SDG COVER PAGE

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51955 MA No.: SDG No.: YE8D0

SOW No. : SFAM01.1

EPA Sample No.	Lab Sample Id	Analysis Method ICP-AES	ICP-MS	Mercury	Cyanide
YE8C9	Q1160-01	X		X	
YE8C9D	Q1160-02	X		X	
YE8C9S	Q1160-03	X		X	
YE8D0	Q1160-04	X		X	
YE8D3	Q1160-05	X		X	

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the SDG Narrative. All edits and manual integrations have been peer-reviewed. Release of the data contained in this hardcopy Complete SDG File and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name:

Date: Title:

68HERH20D0011 SDG # YE8D0

USEPA CLP COC (LAB COPY)
DateShipped: 1/21/2025
CarrierName: FedEx
AirbillNo: 7715 3303 4885

CHAIN OF CUSTODY RECORD

Case #: 51955
MA 3152.0

No: 9-011925-103929-0018
Lab: Alliance Technical Group LLC
Lab Contact: Mohammad Ahmed
Lab Phone: 908-789-8900

2

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
MW-924-SO-38-40	YE8C3	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	108 (Wet Ice), 109 (Wet Ice), 112 (Wet Ice) (4)	924	01/19/2025 09:15	✓
MW-24-SO-5-7	YE8C9	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	150 (Wet Ice), 151 (Wet Ice), 154 (Wet Ice) (5)	24	01/18/2025 16:30	✓ (1) SPLP QC
MW-24-SO-18-20	YE8D0	Soil/ EAEST	Grab	ICP-AES/MS(21)	157 (Wet Ice) (1)	24	01/18/2025 16:40	✓

Sample(s) to be used for Lab QC: MW-24-SO-5-7 Tag 150, MW-24-SO-5-7 Tag 151, MW-24-SO-5-7 Tag 154

Shipment for Case Complete? Y
Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES/MS=ICP-AES/MS Metals+Hg MA 3152.0, pH, SVOA=Semivolatiles, SPLP ICP-AES=SPLP ICP-AES Metals + Hg, pH

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Allison Thurston EA	01/21/25 1600	R. Melendez	10:15 1.22.25	IR gun # 2.2°
					Temp Blank present
					Custody Seal intact

68HERH20D0011

SDG # YE8D0

USEPA CLP COC (LAB COPY)

DateShipped: 1/21/2025
CarrierName: FedEx
AirbillNo: 7715 3303 5859

CHAIN OF CUSTODY RECORD

Case #: 51955
MA 3152.0

No: 9-011925-104047-0019

Lab: Alliance Technical Group LLC
Lab Contact: Mohammad Ahmed
Lab Phone: 908-789-8900

3

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
MW-24-SO-18-20	YE8D0	Soil/ EAEST	Grab	SVOA(21), SPLP ICP-AES(21)	158 (Wet Ice), 161 (Wet Ice) (3)	24	01/18/2025 16:40	(2) SPLP SDG
MW-24-SO-38-40	YE8D1	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21)	164 (Wet Ice), 165 (Wet Ice) (2)	24	01/19/2025 09:15	
MW-24-SO-68-69	YE8D3	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	178 (Wet Ice), 179 (Wet Ice), 182 (Wet Ice) (4)	24	01/19/2025 14:15	(3) SPLP
MW-924-SO-58-60	YE8E2	Soil/ EAEST	Grab	ICP-AES/MS(21)	241 (Wet Ice) (1)	924	01/19/2025 09:50	

Special Instructions:

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: SVOA=Semivolatiles, SPLP ICP-AES=SPLP ICP-AES Metals + Hg, pH, ICP-AES/MS=ICP-AES/MS Metals+Hg MA 3152.0, pH

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Allison Hussa EA	01/21/25 1600		9:55 1-23-25	IR Gun #1 1.9°C
					Custody Seal Intact
					Temp Blank present

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 1 of 2
Received By (Print Name)		Log-in Date 1/22/2025
Received By (Signature)		
Case Number 51955	SDG No. YE8D0	MA No. N/A

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	n/a
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	771533034885 1
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	2.2 Degree C
8. Sample Condition	Intact
9. Sample Tags Sample Tag Numbers	Absent Listed on Traffic Report
10. Does information on Traffic Reports/Chain of Custody Records and Sample Tags agree ?	Yes
11. Date Received at Lab	01/22/2025
12. Time Received	10:15

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1	YE8C9	N/A	154	Q1160-01	Intact
2	YE8C9D	N/A	154	Q1160-02	Intact
3	YE8C9S	N/A	154	Q1160-03	Intact
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A
15	N/A	N/A	N/A	N/A	N/A
16	N/A	N/A	N/A	N/A	N/A
17	N/A	N/A	N/A	N/A	N/A
18	N/A	N/A	N/A	N/A	N/A
19	N/A	N/A	N/A	N/A	N/A
20	N/A	N/A	N/A	N/A	N/A
21	N/A	N/A	N/A	N/A	N/A
22	N/A	N/A	N/A	N/A	N/A
23	N/A	N/A	N/A	N/A	N/A

* Contact SMO and attach record of resolution

Reviewed By		Logbook No.	N/A
Date	1/24/25	Logbook Page No.	N/A

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 2 of 2
Received By (Print Name) Casanova Lira		Log-in Date 1/23/2025
Received By (Signature)		
Case Number 51955	SDG No. YE8D0	MA No. N/A

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	n/a
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	771533035859 2
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	1.9 Degree C
8. Sample Condition	Intact
9. Sample Tags Sample Tag Numbers	Absent Listed on Traffic Report
10. Does information on Traffic Reports/Chain of Custody Records and Sample Tags agree ?	Yes
11. Date Received at Lab	01/23/2025
12.Time Received	09:55

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	YE8D0	N/A	161	Q1160-04	Intact
2	YE8D3	N/A	182	Q1160-05	Intact
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A
15	N/A	N/A	N/A	N/A	N/A
16	N/A	N/A	N/A	N/A	N/A
17	N/A	N/A	N/A	N/A	N/A
18	N/A	N/A	N/A	N/A	N/A
19	N/A	N/A	N/A	N/A	N/A
20	N/A	N/A	N/A	N/A	N/A
21	N/A	N/A	N/A	N/A	N/A
22	N/A	N/A	N/A	N/A	N/A
23	N/A	N/A	N/A	N/A	N/A

* Contact SMO and attach record of resolution

Reviewed By		Logbook No.	N/A
Date	1/24/25	Logbook Page No.	N/A

FORM DC-2
COMPLETE SDG FILE (CSF) INVENTORY SHEET

LAB NAME	**Alliance Technical Group, LLC**		
LAB CODE	**ACE**		
CONTRACT NO.	**68HERH20D0011**		
CASE NO.	**51955**	SDG NO.	**YE8D0**
MA NO.		SOW NO.	**SFAM01.1**

All documents delivered in the Complete SDG File must be original documents where possible. (Reference - Exhibit B Section 2.4)

	PAGE NOs: FROM	PAGE NOs: TO	CHECK LAB	CHECK REGION
1. SDG Cover Page	1	1	✓	
2. Traffic Report/Chain of Custody Record(s)	2	3	✓	
3. Sample Log-In Sheet (DC-1)	4	5	✓	
4. CSF Inventory Sheet (DC-2)	6	8	✓	
5. SDG Narrative	9	11	✓	
6. Communication Logs	NA	NA	✓	
7. Percent Solids Log	NA	NA	✓	
Analysis Forms and Data (ICP-AES)				
8. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	12	14	✓	
9. Instrument raw data by instrument in analysis order	15	276	✓	
Other Data				
10. Standard and Reagent Preparation Logs	277	428	✓	
11. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	429	430	✓	
12. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	431	436	✓	
13. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
14. Extraction Logs for TCLP and SPLP	437	440	✓	
15. Raw GPC Data	NA	NA	✓	
16. Raw Florisil Data	NA	NA	✓	
Analysis Forms and Data (ICP-MS)				
17. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	NA	NA	✓	
18. Instrument raw data by instrument in analysis order	NA	NA	✓	
Other Data				
19. Standard and Reagent Preparation Logs	NA	NA	✓	
20. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	NA	NA	✓	
21. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	NA	NA	✓	
22. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	

	PAGE NOs: FROM	TO	CHECK LAB	REGION
23. Extraction Logs for TCLP and SPLP	NA	NA	✓	
24. Raw GPC Data	NA	NA	✓	
25. Raw Florisil Data	NA	NA	✓	
Analysis Forms and Data (Mercury)				
26. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	441	443	✓	
27. Instrument raw data by instrument in analysis order	444	446	✓	
Other Data				
28. Standard and Reagent Preparation Logs	447	482	✓	
29. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	483	484	✓	
30. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	485	488	✓	
31. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
32. Extraction Logs for TCLP and SPLP	489	492	✓	
33. Raw GPC Data	NA	NA	✓	
34. Raw Florisil Data	NA	NA	✓	
Analysis Forms and Data (Cyanide)				
35. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	NA	NA	✓	
36. Instrument raw data by instrument in analysis order	NA	NA	✓	
Other Data				
37. Standard and Reagent Preparation Logs	NA	NA	✓	
38. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	NA	NA	✓	
39. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	NA	NA	✓	
40. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
41. Extraction Logs for TCLP and SPLP	NA	NA	✓	
42. Raw GPC Data	NA	NA	✓	
43. Raw Florisil Data	NA	NA	✓	

