040701	.0029053	.0022919	.0025496
%RSD	10.68103	2.656778	.6014057	10.24935	.4794514	60.41412

#1	-.003957	.0145117	.6740919	.0249927	.4757287	.0029290
#2	-.003525	.0140213	.6814534	.0301045	.4780545	.0025745
#3	-.003199	.0147773	.6747637	.0299412	.4803124	.0071571

Elem	Sr4077
Units	ppm
Avg	.2311315
Stddev	.0001913
%RSD	.0827730

#1	.2311379
#2	.2313196
#3	.2309371

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5010.754	86146.62	8747.630	4139.665	5812.281
Stddev	2.258	491.27	92.004	9.124	4.951
%RSD	.0450714	.5702706	1.051756	.2203944	.0851902

#1	5012.178	85684.16	8651.237	4149.234	5817.079
#2	5011.933	86093.36	8757.149	4138.697	5807.189
#3	5008.150	86662.36	8834.505	4131.064	5812.575

Sample Name: Q2605-03 Acquired: 7/17/2025 17:04:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032066	-.004305	-.003540	.0031118	-.004087	.3426619
Stddev	.0011441	.000123	.000909	.0026460	.001892	.0016669
%RSD	35.67887	2.855945	25.68091	85.03044	46.29813	.4864499
#1	.0040352	-.004372	-.002550	.0027093	-.004250	.3441731
#2	.0019012	-.004163	-.003734	.0059359	-.005892	.3408740
#3	.0036834	-.004381	-.004336	.0006901	-.002118	.3429388
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4099710	-.000316	.0004484	45.11463	.0009518	.0017001
Stddev	.0018561	.000076	.0001229	.18687	.0002521	.0001545
%RSD	.4527432	24.04448	27.39732	.4142063	26.48315	9.088789
#1	.4096188	-.000265	.0004463	45.27470	.0011199	.0018782
#2	.4083162	-.000280	.0003266	44.90928	.0006620	.0016011
#3	.4119779	-.000404	.0005723	45.15989	.0010735	.0016212
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0069458	1.175959	.1893805	2.004142	.0028265	.0007617
Stddev	.0003132	.003985	.0004796	.024449	.0002158	.0000397
%RSD	4.509242	.3388324	.2532735	1.219902	7.636734	5.214620
#1	.0070102	1.178254	.1898553	1.975976	.0026639	.0007852
#2	.0066054	1.171358	.1893901	2.016564	.0030714	.0007840
#3	.0072218	1.178264	.1888961	2.019885	.0027441	.0007158
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	316.8808	-.002308	F 21.44738	.4525388	.0119617	-.006152
Stddev	2.5259	.001831	.06730	.0304436	.0000683	.000106
%RSD	.7971177	79.32534	.3137865	6.727301	.5705345	1.718340
#1	318.8346	-.004004	21.46653	.4865360	.0120345	-.006260
#2	314.0285	-.002554	21.50303	.4432836	.0119513	-.006049
#3	317.7793	-.000367	21.37258	.4277968	.0118992	-.006147

Sample Name: Q2605-03 Acquired: 7/17/2025 17:04:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003274	.0149667	.6193152	.0246015	.4203931	.0036875
Stddev	.000139	.0004827	.0161639	.0013315	.0052395	.0012542
%RSD	4.239783	3.225028	2.609955	5.412284	1.246342	34.01201

#1	-.003407	.0147350	.6368604	.0239483	.4148285	.0023949
#2	-.003284	.0146436	.6160557	.0237228	.4211188	.0048993
#3	-.003130	.0155216	.6050295	.0261335	.4252319	.0037682

Elem	Sr4077
Units	ppm
Avg	.2188771
Stddev	.0007388
%RSD	.3375452

#1	.2186698
#2	.2182641
#3	.2196974

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5066.082	87876.22	8761.178	4216.560	5886.168
Stddev	4.600	260.32	36.580	15.637	3.747
%RSD	.0907993	.2962401	.4175271	.3708448	.0636565

#1	5062.127	87723.54	8720.405	4213.560	5886.317
#2	5071.130	88176.80	8791.120	4233.479	5889.839
#3	5064.990	87728.31	8772.009	4202.640	5882.349

Sample Name: Q2605-04 Acquired: 7/17/2025 17:08:52 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014685	-.003434	-.001299	.0030341	-.000532	.3470244
Stddev	.0029935	.001949	.001191	.0011723	.001433	.0067406
%RSD	203.8495	56.74180	91.68622	38.63715	269.2165	1.942392
#1	-.001763	-.004093	-.002377	.0021898	-.002071	.3397015
#2	.002021	-.004968	-.000021	.0043725	-.000289	.3484019
#3	.004147	-.001242	-.001500	.0025398	.000763	.3529698
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3413105	-.000281	.0006331	39.80789	.0010732	.0006341
Stddev	.0004578	.000030	.0000645	.02860	.0003834	.0001847
%RSD	.1341366	10.59511	10.18597	.0718392	35.72592	29.12946
#1	.3412682	-.000301	.0006132	39.77551	.0006662	.0004312
#2	.3408753	-.000295	.0007052	39.81847	.0011258	.0006788
#3	.3417880	-.000247	.0005809	39.82970	.0014275	.0007924
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0062973	.8427673	.1434777	1.778114	.0025115	.0011277
Stddev	.0003358	.0038720	.0005301	.029576	.0003714	.0003191
%RSD	5.332817	.4594414	.3694707	1.663349	14.78679	28.29895
#1	.0066670	.8471974	.1437236	1.752601	.0026588	.0014813
#2	.0060113	.8400294	.1438402	1.810532	.0027865	.0010406
#3	.0062135	.8410750	.1428693	1.771209	.0020890	.0008611
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	307.7519	.0005105	F 18.89321	.3595216	.0098692	-.005465
Stddev	1.1168	.0026885	.12551	.0159848	.0009563	.000127
%RSD	.3629041	526.6661	.6643251	4.446130	9.689940	2.316669
#1	308.6009	-.000484	18.97920	.3439473	.0096247	-.005441
#2	308.1681	-.001539	18.95125	.3758875	.0109241	-.005602
#3	306.4867	.003555	18.74919	.3587299	.0090589	-.005352

Sample Name: Q2605-04 Acquired: 7/17/2025 17:08:52 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004031	.0155692	.5681334	.0231302	.3824034	.0054726
Stddev	.000999	.0014191	.0179310	.0022809	.0025843	.0018894
%RSD	24.78147	9.114489	3.156119	9.860920	.6757941	34.52538

#1	-.002945	.0164840	.5788261	.0256013	.3853858	.0067646
#2	-.004237	.0162892	.5474323	.0226838	.3808254	.0033041
#3	-.004911	.0139345	.5781418	.0211056	.3809991	.0063491

Elem	Sr4077
Units	ppm
Avg	.1942425
Stddev	.0006777
%RSD	.3488725

#1	.1942362
#2	.1935680
#3	.1949233

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4983.110	86639.15	8670.208	4203.807	5773.111
Stddev	12.981	308.38	26.893	19.454	11.634
%RSD	.2604901	.3559314	.3101794	.4627686	.2015136

#1	4968.757	86504.44	8701.091	4191.900	5759.800
#2	4986.549	86421.06	8651.956	4193.265	5781.332
#3	4994.026	86991.97	8657.576	4226.257	5778.200

Sample Name: Q2609-02 Acquired: 7/17/2025 17:13:26 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004151	-.003178	.0488038	.0017790	-.001435	.1919903	.2779776
Stddev	.002712	.001234	.0002235	.0032906	.000415	.0080136	.0007797
%RSD	65.33724	38.81789	.4580176	184.9656	28.91311	4.173941	.2804857
#1	-.006789	-.004436	.0490475	.0055711	-.001363	.2012102	.2776656
#2	-.004293	-.003128	.0486084	-.000325	-.001881	.1880606	.2788650
#3	-.001371	-.001970	.0487554	.000091	-.001060	.1867001	.2774022
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000187	.0009616	5.772660	.0031568	.0042270	.2688033	4.053417
Stddev	.000049	.0000722	.009180	.0002729	.0000312	.0007658	.038861
%RSD	26.35899	7.513896	.1590256	8.645815	.7379497	.2848991	.9587138
#1	-.000230	.0010449	5.771539	.0029879	.0042215	.2685990	4.053192
#2	-.000197	.0009169	5.782349	.0030107	.0042606	.2681604	4.092390
#3	-.000133	.0009229	5.764092	.0034717	.0041990	.2696506	4.014670
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1867908	.9040120	.0181000	.0013677	312.0421	-.002291	.2701646
Stddev	.0005178	.0083129	.0000508	.0003772	.7732	.001529	.0001387
%RSD	.2772052	.9195504	.2805819	27.57790	.2477787	66.73514	.0513254
#1	.1862240	.8954545	.0181339	.0014514	311.4098	-.003598	.2702401
#2	.1872390	.9045249	.0180416	.0009557	312.9041	-.002665	.2702490
#3	.1869094	.9120565	.0181244	.0016960	311.8125	-.000610	.2700045
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7395454	.0394869	.0007871	.0325749	.0183298	.7462935	.0219407
Stddev	.0169354	.0005552	.0003154	.0004214	.0011062	.0104934	.0008367
%RSD	2.289969	1.406071	40.06819	1.293514	6.034797	1.406067	3.813625
#1	.7280396	.0390493	.0005225	.0320902	.0188101	.7360848	.0227929
#2	.7589921	.0393000	.0011361	.0328539	.0191146	.7570501	.0219089
#3	.7316045	.0401115	.0007027	.0327806	.0170646	.7457458	.0211204

Sample Name: Q2609-02 Acquired: 7/17/2025 17:13:26 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.744519	.0007549	.0254657
Stddev	.005269	.0019637	.0000976
%RSD	.3020530	260.1308	.3830980

#1	1.749781	.0014810	.0253571
#2	1.739242	.0022521	.0255460
#3	1.744534	-.001468	.0254938

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5028.335	87731.92	8649.577	4248.674	5890.751
Stddev	2.596	265.36	28.826	8.471	8.566
%RSD	.0516246	.3024705	.3332614	.1993683	.1454188

#1	5026.377	87577.59	8632.318	4249.787	5880.882
#2	5027.348	87579.85	8682.854	4239.702	5895.117
#3	5031.279	88038.34	8633.558	4256.533	5896.255

Sample Name: Q2609-06 Acquired: 7/17/2025 17:17:50 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075230	-.001840	.2149652	.0021336	.0005295	.1950136	.1364587
Stddev	.0011668	.001034	.0018858	.0038488	.0013291	.0158302	.0014232
%RSD	15.51033	56.19336	.8772792	180.3893	251.0050	8.117501	1.042915
#1	.0074639	-.002912	.2171376	-.000005	.0014266	.1928799	.1380662
#2	.0087183	-.001759	.2137497	.006577	-.000997	.1803584	.1353594
#3	.0063869	-.000849	.2140082	-.000170	.001159	.2118024	.1359504
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000106	.0010551	2.600220	.0016253	.0050921	.0173851	27.62003
Stddev	.000130	.0000531	.020179	.0000845	.0000770	.0000882	.08303
%RSD	122.0497	5.032244	.7760377	5.199382	1.511177	.5073710	.3006020
#1	-.000014	.0010963	2.618034	.0016585	.0051787	.0174866	27.62883
#2	-.000050	.0010737	2.578306	.0016881	.0050661	.0173273	27.53295
#3	-.000255	.0009951	2.604318	.0015292	.0050316	.0173412	27.69830
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1825118	.3349664	.0435541	.0021878	342.1911	-.001806	.3365365
Stddev	.0011458	.0239724	.0004978	.0004180	3.5016	.001356	.0008237
%RSD	.6278043	7.156666	1.143042	19.10699	1.023299	75.12322	.2447489
#1	.1836735	.3231473	.0440926	.0023387	339.0543	-.000742	.3367087
#2	.1813826	.3191985	.0434589	.0025093	341.5500	-.001341	.3356403
#3	.1824794	.3625533	.0431107	.0017152	345.9690	-.003333	.3372605
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7164349	.0375688	.0015313	-.002841	.0163578	1.246093	.0342448
Stddev	.0332375	.0000135	.0001945	.000450	.0025630	.006275	.0014070
%RSD	4.639286	.0360134	12.70184	15.83531	15.66812	.5035456	4.108625
#1	.6931686	.0375541	.0015633	-.003152	.0137936	1.251103	.0326864
#2	.7016343	.0375718	.0013228	-.002325	.0189195	1.239055	.0354219
#3	.7545017	.0375807	.0017079	-.003045	.0163603	1.248121	.0346260

Sample Name: Q2609-06 Acquired: 7/17/2025 17:17:50 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.775664	.0068424	-.019131
Stddev	.004094	.0010439	.000167
%RSD	.1084404	15.25668	.8714288

#1	3.779997	.0080022	-.019048
#2	3.771859	.0065466	-.019022
#3	3.775135	.0059782	-.019323

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5038.880	85835.15	8634.930	4162.047	5875.356
Stddev	19.137	94.78	40.191	23.163	12.638
%RSD	.3797915	.1104165	.4654450	.5565290	.2151063

#1	5052.509	85880.18	8591.202	4151.352	5871.523
#2	5047.129	85899.01	8670.256	4188.626	5889.467
#3	5017.002	85726.25	8643.330	4146.165	5865.079

Sample Name: PB168883BL Acquired: 7/17/2025 17:22:12 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000110	.0004483	-.001971	-.000699	-.002022	-.004454
Stddev	.002825	.0000282	.001586	.003797	.000364	.005001
%RSD	2570.746	6.279504	80.49989	543.3883	17.98961	112.2947
#1	-.003370	.0004486	-.000140	.000754	-.001906	-.006439
#2	.001621	.0004200	-.002942	.002158	-.002430	-.008157
#3	.001419	.0004763	-.002830	-.005008	-.001731	.001235
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005126	-.000105	.0000295	.0632953	-.000975	.0000359
Stddev	.001048	.000029	.0000855	.0072325	.000291	.0001700
%RSD	20.43689	27.26187	290.2136	11.42653	29.78626	472.8378
#1	-.003982	-.000087	-.000063	.0584308	-.001235	-.000012
#2	-.006038	-.000139	.000047	.0598487	-.001029	.000225
#3	-.005359	-.000091	.000105	.0716064	-.000662	-.000105
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000373	.0001848	.0000116	-.018434	.0002842	.0012743
Stddev	.000206	.0017601	.0002289	.016234	.0000983	.0001474
%RSD	55.21819	952.3720	1973.609	88.06581	34.58109	11.56544
#1	-.000485	.0022051	-.000251	-.006509	.0002158	.0014012
#2	-.000498	-.001018	.000165	-.011871	.0002399	.0013091
#3	-.000135	-.000633	.000121	-.036922	.0003968	.0011127
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4361604	-.002593	-.000207	.2417425	-.002101	.0002809
Stddev	.0601186	.000782	.000188	.0119807	.000500	.0001909
%RSD	13.78359	30.14779	90.72213	4.955978	23.80502	67.95939
#1	.4902266	-.003467	-.000125	.2372893	-.001940	.0001054
#2	.4468351	-.001959	-.000074	.2553121	-.002662	.0004842
#3	.3714195	-.002354	-.000421	.2326261	-.001702	.0002531

Sample Name: PB168883BL Acquired: 7/17/2025 17:22:12 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024432	.0151992	-.003064	.0003227	F -.030974	.0003677
Stddev	.0002135	.0017076	.001345	.0016905	.000471	.0018639
%RSD	8.738942	11.23466	43.89383	523.8497	1.520139	506.8500

#1	.0026840	.0135512	-.003706	.0010033	-.030556	.0022377
#2	.0023687	.0169607	-.003967	-.001602	-.030883	-.001490
#3	.0022770	.0150857	-.001518	.001567	-.031484	.000356

Elem	Sr4077
Units	ppm
Avg	-.000008
Stddev	.000013
%RSD	159.3595

#1	.000005
#2	-.000022
#3	-.000008

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5285.217	90783.32	8319.334	4445.661	6563.551
Stddev	1.227	502.33	54.151	9.896	3.820
%RSD	.0232180	.5533333	.6509034	.2225993	.0582051

#1	5285.519	90216.30	8292.361	4437.782	6562.930
#2	5283.868	90960.93	8381.674	4456.768	6560.079
#3	5286.266	91172.71	8283.968	4442.433	6567.644

Sample Name: PB168883BS Acquired: 7/17/2025 17:26:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7933481	1.932173	.9381784	2.024145	.8324221	2.008146
Stddev	.0016314	.030271	.0043375	.002123	.0020621	.011817
%RSD	.2056365	1.566702	.4623285	.1048999	.2477164	.5884660
#1	.7915619	1.921009	.9350171	2.021815	.8311763	1.997552
#2	.7947595	1.909070	.9363947	2.024651	.8312878	2.020891
#3	.7937229	1.966441	.9431233	2.025970	.8348023	2.005995
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2080300	.1948036	.1872155	1.149131	.3674466	.1954804
Stddev	.0011402	.0010913	.0004544	.019629	.0003476	.0002491
%RSD	.5481127	.5602016	.2427120	1.708149	.0945988	.1274071
#1	.2075098	.1938319	.1869388	1.140837	.3672070	.1954445
#2	.2093376	.1959843	.1869678	1.171546	.3678452	.1952512
#3	.2072427	.1945948	.1877399	1.135011	.3672875	.1957454
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3137091	2.915940	.2114611	1.931958	.4934623	.0767429
Stddev	.0012052	.008700	.0017045	.023440	.0010707	.0002637
%RSD	.3841898	.2983606	.8060472	1.213281	.2169769	.3436750
#1	.3126210	2.925621	.2098203	1.905132	.4932813	.0765092
#2	.3135018	2.913424	.2113403	1.948487	.4924937	.0770289
#3	.3150045	2.908775	.2132228	1.942255	.4946120	.0766904
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.567384	.2965816	.2083504	10.21737	.3076779	.4183917
Stddev	.014633	.0023253	.0006351	.02493	.0014519	.0003971
%RSD	.5699682	.7840384	.3048127	.2440142	.4718833	.0949208
#1	2.573941	.2940597	.2088088	10.24348	.3060318	.4180747
#2	2.550619	.2986408	.2076255	10.21482	.3082261	.4182631
#3	2.577592	.2970442	.2086170	10.19381	.3087759	.4188372

Sample Name: PB168883BS Acquired: 7/17/2025 17:26:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6686905	.2083452	.8039758	5.567860	F -.034325	.1988152
Stddev	.0013446	.0013097	.0070944	.012899	.003224	.0051807
%RSD	.2010778	.6286031	.8824083	.2316762	9.391909	2.605788
#1	.6688867	.2084657	.7960047	5.553444	-.031315	.2029672
#2	.6672586	.2069795	.8095973	5.571824	-.033933	.1930096
#3	.6699262	.2095905	.8063254	5.578313	-.037727	.2004688
Elem	Sr4077					
Units	ppm					
Avg	.2107287					
Stddev	.0004497					
%RSD	.2133981					
#1	.2104438					
#2	.2112471					
#3	.2104952					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5307.126	88722.35	8315.702	4415.262	6480.871	
Stddev	8.601	132.36	16.438	13.143	13.957	
%RSD	.1620736	.1491801	.1976742	.2976745	.2153631	
#1	5304.881	88569.73	8334.575	4400.970	6476.062	
#2	5316.627	88805.67	8304.516	4426.829	6496.598	
#3	5299.870	88791.64	8308.014	4417.988	6469.955	

Sample Name: Q2604-02 Acquired: 7/17/2025 17:30:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005474	-.003032	-.001025	.0031966	-.001683	.0563755	.0002912
Stddev	.000703	.000377	.000135	.0035250	.001299	.0039058	.0004408
%RSD	12.83984	12.44301	13.13617	110.2759	77.20576	6.928216	151.3730
#1	-.005442	-.002925	-.000869	.0060187	-.000358	.0548398	.0006258
#2	-.006193	-.002719	-.001104	.0043256	-.001736	.0608158	.0004563
#3	-.004788	-.003451	-.001101	-.000755	-.002955	.0534710	-.000208
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000261	-.000030	4.479775	-.000300	.0066787	.0040082	.2011608
Stddev	.000054	.000038	.018449	.000196	.0001734	.0002703	.0083905
%RSD	20.65163	126.3045	.4118310	65.39680	2.595642	6.743954	4.171019
#1	-.000258	.000009	4.497348	-.000283	.0067808	.0037612	.1914759
#2	-.000209	-.000066	4.460559	-.000113	.0064786	.0042970	.2062315
#3	-.000317	-.000032	4.481418	-.000504	.0067768	.0039665	.2057750
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0214024	1.581070	.0092989	.0009759	14.23327	-.003353	.0371310
Stddev	.0003815	.021076	.0003722	.0002528	.01415	.002670	.0002146
%RSD	1.782733	1.332991	4.002081	25.90204	.0993866	79.61908	.5778469
#1	.0217983	1.582881	.0096609	.0011994	14.24722	-.001379	.0371026
#2	.0210370	1.559147	.0093185	.0007016	14.23364	-.006390	.0373583
#3	.0213719	1.601181	.0089174	.0010269	14.21893	-.002289	.0369321
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.150755	.0067398	.0005801	-.003187	.0142175	5.791697	.0226378
Stddev	.019656	.0004513	.0001793	.000888	.0010548	.007080	.0024311
%RSD	1.708079	6.696424	30.91579	27.85547	7.419344	.1222490	10.73906
#1	1.128897	.0070775	.0004439	-.003800	.0138233	5.783525	.0248625
#2	1.166977	.0069148	.0005131	-.002169	.0154127	5.796010	.0200428
#3	1.156392	.0062272	.0007833	-.003591	.0134165	5.795556	.0230083

Sample Name: Q2604-02 Acquired: 7/17/2025 17:30:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.784275	-.004085	.0249216
Stddev	.013468	.002931	.0000536
%RSD	.2815137	71.76213	.2148850

#1	4.775796	-.000892	.0249803
#2	4.777224	-.004707	.0249090
#3	4.799805	-.006655	.0248754

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5367.183	90361.20	8460.700	4421.995	6642.617
Stddev	5.372	488.90	31.236	27.712	5.826
%RSD	.1000813	.5410554	.3691931	.6266868	.0877108

#1	5373.265	89857.99	8430.991	4390.173	6649.151
#2	5365.193	90834.42	8493.267	4440.817	6640.737
#3	5363.090	90391.18	8457.841	4434.995	6637.962

Sample Name: CCV05 Acquired: 7/17/2025 17:58:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	5.039543	5.053480	4.861307	5.124395	5.171328	10.16425	10.74865
Stddev	.015118	.078503	.012781	.022170	.020256	.05487	.07797
%RSD	.2999814	1.553452	.2629064	.4326349	.3917036	.5398232	.7253955

#1	5.026132	4.997275	4.850361	5.110960	5.154317	10.12091	10.66131
#2	5.036570	5.143174	4.858209	5.112240	5.165931	10.14591	10.77340
#3	5.055926	5.019992	4.875353	5.149983	5.193736	10.22594	10.81124

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.460635	2.413323	26.94707	.9331925	2.456675	1.252745	4.969008
Stddev	.0002247	.003480	.09084	.0225354	.006171	.004267	.113040
%RSD	.0913179	.1442130	.3371189	2.414869	.2511848	.3406046	2.274900

#1	.2458051	2.412144	26.86933	.9323387	2.452444	1.248604	4.942644
#2	.2461724	2.410586	26.92496	.9561426	2.453825	1.252504	5.092901
#3	.2462130	2.417240	27.04693	.9110961	2.463756	1.257128	4.871480

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.631917	24.67584	2.473911	1.281670	25.40871	2.513047	2.587927
Stddev	.003674	.06494	.005697	.025106	.65078	.005296	.046602
%RSD	.1395992	.2631618	.2302836	1.958878	2.561258	.2107425	1.800737

#1	2.627804	24.61502	2.471171	1.282313	25.50699	2.507645	2.590749
#2	2.633071	24.66828	2.470101	1.306449	26.00477	2.518230	2.633054
#3	2.634875	24.74423	2.480460	1.256249	24.71438	2.513265	2.539978

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.48609	5.352270	5.119603	4.870670	5.026669	4.612751	5.069517
Stddev	.61885	.021740	.015273	.009346	.003184	.102405	.005725
%RSD	2.428179	.4061736	.2983207	.1918921	.0633502	2.220051	.1129268

#1	25.42913	5.344811	5.105059	4.865273	5.029923	4.594527	5.074007
#2	26.13145	5.335242	5.118238	4.865275	5.026524	4.723045	5.071472
#3	24.89769	5.376757	5.135513	4.881463	5.023560	4.520681	5.063070

Sample Name: CCV05 Acquired: 7/17/2025 17:58:47 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.934027	5.040946	5.430472
Stddev	.021086	.006575	.072468
%RSD	.4273683	.1304331	1.334465

#1	4.909743	5.039883	5.357561
#2	4.947694	5.047988	5.431368
#3	4.944646	5.034968	5.502488

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5188.127	85055.18	7923.149	4195.504	6012.816
Stddev	6.909	1916.32	23.400	71.587	13.089
%RSD	.1331769	2.253027	.2953327	1.706291	.2176909

#1	5187.721	85148.50	7948.906	4196.369	6003.492
#2	5195.230	83093.90	7917.343	4123.488	6027.780
#3	5181.429	86923.13	7903.199	4266.655	6007.175

Sample Name: CCB05 Acquired: 7/17/2025 18:02:58 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001318	-.000434	-.001778	-.002445	-.001729	.0030780
Stddev	.000987	.001477	.001045	.001316	.000565	.0082638
%RSD	74.91054	340.6168	58.77594	53.80178	32.68795	268.4758
#1	-.000891	-.000532	-.001380	-.002493	-.001929	.0120909
#2	-.000615	.001090	-.002963	-.001106	-.002168	-.004143
#3	-.002446	-.001859	-.000990	-.003736	-.001091	.001286
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002867	-.000065	.0000958	.0649430	-.000734	.0001211
Stddev	.000517	.000102	.0000410	.0052817	.000550	.0000678
%RSD	18.02472	157.9773	42.75489	8.132885	74.91623	56.03412
#1	-.002477	-.000093	.0000960	.0592608	-.001340	.0001529
#2	-.003453	.000049	.0001367	.0658655	-.000266	.0000432
#3	-.002670	-.000150	.0000548	.0697027	-.000597	.0001671
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000532	-.000946	.0003447	-.003199	.0002480	.0009021
Stddev	.000222	.001483	.0005568	.034814	.0001875	.0004888
%RSD	41.76452	156.6836	161.5154	1088.263	75.59714	54.19015
#1	-.000704	-.002093	.0007316	-.008448	.0001011	.0007577
#2	-.000281	-.001475	-.000293	.033942	.0001837	.0005017
#3	-.000612	.000728	.000596	-.035091	.0004592	.0014469
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.290602	-.003500	.0002094	.1260111	.0060449	.0011436
Stddev	.008998	.005270	.0002884	.0033464	.0002308	.0001255
%RSD	3.096351	150.5820	137.7381	2.655679	3.817532	10.96919
#1	-.294632	.000594	-.000123	.1241040	.0059263	.0012646
#2	-.280293	-.001647	.000387	.1298751	.0058976	.0010141
#3	-.296880	-.009447	.000365	.1240541	.0063108	.0011521