	PAGE NOs: FROM	TO	CHECK LAB	REGION
Additional				
44. EPA Shipping/Receiving Documents				
Airbill (No. of Shipments 2)	493	494	✓	
Sample Tags	NA	NA	✓	
Sample Log-In Sheet (Lab)	495	495	✓	
45. Misc. Shipping/Receiving Records (list all individual records)				
	NA	NA	✓	
46. Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
	496	496	✓	
47. Other Records and related Communication Logs (describe or list)				
	NA	NA	✓	

48. Comments:

Completed by:
(CLP Lab) _____ Nimisha Pandya, Document Control Officer _____
(Signature) (Print Name & Title) (Date)

Audited by:
(EPA) _____ _____ _____
(Signature) (Print Name & Title) (Date)

284 Sheffield Street
Mountainside, NJ 07092

SDG NARRATIVE

USEPA
SDG # YE8D0
CASE # 51955
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID #Q1160

A. Number of Samples and Date of Receipt

03 Soil samples were delivered to the laboratory intact on 01/22/2025, 01/23/2025.

B. Parameters

Test requested for SPLP MetalGroup3 = Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc & SPLP Mercury.

C. Cooler Temp

Indicator Bottle**: Presence/**Absence

Cooler: 2.2^{o}C, 1.9^{o}C

D. Analytical Techniques:

All analyses were based on CLP Methodology by method SFAM01.1.

Inter Element correction factors (IECs) are determined annually and correction factor are applied during ICP-AES analysis.

E. Calculation:

Calculation for ICP-AES Water Sample:

$$\text{Concentration or Result } (\mu g/L) = C \times \frac{Vf}{Vi} \times DF \times 1000$$

Where,

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

Example Calculation For Sample YE8C9 For Arsenic:

If C = 0.0100188 ppm
Vf = 50 ml
Vi = 50 ml
DF = 1

$$\text{Concentration or Result (µg/L)} = 0.0100188 \times \frac{50}{50} \times 1 \times 1000$$

$$= 10.0188 \text{ µg/L}$$

$$= 10 \text{ µg/L (Reported Result with Signification)}$$

Calculation for Hg Water Sample:

Concentration or Result (µg/L) = C x DF
Where,

C = Instrument response in µg/L from the calibration curve.
DF = Dilution Factor

Example Calculation For Sample YE8D0 :

If C = 0.0241 ppb
DF = 1

Concentration or Result (µg/L) = 0.0241 x 1

= 0.0241 µg/L

= 0.024 µg/L (Reported Result with Signification)

F. QA/ QC

Calibrations met requirements. Interference check met requirements. Blank analyses did not indicate any presence of contamination. Laboratory Control sample was within control limits. Spike sample did meet requirements except for Aluminum. Duplicate sample did meet requirements. Serial Dilution did meet requirements.

284 Sheffield Street
Mountainside, NJ 07092

Samples receive as soil but as per ASR process for SPLP and forms are reported with water.

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 Director or his designee, as verified by the following signature.

Signature_____ Name: Nimisha Pandya

Date _____ Title: Document Control Officer

EPA SAMPLE NO.

YE8C9

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8D0

Matrix: Water Lab Sample ID: Q1160-01

% Solids: Date Received: 01/22/2025

Analytical Method: ICP_AES

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): ug/L

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	1700	*	03/05/2025	1629
7440-36-0	Antimony	60	U	03/05/2025	1629
7440-38-2	Arsenic	10		03/05/2025	1629
7440-39-3	Barium	230		03/05/2025	1629
7440-41-7	Beryllium	5.0	U	03/05/2025	1629
7440-43-9	Cadmium	5.0	U	03/05/2025	1629
7440-70-2	Calcium	7200		03/05/2025	1629
7440-47-3	Chromium	3.6	J	03/05/2025	1629
7440-48-4	Cobalt	3.1	J	03/05/2025	1629
7440-50-8	Copper	13	J	03/05/2025	1629
7439-89-6	Iron	4100		03/05/2025	1629
7439-92-1	Lead	10	U	03/05/2025	1629
7439-95-4	Magnesium	5800		03/05/2025	1629
7439-96-5	Manganese	87		03/05/2025	1629
7440-02-0	Nickel	8.9	J	03/05/2025	1629
7440-09-7	Potassium	5000	U	03/05/2025	1629
7782-49-2	Selenium	35	U	03/05/2025	1629
7440-22-4	Silver	10	U	03/05/2025	1629
7440-23-5	Sodium	6900		03/05/2025	1629
7440-28-0	Thallium	25	U	03/05/2025	1629
7440-62-2	Vanadium	3.9	J	03/05/2025	1629
7440-66-6	Zinc	200		03/05/2025	1629

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

YE8D0

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8D0

Matrix: Water Lab Sample ID: Q1160-04

% Solids: Date Received: 01/23/2025

Analytical Method: ICP_AES

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): ug/L

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	200	*	03/05/2025	1645
7440-36-0	Antimony	60	U	03/05/2025	1645
7440-38-2	Arsenic	10	U	03/05/2025	1645
7440-39-3	Barium	220		03/05/2025	1645
7440-41-7	Beryllium	5.0	U	03/05/2025	1645
7440-43-9	Cadmium	5.0	U	03/05/2025	1645
7440-70-2	Calcium	7500		03/05/2025	1645
7440-47-3	Chromium	10	U	03/05/2025	1645
7440-48-4	Cobalt	1.9	J	03/05/2025	1645
7440-50-8	Copper	25	U	03/05/2025	1645
7439-89-6	Iron	360		03/05/2025	1645
7439-92-1	Lead	10	U	03/05/2025	1645
7439-95-4	Magnesium	6000		03/05/2025	1645
7439-96-5	Manganese	47		03/05/2025	1645
7440-02-0	Nickel	3.3	J	03/05/2025	1645
7440-09-7	Potassium	5000	U	03/05/2025	1645
7782-49-2	Selenium	35	U	03/05/2025	1645
7440-22-4	Silver	10	U	03/05/2025	1645
7440-23-5	Sodium	5800		03/05/2025	1645
7440-28-0	Thallium	25	U	03/05/2025	1645
7440-62-2	Vanadium	50	U	03/05/2025	1645
7440-66-6	Zinc	110		03/05/2025	1645

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

YE8D3

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8D0

Matrix: Water Lab Sample ID: Q1160-05

% Solids: Date Received: 01/23/2025

Analytical Method: ICP_AES

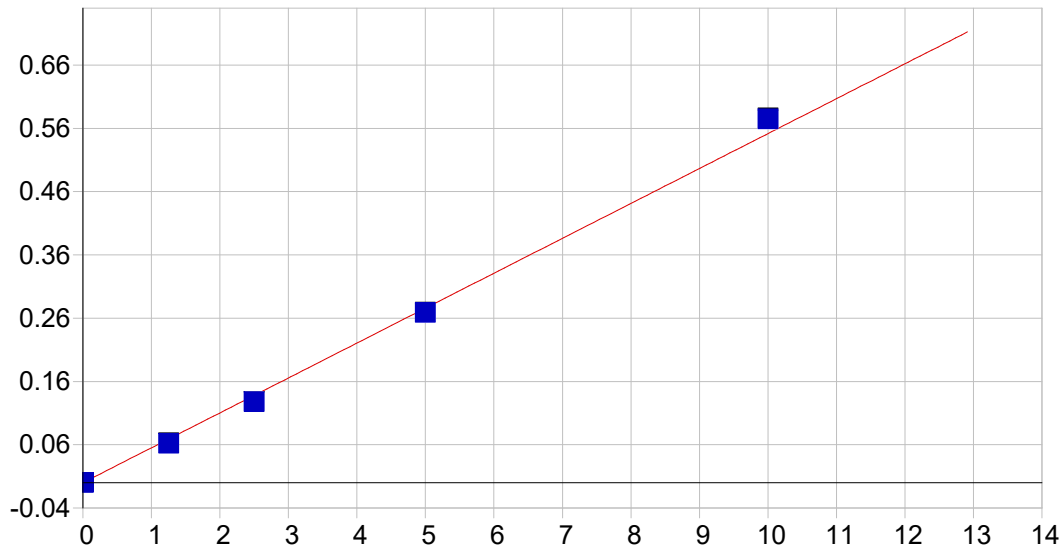
Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): ug/L

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	200	U*	03/05/2025	1649
7440-36-0	Antimony	14	J	03/05/2025	1649
7440-38-2	Arsenic	12		03/05/2025	1649
7440-39-3	Barium	190	J	03/05/2025	1649
7440-41-7	Beryllium	5.0	U	03/05/2025	1649
7440-43-9	Cadmium	5.0	U	03/05/2025	1649
7440-70-2	Calcium	32000		03/05/2025	1649
7440-47-3	Chromium	10	U	03/05/2025	1649
7440-48-4	Cobalt	1.6	J	03/05/2025	1649
7440-50-8	Copper	25	U	03/05/2025	1649
7439-89-6	Iron	100	U	03/05/2025	1649
7439-92-1	Lead	10	U	03/05/2025	1649
7439-95-4	Magnesium	9000		03/05/2025	1649
7439-96-5	Manganese	350		03/05/2025	1649
7440-02-0	Nickel	21	J	03/05/2025	1649
7440-09-7	Potassium	5000	U	03/05/2025	1649
7782-49-2	Selenium	35	U	03/05/2025	1649
7440-22-4	Silver	10	U	03/05/2025	1649
7440-23-5	Sodium	4100	J	03/05/2025	1649
7440-28-0	Thallium	25	U	03/05/2025	1649
7440-62-2	Vanadium	50	U	03/05/2025	1649
7440-66-6	Zinc	43	J	03/05/2025	1649

NOTE: Hardness (total) is reported in mg/L

Comments:

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



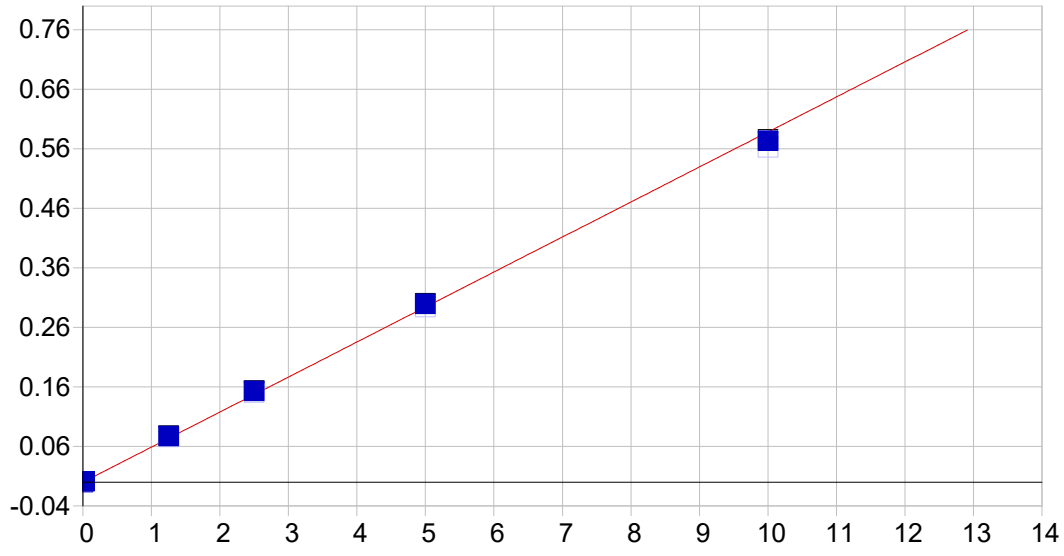
As 189.042 {479}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000055	Re-Slope:	1.000000
A1 (Gain):	0.055176	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998803	Status:	OK.
Std Error of Est:	0.000045		
Predicted MDL:	0.002562		
Predicted MQL:	0.008541		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00006	.000	1
S1	.01000	.00990	-.000	-.976	.00049	.000	1
S3	2.5000	2.3233	-.177	-7.07	.12789	.000	1
S4	5.0000	4.8724	-.128	-2.55	.26829	.001	1
S5	10.000	10.423	.423	4.23	.57405	.002	1
S2	1.2500	1.1317	-.118	-9.46	.06226	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



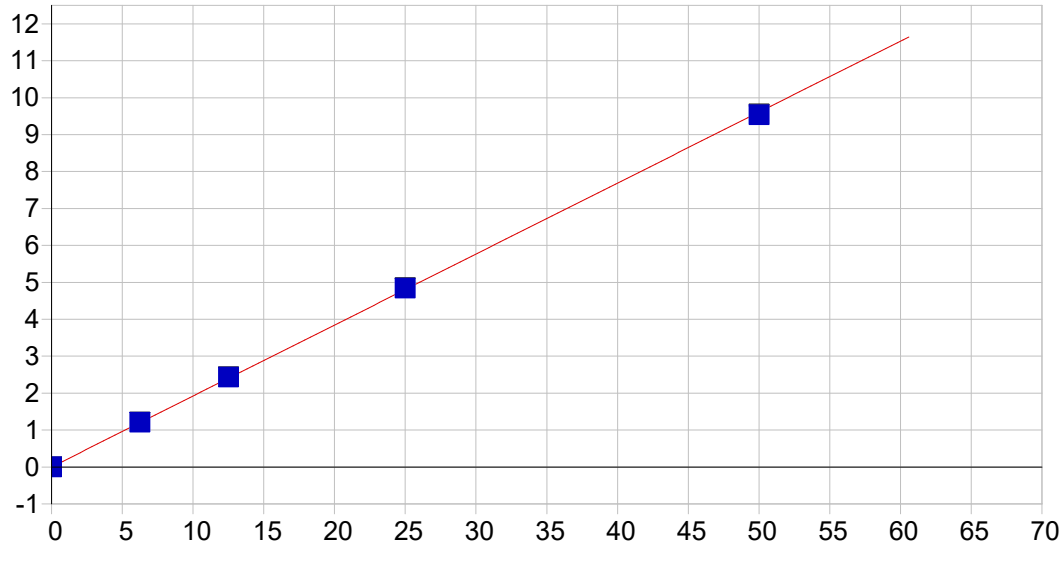
Tl 190.856 {477}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000039	Re-Slope:	1.000000
A1 (Gain):	0.058839	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999577	Status:	OK.
Std Error of Est:	0.000045		
Predicted MDL:	0.001888		
Predicted MQL:	0.006292		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00004	.000	1
S1	.02500	.02683	.002	7.32	.00156	.000	1
S3	2.5000	2.6028	.103	4.11	.15034	.001	1
S4	5.0000	5.0876	.088	1.75	.29370	.001	1
S5	10.000	9.7469	-.253	-2.53	.56216	.002	1
S2	1.2500	1.3109	.061	4.87	.07575	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

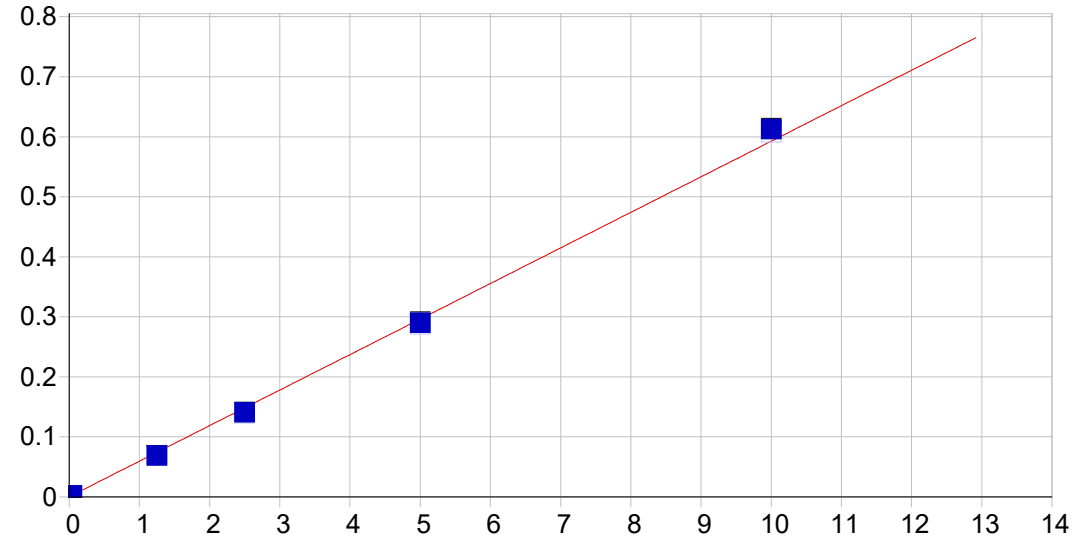


Pb 220.353 {453}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000128	Re-Slope:	1.000000
A1 (Gain):	0.192180	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999963	Status:	OK.
Std Error of Est:	0.000062		
Predicted MDL:	0.001394		
Predicted MQL:	0.004645		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00013	.000	1
S1	.01000	.00947	-.001	-5.27	.00168	.000	1
S3	12.500	12.650	.150	1.20	2.4290	.005	1
S4	25.000	25.206	.206	.826	4.8400	.005	1
S5	50.000	49.605	-.395	-.789	9.5250	.025	1
S2	6.2500	6.2883	.038	.612	1.2073	.002	1