Sample Name: CCB05 Acquired: 7/17/2025 18:02:58 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025601	.0155439	.0085850	.0005822	F -.035562	.0008006
Stddev	.0003928	.0002550	.0068483	.0015498	.001166	.0022213
%RSD	15.34433	1.640271	79.77079	266.2123	3.279508	277.4507

#1	.0029955	.0152637	.0152787	.0005024	-.036599	.0011293
#2	.0024526	.0157622	.0015918	.0021703	-.034300	.0028393
#3	.0022322	.0156058	.0088846	-.000926	-.035789	-.001567

Elem	Sr4077
Units	ppm
Avg	.0001926
Stddev	.0000344
%RSD	17.87260

#1	.0002322
#2	.0001700
#3	.0001755

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5380.656	86122.54	8264.501	4363.739	6726.978
Stddev	13.258	173.64	95.231	14.970	17.797
%RSD	.2463985	.2016229	1.152285	.3430533	.2645638

#1	5395.963	85929.57	8266.765	4349.451	6747.510
#2	5373.214	86266.16	8358.579	4379.309	6715.965
#3	5372.791	86171.90	8168.158	4362.457	6717.459

Sample Name: Q2604-01 Acquired: 7/17/2025 18:07:17 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002680	-.002136	.0000513	.0019456	.0001072	.0677660	-.001177
Stddev	.001276	.001092	.0008396	.0018200	.0011933	.0085653	.000498
%RSD	47.62057	51.12542	1636.046	93.54178	1113.694	12.63946	42.28321
#1	-.002927	-.003354	.0000426	.0035164	.0011227	.0748835	-.001074
#2	-.001298	-.001245	.0008953	-.000049	.0004059	.0582600	-.000739
#3	-.003815	-.001809	-.000784	.002369	-.001207	.0701546	-.001719
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000226	-.000076	4.441747	-.000127	.0065179	.0713348	1.540197
Stddev	.000014	.000014	.008243	.000249	.0003397	.0004606	.012654
%RSD	6.051571	18.74683	.1855843	196.5872	5.212205	.6456877	.8215810
#1	-.000239	-.000090	4.435221	-.000167	.0067822	.0718549	1.542672
#2	-.000227	-.000062	4.451011	-.000352	.0066367	.0711709	1.551432
#3	-.000212	-.000077	4.439010	.000140	.0061347	.0709785	1.526489
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0192631	1.592698	.0082624	.0007761	14.26146	-.000590	.0279396
Stddev	.0005554	.021348	.0001438	.0000621	.12237	.001692	.0001074
%RSD	2.883233	1.340339	1.739789	8.000145	.8580537	286.9531	.3843896
#1	.0196576	1.616495	.0083951	.0008428	14.29810	.001341	.0280258
#2	.0186280	1.575233	.0082826	.0007200	14.36133	-.001298	.0278193
#3	.0195039	1.586365	.0081097	.0007656	14.12496	-.001812	.0279737
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.164350	.0096601	.0008588	-.002410	.0157725	5.834406	.0194052
Stddev	.013110	.0004649	.0000932	.000145	.0027580	.045185	.0008624
%RSD	1.125968	4.812628	10.85298	6.027334	17.48632	.7744598	4.444143
#1	1.158098	.0094036	.0009022	-.002496	.0141157	5.849635	.0197881
#2	1.179416	.0093799	.0007518	-.002242	.0142455	5.870009	.0184177
#3	1.155535	.0101967	.0009224	-.002491	.0189563	5.783574	.0200100

Sample Name: Q2604-01 Acquired: 7/17/2025 18:07:17 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.968742	-.003853	.0229242
Stddev	.023913	.001943	.0000865
%RSD	.4812734	50.42911	.3771030

#1	4.986891	-.005940	.0229529
#2	4.977688	-.002097	.0228270
#3	4.941645	-.003520	.0229926

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5378.814	89781.73	8498.546	4433.431	6599.997
Stddev	9.788	228.03	54.536	6.324	2.051
%RSD	.1819740	.2539793	.6417040	.1426434	.0310722

#1	5388.998	89765.63	8534.305	4427.028	6602.313
#2	5369.478	89562.19	8525.557	4439.673	6598.411
#3	5377.965	90017.39	8435.777	4433.592	6599.267

Sample Name: Q2604-01DUP Acquired: 7/17/2025 18:11:33 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004280	-.001474	.0002695	.0014042	-.002375	.0725605	.0010336
Stddev	.002003	.002359	.0006375	.0042890	.000878	.0097329	.0010509
%RSD	46.80372	160.0833	236.5057	305.4445	36.95421	13.41344	101.6755
#1	-.004786	-.000396	.0009424	.0019268	-.001932	.0689107	.0015085
#2	-.002072	-.004179	-.000325	.0054079	-.003386	.0651801	.0017631
#3	-.005982	.000154	.000191	-.003122	-.001808	.0835907	-.000171
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000210	-.000102	4.455246	-.000427	.0064905	.0718557	1.472755
Stddev	.000059	.000070	.013413	.000197	.0001000	.0001277	.008853
%RSD	27.98488	68.82504	.3010557	46.08200	1.541347	.1777727	.6011386
#1	-.000154	-.000047	4.442372	-.000648	.0064261	.0717847	1.464533
#2	-.000205	-.000079	4.454227	-.000363	.0066058	.0717792	1.471605
#3	-.000272	-.000181	4.469139	-.000271	.0064397	.0720032	1.482127
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0201363	1.590570	.0084432	.0007721	13.64624	-.003219	.0280547
Stddev	.0004047	.006742	.0001069	.0002576	.09738	.002098	.0001758
%RSD	2.009854	.4239014	1.265574	33.35707	.7136237	65.18380	.6266990
#1	.0199215	1.586779	.0083866	.0008932	13.54725	-.003661	.0278632
#2	.0206031	1.598355	.0083766	.0009468	13.64953	-.005061	.0282088
#3	.0198842	1.586577	.0085665	.0004763	13.74193	-.000935	.0280922
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.116046	.0080871	.0005541	-.000321	.0154206	5.557390	.0195111
Stddev	.015855	.0009342	.0000671	.000651	.0002444	.049463	.0011621
%RSD	1.420604	11.55135	12.10248	202.8879	1.584964	.8900445	5.956301
#1	1.129149	.0090908	.0006222	-.001055	.0155779	5.518679	.0197776
#2	1.098422	.0072431	.0004882	.000185	.0151390	5.540376	.0205168
#3	1.120566	.0079273	.0005519	-.000092	.0155448	5.613114	.0182388

Sample Name: Q2604-01DUP Acquired: 7/17/2025 18:11:33 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.049443	-.001073	.0230156
Stddev	.028204	.002629	.0000463
%RSD	.5585508	245.0649	.2011870

#1	5.044843	.000975	.0230543
#2	5.023821	-.004037	.0230281
#3	5.079663	-.000155	.0229643

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5367.949	90139.40	8149.871	4434.449	6579.094
Stddev	33.144	515.48	11.863	18.924	39.680
%RSD	.6174449	.5718732	.1455545	.4267484	.6031268

#1	5395.569	90663.50	8140.131	4434.595	6615.423
#2	5377.083	90121.72	8146.400	4453.300	6585.111
#3	5331.196	89632.98	8163.082	4415.453	6536.749

Sample Name: Q2604-01LX5 Acquired: 7/17/2025 18:15:48 Type: Unk

Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000

User: Jaswal Custom ID1: Custom ID2: Custom ID3:

Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001342	-.000384	-.001439	-.000706	-.000651	.0120981	-.003531
Stddev	.000992	.002088	.000899	.000306	.000920	.0092305	.000241
%RSD	73.92855	543.4384	62.49870	43.31185	141.1571	76.29738	6.832967
#1	-.000205	-.000855	-.002372	-.000747	-.000384	.0216993	-.003439
#2	-.002033	.001899	-.001368	-.000989	.000105	.0032893	-.003805
#3	-.001788	-.002196	-.000577	-.000382	-.001675	.0113056	-.003350
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000164	-.000019	.9856617	-.000651	.0013419	.0146234	.3047845
Stddev	.000046	.000034	.0131219	.000270	.0001925	.0002036	.0052961
%RSD	28.39504	181.9981	1.331278	41.52749	14.34347	1.392583	1.737666
#1	-.000216	-.000024	.9726142	-.000370	.0013275	.0148430	.2995891
#2	-.000126	.000018	.9855141	-.000909	.0015411	.0145864	.3101759
#3	-.000149	-.000050	.9988568	-.000674	.0011570	.0144408	.3045886
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039537	.3141917	.0019900	.0007079	2.218493	-.004202	.0056882
Stddev	.0001934	.0220306	.0001638	.0002235	.006919	.002105	.0000754
%RSD	4.891648	7.011848	8.230791	31.57252	.3118776	50.10009	1.325122
#1	.0038266	.2894262	.0020102	.0005046	2.214082	-.002699	.0057641
#2	.0038582	.3215393	.0021427	.0009472	2.226467	-.003299	.0056873
#3	.0041762	.3316096	.0018170	.0006719	2.214930	-.006608	.0056133
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3213982	.0018161	.0001593	.0010776	.0151738	1.146844	.0027349
Stddev	.0124910	.0003204	.0000070	.0002840	.0014229	.008280	.0017853
%RSD	3.886456	17.64211	4.410742	26.35674	9.377468	.7220179	65.27740
#1	.3109520	.0014562	.0001525	.0007539	.0153693	1.151016	.0032418
#2	.3180084	.0020703	.0001588	.0011940	.0136632	1.152207	.0042120
#3	.3352342	.0019217	.0001665	.0012849	.0164888	1.137307	.0007510

Sample Name: Q2604-01LX5 Acquired: 7/17/2025 18:15:48 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.025251	-.000699	.0048135
Stddev	.006347	.000569	.0000224
%RSD	.6190325	81.39534	.4651284

#1	1.032579	-.000346	.0048394
#2	1.021545	-.000396	.0048005
#3	1.021629	-.001355	.0048007

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5383.394	88989.77	7978.783	4440.967	6647.167
Stddev	17.729	198.44	46.379	16.025	21.581
%RSD	.3293331	.2229946	.5812776	.3608507	.3246639

#1	5388.019	89078.91	8024.494	4431.115	6657.876
#2	5398.352	88762.39	7931.764	4432.328	6661.298
#3	5363.810	89128.01	7980.091	4459.458	6622.325

Sample Name: Q2604-01MS Acquired: 7/17/2025 18:20:08 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8015160	1.922877	.9325639	1.995732	.8303274	2.114507	.2156537
Stddev	.0037102	.043683	.0051555	.004631	.0007323	.012451	.0003692
%RSD	.4628970	2.271732	.5528286	.2320551	.0881936	.5888576	.1711987

#1	.7974343	1.913871	.9298676	1.990459	.8301342	2.110074	.2152347
#2	.8024296	1.970361	.9293157	1.997598	.8297111	2.104880	.2157956
#3	.8046840	1.884400	.9385084	1.999138	.8311370	2.128569	.2159310

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1893181	.1883153	5.640815	.3755805	.2053574	.3855816	4.515142
Stddev	.0007648	.0008548	.023706	.0012830	.0008556	.0008021	.011212
%RSD	.4039534	.4539341	.4202621	.3415957	.4166380	.2080187	.2483091

#1	.1884997	.1879591	5.638274	.3770616	.2051741	.3848299	4.527252
#2	.1900146	.1876962	5.665689	.3748674	.2046083	.3854887	4.505123
#3	.1894400	.1892907	5.618481	.3748125	.2062898	.3864260	4.513050

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2326155	3.620254	.5061314	.0748589	17.74239	.3048964	.2445716
Stddev	.0009692	.044529	.0026473	.0004381	.12439	.0021422	.0011332
%RSD	.4166480	1.230003	.5230533	.5852528	.7010766	.7025885	.4633273

#1	.2319779	3.581411	.5049186	.0746234	17.74690	.3062695	.2432827
#2	.2337308	3.668852	.5043078	.0745889	17.61581	.3059917	.2450204
#3	.2321378	3.610500	.5091679	.0753644	17.86446	.3024280	.2454115

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.20909	.2906021	.4440755	.6810665	.2116374	6.759680	5.652765
Stddev	.06542	.0008945	.0002210	.0039277	.0013309	.022838	.013488
%RSD	.5836153	.3078082	.0497712	.5766916	.6288768	.3378526	.2386009

#1	11.22766	.2896596	.4439117	.6787914	.2102798	6.770676	5.644794
#2	11.13639	.2914392	.4443269	.6788064	.2116924	6.733424	5.645162
#3	11.26322	.2907076	.4439878	.6856018	.2129399	6.774940	5.668337

Sample Name: Q2604-01MS Acquired: 7/17/2025 18:20:08 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.226407	.2014750	.2347452
Stddev	.005806	.0023281	.0004032
%RSD	.1110874	1.155518	.1717405

#1	5.222085	.2034564	.2348475
#2	5.224130	.2020576	.2343008
#3	5.233006	.1989109	.2350874

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5258.727	89113.14	8298.466	4394.879	6378.272
Stddev	.931	208.70	32.137	3.780	13.565
%RSD	.0177107	.2341990	.3872665	.0860183	.2126705

#1	5259.609	89033.24	8327.489	4395.932	6380.131
#2	5258.820	89349.99	8263.928	4398.022	6390.812
#3	5257.753	88956.19	8303.979	4390.684	6363.874

Sample Name: Q2604-01MSD Acquired: 7/17/2025 18:24:06 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7758884	1.814396	.9118530	1.935864	.8092611	2.054390	.2094242
Stddev	.0032978	.010732	.0007990	.001899	.0028799	.015892	.0011537
%RSD	.4250366	.5914858	.0876231	.0981006	.3558654	.7735515	.5508863

#1	.7720812	1.810210	.9109581	1.935301	.8088780	2.071292	.2087369
#2	.7778572	1.826590	.9121062	1.934309	.8065919	2.039751	.2087796
#3	.7777268	1.806388	.9124947	1.937980	.8123133	2.052126	.2107562

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1844980	.1829982	5.475461	.3712516	.1996867	.3742479	5.081906
Stddev	.0002721	.0003170	.007866	.0010923	.0002549	.0006917	.016285
%RSD	.1475097	.1732472	.1436519	.2942294	.1276403	.1848379	.3204495

#1	.1843894	.1826956	5.473309	.3719234	.1995406	.3738822	5.077586
#2	.1842969	.1829711	5.484178	.3718402	.1995385	.3738157	5.099915
#3	.1848077	.1833279	5.468895	.3699912	.1999810	.3750457	5.068216

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2437608	3.541566	.4925829	.0731484	17.43615	.2956176	.2404244
Stddev	.0002349	.005470	.0007581	.0001796	.08634	.0035360	.0012095
%RSD	.0963702	.1544546	.1539139	.2454790	.4951984	1.196139	.5030708

#1	.2439445	3.535280	.4917323	.0733022	17.52356	.2981443	.2409153
#2	.2434961	3.544167	.4928286	.0729510	17.43396	.2971317	.2390466
#3	.2438418	3.545250	.4931877	.0731919	17.35092	.2915766	.2413112

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.05284	.2817392	.4352605	.6686010	.2064331	6.625768	5.472031
Stddev	.06948	.0024771	.0003779	.0003485	.0008708	.034909	.007537
%RSD	.6286194	.8791998	.0868102	.0521198	.4218122	.5268710	.1377321

#1	11.11025	.2817188	.4348815	.6684325	.2057105	6.654580	5.466388
#2	11.07266	.2792725	.4352628	.6690017	.2061889	6.635777	5.480590
#3	10.97560	.2842265	.4356372	.6683688	.2073999	6.586948	5.469114

Sample Name: Q2604-01MSD Acquired: 7/17/2025 18:24:06 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.047449	.1942615	.2280918
Stddev	.002924	.0033616	.0003376
%RSD	.0579209	1.730431	.1480229
#1	5.046110	.1973680	.2282598
#2	5.050802	.1947238	.2283126
#3	5.045435	.1906927	.2277032

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5305.570	88491.27	8329.492	4416.328	6447.268
Stddev	21.362	80.28	34.788	11.358	23.627
%RSD	.4026393	.0907213	.4176465	.2571849	.3664583
#1	5328.129	88402.94	8355.161	4419.569	6472.508
#2	5302.933	88559.79	8343.416	4425.713	6443.615
#3	5285.650	88511.07	8289.899	4403.701	6425.681

Sample Name: Q2604-01A Acquired: 7/17/2025 18:28:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8108232	1.957703	.9445290	2.024641	.8460356	2.118837	.2160338
Stddev	.0039200	.049130	.0070985	.010343	.0011936	.022926	.0002449
%RSD	.4834654	2.509553	.7515433	.5108421	.1410778	1.082020	.1133659

#1	.8113452	1.957683	.9430033	2.026518	.8457796	2.098317	.2158883
#2	.8066682	1.908583	.9383174	2.013489	.8473364	2.143582	.2163166
#3	.8144560	2.006842	.9522664	2.033918	.8449908	2.114611	.2158966

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1978204	.1902759	5.502255	.3759768	.2066790	.3848632	4.338141
Stddev	.0016874	.0012404	.020929	.0024317	.0011221	.0010557	.060263
%RSD	.8529785	.6519105	.3803747	.6467804	.5429284	.2743137	1.389141

#1	.1996857	.1898885	5.480495	.3755224	.2059566	.3850091	4.270491
#2	.1973754	.1892754	5.522241	.3738044	.2061087	.3837421	4.357852
#3	.1964002	.1916638	5.504029	.3786038	.2079718	.3858384	4.386080

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2344987	3.556861	.5101318	.0754386	16.69445	.3026720	.2476280
Stddev	.0009754	.012263	.0031082	.0003468	.20076	.0009449	.0002507
%RSD	.4159431	.3447791	.6092973	.4597164	1.202553	.3121683	.1012530

#1	.2334212	3.569740	.5086682	.0751187	16.46795	.3029412	.2475498
#2	.2347533	3.555521	.5080256	.0758072	16.76495	.3016218	.2479086
#3	.2353215	3.545323	.5137017	.0753899	16.85045	.3034531	.2474257

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.04511	.3038707	.4492908	.7023944	.2144234	6.367458	5.699815
Stddev	.12181	.0014471	.0004774	.0023851	.0010965	.046705	.036068
%RSD	1.102815	.4762334	.1062656	.3395625	.5113747	.7334906	.6327981

#1	10.91811	.3055242	.4498401	.7018199	.2154061	6.316512	5.694048
#2	11.05627	.3028350	.4489755	.7003491	.2146235	6.408251	5.666978
#3	11.16095	.3032528	.4490568	.7050143	.2132406	6.377612	5.738420

Sample Name: Q2604-01A Acquired: 7/17/2025 18:28:02 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.104426	.2024548	.2373186
Stddev	.033919	.0022685	.0007979
%RSD	.6645094	1.120487	.3362123
#1	5.096751	.1999989	.2364121
#2	5.075001	.2044716	.2379145
#3	5.141525	.2028940	.2376292

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5288.722	89119.10	8030.489	4422.299	6389.588
Stddev	16.766	419.24	34.198	9.332	37.531
%RSD	.3170086	.4704289	.4258561	.2110224	.5873785
#1	5288.348	89600.39	7999.405	4431.603	6402.252
#2	5305.671	88833.38	8024.941	4412.939	6419.149
#3	5272.146	88923.53	8067.123	4422.355	6347.363

Sample Name: PB168882BL Acquired: 7/17/2025 18:31:59 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002340	-.000757	-.003025	-.002210	-.001823	.0049401
Stddev	.001622	.001258	.000785	.001005	.003153	.0089335
%RSD	69.31315	166.1655	25.94045	45.48455	172.9804	180.8353
#1	-.003488	-.002205	-.003782	-.001077	-.002855	.0050328
#2	-.000485	-.000128	-.003078	-.002995	.001717	.0138269
#3	-.003047	.000062	-.002215	-.002557	-.004330	-.004039
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003717	-.000093	-.000012	.0589050	-.000532	-.000220
Stddev	.001442	.000073	.000053	.0136665	.000299	.000078
%RSD	38.80552	78.09676	448.4385	23.20081	56.23654	35.36202
#1	-.004131	-.000116	.000011	.0606797	-.000247	-.000167
#2	-.004906	-.000151	-.000072	.0715975	-.000506	-.000183
#3	-.002112	-.000012	.000026	.0444379	-.000844	-.000309
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000233	.0010078	.0003591	-.021376	-.000003	.0009675
Stddev	.000154	.0021073	.0004529	.029139	.000106	.0000871
%RSD	65.91968	209.0897	126.1225	136.3132	3151.259	9.001819
#1	-.000074	.0016167	.0007586	-.015021	-.000117	.0010267
#2	-.000244	.0027436	-.000133	-.053168	.000014	.0008675
#3	-.000381	-.001337	.000452	.004060	.000093	.0010084
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.298740	-.002410	-.000058	.1190217	.0002667	.0002979
Stddev	.018116	.002590	.000029	.0231163	.0004522	.0000156
%RSD	6.063979	107.4749	51.26597	19.42194	169.5366	5.222841
#1	-.319399	-.004976	-.000083	.0925188	.0006365	.0003041
#2	-.285566	-.002458	-.000025	.1350231	.0004010	.0002802
#3	-.291256	.000204	-.000064	.1295232	-.000237	.0003093

Sample Name: PB168882BL Acquired: 7/17/2025 18:31:59 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022281	.0149629	.0014187	.0020325	F -.031105	-.001282
Stddev	.0003683	.0015271	.0121525	.0033645	.001437	.000860
%RSD	16.52900	10.20597	856.5981	165.5342	4.620419	67.06196

#1	.0020570	.0133333	-.011213	.0045708	-.030656	-.001421
#2	.0019765	.0151944	.002441	.0033106	-.032714	-.002065
#3	.0026508	.0163611	.013028	-.001784	-.029947	-.000362

Elem	Sr4077
Units	ppm
Avg	-.000091
Stddev	.000012
%RSD	12.95214

#1	-.000080
#2	-.000089
#3	-.000103

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5308.522	89089.24	7936.606	4418.045	6532.774
Stddev	21.624	259.05	58.737	7.185	29.069
%RSD	.4073521	.2907772	.7400810	.1626225	.4449774

#1	5330.934	89327.13	7870.346	4426.340	6556.195
#2	5306.848	89127.33	7982.276	4413.790	6541.886
#3	5287.783	88813.25	7957.196	4414.004	6500.240

Sample Name: PB168882BS Acquired: 7/17/2025 18:54:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8049499	1.998684	.9644190	2.050858	.8453690	2.032201
Stddev	.0016610	.028786	.0011796	.011613	.0035027	.001914
%RSD	.2063536	1.440250	.1223104	.5662410	.4143439	.0942044
#1	.8056436	1.972394	.9654212	2.040882	.8415654	2.030750
#2	.8030545	2.029444	.9631190	2.048085	.8460799	2.034371
#3	.8061517	1.994215	.9647166	2.063606	.8484618	2.031481
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2103705	.1968540	.1927443	1.140782	.3706364	.1998786
Stddev	.0005773	.0007901	.0006718	.007180	.0005546	.0006182
%RSD	.2744312	.4013867	.3485497	.6293979	.1496472	.3093048
#1	.2099454	.1968316	.1924156	1.132492	.3703547	.1996538
#2	.2101384	.1960752	.1923001	1.145022	.3712754	.1994043
#3	.2110278	.1976550	.1935171	1.144832	.3702791	.2005778
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3177134	2.957431	.2136240	1.965200	.5044375	.0779458
Stddev	.0009784	.015927	.0000080	.004039	.0013750	.0006180
%RSD	.3079451	.5385296	.0037576	.2055167	.2725864	.7928093
#1	.3166123	2.948588	.2136312	1.963327	.5038677	.0774159
#2	.3184828	2.975817	.2136154	1.962438	.5034390	.0777968
#3	.3180451	2.947887	.2136255	1.969835	.5060058	.0786246
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.975428	.2965440	.2132498	10.25017	.3127175	.4248734
Stddev	.019714	.0024052	.0005699	.06996	.0015195	.0013943
%RSD	.6625472	.8110876	.2672325	.6825531	.4859041	.3281621
#1	2.968061	.2991228	.2133988	10.17232	.3137142	.4236674
#2	2.997764	.2961476	.2126203	10.30778	.3109686	.4245527
#3	2.960458	.2943616	.2137304	10.27042	.3134697	.4264001

Sample Name: PB168882BS Acquired: 7/17/2025 18:54:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6919846	.2124124	.8207106	5.869468	F -.032454	.2030680
Stddev	.0035271	.0010269	.0121009	.019208	.001115	.0024898
%RSD	.5097107	.4834370	1.474445	.3272577	3.434558	1.226086
#1	.6889008	.2112325	.8304476	5.847305	-.031770	.2010850
#2	.6912224	.2129002	.8071630	5.879795	-.033740	.2058622
#3	.6958304	.2131045	.8245211	5.881304	-.031852	.2022567
Elem	Sr4077					
Units	ppm					
Avg	.2120836					
Stddev	.0003298					
%RSD	.1555049					
#1	.2119803					
#2	.2118177					
#3	.2124526					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5261.005	88533.75	8298.128	4412.726	6359.619	
Stddev	8.709	168.63	37.398	5.617	13.029	
%RSD	.1655438	.1904695	.4506843	.1272810	.2048775	
#1	5270.504	88726.11	8290.015	4418.479	6370.744	
#2	5259.113	88463.72	8338.917	4412.443	6362.829	
#3	5253.396	88411.41	8265.452	4407.257	6345.285	

Sample Name: Q2609-01 Acquired: 7/17/2025 19:06:37 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.490388	.2600752	17.87949	-.142604	.6727672	153.6913
Stddev	.004180	.0044392	.06796	.004813	.0040173	.2180
%RSD	.1197655	1.706877	.3800831	3.375335	.5971320	.1418655
#1	3.485813	.2651337	17.85791	-.143730	.6693669	153.6014
#2	3.494009	.2568282	17.82493	-.146754	.6717347	153.9399
#3	3.491342	.2582638	17.95561	-.137327	.6772000	153.5326
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.426200	.0524192	.2326715	140.9354	2.324678	2.575509
Stddev	.034168	.0005192	.0027693	.3277	.012970	.009069
%RSD	.4600973	.9904476	1.190197	.2325346	.5579386	.3521330
#1	7.453409	.0519756	.2294784	140.6372	2.324385	2.570916
#2	7.387853	.0529902	.2341192	141.2863	2.337792	2.569654
#3	7.437338	.0522919	.2344167	140.8828	2.311856	2.585955
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.68635	F 2128.243	7.208466	68.77939	3.917723	^ *****
Stddev	.16606	14.975	.013420	.30944	.013032	----
%RSD	.2649127	.7036520	.1861749	.4498957	.3326482	----
#1	62.66160	2133.117	7.195954	68.42383	3.911415	^ ----
#2	62.53406	2111.438	7.222639	68.92669	3.909044	^ ----
#3	62.86341	2140.174	7.206804	68.98766	3.932709	^ ----
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.96007	.5227944	F 29.03394	58.72997	^ *****	20.51916
Stddev	.12026	.0047240	.55507	.17986	----	.04420
%RSD	.4460702	.9036067	1.911797	.3062565	----	.2153913
#1	27.09482	.5282198	29.52865	58.93506	^ ----	20.51312
#2	26.92180	.5205717	29.13951	58.65579	^ ----	20.47829
#3	26.86361	.5195917	28.43367	58.59905	^ ----	20.56606