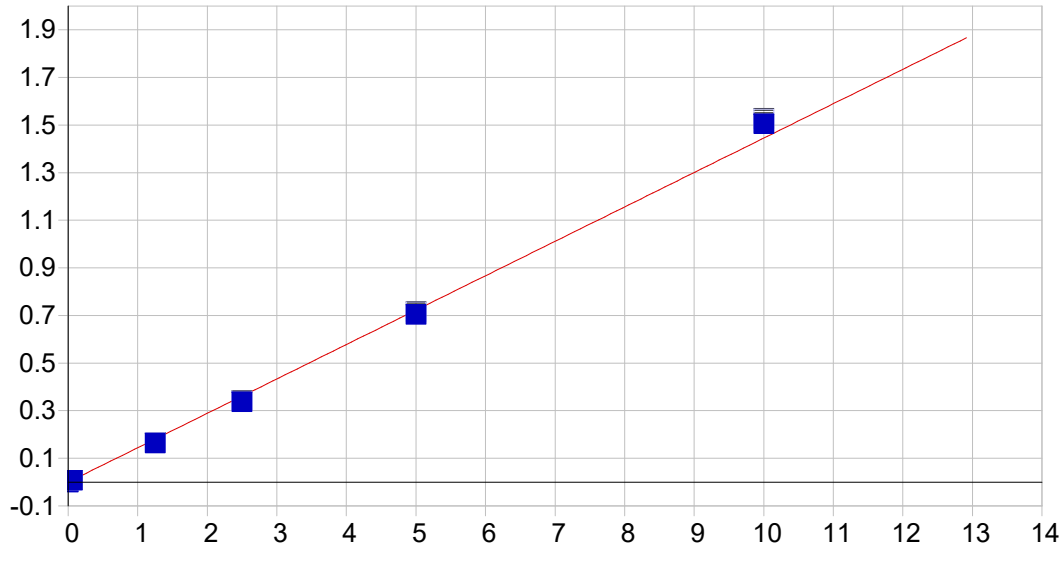
Se 196.090 {472}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000309	Re-Slope:	1.000000
A1 (Gain):	0.059212	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999234	Status:	OK.
Std Error of Est:	0.000072		
Predicted MDL:	0.002894		
Predicted MQL:	0.009648		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00031	.000	1
S1	.03500	.03177	-.003	-9.23	.00219	.000	1
S3	2.5000	2.3683	-.132	-5.27	.13917	.001	1
S4	5.0000	4.8902	-.110	-2.20	.28714	.002	1
S5	10.000	10.339	.339	3.39	.60705	.002	1
S2	1.2500	1.1557	-.094	-7.55	.06806	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



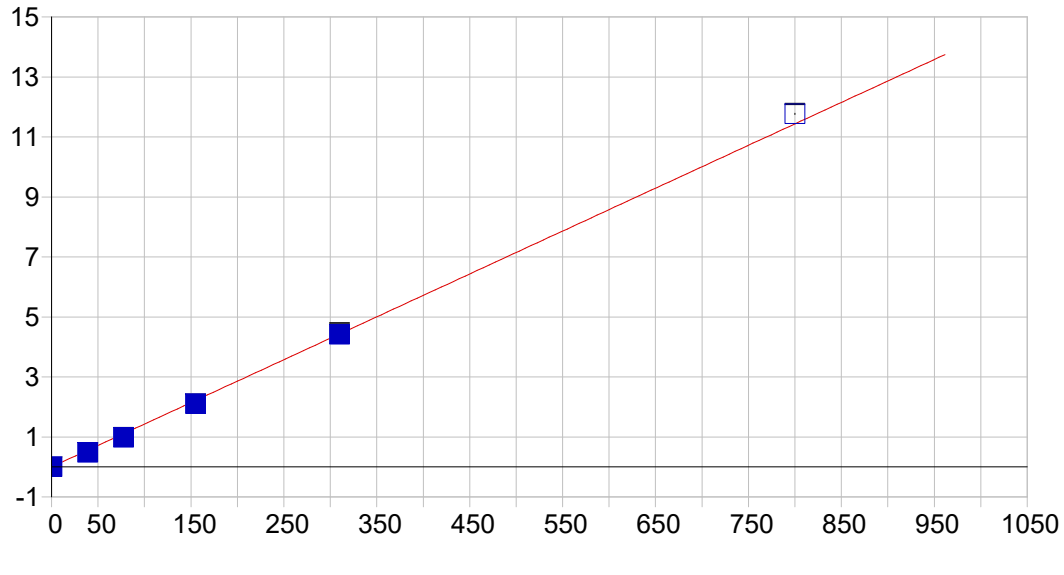
Sb 206.833 {463}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000106	Re-Slope:	1.000000
A1 (Gain):	0.144529	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998859	Status:	OK.
Std Error of Est:	0.000288		
Predicted MDL:	0.001888		
Predicted MQL:	0.006292		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	-.00010	.000	1
S1	.06000	.05601	-.004	-6.64	.00797	.000	1
S3	2.5000	2.3291	-.171	-6.84	.34133	.001	1
S4	5.0000	4.8760	-.124	-2.48	.71426	.002	1
S5	10.000	10.419	.419	4.19	1.5250	.003	1
S2	1.2500	1.1299	-.120	-9.61	.16560	.001	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

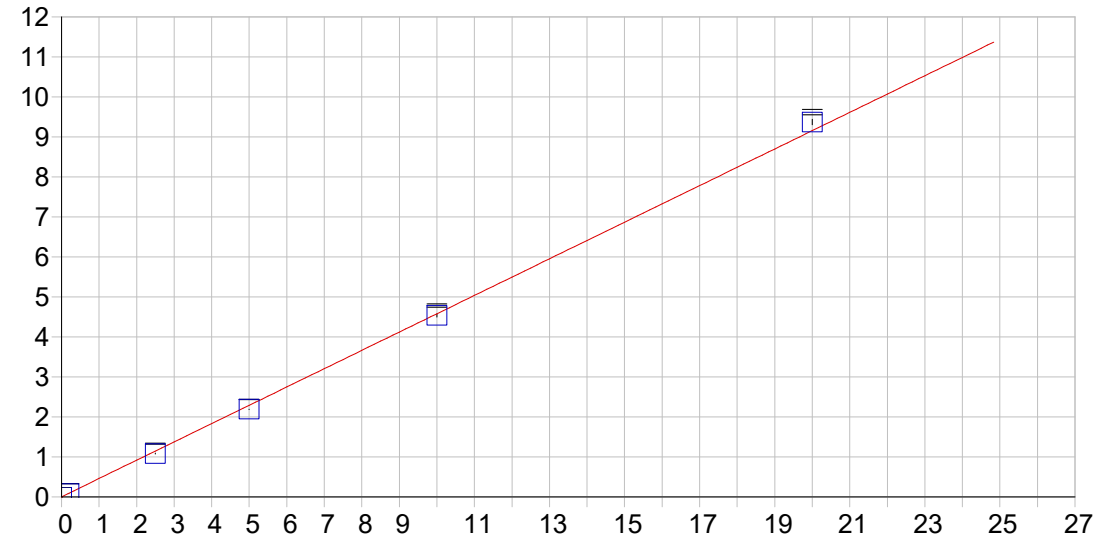


Al 396.152 { 85}

Date of Fit: 3/4/2025 16:10:25 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000062	Re-Slope:	1.000000
A1 (Gain):	0.014294	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999004	Status:	OK.
Std Error of Est:	0.000397		
Predicted MDL:	0.006591		
Predicted MQL:	0.021969		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00008	.000	.000	.00006	.000	1
S1	.20000	.16929	-.031	-15.4	.00249	.000	1
S3	77.500	68.726	-8.77	-11.3	.98371	.005	1
S4	155.00	146.82	-8.18	-5.28	2.1013	.004	1
S5	310.00	308.79	-1.21	-.389	4.4191	.052	1
S2	38.750	33.736	-5.01	-12.9	.48292	.003	1
S6	800.00	823.23	23.2	2.90	11.767	.023	1