Sample Name: Q2609-01 Acquired: 7/17/2025 19:06:37 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.910162	5.814714	F 17.39562	6.141055	F 76.81717	.9478821
Stddev	.009992	.010546	.13725	.014963	.50389	.0069761
%RSD	.3433469	.1813655	.7889897	.2436562	.6559598	.7359641
#1	2.907243	5.805788	17.26895	6.139706	76.32959	.9499605
#2	2.901955	5.812003	17.37646	6.126812	76.78599	.9401030
#3	2.921288	5.826351	17.54144	6.156647	77.33592	.9535827
Elem	Sr4077					
Units	ppm					
Avg	F -1.06333					
Stddev	.01517					
%RSD	1.427004					
#1	-1.06748					
#2	-1.04652					
#3	-1.07601					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5158.293	94876.26	9711.031	4302.452	4298.954	
Stddev	9.973	225.95	38.502	5.406	10.633	
%RSD	.1933399	.2381571	.3964725	.1256429	.2473307	
#1	5155.372	94862.64	9745.248	4307.205	4302.082	
#2	5169.401	94657.42	9669.341	4296.571	4307.672	
#3	5150.107	95108.72	9718.504	4303.580	4287.109	

Sample Name: Q2609-05 Acquired: 7/17/2025 19:11:14 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.137392	.3056652	22.18638	-.240156	.7253657	165.4512
Stddev	.013039	.0054408	.09008	.012183	.0042299	.2768
%RSD	.3151422	1.779981	.4060337	5.072808	.5831468	.1672798

#1	4.136118	.3094903	22.15103	-.243807	.7207259	165.5229
#2	4.125037	.3080687	22.11933	-.226565	.7290072	165.1457
#3	4.151021	.2994366	22.28878	-.250095	.7263641	165.6852

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.346529	.0637009	.3412376	166.1566	2.684361	3.219272
Stddev	.143477	.0011039	.0032426	.7718	.017549	.013951
%RSD	2.260718	1.732934	.9502378	.4644874	.6537588	.4333610

#1	6.376346	.0646399	.3404830	166.5897	2.674373	3.214004
#2	6.190486	.0624849	.3384389	165.2655	2.674085	3.208722
#3	6.472754	.0639780	.3447910	166.6146	2.704624	3.235090

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	71.20239	F 2400.479	8.233544	80.95322	4.701528	^ *****
Stddev	.20855	7.390	.030836	.25731	.019231	-----
%RSD	.2928961	.3078710	.3745221	.3178460	.4090357	-----

#1	71.17649	2396.289	8.251207	80.96791	4.696276	^ -----
#2	71.00799	2409.013	8.197937	80.68888	4.685468	^ -----
#3	71.42267	2396.136	8.251487	81.20287	4.722839	^ -----

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.47501	.5325221	F 29.18539	73.80897	^ *****	F 23.28233
Stddev	.20554	.0051437	.20320	.44626	-----	.05925
%RSD	.6329059	.9659231	.6962391	.6046198	-----	.2545050

#1	32.28412	.5271139	29.25879	73.51236	^ -----	23.29339
#2	32.69258	.5373526	29.34169	74.32220	^ -----	23.21833
#3	32.44832	.5330999	28.95569	73.59236	^ -----	23.33528

Sample Name: Q2609-05 Acquired: 7/17/2025 19:11:14 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.509867	7.109258	F 34.06792	7.644916	F 117.2181	1.058881
Stddev	.009966	.006478	.25780	.015142	.3746	.002813
%RSD	.2839384	.0911176	.7567337	.1980714	.3196030	.2656245

#1	3.506333	7.104506	33.85961	7.640353	116.9025	1.060458
#2	3.502149	7.106630	34.35624	7.632580	117.1198	1.060552
#3	3.521118	7.116636	33.98790	7.661815	117.6322	1.055634

Elem	Sr4077
Units	ppm
Avg	F -1.25374
Stddev	.00942
%RSD	.7513770

#1	-1.24897
#2	-1.26459
#3	-1.24766

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5195.859	96513.46	9915.241	4318.882	4026.188
Stddev	21.989	230.88	82.038	19.015	20.914
%RSD	.4232040	.2392220	.8273887	.4402781	.5194394

#1	5184.096	96779.72	9878.392	4313.064	4020.150
#2	5221.228	96368.74	10009.24	4303.456	4049.457
#3	5182.253	96391.92	9858.09	4340.127	4008.959

Sample Name: CCV06 Acquired: 7/17/2025 19:24:03 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.064131	4.893983	4.865075	5.118918	5.148702	9.937737
Stddev	.001995	.031835	.002908	.008551	.004112	.018881
%RSD	.0393920	.6504827	.0597759	.1670432	.0798586	.1899962
#1	5.062762	4.898533	4.864584	5.125553	5.151496	9.917143
#2	5.066420	4.923298	4.868198	5.121933	5.143981	9.941835
#3	5.063212	4.860118	4.862444	5.109268	5.150630	9.954233
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.43742	.2481483	2.432629	26.25984	.9088350	2.463455
Stddev	.27854	.0011288	.004810	.03529	.0022807	.003261
%RSD	2.668712	.4548685	.1977095	.1343708	.2509489	.1323729
#1	10.61982	.2478957	2.431267	26.22007	.9082444	2.462033
#2	10.11679	.2471673	2.437972	26.27207	.9069078	2.467186
#3	10.57564	.2493820	2.428647	26.28738	.9113530	2.461147
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.263287	4.767243	2.568734	23.86580	2.487696	1.247754
Stddev	.000491	.035535	.011744	.12376	.002799	.006377
%RSD	.0388300	.7453926	.4571808	.5185722	.1125261	.5110685
#1	1.263086	4.727155	2.555219	23.73456	2.486912	1.244400
#2	1.263847	4.794867	2.576454	23.88245	2.490804	1.243754
#3	1.262930	4.779705	2.574529	23.98039	2.485372	1.255108
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.31814	2.440622	2.496464	24.65573	5.359392	5.111608
Stddev	.33939	.010615	.011255	.08050	.025733	.001868
%RSD	1.289558	.4349296	.4508330	.3265011	.4801432	.0365407
#1	26.05366	2.431395	2.509414	24.56336	5.353945	5.109651
#2	26.19995	2.438249	2.490935	24.69292	5.336818	5.113372
#3	26.70082	2.452223	2.489043	24.71091	5.387412	5.111799

Sample Name: CCV06 Acquired: 7/17/2025 19:24:03 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.880543	4.886021	F 4.488265	5.044803	4.950456	4.950629
Stddev	.003514	.006320	.029438	.016536	.014544	.013052
%RSD	.0719962	.1293508	.6558984	.3277732	.2937991	.2636494

#1	4.882656	4.880339	4.454318	5.028154	4.944288	4.940595
#2	4.882486	4.892828	4.503699	5.061223	4.967068	4.965386
#3	4.876487	4.884896	4.506776	5.045033	4.940012	4.945908

Elem	Sr4077
Units	ppm
Avg	5.321616
Stddev	.037813
%RSD	.7105537

#1	5.280268
#2	5.354437
#3	5.330144

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5151.614	87031.54	7864.898	4288.087	5955.494
Stddev	9.334	63.98	14.504	19.600	16.569
%RSD	.1811786	.0735121	.1844094	.4570821	.2782123

#1	5162.200	87069.71	7848.373	4268.494	5973.220
#2	5144.568	87067.23	7875.514	4288.072	5940.396
#3	5148.074	86957.67	7870.808	4307.694	5952.866

Sample Name: CCB06 Acquired: 7/17/2025 19:28:14 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001240	.0014278	-.002037	-.003794	-.002504	.0002789
Stddev	.000728	.0004476	.000226	.004752	.000352	.0004322
%RSD	58.72573	31.34593	11.07223	125.2677	14.06819	154.9515
#1	-.001996	.0018945	-.001777	-.007323	-.002146	-.000214
#2	-.000543	.0013868	-.002167	.001610	-.002515	.000460
#3	-.001180	.0010022	-.002168	-.005669	-.002850	.000592
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003375	-.000081	.0000424	.0621903	-.000275	-.000054
Stddev	.000928	.000032	.0000375	.0123951	.000238	.000145
%RSD	27.48982	38.71976	88.47527	19.93099	86.60082	266.4773
#1	-.003764	-.000048	.0000698	.0521381	-.000385	-.000172
#2	-.004045	-.000086	.0000579	.0583929	-.000438	.000107
#3	-.002316	-.000110	-.000000	.0760399	-.000002	-.000098
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000371	-.000475	.0002877	-.002284	.0003116	.0011438
Stddev	.000354	.000735	.0000312	.023900	.0000536	.0002451
%RSD	95.32132	154.7094	10.85631	1046.625	17.18208	21.42922
#1	-.000553	-.000572	.0003238	.020484	.0003354	.0009080
#2	-.000598	-.001157	.0002697	-.000161	.0002503	.0013972
#3	.000037	.000304	.0002697	-.027174	.0003492	.0011263
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.300284	-.003367	.0000885	.2222212	.0047977	.0012119
Stddev	.013578	.000641	.0001475	.0374207	.0002099	.0002457
%RSD	4.521616	19.04534	166.7148	16.83939	4.374182	20.27077
#1	-.313592	-.002627	.0001396	.1836410	.0049569	.0014177
#2	-.300808	-.003713	-.000078	.2246594	.0045599	.0012782
#3	-.286451	-.003762	.000204	.2583631	.0048762	.0009399

Sample Name: CCB06 Acquired: 7/17/2025 19:28:14 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018512	.0160796	-.005569	.0010677	F -.028162	-.002699
Stddev	.0005848	.0006972	.016999	.0004230	.002564	.002573
%RSD	31.59188	4.336128	305.2352	39.61579	9.103008	95.32009

#1	.0014335	.0157017	.008206	.0006428	-.029356	-.000377
#2	.0016004	.0168842	-.000346	.0014888	-.025219	-.005464
#3	.0025195	.0156528	-.024567	.0010715	-.029911	-.002256

Elem	Sr4077
Units	ppm
Avg	.0002524
Stddev	.0001062
%RSD	42.10296

#1	.0003146
#2	.0003128
#3	.0001297

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5384.406	90823.21	8281.501	4509.484	6644.869
Stddev	18.892	31.32	107.621	19.007	21.105
%RSD	.3508567	.0344804	1.299539	.4214937	.3176186

#1	5382.784	90799.31	8157.238	4525.673	6648.891
#2	5404.056	90811.67	8344.797	4514.223	6663.674
#3	5366.378	90858.66	8342.468	4488.555	6622.042

Sample Name: Q2609-01DLX10 Acquired: 7/17/2025 19:34:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3903816	.0392005	1.675255	.0057349	.0719661	17.31775	.8547062
Stddev	.0030402	.0010849	.008937	.0021744	.0012047	.03066	.0008481
%RSD	.7787832	2.767584	.5334924	37.91615	1.673969	.1770689	.0992242
#1	.3910609	.0404475	1.669457	.0034834	.0730945	17.34598	.8537335
#2	.3870592	.0386802	1.670760	.0058981	.0721063	17.32215	.8550942
#3	.3930247	.0384737	1.685547	.0078231	.0706974	17.28512	.8552908
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043553	.0036528	17.60677	.2824734	.2307978	7.835576	309.6922
Stddev	.0001213	.0003177	.01935	.0014406	.0007009	.031230	2.4667
%RSD	2.784983	8.697730	.1098951	.5099885	.3036683	.3985726	.7964995
#1	.0044387	.0037753	17.59252	.2808645	.2304916	7.814151	308.0683
#2	.0042161	.0032921	17.59900	.2836437	.2303021	7.821167	312.5307
#3	.0044110	.0038911	17.62880	.2829120	.2315996	7.871410	308.4778
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9093922	8.806973	.3641197	.0061040	2.336546	.0578179	7.034446
Stddev	.0006490	.055215	.0013822	.0008639	.034216	.0023006	.010419
%RSD	.0713616	.6269520	.3796095	14.15376	1.464391	3.979064	.1481111
#1	.9101005	8.864232	.3630068	.0051078	2.324209	.0604741	7.027576
#2	.9092497	8.802629	.3636852	.0065565	2.375220	.0564519	7.046434
#3	.9088263	8.754058	.3656669	.0066476	2.310209	.0565278	7.029329
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.362213	-.132030	2.446660	.2692306	.6923336	1.842591	.5199318
Stddev	.060502	.017630	.012620	.0007869	.0026497	.009329	.0005499
%RSD	.9509637	13.35294	.5158185	.2922802	.3827228	.5062972	.1057684
#1	6.307119	-.141498	2.435598	.2692519	.6894359	1.844207	.5205029
#2	6.426962	-.111689	2.443975	.2684332	.6946331	1.851007	.5194058
#3	6.352558	-.142902	2.460407	.2700066	.6929317	1.832560	.5198867

Sample Name: Q2609-01DLX10 Acquired: 7/17/2025 19:34:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.622069	.1270016	-.184058
Stddev	.033381	.0017047	.002350
%RSD	.5040873	1.342280	1.276779

#1	6.586024	.1261299	-.182661
#2	6.628267	.1289659	-.186771
#3	6.651917	.1259090	-.182743

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5320.881	90051.68	8475.218	4430.987	6125.211
Stddev	6.945	531.22	32.820	11.439	6.582
%RSD	.1305247	.5899004	.3872490	.2581663	.1074640

#1	5325.305	90483.50	8457.788	4442.993	6130.436
#2	5324.460	89458.49	8513.076	4420.214	6127.378
#3	5312.876	90213.04	8454.790	4429.755	6117.818

Sample Name: Q2609-05DLX10 Acquired: 7/17/2025 19:38:21 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4842684	.0479575	2.037889	.0134301	.0747946	19.27959	.7576911
Stddev	.0014191	.0015485	.004305	.0045286	.0023984	.01945	.0013152
%RSD	.2930389	3.228876	.2112271	33.71979	3.206630	.1008776	.1735800
#1	.4836380	.0494281	2.032920	.0087630	.0753160	19.27860	.7588242
#2	.4858935	.0481029	2.040300	.0137212	.0768894	19.26065	.7580002
#3	.4832737	.0463414	2.040449	.0178062	.0721784	19.29951	.7562488
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057634	.0046056	21.74778	.3438123	.2829447	9.290066	384.4663
Stddev	.0003711	.0006703	.08335	.0072494	.0002503	.001772	6.0477
%RSD	6.439617	14.55429	.3832479	2.108544	.0884568	.0190730	1.573000
#1	.0058313	.0046893	21.83855	.3404968	.2829159	9.290026	382.6578
#2	.0053629	.0052301	21.73013	.3388135	.2827101	9.288315	379.5292
#3	.0060958	.0038973	21.67468	.3521266	.2832082	9.291858	391.2119
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.088966	10.81980	.4300041	.0074195	3.141261	.0618126	8.794486
Stddev	.001407	.00344	.0010609	.0008032	.085017	.0044245	.116858
%RSD	.1292257	.0318117	.2467276	10.82575	2.706454	7.157932	1.328766
#1	1.089552	10.82079	.4298944	.0083272	3.104379	.0658041	8.694625
#2	1.089985	10.81597	.4290023	.0068009	3.080914	.0570551	8.765826
#3	1.087360	10.82263	.4311157	.0071303	3.238491	.0625784	8.923008
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.375081	-.100573	2.926425	.3202550	.8758365	3.840006	.6290483
Stddev	.133033	.010389	.002461	.0000406	.0017957	.058976	.0060733
%RSD	1.588436	10.32978	.0841053	.0126916	.2050234	1.535822	.9654795
#1	8.290186	-.097373	2.924097	.3202985	.8738218	3.800950	.6242529
#2	8.306657	-.112185	2.929001	.3202180	.8772684	3.811221	.6270144
#3	8.528399	-.092160	2.926176	.3202483	.8764192	3.907846	.6358776

Sample Name: Q2609-05DLX10 Acquired: 7/17/2025 19:38:21 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	10.07182	.1598272	-.242690
Stddev	.03777	.0033074	.005800
%RSD	.3750129	2.069329	2.389803

#1	10.08583	.1615032	-.241088
#2	10.10059	.1560174	-.237860
#3	10.02905	.1619611	-.249123

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5286.334	88407.75	8507.348	4353.664	6013.303
Stddev	9.150	1477.32	40.334	56.844	6.093
%RSD	.1730828	1.671029	.4741104	1.305650	.1013217

#1	5288.335	89353.98	8550.419	4405.273	6015.273
#2	5276.349	89163.84	8470.467	4362.981	6006.469
#3	5294.317	86705.42	8501.158	4292.737	6018.167

Sample Name: Q2614-01 Acquired: 7/17/2025 19:42:23 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0802262	.0049045	1.825424	.0082208	.0073708	84.71471	1.815245
Stddev	.0014164	.0050381	.004304	.0058456	.0014133	.07630	.001161
%RSD	1.765563	102.7246	.2358000	71.10832	19.17390	.0900682	.0639793

#1	.0818275	-.000839	1.827677	.0130425	.0061848	84.76698	1.816112
#2	.0791369	.008576	1.820461	.0017191	.0089346	84.74999	1.815696
#3	.0797143	.006977	1.828135	.0099007	.0069931	84.62715	1.813925

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0049193	.0131042	217.5859	.2676760	.1014204	1.086186	200.9502
Stddev	.0001535	.0000631	.8399	.0036652	.0001309	.001116	2.2052
%RSD	3.121240	.4813847	.3860021	1.369271	.1290546	.1026999	1.097406

#1	.0048002	.0130342	216.7429	.2661287	.1014941	1.085066	202.5054
#2	.0048652	.0131219	218.4226	.2650382	.1012693	1.086195	198.4265
#3	.0050926	.0131566	217.5922	.2718611	.1014978	1.087298	201.9189

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.210966	43.19753	.2834039	.0058232	5.784242	.3045523	3.286963
Stddev	.010614	.05256	.0010649	.0002787	.070326	.0004425	.028877
%RSD	.1471966	.1216826	.3757583	4.786718	1.215828	.1452840	.8785180

#1	7.200882	43.22019	.2835607	.0060954	5.811192	.3049789	3.294280
#2	7.222041	43.13744	.2822692	.0055383	5.704426	.3045824	3.255132
#3	7.209974	43.23496	.2843817	.0058359	5.837107	.3040955	3.311477

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.26218	.1257586	.0179439	.0847033	2.723831	2.764669	17.90953
Stddev	.11575	.0079680	.0001612	.0013673	.009216	.015352	.03443
%RSD	1.027776	6.335966	.8985672	1.614205	.3383300	.5553058	.1922628

#1	11.35437	.1339093	.0177697	.0833649	2.731790	2.777136	17.91944
#2	11.13228	.1179867	.0180879	.0846474	2.725969	2.747521	17.87123
#3	11.29987	.1253797	.0179740	.0860977	2.713735	2.769349	17.93793

Sample Name: Q2614-01 Acquired: 7/17/2025 19:42:23 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	14.92744	.2095389	.8204922
Stddev	.04345	.0011718	.0030808
%RSD	.2910782	.5592392	.3754764
#1	14.96609	.2081988	.8196059
#2	14.88041	.2100467	.8239190
#3	14.93582	.2103711	.8179518

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5759.249	96620.20	9414.384	4779.393	5628.301
Stddev	5.307	889.26	56.250	48.033	8.873
%RSD	.0921493	.9203663	.5974889	1.004999	.1576557
#1	5765.050	96379.99	9479.206	4764.807	5632.525
#2	5758.059	97604.89	9378.410	4833.028	5634.273
#3	5754.638	95875.71	9385.537	4740.343	5618.105

Sample Name: Q2614-01DUP Acquired: 7/17/2025 19:46:26 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0815732	.0063904	1.853893	.0153111	.0072207	85.12242
Stddev	.0019317	.0007986	.007814	.0024461	.0013435	.52348
%RSD	2.368111	12.49624	.4214880	15.97627	18.60624	.6149775
#1	.0821736	.0071763	1.845442	.0125163	.0087410	84.53274
#2	.0794126	.0064151	1.855380	.0170629	.0061931	85.53232
#3	.0831335	.0055798	1.860856	.0163541	.0067280	85.30221
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.817787	.0050147	.0131334	219.0418	.2668203	.1028332
Stddev	.013189	.0000470	.0000656	1.5737	.0003443	.0003789
%RSD	.7255751	.9365089	.4992250	.7184685	.1290410	.3685012
#1	1.803679	.0050582	.0132004	217.9848	.2666092	.1032513
#2	1.829810	.0050211	.0131304	220.8505	.2672177	.1027359
#3	1.819871	.0049649	.0130694	218.2902	.2666342	.1025124
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.104295	202.5228	7.244237	43.68297	.2886082	.0055734
Stddev	.003653	.8702	.046848	.33643	.0007172	.0005351
%RSD	.3307899	.4296820	.6466885	.7701544	.2484997	9.600234
#1	1.100296	202.2767	7.196236	43.29947	.2877805	.0049601
#2	1.105134	201.8022	7.289839	43.92839	.2889976	.0058152
#3	1.107456	203.4896	7.246636	43.82104	.2890464	.0059449
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.870654	.3031713	3.319244	11.27411	.1056270	.0179916
Stddev	.055417	.0050812	.007444	.02256	.0065594	.0002235
%RSD	.9439728	1.676032	.2242593	.2001219	6.209999	1.242281
#1	5.849532	.2973245	3.325098	11.26931	.1083982	.0182390
#2	5.828903	.3056699	3.321768	11.25434	.0981367	.0179313
#3	5.933526	.3065195	3.310867	11.29869	.1103460	.0178044

Sample Name: Q2614-01DUP Acquired: 7/17/2025 19:46:26 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0867460	2.747787	2.735342	F 18.24039	15.12395	.2112041
Stddev	.0010664	.019529	.017705	.02225	.06385	.0043751
%RSD	1.229291	.7107310	.6472828	.1219874	.4221825	2.071503

#1	.0871237	2.725239	2.727227	18.21991	15.11719	.2062883
#2	.0875721	2.759381	2.723149	18.23720	15.06374	.2146709
#3	.0855422	2.758739	2.755650	18.26407	15.19090	.2126530

Elem	Sr4077
Units	ppm
Avg	.8181383
Stddev	.0067629
%RSD	.8266208

#1	.8118956
#2	.8253227
#3	.8171965

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5672.806	96762.80	9435.853	4745.912	5530.531
Stddev	13.435	333.83	52.872	10.018	12.990
%RSD	.2368382	.3450024	.5603257	.2110908	.2348768

#1	5688.155	96458.90	9447.297	4738.175	5544.866
#2	5667.085	97120.12	9378.197	4757.228	5519.541
#3	5663.177	96709.37	9482.066	4742.334	5527.185

Sample Name: Q2614-01LX5 Acquired: 7/17/2025 19:50:29 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0121684	.0007129	.3320030	.0001889	-.000206	16.30687	.3333221
Stddev	.0034082	.0009877	.0012027	.0016786	.001951	.03969	.0011740
%RSD	28.00875	138.5585	.3622461	888.5213	948.2652	.2434013	.3521986

#1	.0160582	.0001202	.3313714	.0017094	.001328	16.35270	.3346547
#2	.0097055	.0001653	.3333898	.0004697	-.002402	16.28405	.3328711
#3	.0107416	.0018531	.3312477	-.001612	.000457	16.28385	.3324405

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007851	.0014637	45.99912	.0528634	.0223350	.2876963	43.22289
Stddev	.0000700	.0000644	.20791	.0004643	.0001495	.0000649	.05292
%RSD	8.911138	4.396705	.4519817	.8782977	.6692873	.0225687	.1224351

#1	.0007155	.0014418	46.23722	.0523278	.0224816	.2877536	43.26555
#2	.0008554	.0015362	45.85344	.0531090	.0221828	.2877095	43.16367
#3	.0007846	.0014132	45.90672	.0531532	.0223407	.2876258	43.23944

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.451581	9.177744	.0552168	.0022947	.6874860	.0625588	.6739963
Stddev	.004940	.044431	.0000949	.0001400	.0033048	.0008895	.0021977
%RSD	.3402850	.4841220	.1718038	6.103182	.4807030	1.421828	.3260704

#1	1.457161	9.198792	.0551224	.0021431	.6878811	.0633206	.6715771
#2	1.449817	9.126700	.0552158	.0024193	.6905755	.0627746	.6758696
#3	1.447766	9.207741	.0553121	.0023217	.6840015	.0615813	.6745422

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.223362	.0330118	.0035646	.0217745	.6837521	.8192677	3.410897
Stddev	.016122	.0009753	.0001705	.0005960	.0023309	.0091056	.007174
%RSD	.7251029	2.954321	4.781730	2.737156	.3408921	1.111432	.2103381

#1	2.212919	.0339597	.0037304	.0223822	.6862791	.8176415	3.413668
#2	2.241930	.0320113	.0033898	.0211909	.6816864	.8110848	3.416272
#3	2.215238	.0330644	.0035736	.0217505	.6832906	.8290769	3.402750

Sample Name: Q2614-01LX5 Acquired: 7/17/2025 19:50:29 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.406188	.0375814	.1541324
Stddev	.015878	.0008308	.0001086
%RSD	.4661608	2.210581	.0704381

#1	3.420969	.0366650	.1542059
#2	3.408193	.0382853	.1540077
#3	3.389403	.0377938	.1541837

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5514.160	92150.87	8507.794	4532.466	6412.285
Stddev	10.280	420.00	67.641	11.953	7.502
%RSD	.1864310	.4557747	.7950440	.2637248	.1169959

#1	5502.295	91683.72	8430.126	4518.930	6405.227
#2	5519.757	92271.62	8539.489	4536.898	6420.164
#3	5520.426	92497.27	8553.767	4541.570	6411.466

Sample Name: Q2614-01MS Acquired: 7/17/2025 19:54:36 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8067325	1.868206	4.058004	1.804943	.4004586	102.7807
Stddev	.0025885	.030013	.002953	.004722	.0025898	.0291
%RSD	.3208636	1.606495	.0727783	.2615990	.6467015	.0283512

#1	.8043606	1.879878	4.054757	1.805137	.3980651	102.7914
#2	.8063434	1.834111	4.058723	1.809565	.4001029	102.8029
#3	.8094936	1.890629	4.060531	1.800128	.4032079	102.7477

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.518719	.1791552	.2107582	234.8343	.5716106	.3328753
Stddev	.001651	.0004367	.0005708	.5852	.0002438	.0003191
%RSD	.0655555	.2437543	.2708131	.2492008	.0426561	.0958721

#1	2.517339	.1789213	.2101901	234.3209	.5713658	.3326889
#2	2.520548	.1788852	.2107528	234.7105	.5716124	.3326932
#3	2.518271	.1796590	.2113316	235.4715	.5718535	.3332438

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.388668	236.4201	6.965519	69.40185	.8458379	.0727602
Stddev	.003571	.6463	.007046	.22689	.0026621	.0008602
%RSD	.2571522	.2733842	.1011580	.3269150	.3147231	1.182233

#1	1.387959	236.3815	6.960455	69.31055	.8439441	.0736490
#2	1.385505	235.7940	6.962535	69.23483	.8446880	.0719318
#3	1.392541	237.0849	6.973566	69.66016	.8488816	.0726997