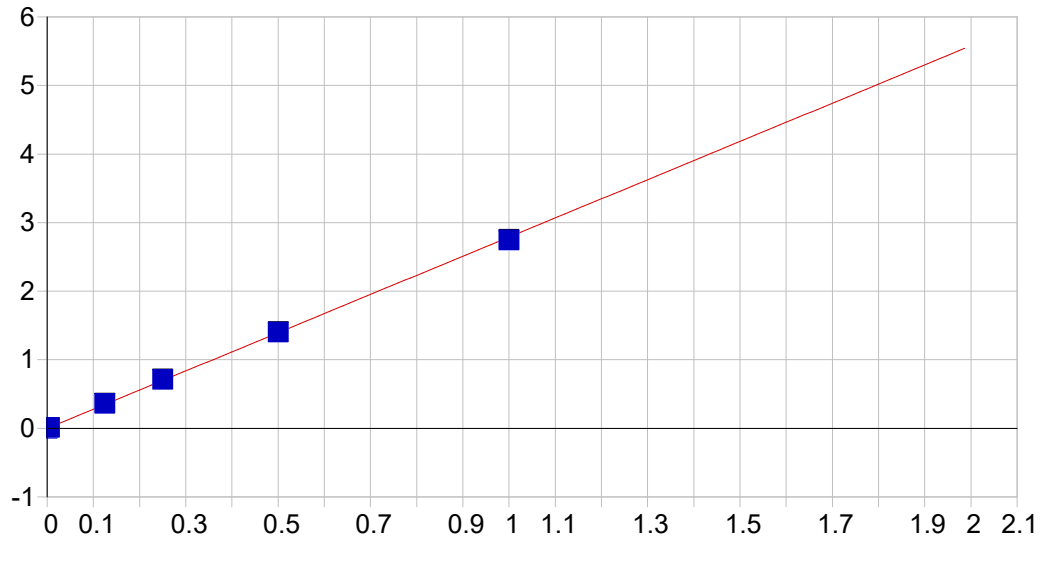
Ba 493.409 { 68}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002332	Re-Slope:	1.000000
A1 (Gain):	0.457690	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999577	Status:	OK.
Std Error of Est:	0.001415		
Predicted MDL:	0.000798		
Predicted MQL:	0.002661		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00004	.000	.000	.00235	.000	1
S1	.20000	.17746	-.023	-11.3	.08355	.001	1
S3	5.0000	4.7764	-.224	-4.47	2.1885	.006	1
S4	10.000	9.9130	-.087	-.870	4.5394	.040	1
S5	20.000	20.470	.470	2.35	9.3713	.067	1
S2	2.5000	2.3629	-.137	-5.49	1.0838	.013	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



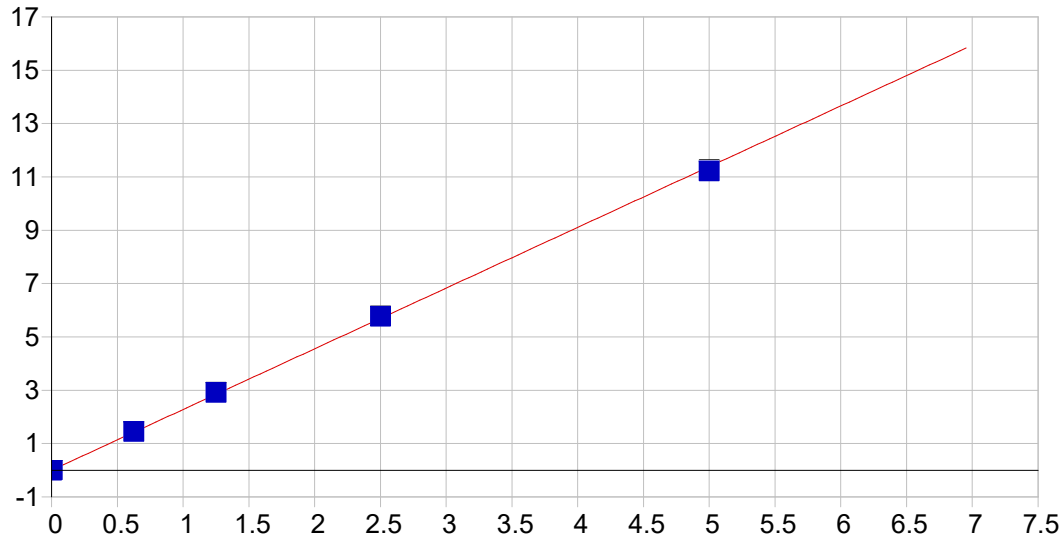
Be 234.861 {144}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000047	Re-Slope:	1.000000
A1 (Gain):	2.789292	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999821	Status:	OK.
Std Error of Est:	0.000197		
Predicted MDL:	0.000075		
Predicted MQL:	0.000250		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00005	.000	1
S1	.00500	.00536	.000	7.12	.01487	.000	1
S3	.25000	.25630	.006	2.52	.71170	.003	1
S4	.50000	.50352	.004	.704	1.3981	.005	1
S5	1.0000	.98459	-.015	-1.54	2.7337	.009	1
S2	.12500	.13024	.005	4.19	.36165	.003	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



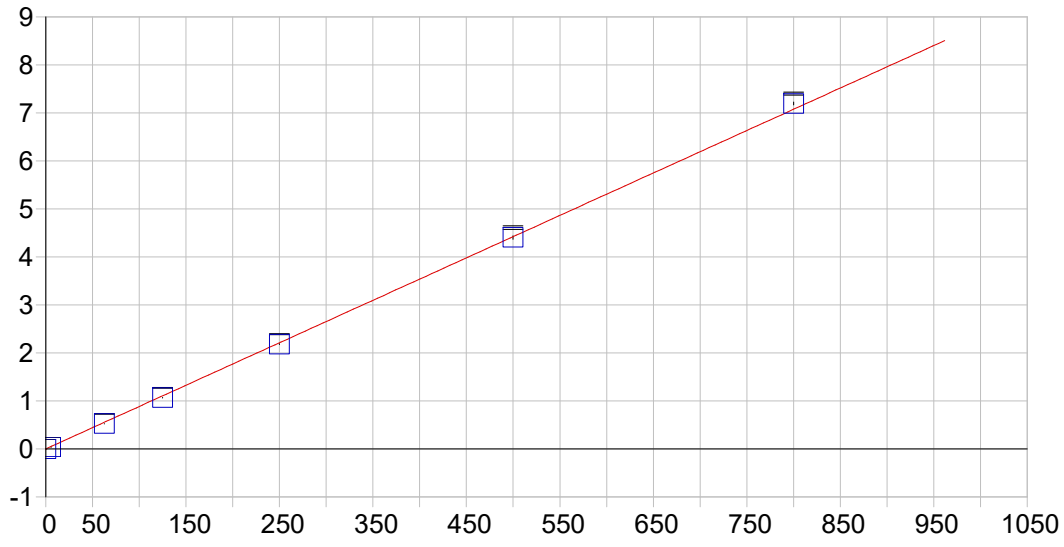
Cd 214.438 {457}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	2.276951	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999878	Status:	OK.
Std Error of Est:	0.000299		
Predicted MDL:	0.000076		
Predicted MQL:	0.000254		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00000	.000	1
S1	.00500	.00501	.000	.122	.01141	.000	1
S3	1.2500	1.2796	.030	2.37	2.9192	.003	1
S4	2.5000	2.5334	.033	1.34	5.7797	.006	1
S5	5.0000	4.9283	-.072	-1.43	11.244	.025	1
S2	.62500	.63374	.009	1.40	1.4458	.002	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



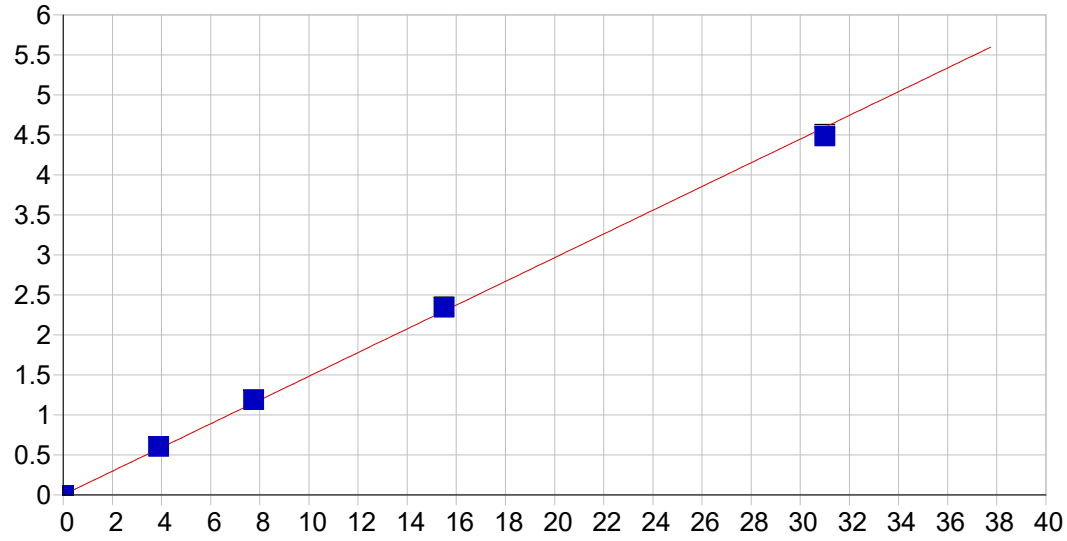
Ca 373.690 { 90}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000077	Re-Slope:	1.000000
A1 (Gain):	0.008844	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999817	Status:	OK.
Std Error of Est:	0.000590		
Predicted MDL:	0.008134		
Predicted MQL:	0.027115		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00080	.001	.000	.00008	.000	1
S2	62.500	59.391	-3.11	-4.97	.52534	.004	1
S3	125.00	120.37	-4.63	-3.71	1.0646	.007	1
S4	250.00	246.51	-3.49	-1.40	2.1802	.010	1
S5	500.00	498.07	-1.93	-.386	4.4051	.037	1
S1	5.0000	4.6425	-.358	-7.15	.04114	.000	1
S6	800.00	813.52	13.5	1.69	7.1950	.030	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