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.555407	.6669078	4.686893	22.29862	.7223983	.3776102
Stddev	.028813	.0018072	.015916	.05960	.0039969	.0004832
%RSD	.3015376	.2709873	.3395821	.2672648	.5532848	.1279526

#1	9.547308	.6676558	4.700428	22.23522	.7186969	.3774956
#2	9.587402	.6682210	4.690892	22.35350	.7218614	.3771947
#3	9.531509	.6648467	4.669359	22.30714	.7266365	.3781404

Sample Name: Q2614-01MS Acquired: 7/17/2025 19:54:36 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7424262	3.609344	3.006583	F 23.88370	14.41272	.4270434
Stddev	.0015400	.000975	.023112	.03542	.03316	.0042623
%RSD	.2074245	.0270145	.7687267	.1482885	.2300470	.9981018

#1	.7409607	3.608615	3.003355	23.86145	14.39615	.4257325
#2	.7440312	3.608966	2.985254	23.92454	14.39111	.4235906
#3	.7422866	3.610452	3.031140	23.86512	14.45090	.4318073

Elem	Sr4077
Units	ppm
Avg	.9841113
Stddev	.0020778
%RSD	.2111360

#1	.9821190
#2	.9862652
#3	.9839495

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5670.049	96931.91	9206.775	4712.383	5515.931
Stddev	10.238	143.07	28.676	13.473	9.386
%RSD	.1805541	.1475969	.3114714	.2859090	.1701666

#1	5669.001	97096.88	9237.592	4698.856	5519.847
#2	5680.770	96841.83	9180.874	4712.490	5522.725
#3	5660.376	96857.03	9201.860	4725.802	5505.220

Sample Name: Q2614-01MSD Acquired: 7/17/2025 19:58:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7215656	1.757583	2.497600	1.621940	.3583761	83.90242
Stddev	.0031318	.029277	.003669	.001481	.0012162	.02173
%RSD	.4340319	1.665741	.1469070	.0913317	.3393651	.0258967
#1	.7221981	1.770334	2.495686	1.623038	.3572009	83.88020
#2	.7243329	1.778322	2.495283	1.622527	.3596296	83.92362
#3	.7181658	1.724093	2.501830	1.620255	.3582979	83.90344
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.712359	.1586948	.1958058	218.8556	.4891759	.2899647
Stddev	.002426	.0011716	.0003728	.3042	.0020908	.0004570
%RSD	.1416946	.7382615	.1903697	.1390112	.4274213	.1575986
#1	1.714577	.1584494	.1954172	218.6284	.4911403	.2895163
#2	1.709768	.1599696	.1958398	218.7371	.4894092	.2899482
#3	1.712733	.1576653	.1961604	219.2012	.4869782	.2904298
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.114843	181.6250	5.866688	43.12238	.7382930	.0666502
Stddev	.001918	1.0768	.011507	.07936	.0014168	.0004676
%RSD	.1720370	.5928731	.1961483	.1840456	.1918952	.7016003
#1	1.112732	181.7585	5.857328	43.13751	.7368500	.0662241
#2	1.115320	180.4877	5.863201	43.03654	.7383470	.0665759
#3	1.116478	182.6288	5.879536	43.19309	.7396820	.0671505
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.244916	.5147489	2.832791	21.02998	.2683360	.3447843
Stddev	.051370	.0012719	.004268	.12758	.0044131	.0009852
%RSD	.7090507	.2470900	.1506788	.6066413	1.644615	.2857351
#1	7.232246	.5135370	2.837705	21.08381	.2710354	.3438049
#2	7.201066	.5146364	2.830011	20.88431	.2632432	.3457751
#3	7.301436	.5160733	2.830656	21.12182	.2707293	.3447730

Sample Name: Q2614-01MSD Acquired: 7/17/2025 19:58:32 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6887301	2.936492	2.326781	F 21.36215	12.34254	.3742594
Stddev	.0007795	.002244	.025706	.05030	.03540	.0040151
%RSD	.1131740	.0764149	1.104772	.2354687	.2867817	1.072817

#1	.6889209	2.938320	2.321627	21.30687	12.34917	.3774935
#2	.6893965	2.937168	2.304042	21.40523	12.37415	.3697654
#3	.6878730	2.933988	2.354673	21.37435	12.30429	.3755193

Elem	Sr4077
Units	ppm
Avg	.9080903
Stddev	.0016246
%RSD	.1789064

#1	.9097166
#2	.9064673
#3	.9080871

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5931.146	102478.8	9812.751	5007.481	5592.877
Stddev	1.684	96.2	49.840	6.894	2.260
%RSD	.0283869	.0939055	.5079075	.1376793	.0404130

#1	5932.737	102409.6	9831.798	5000.845	5594.360
#2	5929.383	102438.1	9756.196	5014.608	5590.275
#3	5931.317	102588.7	9850.258	5006.991	5593.994

Sample Name: Q2614-01A Acquired: 7/17/2025 20:02:29 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7988443	1.830228	2.638450	1.841283	.7576885	79.59418
Stddev	.0050174	.020759	.006124	.004935	.0033031	.11012
%RSD	.6280840	1.134250	.2321094	.2680431	.4359500	.1383482

#1	.8041848	1.853416	2.635732	1.846824	.7579521	79.51896
#2	.7981192	1.823896	2.634155	1.839667	.7608520	79.54301
#3	.7942289	1.813371	2.645463	1.837359	.7542615	79.72058

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.761140	.1731936	.2022038	209.8498	.5741254	.3213256
Stddev	.003250	.0013898	.0007134	.2022	.0124294	.0009122
%RSD	.1845228	.8024368	.3528005	.0963432	2.164920	.2838868

#1	1.759395	.1739610	.2015526	209.9911	.5884456	.3216129
#2	1.764889	.1715894	.2020926	209.6182	.5661368	.3203044
#3	1.759136	.1740306	.2029663	209.9401	.5677937	.3220596

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.559602	210.2188	6.680701	43.46009	.7915414	.0781046
Stddev	.004092	4.0349	.003058	.09378	.0014424	.0009548
%RSD	.2623985	1.919377	.0457722	.2157793	.1822206	1.222478

#1	1.555508	214.7645	6.679615	43.38626	.7899015	.0790947
#2	1.559605	208.8304	6.678335	43.42840	.7921094	.0780297
#3	1.563693	207.0614	6.684154	43.56560	.7926133	.0771895

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.029807	.5581298	3.372904	19.89569	.4552304	.3896007
Stddev	.169365	.0029241	.064814	.37566	.0159253	.0014187
%RSD	2.109201	.5239158	1.921620	1.888160	3.498294	.3641505

#1	8.210955	.5561432	3.447742	20.30056	.4727976	.3911771
#2	8.003056	.5567586	3.336080	19.82807	.4511544	.3884265
#3	7.875410	.5614875	3.334890	19.55842	.4417393	.3891985

Sample Name: Q2614-01A Acquired: 7/17/2025 20:02:29 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8046791	3.287848	4.816574	F 23.90989	18.59516	.3789086
Stddev	.0032820	.008079	.089104	.08218	.04522	.0017398
%RSD	.4078616	.2457288	1.849947	.3437082	.2431789	.4591589

#1	.8059189	3.285420	4.906535	23.98145	18.63451	.3796175
#2	.8009579	3.281261	4.814835	23.92810	18.54576	.3801820
#3	.8071606	3.296863	4.728352	23.82014	18.60520	.3769263

Elem	Sr4077
Units	ppm
Avg	.8956540
Stddev	.0042248
%RSD	.4717048

#1	.8907899
#2	.8977621
#3	.8984100

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5713.567	95782.83	9498.022	4727.712	5709.809
Stddev	6.744	1684.18	48.245	73.691	3.985
%RSD	.1180270	1.758331	.5079526	1.558697	.0697895

#1	5712.577	93840.40	9510.460	4643.582	5711.519
#2	5707.373	96672.26	9538.831	4758.733	5712.653
#3	5720.751	96835.82	9444.776	4780.821	5705.255

Sample Name: CCV07 Acquired: 7/17/2025 20:16:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	4.996888	4.740309	4.834061	5.042089	5.104145	9.930027	10.42018
Stddev	.011118	.052674	.009996	.008151	.001103	.032544	.05524
%RSD	.2224977	1.111197	.2067825	.1616678	.0216006	.3277324	.5301609
#1	4.987699	4.764820	4.842194	5.032688	5.102872	9.966832	10.43067
#2	4.993720	4.679846	4.822901	5.047204	5.104775	9.905056	10.46943
#3	5.009247	4.776261	4.837087	5.046374	5.104788	9.918193	10.36044
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2423021	2.410692	26.03189	.9244644	2.447633	1.250057	4.893432
Stddev	.0015146	.005379	.13400	.0037177	.004912	.002831	.023431
%RSD	.6250975	.2231326	.5147432	.4021482	.2006920	.2264694	.4788272
#1	.2440499	2.410715	26.16454	.9277484	2.447356	1.247950	4.867036
#2	.2414816	2.405301	25.89658	.9252167	2.442865	1.248945	4.901488
#3	.2413747	2.416059	26.03454	.9204280	2.452678	1.253275	4.911773
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.552347	23.98664	2.469390	1.248921	25.41556	2.450686	2.513540
Stddev	.009433	.13584	.003620	.001836	.05349	.008138	.005811
%RSD	.3695850	.5663297	.1465772	.1470247	.2104691	.3320632	.2312010
#1	2.559328	24.11029	2.471055	1.247146	25.35500	2.456887	2.510334
#2	2.541616	23.84123	2.465238	1.250813	25.45634	2.441471	2.510037
#3	2.556099	24.00841	2.471878	1.248804	25.43535	2.453699	2.520248
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.91557	5.206416	5.085550	4.842493	4.897273	4.681972	4.984581
Stddev	.04759	.023872	.007951	.011963	.021644	.017661	.009470
%RSD	.1910216	.4585083	.1563481	.2470369	.4419658	.3772140	.1899917
#1	24.87660	5.233334	5.082361	4.844186	4.906220	4.668638	4.986448
#2	24.96862	5.187816	5.079689	4.829774	4.872589	4.702001	4.974316
#3	24.90151	5.198097	5.094601	4.853519	4.913008	4.675275	4.992978

Sample Name: CCV07 Acquired: 7/17/2025 20:16:18 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.848374	4.905082	5.313662
Stddev	.025204	.017856	.117830
%RSD	.5198447	.3640384	2.217490

#1	4.847151	4.904638	5.408119
#2	4.823803	4.887451	5.181626
#3	4.874167	4.923156	5.351240

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5221.092	86523.83	8079.179	4316.516	6047.589
Stddev	7.484	332.29	55.857	5.112	8.240
%RSD	.1433453	.3840430	.6913736	.1184387	.1362464

#1	5226.196	86362.11	8015.551	4321.383	6048.067
#2	5224.579	86303.36	8101.842	4316.976	6055.580
#3	5212.500	86906.02	8120.142	4311.189	6039.121

Sample Name: CCB07 Acquired: 7/17/2025 20:20:28 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000626	.0005388	-.001897	.0008004	-.001200	.0011315
Stddev	.001463	.0013372	.000490	.0033447	.002411	.0087083
%RSD	233.8241	248.1704	25.82401	417.8773	200.9856	769.6165
#1	-.000858	.0001976	-.002360	-.001068	-.000647	-.007833
#2	-.001959	-.000595	-.001384	-.001193	.000887	.001669
#3	.000940	.002014	-.001946	.004662	-.003839	.009559
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003664	-.000031	.0001326	.0639996	-.000347	-.000012
Stddev	.000208	.000077	.0001144	.0077374	.000256	.000081
%RSD	5.678751	249.2939	86.26040	12.08977	73.73238	690.3029
#1	-.003892	-.000112	.0002213	.0713241	-.000253	.000070
#2	-.003618	.000040	.0001729	.0559066	-.000152	-.000013
#3	-.003484	-.000021	.0000035	.0647682	-.000637	-.000092
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000536	-.000084	.0002620	-.022620	.0005037	.0008241
Stddev	.000420	.001629	.0001816	.015354	.0000955	.0001080
%RSD	78.40342	1949.651	69.31184	67.87853	18.96307	13.10282
#1	-.000065	-.001709	.0000598	-.014696	.0006098	.0006994
#2	-.000672	.001549	.0003152	-.040318	.0004771	.0008853
#3	-.000872	-.000090	.0004111	-.012847	.0004244	.0008875
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.485307	-.003008	.0001790	.1459905	.0090643	.0011193
Stddev	.028601	.001688	.0000953	.0325867	.0005418	.0001687
%RSD	5.893419	56.13855	53.22203	22.32109	5.977447	15.07042
#1	-.457871	-.001241	.0001082	.1729574	.0096489	.0013077
#2	-.483102	-.003176	.0001415	.1552332	.0089651	.0010681
#3	-.514946	-.004605	.0002873	.1097809	.0085790	.0009822

Sample Name: CCB07 Acquired: 7/17/2025 20:20:28 Type: Unk
Method: 6010-200.7 NEW(v42) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028146	.0168534	-.004426	.0003515	F -.029601	-.004873
Stddev	.0001916	.0022827	.002672	.0011202	.001243	.000372
%RSD	6.806435	13.54448	60.37084	318.6543	4.197501	7.636782
#1	.0028489	.0193286	-.007495	.0016418	-.030424	-.004481
#2	.0029866	.0148311	-.002610	-.000372	-.030208	-.005222
#3	.0026081	.0164004	-.003174	-.000215	-.028172	-.004916
Elem	Sr4077					
Units	ppm					
Avg	.0001870					
Stddev	.0000878					
%RSD	46.95732					
#1	.0001070					
#2	.0001731					
#3	.0002809					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5292.738	89966.42	7992.330	4443.637	6496.089	
Stddev	7.948	227.33	48.203	31.941	14.042	
%RSD	.1501609	.2526882	.6031099	.7187920	.2161663	
#1	5285.794	90034.43	8040.756	4476.802	6490.164	
#2	5301.406	90152.00	7944.354	4441.028	6512.123	
#3	5291.014	89712.85	7991.879	4413.081	6485.980	

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: 07/16/2025 Time : 10:05 Temp : 96 °C

End Digest Date: 07/16/2025 Time : 13:10 Temp : 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: S/S.

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M6007
LFS-2	0.25	M6015
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	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

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
07/16/25 14:10	S/S. met. dig	S (metals Lab)
	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
PB168883BL	PBW883	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	19
PB168883BS	LCS883	<2	50	25	Colorless	Colorless	Clear	Clear	M6007,M6015	20
Q2604-01MS	RW8-SP100-20250711MS	<2	50	25	Colorless	Colorless	Clear	Clear	M6007,M6015	23
Q2604-01MSD	RW8-SP100-20250711MSD	<2	50	25	Colorless	Colorless	Clear	Clear	M6007,M6015	24
Q2604-01DUP	RW8-SP100-20250711DUP	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	22
Q2604-01	RW8-SP100-20250711	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	21
Q2604-02	RW8-SP303-20250711	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	25
Q2608-01	A2028	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	26

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WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB168883 Worklist ID : 190766 Department : Digestion Date : 07-16-2025 09:28:11

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2604-01	RW8-SP100-20250711	Water	Metals Group4	1:1 HNO3 to pH < 2	TETR06	O11	07/11/2025	6010D
Q2604-02	RW8-SP303-20250711	Water	Metals Group4	1:1 HNO3 to pH < 2	TETR06	O11	07/11/2025	6010D
Q2608-01	A2028	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	PSEG03	D41	07/15/2025	6010D

Date/Time 07/16/25 09:45

Raw Sample Received by: SLG.mct.dig

Raw Sample Relinquished by: CFC

Date/Time 07/16/25 10:45

Raw Sample Received by: CFC

Raw Sample Relinquished by: SLG.mct.dig

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136533

Review By	Janvi	Review On	7/18/2025 11:48:20 AM
Supervise By	jaswal	Supervise On	7/21/2025 4:45:05 AM
STD. NAME	STD REF.#		
ICAL Standard	MP86192,MP86193,MP86194,MP86195,MP86196,MP86212		
ICV Standard	MP86213		
CCV Standard	MP86216		
ICSA Standard	MP86214,MP86215		
CRI Standard	MP86212		
LCS Standard			
Chk Standard	MP86217,MP86218		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	07/17/25 13:05		Jaswal	OK
2	S1	S1	CAL2	07/17/25 13:09		Jaswal	OK
3	S2	S2	CAL3	07/17/25 13:13		Jaswal	OK
4	S3	S3	CAL4	07/17/25 13:18		Jaswal	OK
5	S4	S4	CAL5	07/17/25 13:22		Jaswal	OK
6	S5	S5	CAL6	07/17/25 13:26		Jaswal	OK
7	ICV01	ICV01	ICV	07/17/25 13:30	Sb,Cr,Fe,Ag,Tl Fail For (95-105)	Jaswal	OK
8	LLICV01	LLICV01	LLICV	07/17/25 13:37		Jaswal	OK
9	ICB01	ICB01	ICB	07/17/25 13:41		Jaswal	OK
10	CRI01	CRI01	CRDL	07/17/25 13:46		Jaswal	OK
11	ICSA01	ICSA01	ICSA	07/17/25 13:51		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	07/17/25 13:56		Jaswal	OK
13	ICSADL	ICSADL	ICSA	07/17/25 14:01		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	07/17/25 14:05		Jaswal	OK
15	CCV01	CCV01	CCV	07/17/25 14:20		Jaswal	OK
16	CCB01	CCB01	CCB	07/17/25 14:25		Jaswal	OK
17	Q2606-01	402	SAM	07/17/25 14:32		Jaswal	OK
18	Q2600-02	TRENCH	SAM	07/17/25 14:36		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136533

Review By	Janvi	Review On	7/18/2025 11:48:20 AM
Supervise By	jaswal	Supervise On	7/21/2025 4:45:05 AM

STD. NAME	STD REF.#
ICAL Standard	MP86192,MP86193,MP86194,MP86195,MP86196,MP86212
ICV Standard	MP86213
CCV Standard	MP86216
ICSA Standard	MP86214,MP86215
CRI Standard	MP86212
LCS Standard	
Chk Standard	MP86217,MP86218

19	Q2600-06	STOCK-PILE	SAM	07/17/25 14:41		Jaswal	OK
20	Q2600-10	END-OF-TRENCH	SAM	07/17/25 14:45		Jaswal	OK
21	Q2611-01	EO-02-071525	SAM	07/17/25 14:49		Jaswal	OK
22	Q2622-01	2819	SAM	07/17/25 14:54		Jaswal	OK
23	CCV02	CCV02	CCV	07/17/25 14:58		Jaswal	OK
24	CCB02	CCB02	CCB	07/17/25 15:02		Jaswal	OK
25	Q2592-02	WC-SOIL-20250711	SAM	07/17/25 15:07		Jaswal	OK
26	Q2614-06	HR-MCN-COMP-01	SAM	07/17/25 15:12		Jaswal	OK
27	Q2612-01	OR-02-071525	SAM	07/17/25 15:16		Jaswal	OK
28	Q2614-01RE	HR-MCN-COMP-01R	SAM	07/17/25 15:20	Not Use	Jaswal	Not Ok
29	Q2608-01	A2028	SAM	07/17/25 15:24		Jaswal	OK
30	Q2585-04	EFF-WW	SAM	07/17/25 15:29		Jaswal	OK
31	Q2606-01DUP	402DUP	DUP	07/17/25 15:33		Jaswal	OK
32	Q2606-01L	402L	SD	07/17/25 15:37		Jaswal	OK
33	Q2606-01MS	402MS	MS	07/17/25 15:42		Jaswal	OK
34	Q2606-01MSD	402MSD	MSD	07/17/25 15:46		Jaswal	OK
35	CCV03	CCV03	CCV	07/17/25 15:50		Jaswal	OK
36	CCB03	CCB03	CCB	07/17/25 15:56		Jaswal	OK
37	Q2606-01A	402A	PS	07/17/25 16:00		Jaswal	OK
38	PB168881BL	PB168881BL	MB	07/17/25 16:04		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136533

Review By	Janvi	Review On	7/18/2025 11:48:20 AM
Supervise By	jaswal	Supervise On	7/21/2025 4:45:05 AM
STD. NAME	STD REF.#		
ICAL Standard	MP86192,MP86193,MP86194,MP86195,MP86196,MP86212		
ICV Standard	MP86213		
CCV Standard	MP86216		
ICSA Standard	MP86214,MP86215		
CRI Standard	MP86212		
LCS Standard			
Chk Standard	MP86217,MP86218		

39	PB168881BS	PB168881BS	LCS	07/17/25 16:08		Jaswal	OK
40	Q2614-06DUP	HR-MCN-COMP-01D	DUP	07/17/25 16:12		Jaswal	OK
41	Q2614-06L	HR-MCN-COMP-01L	SD	07/17/25 16:17		Jaswal	OK
42	Q2614-06MS	HR-MCN-COMP-01M	MS	07/17/25 16:21		Jaswal	OK
43	Q2614-06MSD	HR-MCN-COMP-01M	MSD	07/17/25 16:25		Jaswal	OK
44	Q2614-06A	HR-MCN-COMP-01A	PS	07/17/25 16:29	0.1ml of M6004,M6013 in 10ml sample.	Jaswal	OK
45	PB168888BL	PB168888BL	MB	07/17/25 16:33		Jaswal	OK
46	PB168888BS	PB168888BS	LCS	07/17/25 16:38		Jaswal	OK
47	CCV04	CCV04	CCV	07/17/25 16:42		Jaswal	OK
48	CCB04	CCB04	CCB	07/17/25 16:46		Jaswal	OK
49	PB168847TB	PB168847TB	MB	07/17/25 16:50		Jaswal	OK
50	Q2605-01	V908	SAM	07/17/25 16:55		Jaswal	OK
51	Q2605-02	VB16135	SAM	07/17/25 16:59		Jaswal	OK
52	Q2605-03	VB15061	SAM	07/17/25 17:04		Jaswal	OK
53	Q2605-04	V897	SAM	07/17/25 17:08		Jaswal	OK
54	Q2609-02	710-ABC	SAM	07/17/25 17:13		Jaswal	OK
55	Q2609-06	709-AB	SAM	07/17/25 17:17		Jaswal	OK
56	PB168883BL	PB168883BL	MB	07/17/25 17:22		Jaswal	OK
57	PB168883BS	PB168883BS	LCS	07/17/25 17:26		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136533

Review By	Janvi	Review On	7/18/2025 11:48:20 AM
Supervise By	jaswal	Supervise On	7/21/2025 4:45:05 AM

STD. NAME	STD REF.#
ICAL Standard	MP86192,MP86193,MP86194,MP86195,MP86196,MP86212
ICV Standard	MP86213
CCV Standard	MP86216
ICSA Standard	MP86214,MP86215
CRI Standard	MP86212
LCS Standard	
Chk Standard	MP86217,MP86218

58	Q2604-02	RW8-SP303-2025071	SAM	07/17/25 17:30		Jaswal	OK
59	CCV05	CCV05	CCV	07/17/25 17:58		Jaswal	OK
60	CCB05	CCB05	CCB	07/17/25 18:02		Jaswal	OK
61	Q2604-01	RW8-SP100-2025071	SAM	07/17/25 18:07		Jaswal	OK
62	Q2604-01DUP	RW8-SP100-2025071	DUP	07/17/25 18:11		Jaswal	OK
63	Q2604-01L	RW8-SP100-2025071	SD	07/17/25 18:15		Jaswal	OK
64	Q2604-01MS	RW8-SP100-2025071	MS	07/17/25 18:20		Jaswal	OK
65	Q2604-01MSD	RW8-SP100-2025071	MSD	07/17/25 18:24		Jaswal	OK
66	Q2604-01A	RW8-SP100-2025071	PS	07/17/25 18:28	0.1ml of M6004,M6013 in 10ml sample	Jaswal	OK
67	PB168882BL	PB168882BL	MB	07/17/25 18:31		Jaswal	OK
68	PB168882BS	PB168882BS	LCS	07/17/25 18:54		Jaswal	OK
69	Q2609-01	710-ABC	SAM	07/17/25 19:06	Fe,Zn High , Ag oversaturated	Jaswal	Dilution
70	Q2609-05	709-AB	SAM	07/17/25 19:11	Fe,Zn High , Ag oversaturated	Jaswal	Dilution
71	CCV06	CCV06	CCV	07/17/25 19:24		Jaswal	OK
72	CCB06	CCB06	CCB	07/17/25 19:28		Jaswal	OK
73	Q2609-01DL	710-ABCDL	SAM	07/17/25 19:34	10X For Fe,Ag,Zn	Jaswal	Confirms
74	Q2609-05DL	709-ABDL	SAM	07/17/25 19:38	10X For Fe,Ag,Zn	Jaswal	Confirms
75	Q2614-01	HR-MCN-COMP-01	SAM	07/17/25 19:42		Jaswal	OK
76	Q2614-01DUP	HR-MCN-COMP-01D	DUP	07/17/25 19:46		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136533

Review By	Janvi	Review On	7/18/2025 11:48:20 AM
Supervise By	jaswal	Supervise On	7/21/2025 4:45:05 AM

STD. NAME	STD REF.#
ICAL Standard	MP86192,MP86193,MP86194,MP86195,MP86196,MP86212
ICV Standard	MP86213
CCV Standard	MP86216
ICSA Standard	MP86214,MP86215
CRI Standard	MP86212
LCS Standard	
Chk Standard	MP86217,MP86218

77	Q2614-01L	HR-MCN-COMP-01L	SD	07/17/25 19:50		Jaswal	OK
78	Q2614-01MS	HR-MCN-COMP-01M	MS	07/17/25 19:54		Jaswal	OK
79	Q2614-01MSD	HR-MCN-COMP-01M	MSD	07/17/25 19:58		Jaswal	OK
80	Q2614-01A	HR-MCN-COMP-01A	PS	07/17/25 20:02		Jaswal	OK
81	CCV07	CCV07	CCV	07/17/25 20:16		Jaswal	OK
82	CCB07	CCB07	CCB	07/17/25 20:20		Jaswal	OK

Prep Standard - Chemical Standard Summary

Order ID : Q2604
Test : Metals Group4
Prepbatch ID : PB168883,
Sequence ID/Qc Batch ID: LB136533, LB136533,

Standard ID :
MP85156, MP86192, MP86193, MP86194, MP86195, MP86196, MP86211, MP86212, MP86213, MP86214, MP86215, MP86216, MP86217, MP86218,

Chemical ID :
M5467, M5470, M5471, M5499, M5658, M5747, M5748, M5751, M5798, M5799, M5800, M5801, M5811, M5814, M5816, M5820, M5942, M5962, M5970, M5984, M5985, M5996, M5997, M6007, M6015, M6021, M6023, M6028, M6030, M6032, M6076, M6127, M6128, M6137, M6142, M6144, M6145, M6146, M6151, M6152, M6155, M6158, M6159, 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)	MP86192	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal
								07/03/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6162 = Final Quantity: 2500.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
907	ICP AES STD S (S5)	MP86193	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/03/2025
FROM 5.00000ml of M5467 + 5.00000ml of M5470 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5970 + 5.00000ml of M5996 + 5.00000ml of M5997 + 5.00000ml of M6076 + 5.00000ml of M6146 + 455.00000ml of MP86192 = 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	MP86194	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/03/2025
FROM 50.00000ml of MP86192 + 50.00000ml of MP86193 = 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	MP86195	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

A)

FROM 25.00000ml of MP86193 + 75.00000ml of MP86192 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3913	ICP AES STD S2	MP86196	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

A)

FROM 16.00000ml of MP86193 + 184.00000ml of MP86192 = Final Quantity: 200.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2950	ICP AES S1/CRI STOCK STD	MP86211	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/03/2025
FROM 0.03000ml of M5798 + 0.03000ml of M6028 + 0.04000ml of M6137 + 0.05000ml of M5658 + 0.05000ml of M5811 + 0.05000ml of M6030 + 0.05000ml of M6159 + 0.06000ml of M5747 + 0.10000ml of M5471 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5499 + 1.00000ml of M5942 + 1.00000ml of M6127 + 1.00000ml of M6142 + 1.00000ml of M6144 + 2.00000ml of M5816 + 89.29000ml of MP86192 = 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	MP86212	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/03/2025
FROM 2.00000ml of MP86211 + 98.00000ml of MP86192 = 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>
4163	NEW ICV-060925	MP86213	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

FROM 0.20000ml of M6163 + 0.20000ml of M6164 + 0.20000ml of M6165 + 49.40000ml of MP86192 = 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>
904	ICP AES ICSA SOLN	MP86214	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

FROM 10.00000ml of M6152 + 80.00000ml of MP86192 = 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>
3494	ICP AES ICSAB SOLN-1	MP86215	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/03/2025
FROM 10.00000ml of M6152 + 10.00000ml of M6155 + 80.00000ml of MP86192 = 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	MP86216	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/03/2025
FROM 50.00000ml of MP86192 + 50.00000ml of MP86193 = 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>
919	ICP AES INTERNAL STD	MP86217	06/25/2025	07/18/2025	Janvi Patel	None	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

<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	MP86218	06/25/2025	07/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

FROM 200.00000ml of M6162 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	082922	08/29/2025	04/14/2025 / jaswal	03/16/2023 / jaswal	M5470

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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.	58120 / Ca, 10000 PPM, 500 ml	031523	03/15/2026	04/17/2025 / Janvi	03/17/2023 / bin	M5499

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

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

CHEMICAL RECEIPT LOG BOOK

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

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

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

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

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

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

CHEMICAL RECEIPT LOG BOOK

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

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGT11-1 / 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

CHEMICAL RECEIPT LOG BOOK

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

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

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

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

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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	U2-MEB731108	03/17/2028	06/19/2025 / MOHAN	05/14/2024 / Jaswal	M6015

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57081 / 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

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	01/01/2026	01/01/2025 / kareem	09/19/2024 / kareem	M6076

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

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

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

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

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

CHEMICAL RECEIPT LOG BOOK

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

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

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	03/25/2029	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

CHEMICAL RECEIPT LOG BOOK

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-2-125ML / EPA CLP ICP Verification Standard2	U2-MEB733713	06/01/2028	06/09/2025 / jaswal	06/09/2025 / jaswal	M6164

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-3-125ML / EPA CLP ICP Verification Standard3	V2-MEB749572	01/02/2030	06/09/2025 / jaswal	06/09/2025 / jaswal	M6165

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



M6032

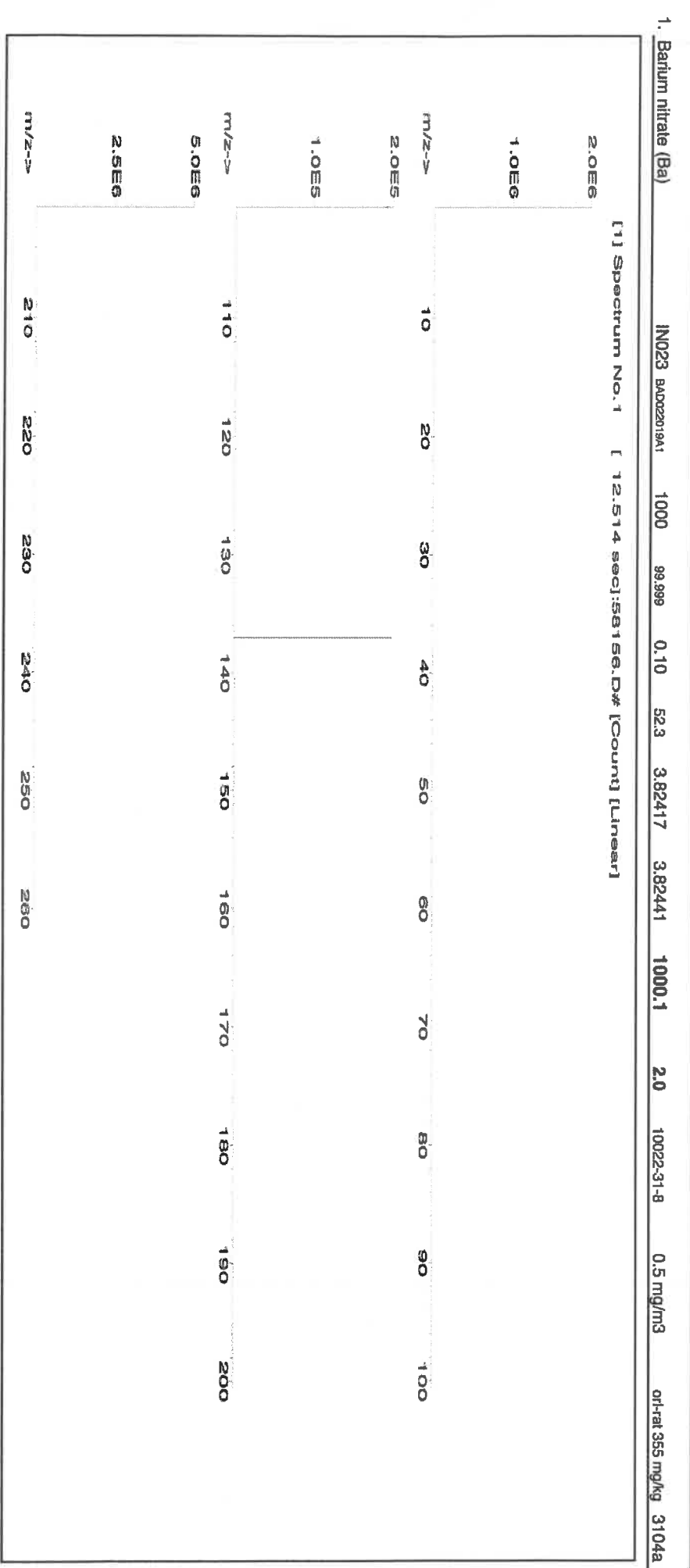


CERTIFIED WEIGHT REPORT:

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
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.058

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	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)
1. Barium nitrate (Ba)	IN023	BA0022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	1000.1





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).



M6028



CERTIFIED WEIGHT REPORT:

Part Number: 57048
Lot Number: 070124
Description: Cadmium (Cd)

Solvent: 24002546 Nitric Acid
Lot #

Expiration Date:

070127

2%

40.0 (mL)

Nitric Acid

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

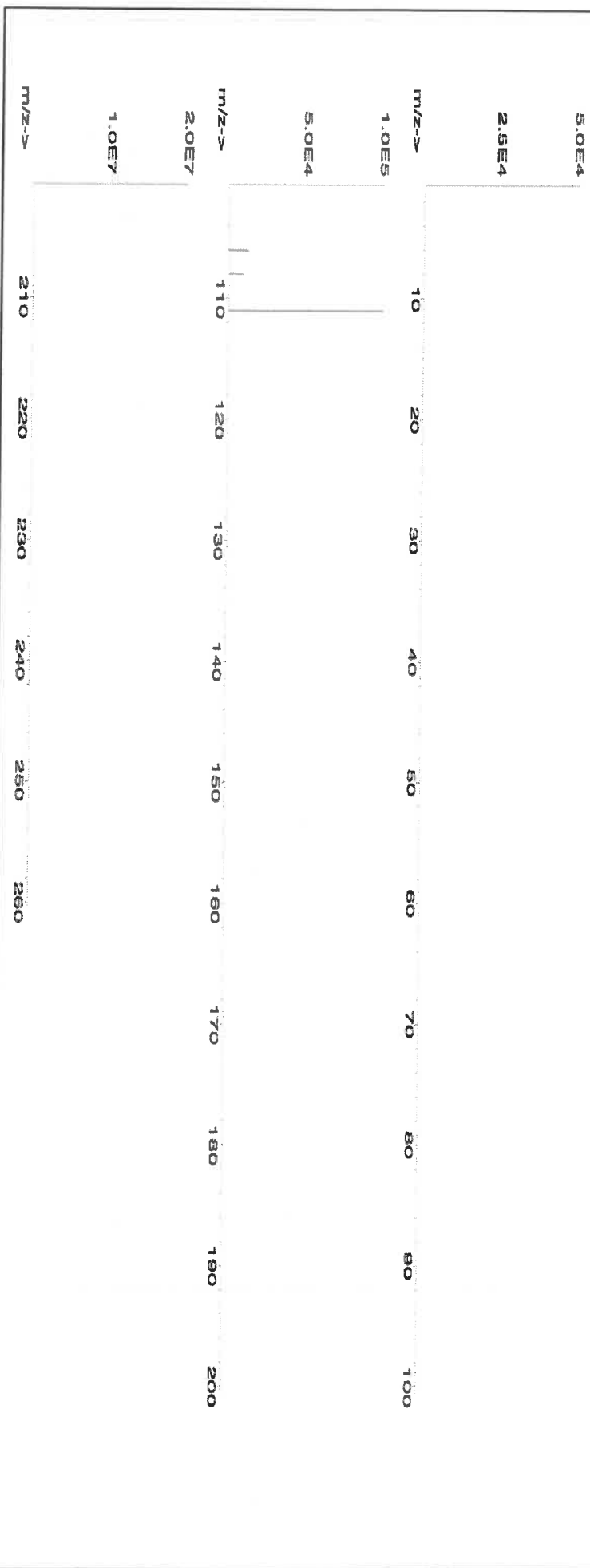
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

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.

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

Solvent: 21110221 Nitric Acid

Lot #

Expiration Date: 051526

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 5000.1

SE-05 Balance Uncertainty

0.12 Flask Uncertainty

5.0% 250.0 (mL) Nitric Acid

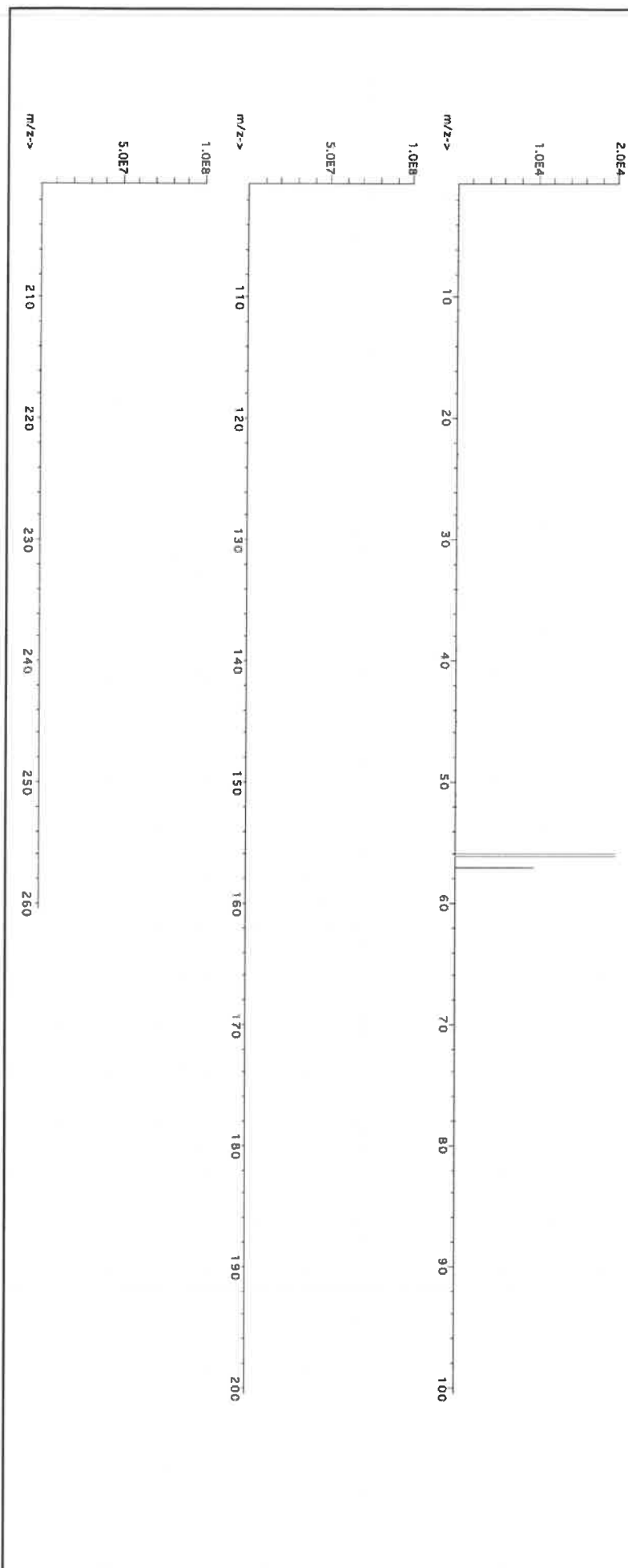
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	051523
<i>Pedro L. Renias</i>	
Reviewed By:	Pedro L. Renias
	051523

Compound

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

1. Iron (Fe)	IN346	2302010-500	10000	99.995	0.10	100.0	50.0034	50.0111	10001.5	20.0	7439-89-6	5 mg/m3	or-tral 7500mg/kg 3126a
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[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:

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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
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Refine your results. Redefine your industry.

RD:05/14/2024

Certificate of Analysis

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Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



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, Cerium, Thallium,	Aluminum, Selenium,
	100 µg/mL ea: Lead,	Calcium,
	80 µg/mL ea: Arsenic,	
	70 µg/mL ea: Mercury,	
	50 µg/mL ea: Nickel,	
	40 µg/mL ea: Chromium,	
	30 µg/mL ea: Copper, Vanadium,	Boron,
	20 µg/mL ea: Zinc, Barium, Cadmium, Manganese,	Strontium, Beryllium, Cobalt, Lithium,
	7.5 µg/mL ea: Silver	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

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

Assay Information:

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

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, 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; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 30, 2022

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

11.2 Lot Expiration Date

- August 30, 2026

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





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

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2.0 PRODUCT DESCRIPTION

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

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

Assay Information:

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 17, 2023

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

11.2 Lot Expiration Date

- **March 17, 2028**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM



M5467 R: 03/01/23 (14)

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57058
020623
Cerium (Ce)

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

020626
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

1000.12

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Lot #

Solvent: 21110221 Nitric Acid

2% 20.0 Nitric Acid (mL)

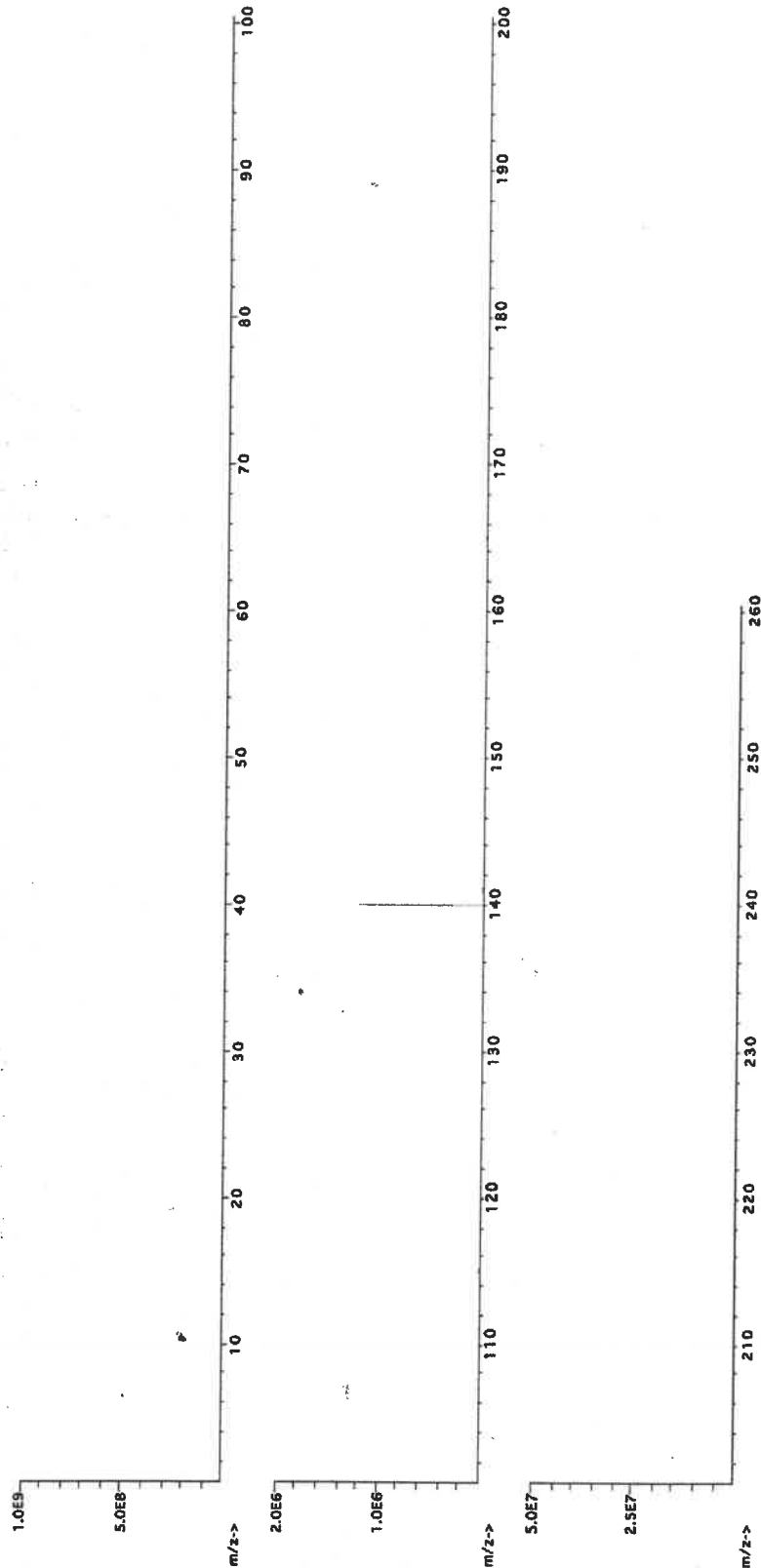
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty +/- (µg/mL) CAS# OSHA PEL (TWA) LD50 SRM

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	3.04921	1000.0	2.0	10294-41-4	NA	NA

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	T	Eu	<0.02	In	<0.02	Mg	<0.01	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	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

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).

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



M5497 - M5508
And on 4/14/23
063

Material No.: 3624-01

Batch No.: 0000281938

Manufactured Date: 2021-06-07

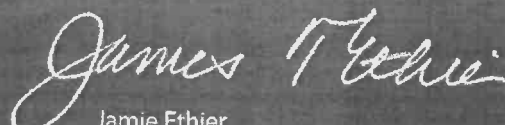
Retest Date: 2026-06-07

Revision No.: 2

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	≥ 99.0 %	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
Insoluble Matter	≤ 0.005 %	0.003 %
Iodide (I)	≤ 0.002 %	< 0.002 %
Bromide (Br)	≤ 0.01 %	< 0.01 %
Chlorate and Nitrate (as NO ₃)	≤ 0.003 %	< 0.001 %
ACS - Phosphate (PO ₄)	≤ 5 ppm	< 5 ppm
Sulfate (SO ₄)	≤ 0.004 %	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 2 ppm	< 1 ppm
Calcium (Ca)	≤ 0.002 %	< 0.001 %
Magnesium (Mg)	≤ 0.001 %	< 0.001 %
Potassium (K)	≤ 0.005 %	0.001 %

For Laboratory, Research, or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC


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



CERTIFIED WEIGHT REPORT:

Part Number: 58024
Lot Number: 060523
Description: Chromium (Cr)

Lot # 2110221 **Solvent:** Nitric Acid

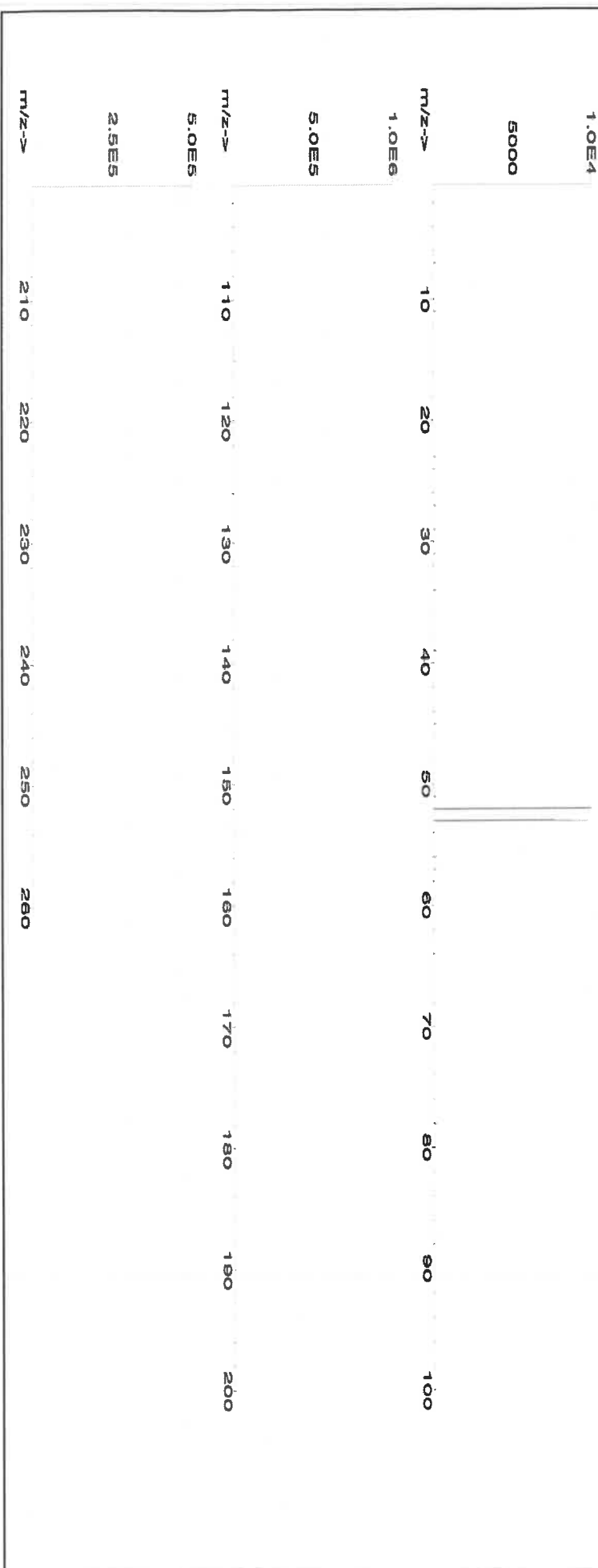
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

Expiration Date: 060526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.02 0.058 Balance Uncertainty
Flask Uncertainty

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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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]





Certified Reference Material CRM



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

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

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

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

(T) = Target analyte

Physical Characterization:

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: **57082**
Lot Number: **100923**
Description: **Lead (Pb)**

Solvent: **24002546 Nitric Acid**

Lot #

R: 12/20/23 MS747

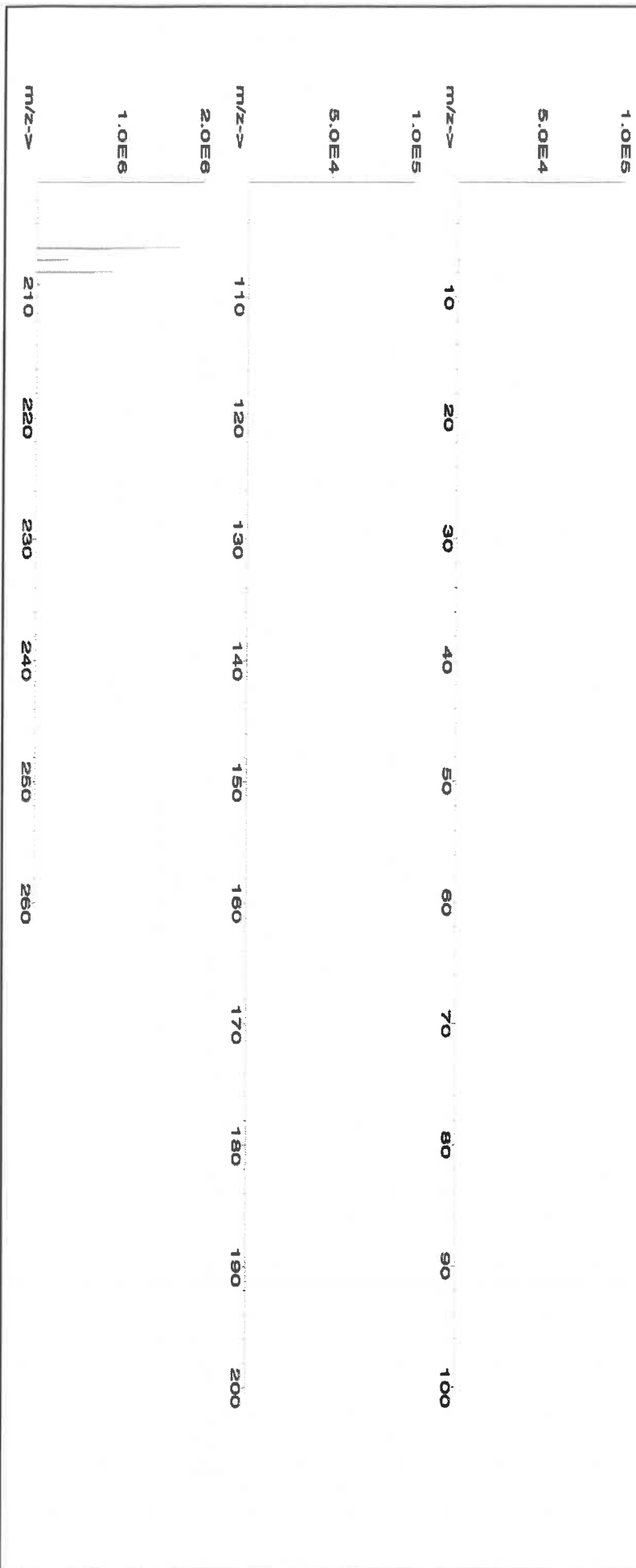
Formulated By:	Lawrence Barry	100923
Reviewed By:	Pedro L. Renteria	100923

Expiration Date: **100926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **3000.41**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Lead(II) nitrate (Pb) IN029 PbO122016A1 1000 99.999 0.10 62.5 4.80071 4.80077 1000.0 2.0 10099-74-8 0.05 mg/m3 Intvms-ret 89 mg/kg 3128

[1] Spectrum No. 1 [14.144 sec]:58082.D# [Count] [Linear]





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	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	T	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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- * 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: 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