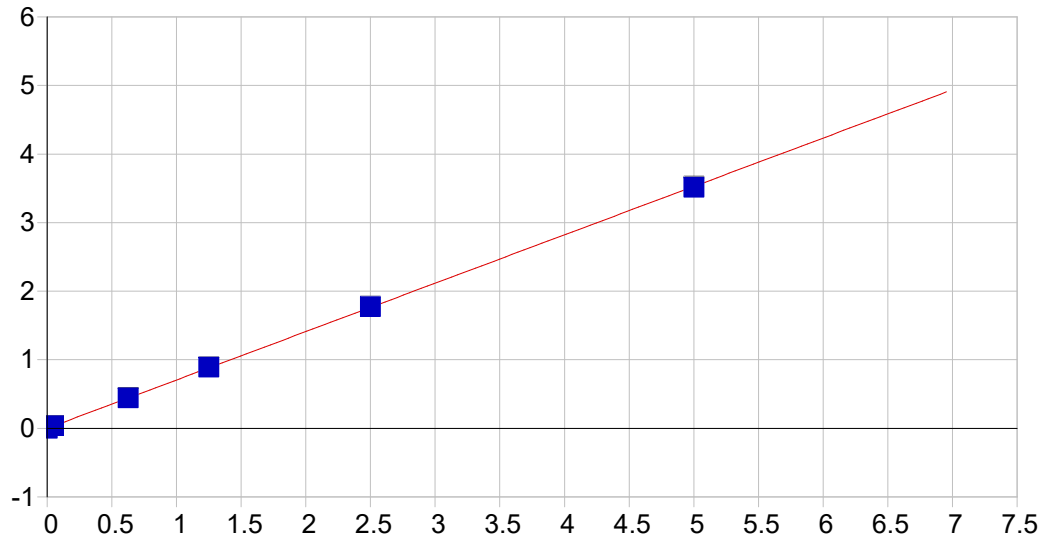
Cr 267.716 {126}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000071	Re-Slope:	1.000000
A1 (Gain):	0.148260	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999625	Status:	OK.
Std Error of Est:	0.000120		
Predicted MDL:	0.000412		
Predicted MQL:	0.001374		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00007	.000	1
S1	.01000	.01066	.001	6.61	.00165	.000	1
S3	7.7500	8.0144	.264	3.41	1.1897	.001	1
S4	15.500	15.801	.301	1.94	2.3455	.004	1
S5	31.000	30.237	-.763	-2.46	4.4886	.020	1
S2	3.8750	4.0719	.197	5.08	.60447	.001	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



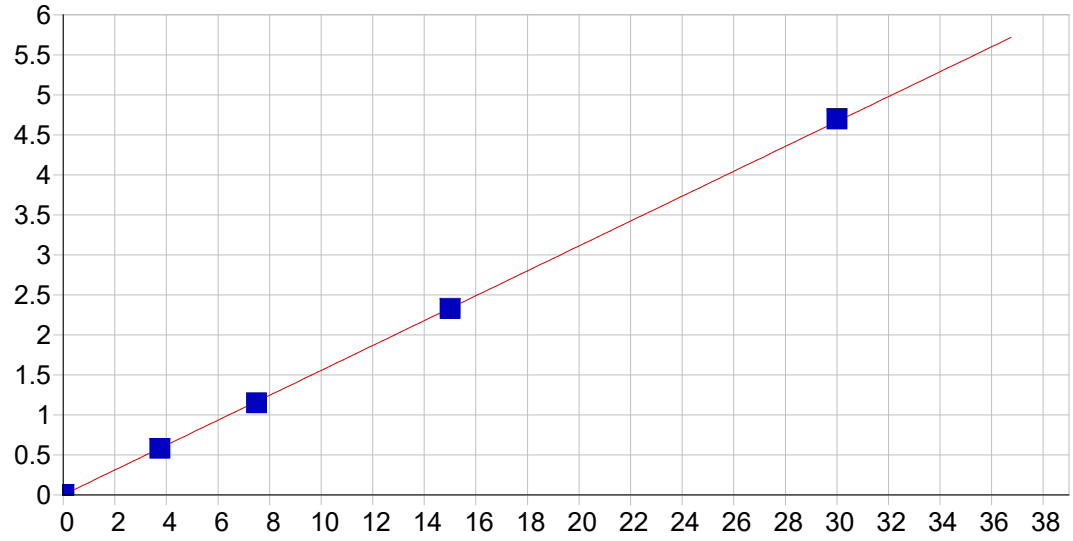
Co 228.616 {448}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000165	Re-Slope:	1.000000
A1 (Gain):	0.705564	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999985	Status:	OK.
Std Error of Est:	0.000103		
Predicted MDL:	0.000265		
Predicted MQL:	0.000882		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00017	.000	1
S1	.05000	.04958	-.000	-.840	.03495	.000	1
S3	1.2500	1.2609	.011	.874	.89285	.002	1
S4	2.5000	2.5132	.013	.527	1.7797	.002	1
S5	5.0000	4.9760	-.024	-.480	3.5241	.007	1
S2	.62500	.62534	.000	.054	.44273	.001	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



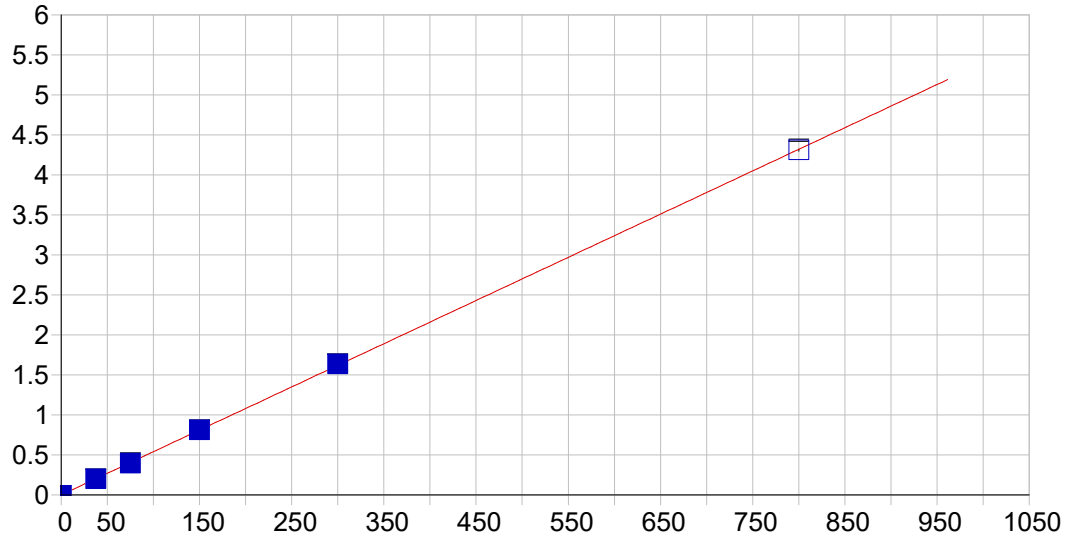
Cu 324.754 {104}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000435	Re-Slope:	1.000000
A1 (Gain):	0.155535	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999956	Status:	OK.
Std Error of Est:	0.000067		
Predicted MDL:	0.001705		
Predicted MQL:	0.005684		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00043	.000	1
S1	.02500	.03097	.006	23.9	.00525	.000	1
S3	7.5000	7.3687	-.131	-1.75	1.1464	.002	1
S4	15.000	14.967	-.033	-.218	2.3281	.004	1
S5	30.000	30.175	.175	.584	4.6933	.008	1
S2	3.7500	3.7330	-.017	-.453	.58099	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