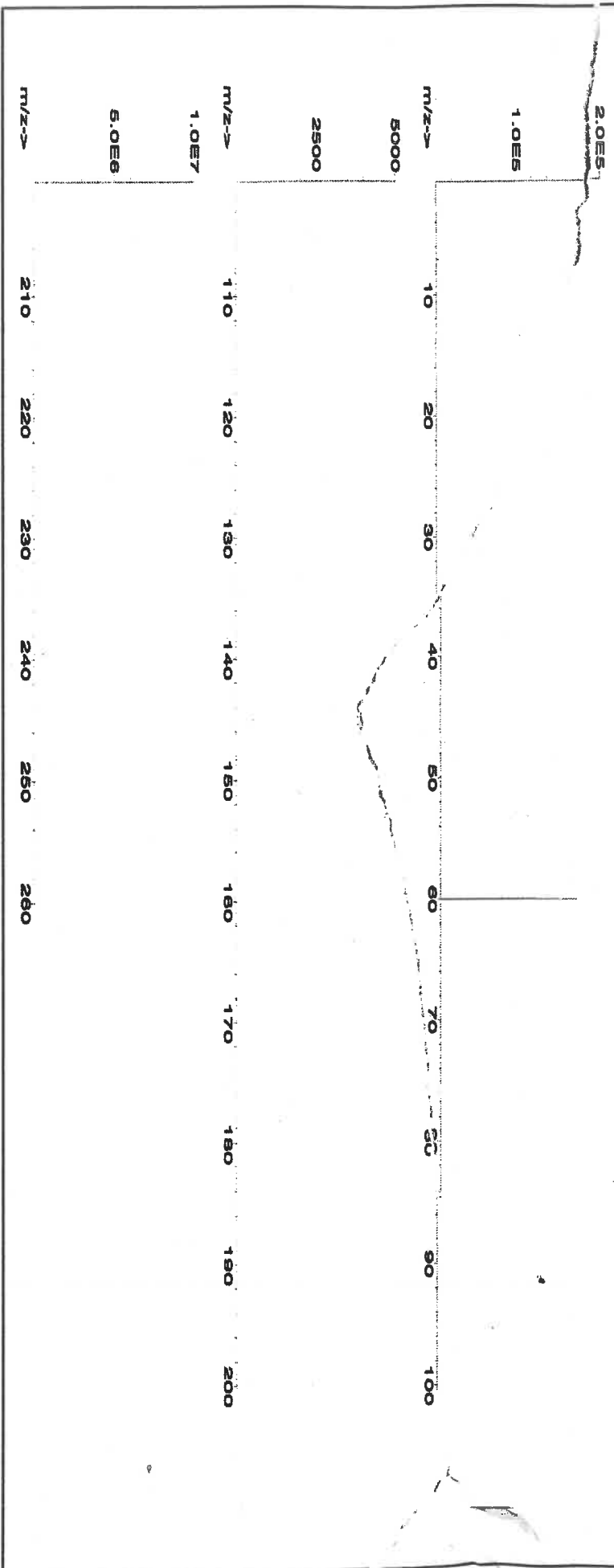
Volume shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.056 Flask Uncertainty

Formulated By:	Lawrence Barry	091223
Reviewed By:	Pedro L. Renteria	091223

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	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]:56026.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.
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Certified Reference Material CRM

R: 8/25/23 M5751



CERTIFIED WEIGHT REPORT:

Part Number: 58029
Lot Number: 071723
Description: Copper (Cu)

Lot # 2110221
Solvent: Nitric Acid

Expiration Date: 071726
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000

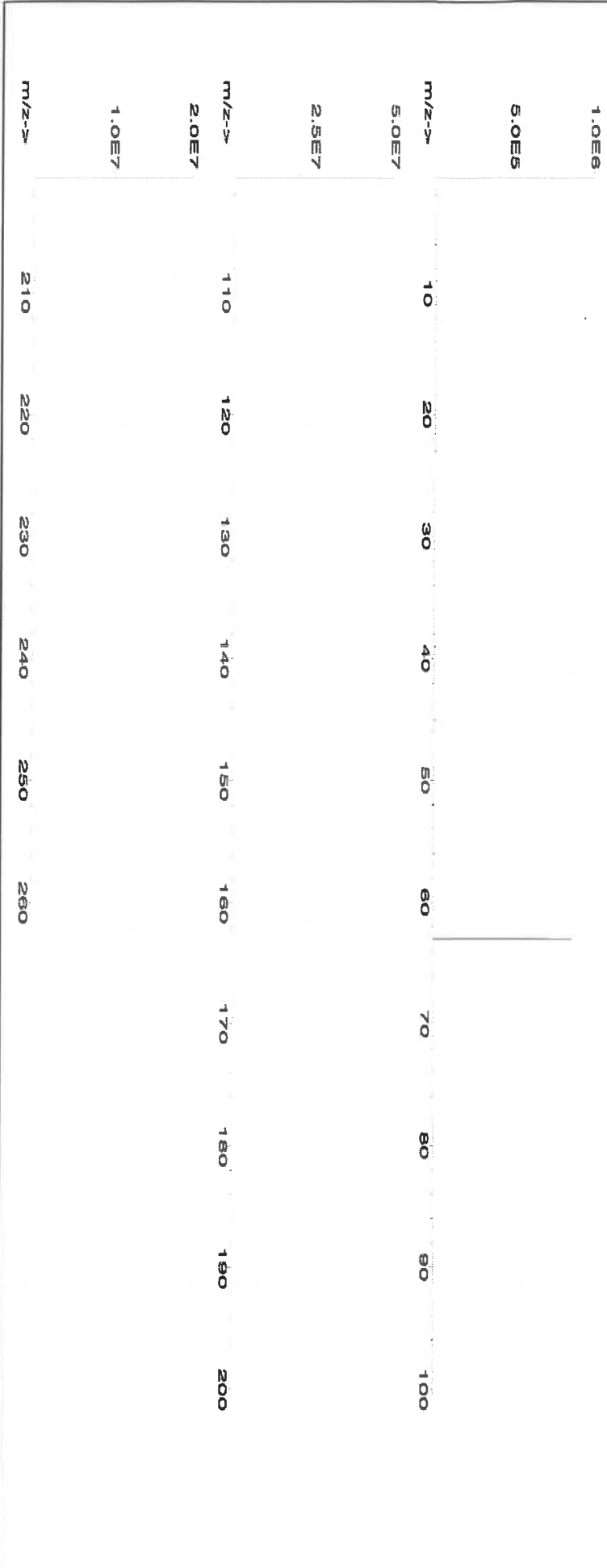
2.0% **40.0 (mL)** **Nitric Acid**

NIST Test Number: 6LUTB
Volume shown below was diluted to (mL): 2000.02

Formulated By:	Benson Chan	071723
Reviewed By:	Pedro L. Ruelas	071723

Compound		Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)	NIST SRM
1. Copper(II) nitrate trihydrate (Cu)		58129	022723	0.1000	200.0	0.084	1000	10000.5	1000.0	2.2	10031-43-3 1 mg/m3 or/rat 794 mg/kg	3114

[1] Spectrum No. 1 [33.422 sec]: 58029.D# [Count] [Linear]



Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



Certified Reference Material CRM



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

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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Co	<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	Cu	<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	T		Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 57004
Lot Number: 102523
Description: Beryllium (Be)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date:

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

NIST Test Number:

Volume shown below was diluted to (mL):

2.0%

40.0 (mL)

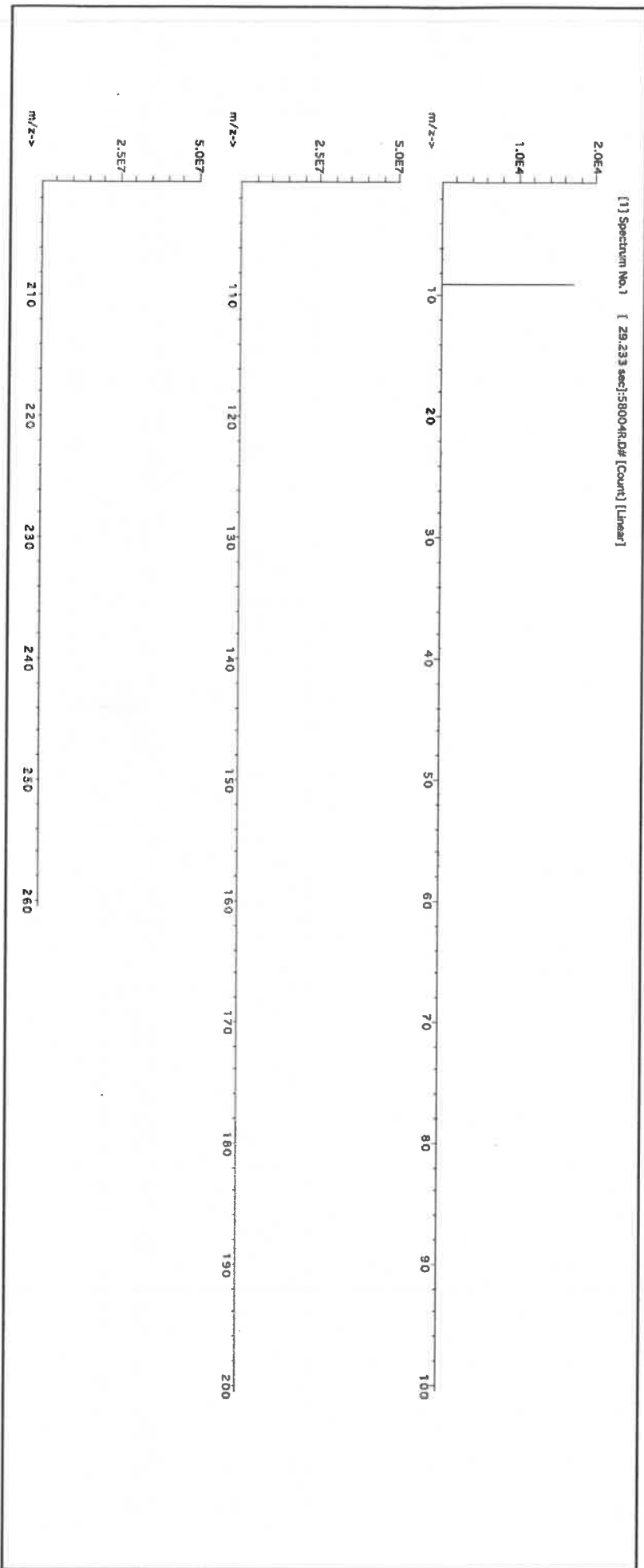
Nitric Acid

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

SDS Information

Compound	Part Number	Lot	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597-99-4	0.2µg/m3	intrinsc-rat 3.16mg/kg	NA
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (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	La	<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	<0.02	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	Sn	<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

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000

2% 10.0 Nitric Acid
6% 30.0 Hydrochloric acid
(mL)

NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

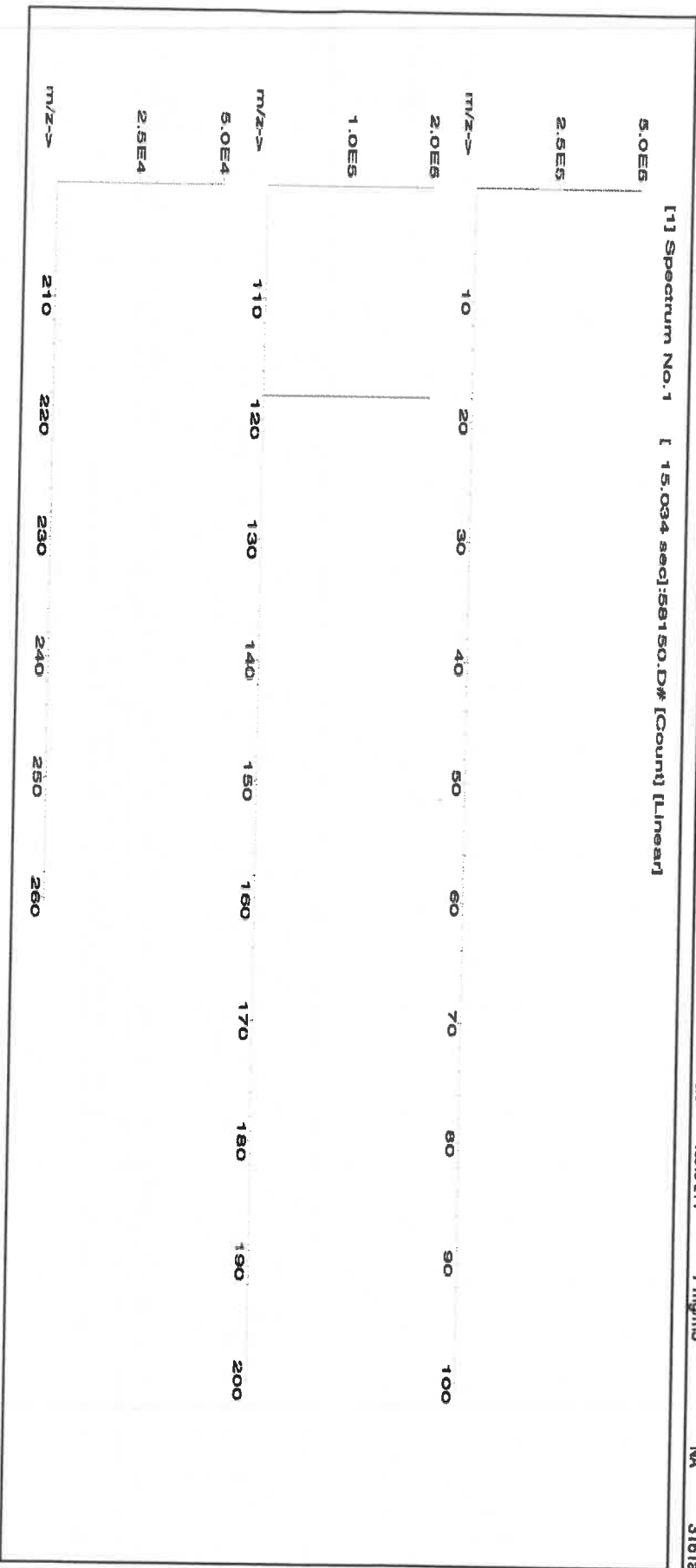
5E-05 Balance Uncertainty
0.0058 Flask Uncertainty

<i>[Signature]</i>	
Formulated By:	Benson Chan
	071123
Reviewed By:	Pedro L. Rientas
	071123

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

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

[1] Spectrum No. 1 [15.034 sec]:56150.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * 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 (54)

CERTIFIED WEIGHT REPORT:

Part Number: 57027
Lot Number: 091923
Description: Cobalt (Co)

Expiration Date: 091926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.02

Lot # 24002546
Solvent: Nitric Acid

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

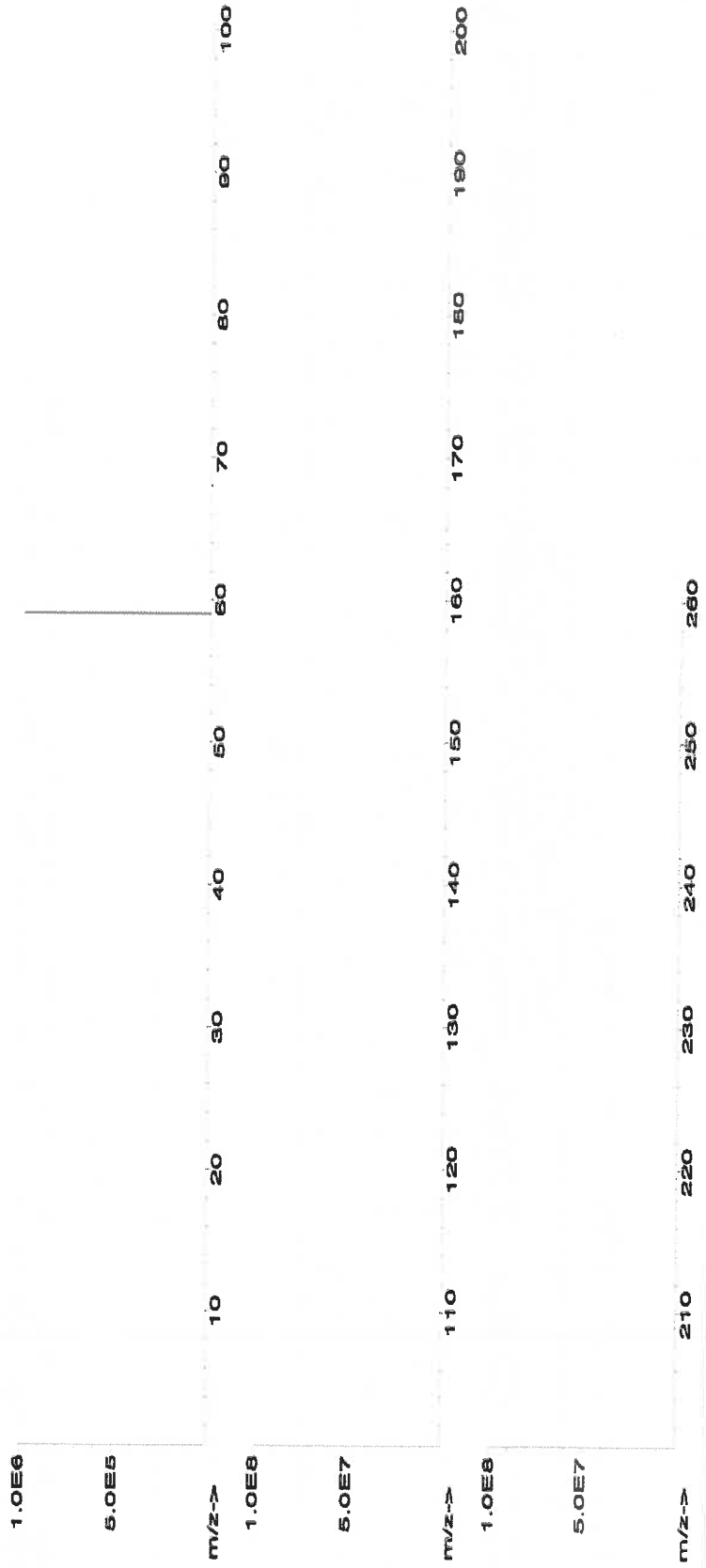
SDS Information

Expanded Uncertainty +/- (µg/mL)
Final Conc. (µg/mL)
Initial Conc. (µg/mL)
Nominal Conc. (µg/mL)
Pipette (mL)
Balance Uncertainty
Flask Uncertainty

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 or-rat 691 mg/kg 3113

[1] Spectrum No.1 [34.243 sec]:58027.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

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	<0.02	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	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Gé	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.02	Sc	<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:

Ben. J. P.

- * 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

AR: 02/09/24

M5801

BA



CERTIFIED WEIGHT REPORT:

Part Number: 57033
Lot Number: 111323
Description: Arsenic (As)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date: 111326

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6LUTB

Volume shown below was diluted to (mL): 4000.0

Balance Uncertainty: 5E-05
Flask Uncertainty: 0.06

2.0%

80.0 (mL)

Nitric Acid

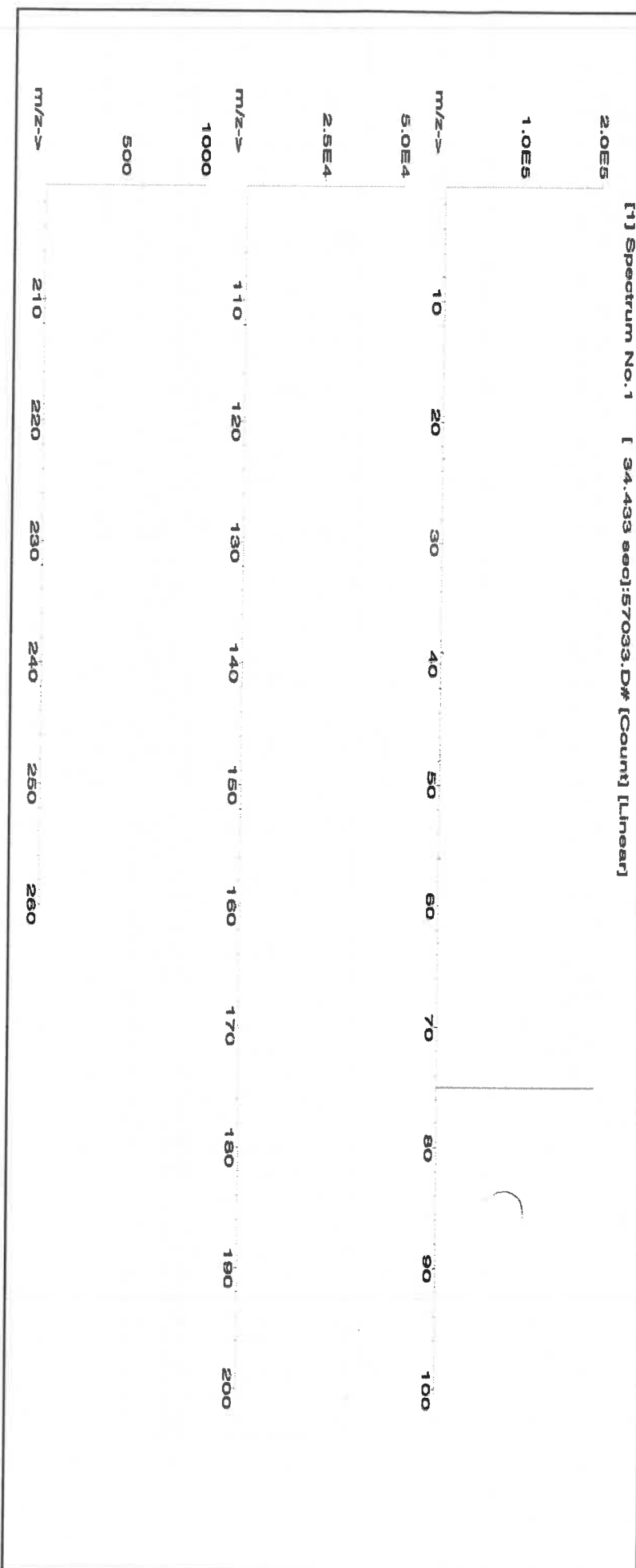
Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rendas	111323

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	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	Tc	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Bc	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge*	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	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			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 WEIGHT REPORT:

Part Number: **57005**
Lot Number: **071123**
Description: **Boron (B)**

Solvent: MKB0857V Ammonium hydroxide

Lot #

AI 021009124 M5814

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2.0% 40.0 Ammonium hydroxide (mL)

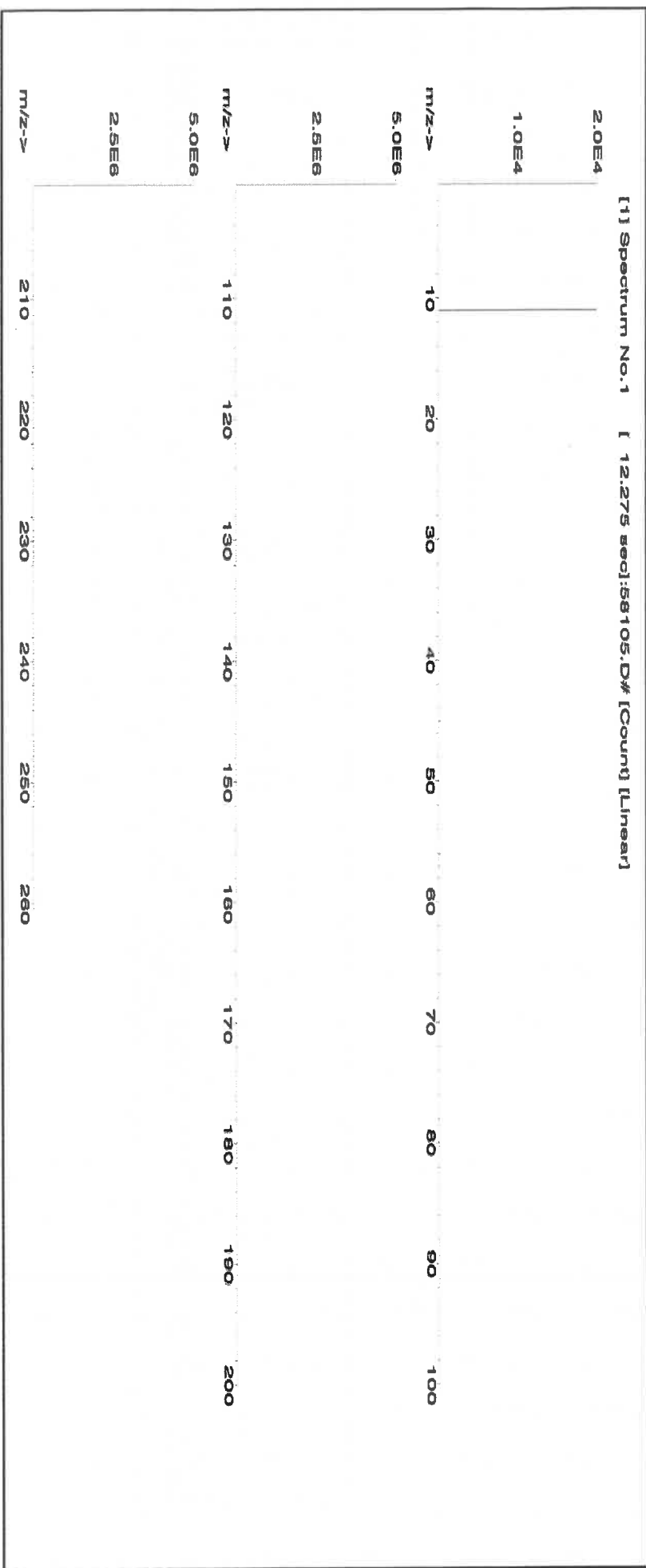
Weight shown below was diluted to (mL): 1999.48 0.058 Balance Uncertainty Flask Uncertainty

Formulated By:	Benson Chan
071123	
Reviewed By:	Pedro L. Rientas
071123	

SDS Information

Compound	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





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:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57016
122923
Sulfur (S)