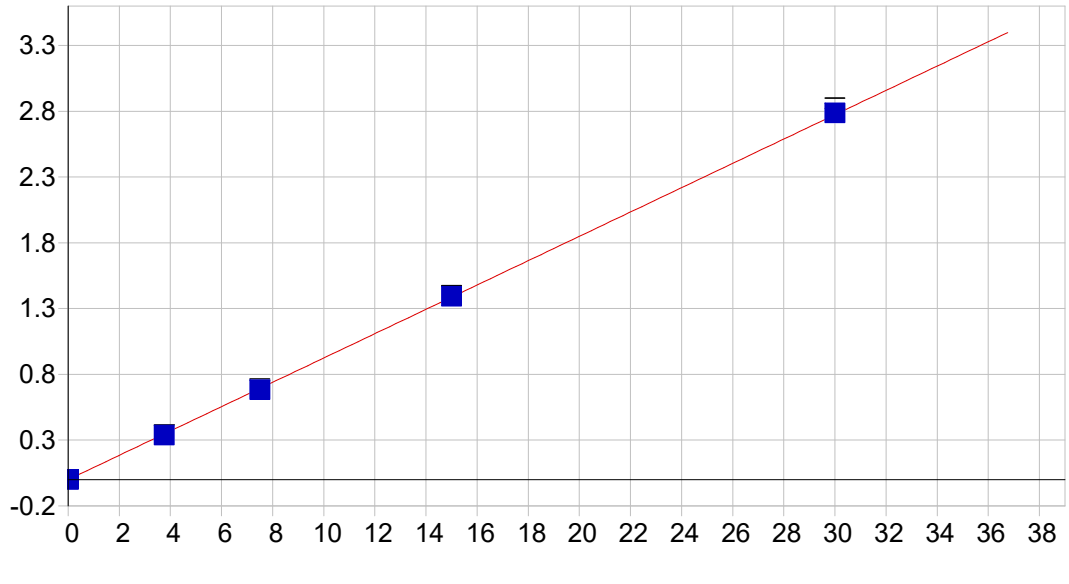
Fe 259.837 {130}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000020	Re-Slope:	1.000000
A1 (Gain):	0.005400	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999971	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.005655		
Predicted MQL:	0.018850		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00002	.000	1
S1	.10000	.10257	.003	2.57	.00056	.000	1
S3	75.000	73.505	-1.50	-1.99	.39652	.002	1
S4	150.00	150.49	.490	.327	.81181	.003	1
S5	300.00	303.27	3.27	1.09	1.6360	.003	1
S2	37.500	36.906	-.594	-1.58	.19910	.001	1
S6	800.00	798.32	-1.68	-.210	4.3108	.014	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



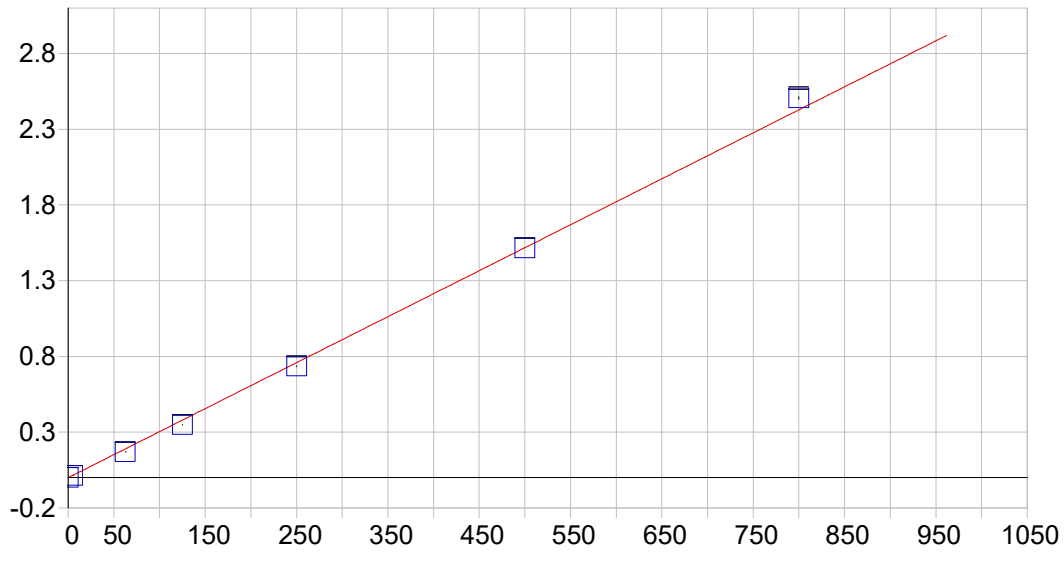
Mn 257.610 {131}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000011	Re-Slope:	1.000000
A1 (Gain):	0.092469	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999960	Status:	OK.
Std Error of Est:	0.000029		
Predicted MDL:	0.000311		
Predicted MQL:	0.001035		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00001	.000	1
S1	.01500	.01461	-.000	-2.58	.00134	.000	1
S3	7.5000	7.3941	-.106	-1.41	.68323	.006	1
S4	15.000	15.063	.063	.423	1.3919	.009	1
S5	30.000	30.132	.132	.439	2.7843	.039	1
S2	3.7500	3.6610	-.089	-2.37	.33828	.003	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



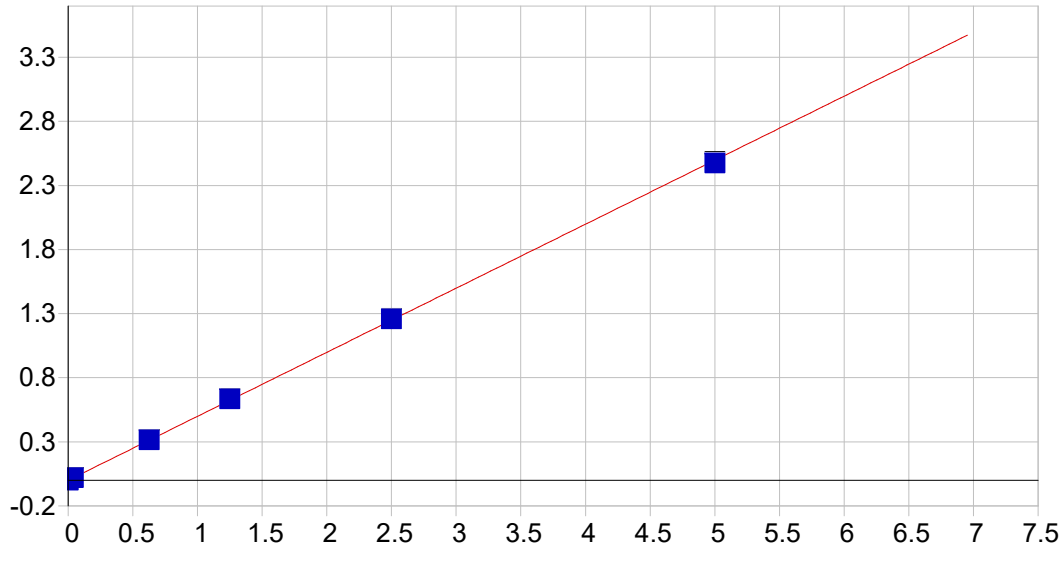
Mg 279.079 {121}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000040	Re-Slope:	1.000000
A1 (Gain):	0.003035	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999236	Status:	OK.
Std Error of Est:	0.000414		
Predicted MDL:	0.012899		
Predicted MQL:	0.042997		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00172	.002	.000	-.00003	.000	1
S2	62.500	56.019	-6.48	-10.4	.17000	.000	1
S3	125.00	114.99	-10.0	-8.00	.34902	.002	1
S4	250.00	242.15	-7.85	-3.14	.73501	.002	1
S5	500.00	499.56	-.440	-.088	1.5164	.001	1
S1	5.0000	4.2011	-.799	-16.0	.01271	.000	1
S6	800.00	825.57	25.6	3.20	2.5060	.009	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



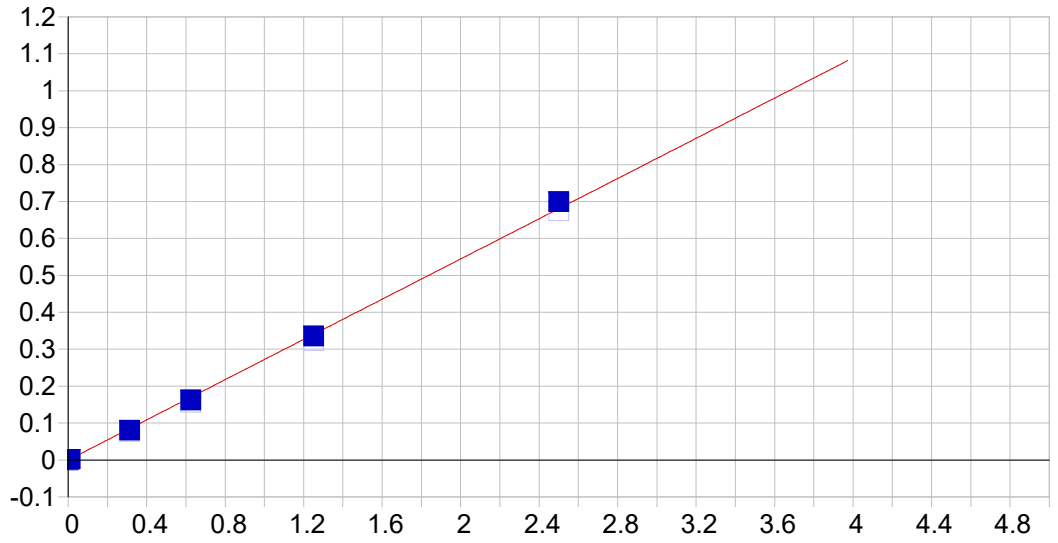
Ni 231.604 {446}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000199	Re-Slope:	1.000000
A1 (Gain):	0.499519	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999948	Status:	OK.
Std Error of Est:	0.000122		
Predicted MDL:	0.000419		
Predicted MQL:	0.001396		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00020	.000	1
S1	.04000	.04005	.000	.132	.01983	.000	1
S3	1.2500	1.2703	.020	1.62	.63581	.001	1
S4	2.5000	2.5200	.020	.799	1.2615	.002	1
S5	5.0000	4.9533	-.047	-.933	2.4799	.006	1
S2	.62500	.63132	.006	1.01	.31589	.001	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