Lot #

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: 6L7B

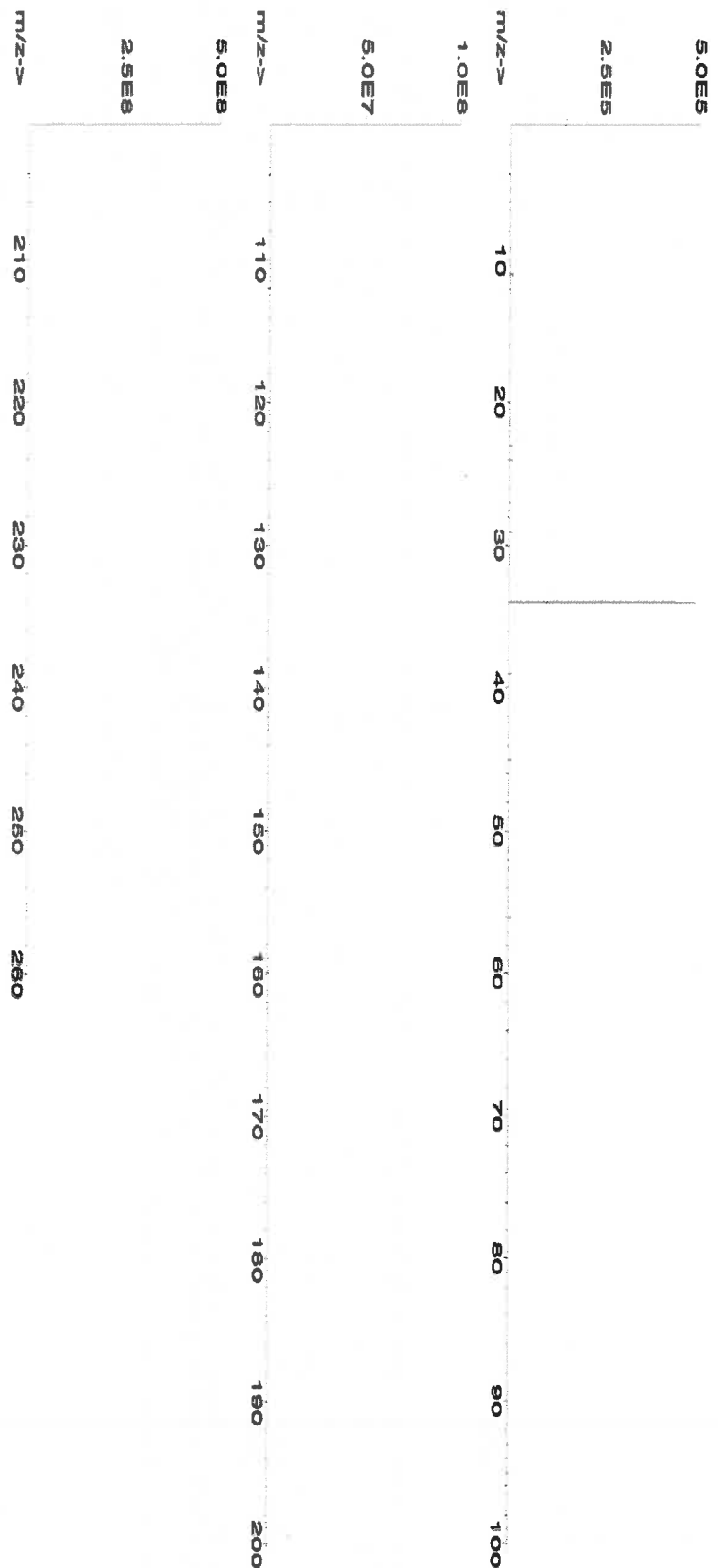
Weight shown below was diluted to (mL): 4000.0
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium sulfate (S) IN117 SLBR225V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA or-rel 4250mg/kg 3181

[1] Spectrum No. 1 [33.603 sec]:57016.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	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 57015
Lot Number: 091123
Description: Phosphorous (P)

Solvent: 24002546 Nitric Acid

Lot #

Formulated By:	Lawrence Barry
	091123
Reviewed By:	Pedro L. Rentas
	091123

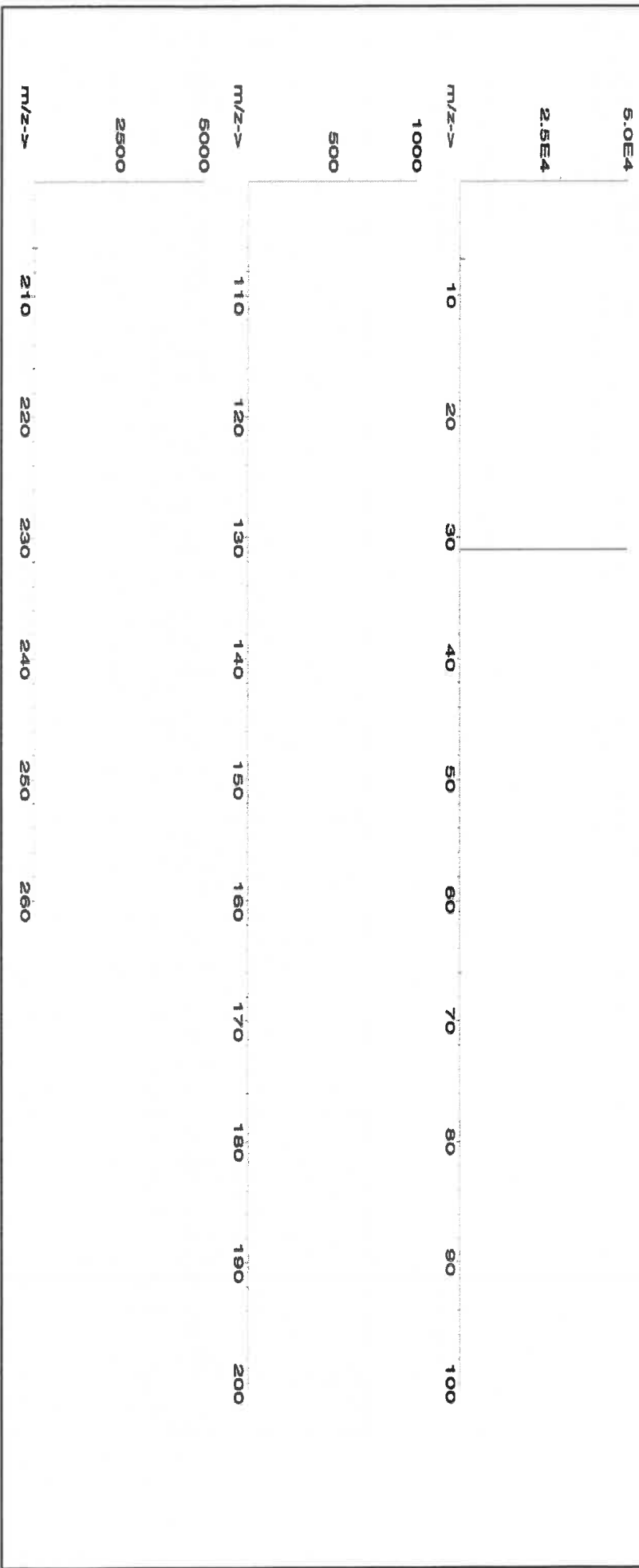
Expiration Date: 091126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6LUTB
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium dihydrogen phosphate (P) IN008 PY062019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/m3 xH-rat >2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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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



Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number:

57034

Lot Number:

060624

Description:

Selenium (Se)

Lot # Solvent:

24002546

Nitric Acid

2.0%

40.0 (mL)

Nitric Acid

(mL)

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

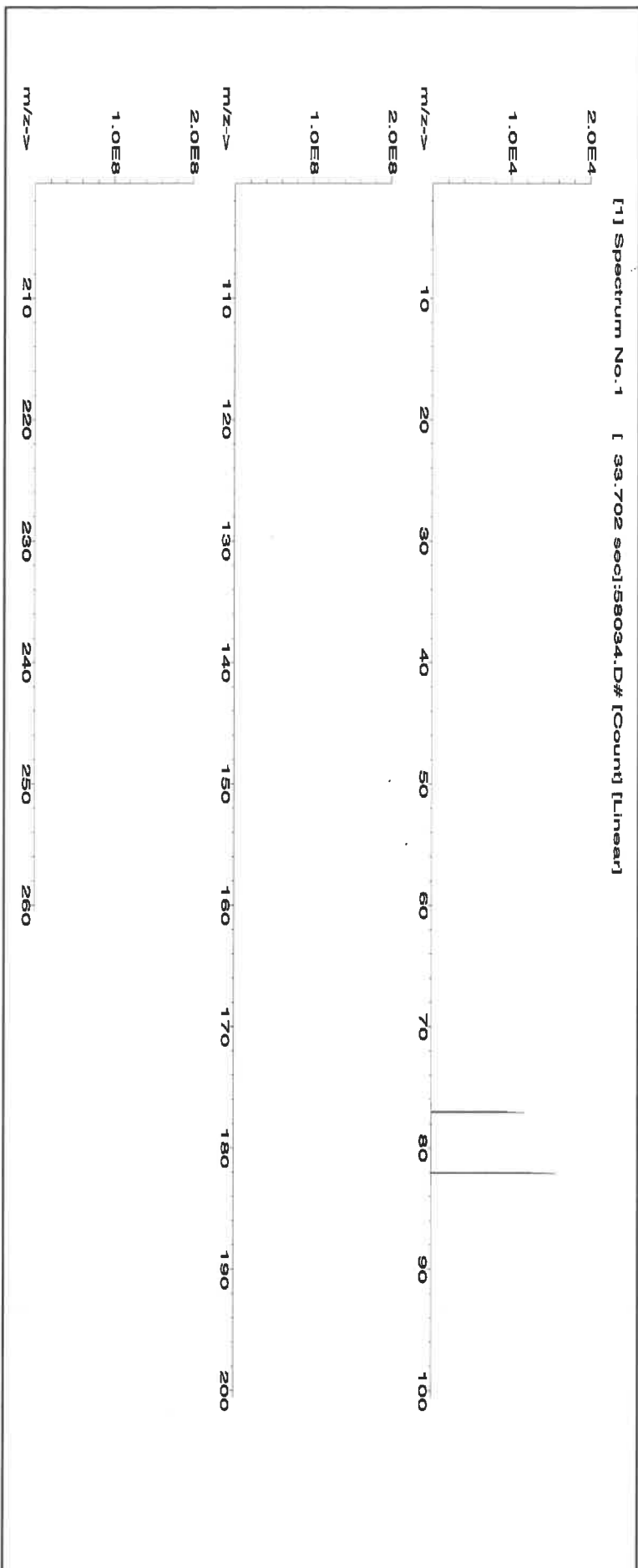
SE-05 Balance Uncertainty
0.100 Flask Uncertainty

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)	(Solvent Safety Info. On Attached pg.)	CAS#	OSHA PEL (TWA)	LDSO	NIST SRM
----------	-------------	------------	-----------------	-------------------	--------------	-----------------------	-----------------------	---------------------	----------------------------------	--	------	----------------	------	----------

1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	1000.0	2.2	7782-49-2	0.2 mg/m3	or-tral 6700 mg/kg	3149
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	T	Tb	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	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	Sr	<0.02	S	<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	Ta	<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		<0.02	Ti	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

Absolute Standards, Inc.
800-368-1131
www.absolute-standards.com



Certified Reference Material CRM
M5970 M5971 R1 710124



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

CERTIFIED WEIGHT REPORT:

Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 06/21/27
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

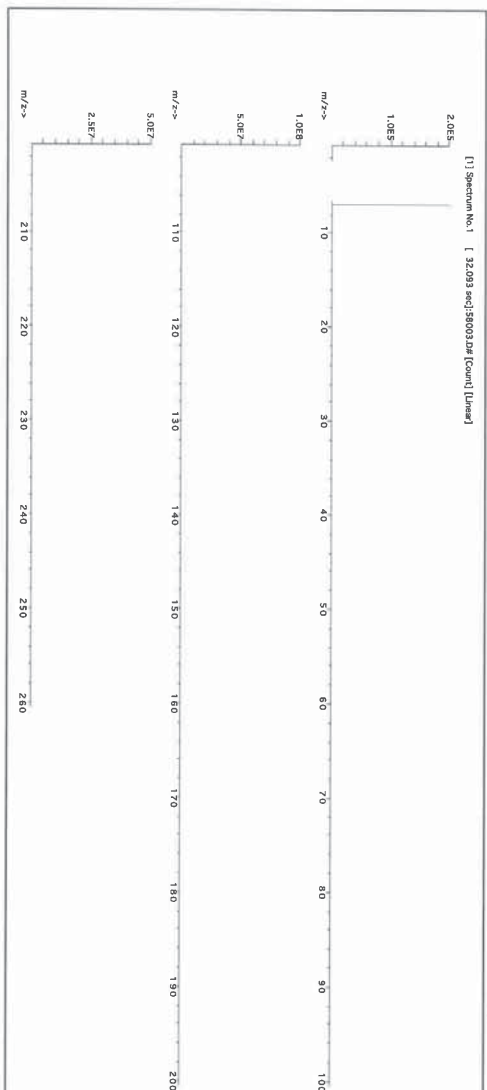
2.0% 5.0 (mL)
Nitric Acid

Microvite Capactor	
Formulated By:	062124
Glovent Epoxide	
Reviewed By: <i>[Signature]</i>	
Petro L. Parias	062124

Compound		SDS Information												NEST	
		(Solvent Safety Info. On Attachment pg.)													
Part	Lot	Dilution	Initial	Uncertainty	Nominal	Initial	Final	Expanded	Uncertainty	CAS#	OSHA PEL (TWA)	LD50	SM		
Number	Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)		

1. Lithium nitrate (Li) 58103 070622 0.1000 25.0 0.004 1000 10000.4 10000.4 2.0 7790-68-4 5 mg/m3 or-hal 1428 mg/kg NA

[1] Spectrum No. 1 [32.093 sec; 15000.0Hz Count [Lines]



Part # 57003 Lot # 062124

1 of 2

Printed: 6/24/2024, 11:20:08 PM

Certificate of Analysis

300 Technology Drive
 Christiansburg, VA 24073 USA
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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, $X_{\text{CRM/RM}}$, 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:

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

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

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

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

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)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.004600	M Eu	0.009037	M Na	0.086360	M Se <	0.005200	M Zn	0.030125
M Al	0.014862	O Fe	0.002410	M Nb <	0.000570	O Si	0.024100	O Zr <	0.002600
M As <	0.003500	M Ga <	0.000570	M Nd	0.000923	M Sm	0.000461		
M Au <	0.001700	M Gd <	0.003500	M Ni <	0.005700	M Sn <	0.002300		
O B	0.002209	M Ge <	0.005200	M Os <	0.001200	M Sr <	0.004600		
O Ba <	0.002500	M Hf <	0.000570	n P <		M Ta <	0.000570		
O Be <	0.001400	M Hg <	0.000570	M Pb	0.005020	M Tb	0.001044		
M Bi <	0.003500	M Ho	0.009037	M Pd <	0.005100	M Te <	0.002300		
O Ca	0.009841	M In <	0.002300	M Pr <	0.002300	M Th <	0.000570		
M Cd <	0.000570	M Ir <	0.000570	M Pt <	0.000570	M Ti <	0.003500		
M Ce <	0.002300	O K	0.018677	M Rb <	0.000570	M Tl <	0.000570		
M Co <	0.000570	M La	0.000461	M Re <	0.000570	M Tm <	0.003500		
M Cr <	0.004000	O Li <	0.009300	M Rh <	0.008000	M U <	0.000570		
M Cs <	0.000570	M Lu	0.000582	M Ru <	0.000570	M V	0.001265		
M Cu	0.002610	O Mg	0.001486	n S <		M W <	0.002300		
M Dy	0.003815	M Mn	0.000582	M Sb	0.005422	s Y <			
M Er	0.003615	M Mo <	0.005700	M Sc <	0.001200	M Yb	0.001827		

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 88.91 +3 6 Y(OH)(H₂O)_{x+2}

Chemical Compatibility -Soluble in HCl, H₂SO₄ and HNO₃. Avoid HF, H₃PO₄ and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride.

Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H₂O/ HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H₂O / HCl or HNO₃).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	73Ge16O, 178Hf+2
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

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

11.2 Lot Expiration Date

- February 20, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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:

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

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

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	<	0.000760	M	Eu	<	0.000760	O	Na	0.012771	M	Se	<	0.023000	M	Zn	<	0.006100
M	Al	0.003385	O	Fe	0.004462	M	Nb	<	0.000760	O	Si	0.024619	M	Zr	<	0.000760		
M	As	<	0.004600	M	Ga	<	0.000760	M	Nd	<	0.000760	M	Sm	<	0.000760			
M	Au	<	0.002300	M	Gd	<	0.000760	O	Ni	<	0.005100	M	Sn	<	0.000760			
O	B	0.003692	M	Ge	<	0.001600	M	Os	<	0.000760	O	Sr	<	0.000610				
M	Ba	<	0.001600	M	Hf	<	0.000760	n	P	<		M	Ta	<	0.000760			
O	Be	<	0.000130	M	Hg	<	0.003100	M	Pb	0.001400	M	Tb	<	0.000760				
M	Bi	<	0.000760	M	Ho	<	0.000760	M	Pd	<	0.001600	M	Te	<	0.000760			
O	Ca	0.004616	s	In	<			M	Pr	<	0.000760	M	Th	<	0.000760			
M	Cd	<	0.000760	M	Ir	<	0.000760	M	Pt	<	0.000760	O	Ti	<	0.001100			
M	Ce	<	0.000760	O	K	0.007078	M	Rb	<	0.000760	M	Tl	<	0.000760				
M	Co	<	0.000760	M	La	<	0.000760	M	Re	<	0.000760	M	Tm	<	0.000760			
O	Cr	<	0.001300	O	Li	<	0.000130	M	Rh	<	0.000760	M	U	<	0.000760			
M	Cs	<	0.000760	M	Lu	<	0.000760	M	Ru	<	0.000760	M	V	<	0.001600			
M	Cu	<	0.003800	O	Mg	0.000707	n	S	<		M	W	<	0.001600				
M	Dy	<	0.000760	O	Mn	0.000149	M	Sb	<	0.000760	M	Y	<	0.000760				
M	Er	<	0.000760	M	Mo	<	0.002300	M	Sc	<	0.000760	M	Yb	<	0.000760			

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 114.82 +3 6 In(H₂O)₆+3

Chemical Compatibility -Soluble in HCl, HNO₃, and H₂SO₄. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO₃); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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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,	Potassium,
	Magnesium,	Sodium,
	2 000 µg/mL ea:	
	Aluminum,	Barium,
	1 000 µg/mL ea:	
	Iron,	
	500 µg/mL ea:	
	Nickel,	Vanadium,
	Zinc,	Cobalt,
	Manganese,	
	250 µg/mL ea:	
	Silver,	Copper,
	200 µg/mL ea:	
	Chromium,	
	50 µg/mL ea:	
	Beryllium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

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

Assay Information:

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

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, 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

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

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

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

R: 2/22/24
MS997

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CLPP-CAL-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:

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

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

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

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

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

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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



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Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

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M6075
M6076
M6077

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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

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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:

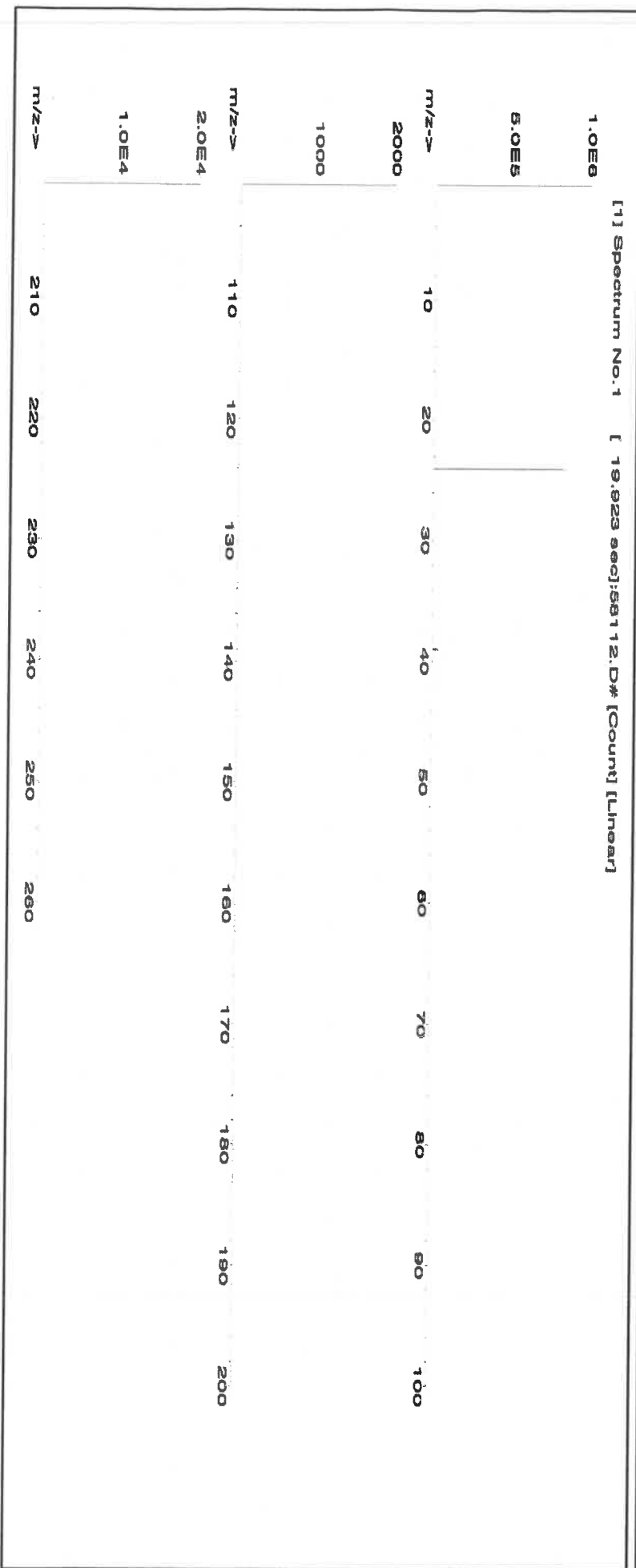
Part Number: 58112
Lot # 24012496
Description: Magnesium (Mg) Nitric Acid

Expiration Date: 11/21/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6LUB
Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	112124

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Magnesium nitrate hexahydrate (Mg) IN030 MG000023A1 10000 99.999 0.10 8.51 234.9183 234.9459 10001.2 20.0 13446-18-9 NA off-rat 5440 mg/kg 3131a





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58025
101124
Manganese (Mn)

Lot #
Solvent: Nitric Acid

24002546
80.0
Nitric Acid

R-71113128
MN6928

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	101124

Expiration Date: 101127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.2
5E-05 Balance Uncertainty
0.10 Flask Uncertainty

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Manganese(II) nitrate hydrate (Mn) IN031 MNM02020A1 1000 99.999 0.10 20.8 19.2322 19.2344 1000.1 2.0 15710-66-4 5 mg/m3 or-trt >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]

5.0E6	2.5E6	1.0E6	5.0E7	1.0E6	5.0E7
m/z->	m/z->	m/z->	m/z->	m/z->	m/z->
10	20	30	40	50	60
70	80	90	100		
210	220	230	240	250	260



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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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; Inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 10, 2024

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

11.2 Lot Expiration Date

- July 10, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57119
103024
Potassium (K)

R-21113125

Lot #
Solvent: 24002546
Nitric Acid

<i>Giovanni Caporaso</i>	
Formulated By:	Giovanni Caporaso
Reviewed By:	Pedro L. Renteria
	103024

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

103027
Ambient (20 °C)
10000

M6141
M6142
M6143

2%
80.0
(mL)
Nitric Acid

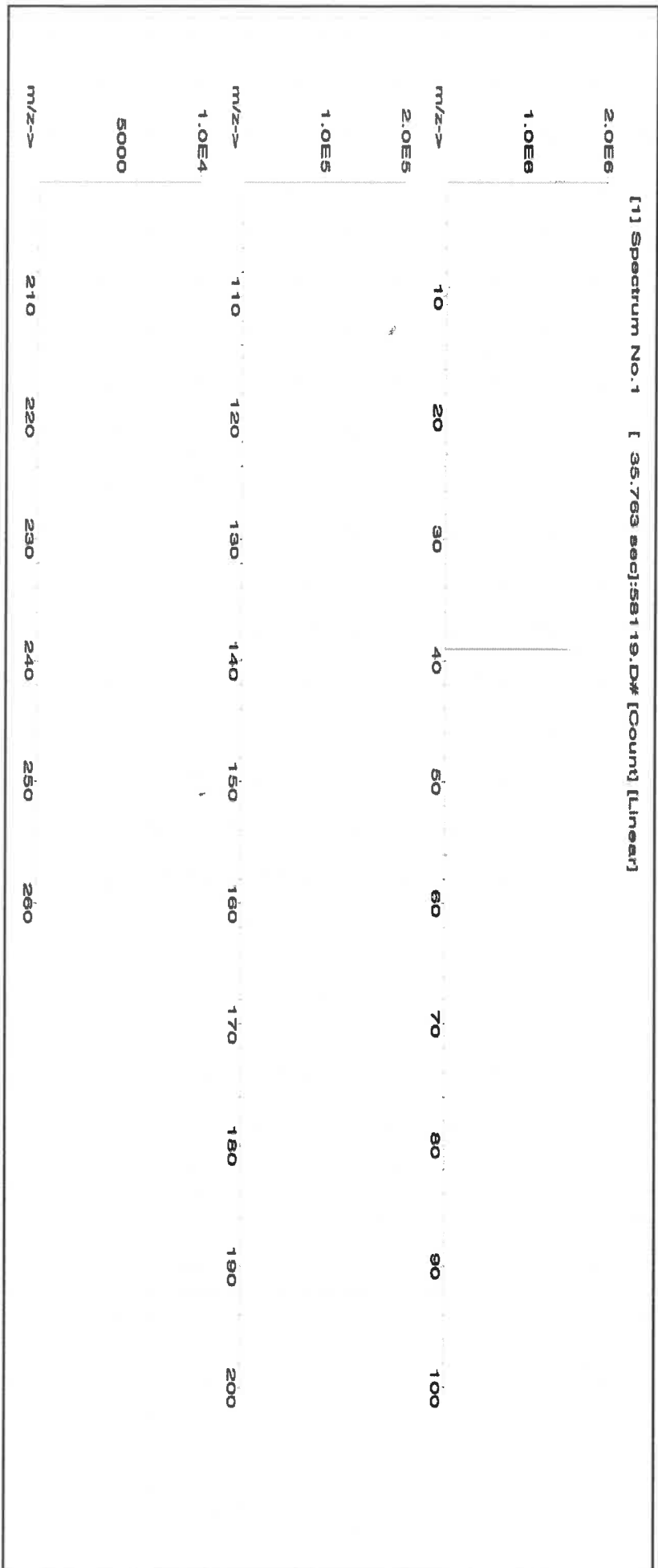
Weight shown below was diluted to (mL):

4000.1
0.15
Flask Uncertainty

Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	± (µg/mL)	(Solvent Safety Info. On Attached pg.)	SRM

1. Potassium nitrate (K) IN034 KD062022A1 10000 99.999 0.10 37.7 106.1040 ##### 10001.1 20.0 7757-79-1 5 mg/m3 orl-rat 3750 mg/kg 3141a

[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 # **R-1113125**
Lot Number: **072424** Solvent: **24002546 Nitric Acid**
Description: **Sodium (Na)**

Expiration Date: **072427** 2% 80.0 Nitric Acid (mL)

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

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

NIST Test Number: **6UTB** 5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): **4000.2** 0.10 Flask Uncertainty

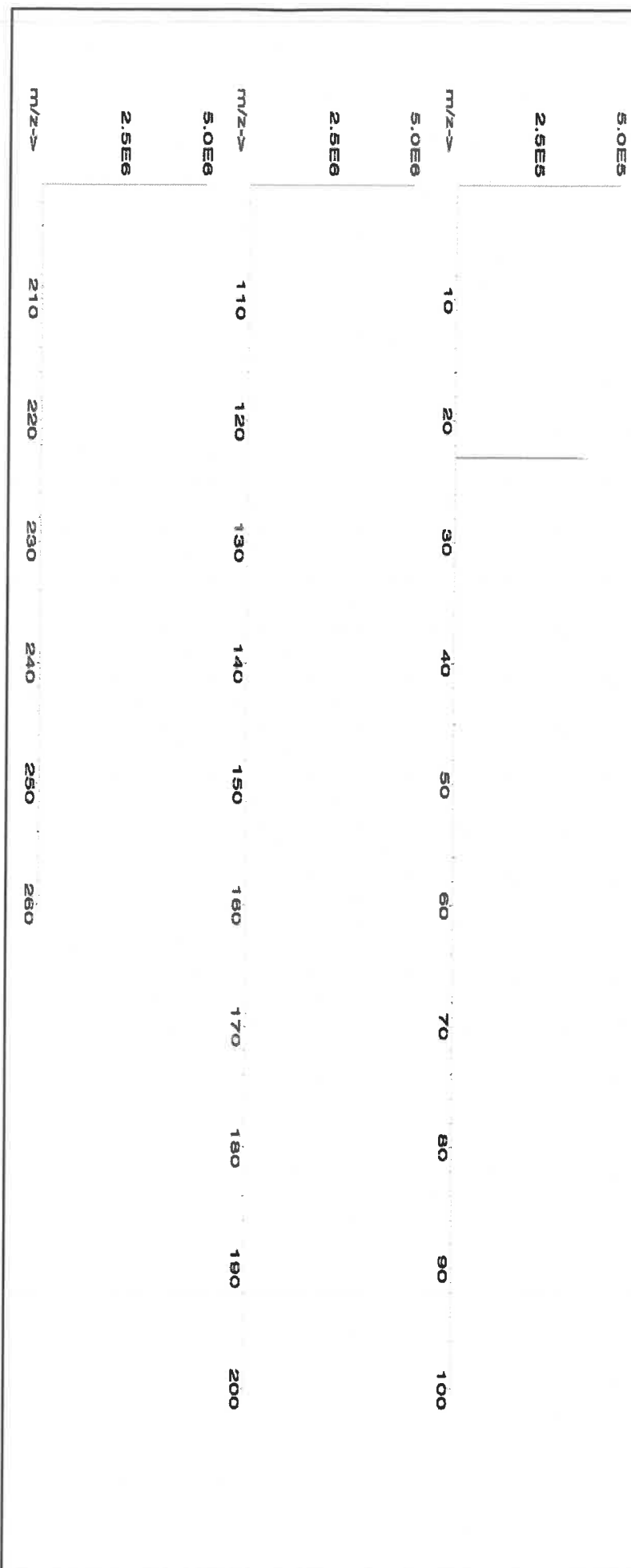
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Sodium nitrate (Na) IN036 NAV01201511 10000 99.999 0.10 26.9 148.7096 ##### 10000.0 20.0 7631-99-4 5 mg/m3 orl-rat 3430 mg/kg 3152a

[1] Spectrum No. 1 [8.935 sec]: 58111.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)

Lot #

Nitric Acid

Expiration Date: 121727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

M6145

2%
40.0 (mL)
Nitric Acid

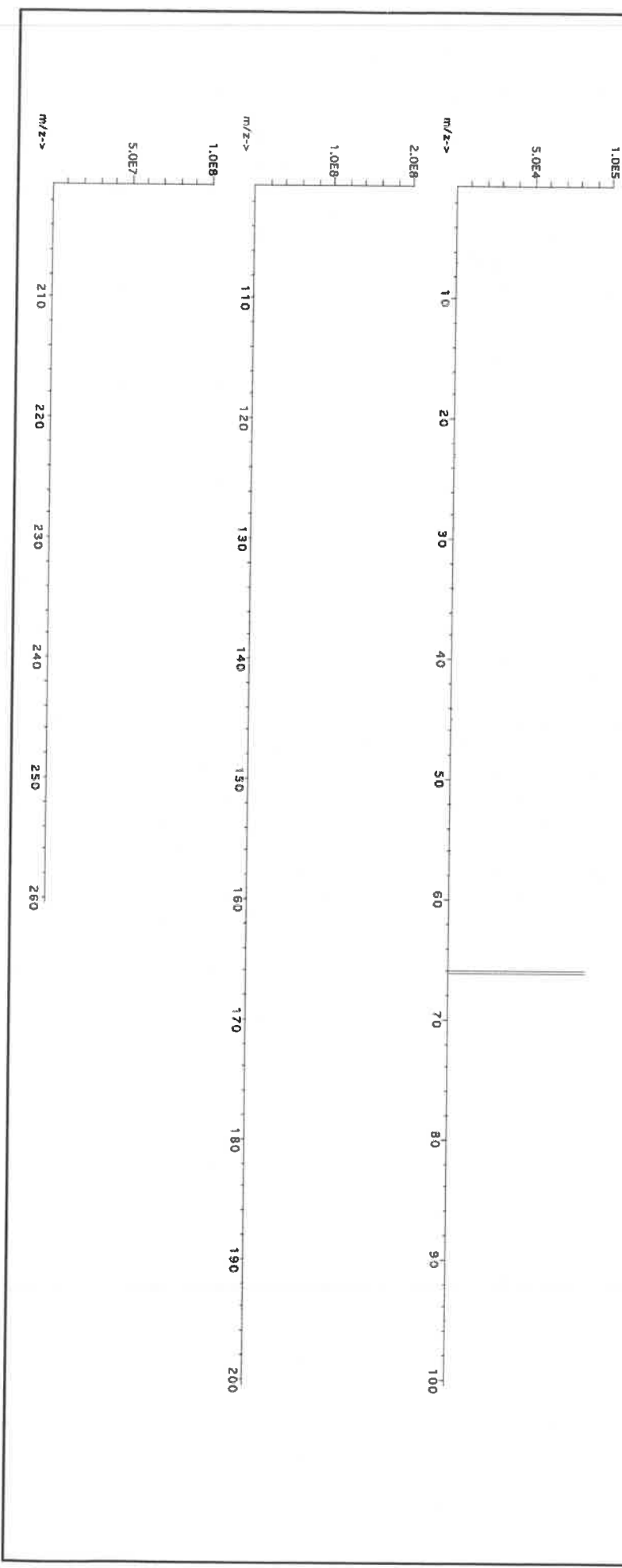
Weight shown below was diluted to (mL): 2000.1
5E-05 Balance Uncertainty
0.10 Flask Uncertainty

<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	<i>Pedro L. Rentias</i>
	Pedro L. Rentias
	121724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	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] [Lines]





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**™

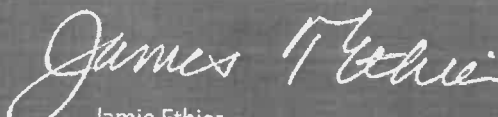


Material No.: 9530-33
Batch No.: 22G2862015

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

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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

 **avantorsTM**



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



Jamie Croak
Director Quality Operations, Bioscience Division

Nitric Acid 69%
CMOS



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

avantor™



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 >>>



Test	Specification	Result
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Joak

Jamie Croak
Director Quality Operations, Bioscience Production

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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-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



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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

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 01, 2023

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

11.2 Lot Expiration Date

- June 01, 2028

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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.

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

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





M6030



CERTIFIED WEIGHT REPORT:

Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:

122826

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL):

4000.30

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

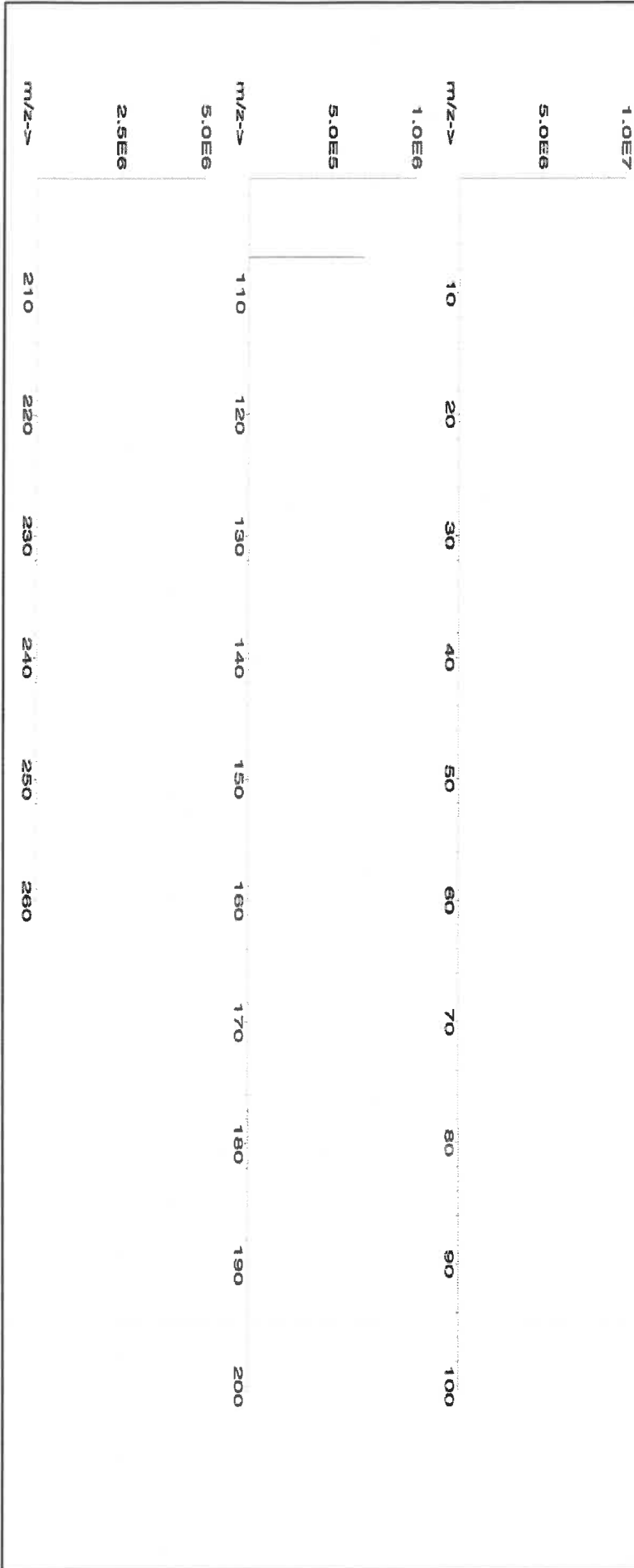
Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rentas
122823	

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9999	0.10	63.7	6.27992	6.27998	1000.0	2.0	7761-88-8	10 µg/m ³	NA	3151
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[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

Physical Characterization:

(T)= Target analyte

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

Certified by:

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



R: 10/18/24
Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number:

57051

Lot #

Solvent:

24002546

Handwritten: Giovanni Esposito

071724

Lot Number:

071724

Description:

Antimony (Sb)

Expiration Date:

071727

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UJB

Volume shown below was diluted to (mL):

2000.26

5E-05

Balance Uncertainty

0.058

Flask Uncertainty

2.0%

40.0

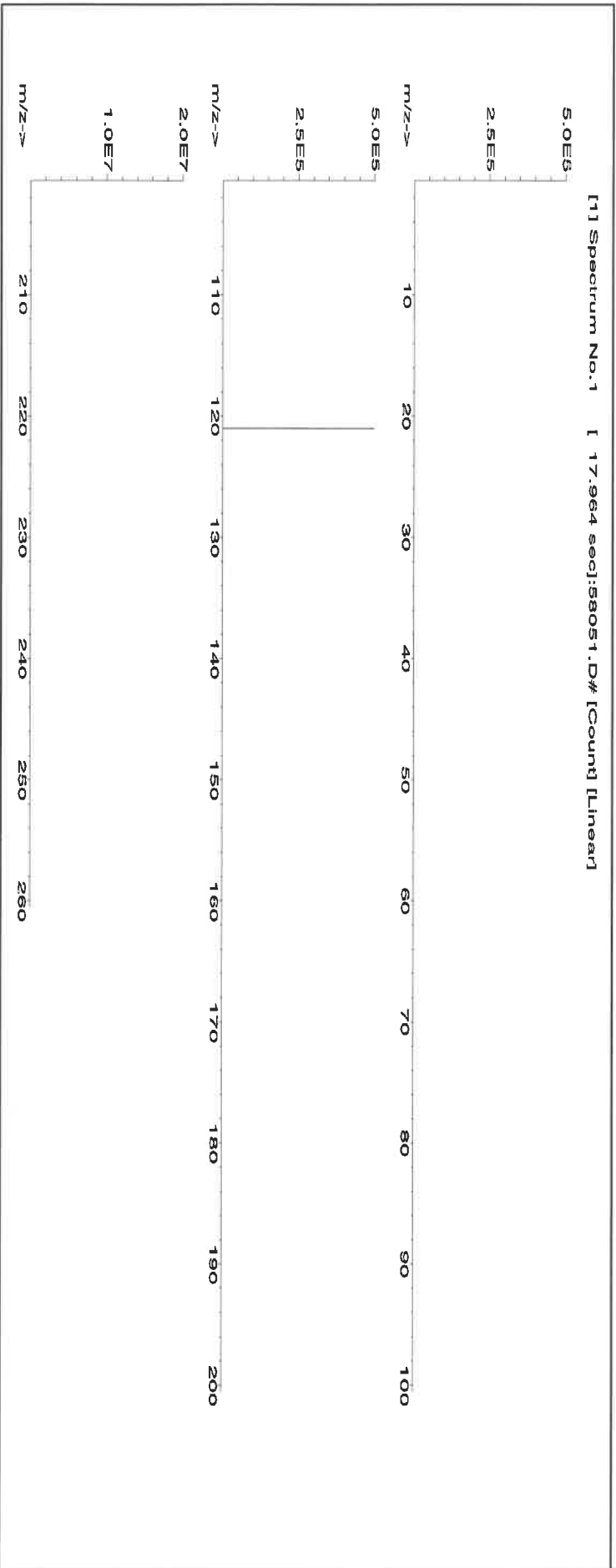
Nitric Acid

Formulated By:	Giovanni Esposito	071724
Reviewed By:	Pedro L. Rentas	071724

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Antimony (Sb)	58151	060324	0.1000	200.0	0.084	1000	10001.4	1000.0	2.2	7440-36-0	0.5 mg/m3	or-rat 7000 mg/kg	3102a
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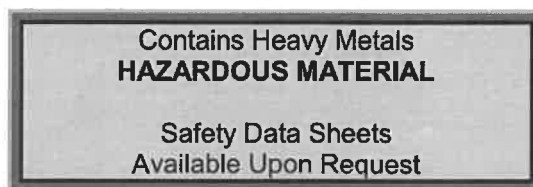
Instructions for QATS Reference Material: ICP-AES ICS

**QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)**

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



M6152

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) BREAKAGE OR MISSING ITEMS

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

**QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120**

(C) ANALYSIS OF SAMPLES

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,





Instructions for QATS Reference Material: ICP-AES ICS

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

R: 04/20/21

Instructions for QATS Reference Material: ICP-AES ICS

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



M6155

(A) **SAMPLE DESCRIPTION**

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) **BREAKAGE OR MISSING ITEMS**

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

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APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) **ANALYSIS OF SAMPLES**

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,





APTIM

Instructions for QATS Reference Material: ICP-AES ICS

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

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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: 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

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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



R: 8/5/24

M6019

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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: Single Analyte Custom Grade Solution
Catalog Number: CGSR1
Lot Number: U2-SR730227
Matrix: 0.1% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Strontium
Starting Material: SrCO₃
Starting Material Lot#: M2-2192
Starting Material Purity: 99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	998 ± 4 µg/mL ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	1001 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1001 ± 2 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001980	M	Eu	<	0.000495	O	Na	0.000200	M	Se	<	0.013862	O	Zn	0.000143	
O	Al	0.000370	O	Fe	0.000410	M	Nb	<	0.000495	i	Si	<			M	Zr	<	0.000495
M	As	<	0.000495	M	Ga	<	0.000495	M	Nd	<	0.000495	M	Sm	<	0.000495			
M	Au	<	0.000989	M	Gd	<	0.000495	O	Ni	<	0.007631	M	Sn	<	0.000990			
M	B	<	0.039606	M	Ge	<	0.000495	M	Os	<	0.000494	s	Sr	<				
M	Ba	0.006486	M	Hf	<	0.000495	i	P	<			M	Ta	<	0.000495			
M	Be	<	0.000990	M	Hg	<	0.000989	M	Pb	<	0.002970	M	Tb	<	0.000495			
M	Bi	<	0.000495	M	Ho	<	0.000495	M	Pd	<	0.003957	M	Te	<	0.027724			
O	Ca	0.004255	M	In	<	0.000495	M	Pr	<	0.000495	M	Th	<	0.000990				
M	Cd	0.001339	M	Ir	<	0.000494	M	Pt	<	0.002970	M	Ti	<	0.005940				
M	Ce	<	0.004950	O	K	<	0.008184	M	Rb	<	0.002970	M	Tl	<	0.000495			
M	Co	<	0.000495	M	La	<	0.000495	M	Re	<	0.000495	M	Tm	<	0.000495			
O	Cr	<	0.003207	O	Li	<	0.000884	O	Rh	<	0.012829	M	U	<	0.001485			
M	Cs	<	0.000990	M	Lu	<	0.002970	M	Ru	<	0.000989	M	V	<	0.001980			
M	Cu	0.000099	O	Mg	0.000064	i	S	<				M	W	<	0.003960			
M	Dy	<	0.000495	O	Mn	0.000066	M	Sb	<	0.014852	O	Y	<	0.000995				
M	Er	<	0.000495	M	Mo	<	0.001980	M	Sc	<	0.001980	M	Yb	<	0.000495			

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2, 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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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)

Solvent: 24002546 Nitric Acid
Lot #

Expiration Date:

062727

2% 40.0 Nitric Acid (mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.1 0.10 Flask Uncertainty

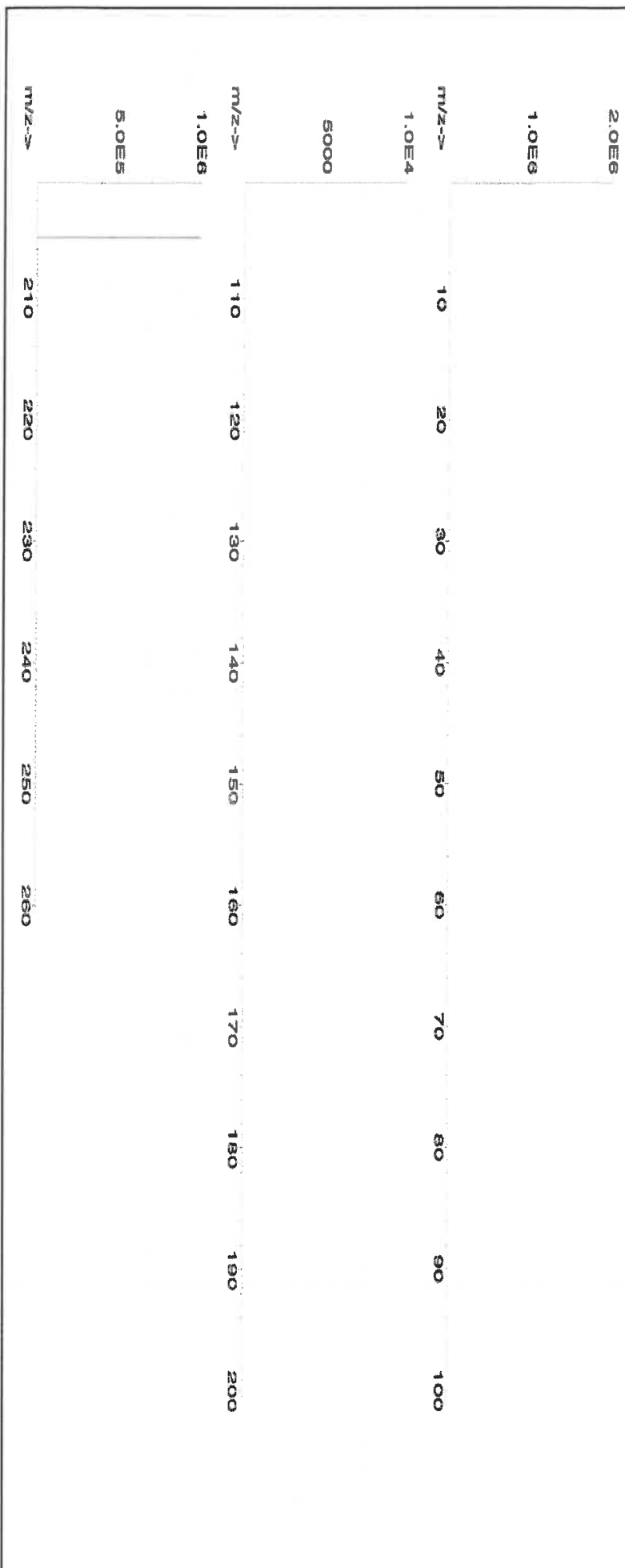
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	062724
Reviewed By:	<i>Pedro L. Rendas</i>
	Pedro L. Rendas
	062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 or-mus 15mg/kg 3158

[1] Spectrum No.1 [14.044 sec]:57081.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

M6021



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

CERTIFIED WEIGHT REPORT:

Part Number: 57023
Lot Number: 062424
Description: Vanadium (V)

Lot # 24002546
Solvent: Nitric Acid

Aleah O'Brady	
Formulated By:	Aleah O'Brady
Reviewed By:	Pedro L. Rantas

062424

062424

Expiration Date:

062427

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

2000.3

5E-05 Balance Uncertainty

0.06 Flask Uncertainty

Expanded

Uncertainty

+/- (µg/mL)

SDS Information

(Solvent Safety Info. On Attached pg.)

CAS# 05814-11-0

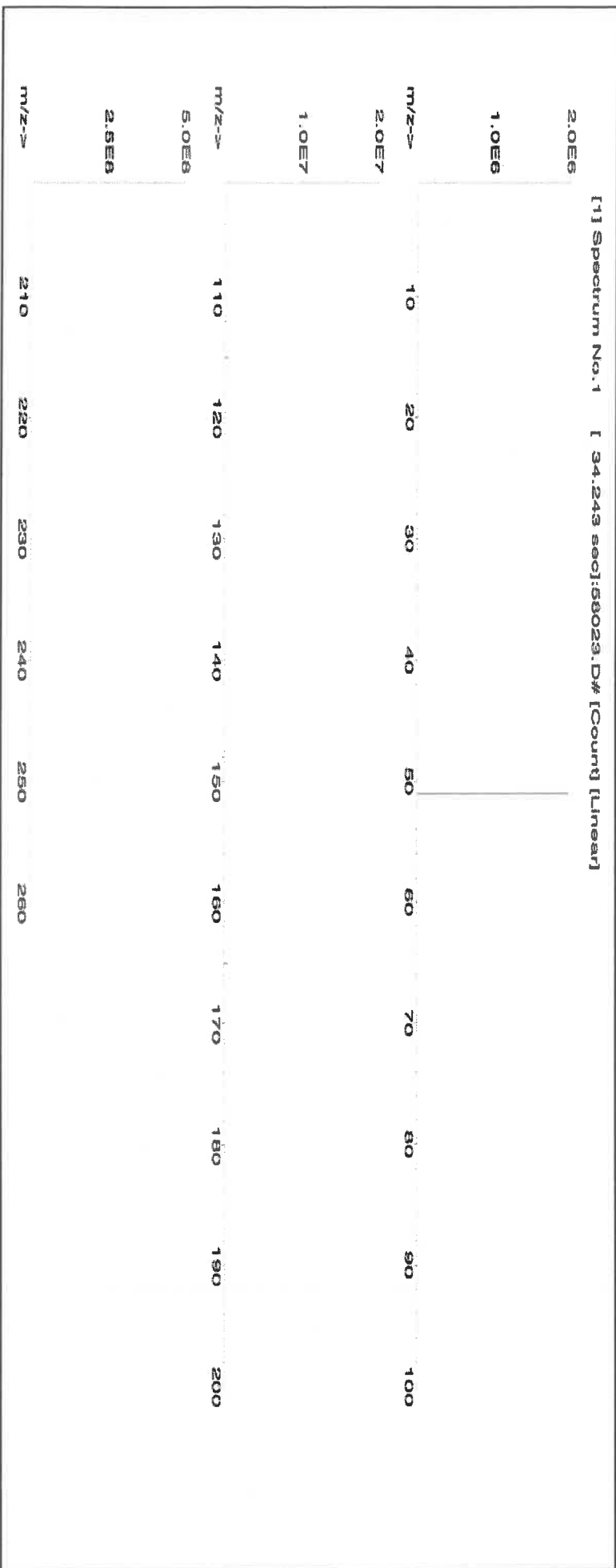
LD50

SRM

1. Ammonium metavanadate (V)

58123 021224 0.1000 200.0 0.084 1000 10000.3 1000.0 2.2 7803-55-6 0.05 mg/m3 3165

[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (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	T
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02		<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



SHIPPING DOCUMENTS

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CHEMTECH CHAIN OF CUSTODY RECORD		284 Sheffield Street, Mountainside, NJ 07092 (908) 789-8900 Fax: (908) 78-8922 www.chemtech.net		Chemtech Project Number: Q 2604											
CLIENT INFORMATION		PROJECT INFORMATION		BILLING INFORMATION											
COMPANY: Tetra Tech		PROJECT NAME: NWIRP Bethpage		BILL TO: PO#											
ADDRESS: 4433 Corporation Ln, Suite 300		PROJECT #: 112G08005-WE13 LOCATION: RW8		ADDRESS:											
CITY: Virginia Beach STATE: VA ZIP: 23462		PROJECT MANAGER: Ernie Wu		CITY: STATE: ZIP:											
ATTENTION: Ernie Wu		E-MAIL: ernie.wu@tetratech.com		ATTENTION: PHONE:											
PHONE: 757-466-4901 FAX: 757-461-4148		PHONE: 757-466-4901 FAX: 757-461-4148													
DATA TURNAROUND INFORMATION		DATA DELIVERABLE INFORMATION		ANALYSIS											
FAX: _____ 10 _____ DAYS* HARD COPY: _____ 10 _____ DAYS* EDD _____ 10 _____ DAYS* * TO BE APPROVED BY CHEMTECH STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS		☐ RESEULTS ONLY ☐ USEPA CLP ☐ RESULTS + QC ☐ New York State ASP "B" ☐ New Jersey REDUCED ☐ New York State ASP "A" ☐ New Jersey CLP ☐ Other _____ ☐ EDD Format _____		<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">1,4-Dioxane SW846 8270</td> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td> </tr> </table>		1,4-Dioxane SW846 8270	1	2	3	4	5	6	7	8	9
1,4-Dioxane SW846 8270	1	2	3	4	5	6	7	8	9						
				PRESERVATIVES											
				COMMENTS											
CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP GRAB	SAMPLE COLLECTION DATE TIME	# of Bottles										
1.	RW8-SP100-20250711	GW		7/11/25 13:05	2										
2.	RW8-SP303-20250711	GW		7/11/25 13:13	4										
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE PROSESSION INCLUDING COURIER DELIVERY					
RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY	Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant ☐ Cooler Temp <u>24.5</u> MeOH extraction requires an additional 4oz. Jar for percent solid ☐ Ice in Cooler? <u>yes</u> Comments:		
1.	7/14/25 13:00	1.			
RELINQUISHED BY	DATE/TIME	RECEIVED BY			
2.	7/15/25 10:15	2.	SHIPPED VIA: CLIENT: ☐ Hand Delivered ☐ Overnight CHEMTECH: ☐ Picked Up ☐ Overnight		
RELINQUISHED BY	DATE/TIME	RECEIVED FOR LAB BY			
3.		3.	Page _____ of _____		
			Shipment Complete ☐ YES ☐ NO		

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT
YELLOW - CHEMTECH COPY
PINK - SAMPLER COPY

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