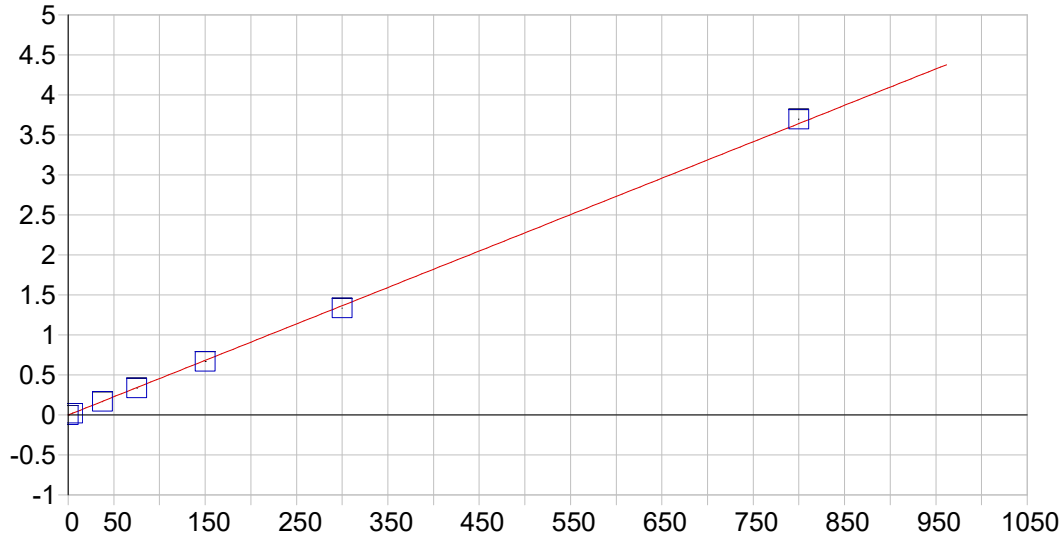
Ag 328.068 {103}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000209	Re-Slope:	1.000000
A1 (Gain):	0.272312	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999492	Status:	OK.
Std Error of Est:	0.000070		
Predicted MDL:	0.000356		
Predicted MQL:	0.001187		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00021	.000	1
S1	.01000	.00911	-.001	-8.95	.00225	.000	1
S3	.62500	.59602	-.029	-4.64	.15610	.000	1
S4	1.2500	1.2308	-.019	-1.54	.32295	.001	1
S5	2.5000	2.5664	.066	2.66	.67467	.000	1
S2	.31250	.29520	-.017	-5.54	.07718	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



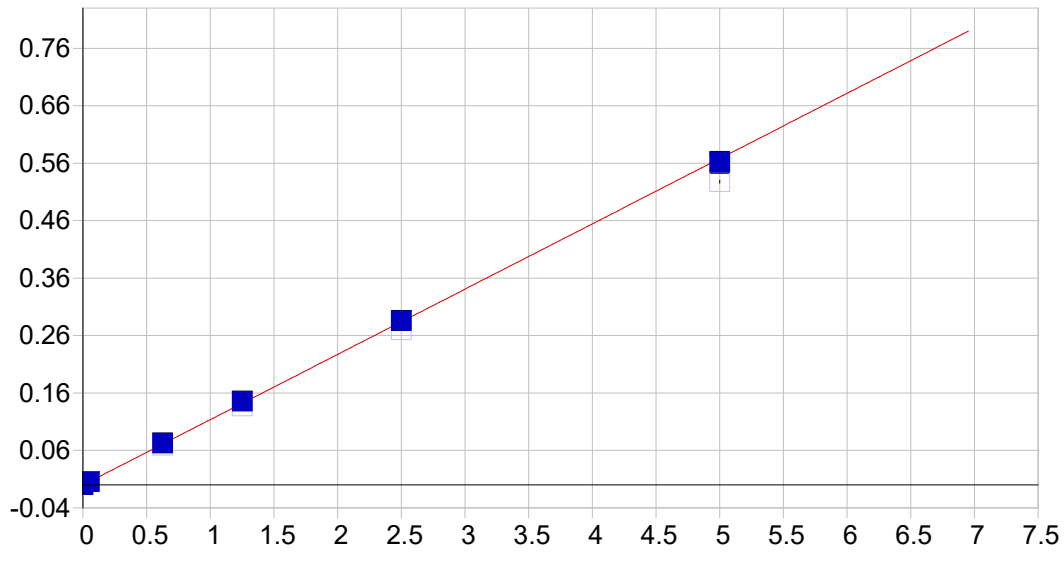
Na 818.326 { 41}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001076	Re-Slope:	1.000000
A1 (Gain):	0.004554	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999853	Status:	OK.
Std Error of Est:	0.000241		
Predicted MDL:	0.181435		
Predicted MQL:	0.604783		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00033	.000	.000	-.00107	.001	1
S2	37.500	36.780	-.720	-1.92	.16641	.001	1
S3	75.000	73.868	-1.13	-1.51	.33531	.001	1
S4	150.00	146.98	-3.02	-2.01	.66825	.001	1
S5	300.00	293.40	-6.60	-2.20	1.3350	.003	1
S1	5.0000	4.9806	-.019	-.387	.02160	.001	1
S6	800.00	811.49	11.5	1.44	3.6943	.004	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



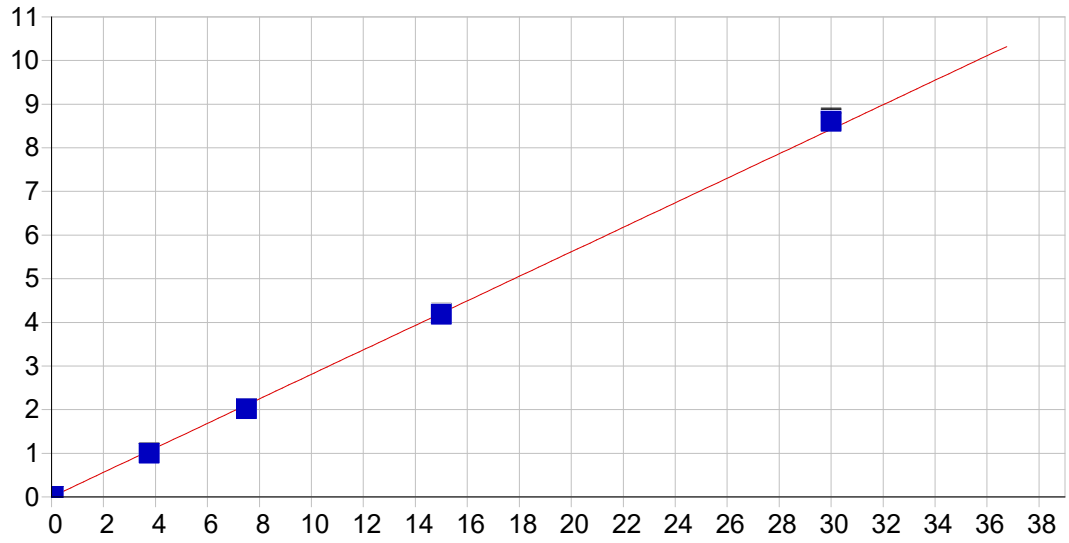
V 292.402 {115}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000026	Re-Slope:	1.000000
A1 (Gain):	0.113612	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999879	Status:	OK.
Std Error of Est:	0.000044		
Predicted MDL:	0.001730		
Predicted MQL:	0.005767		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00003	.000	1
S1	.05000	.05018	.000	.354	.00566	.000	1
S3	1.2500	1.2796	.030	2.37	.13705	.001	1
S4	2.5000	2.5177	.018	.709	.26941	.000	1
S5	5.0000	4.9368	-.063	-1.26	.52763	.002	1
S2	.62500	.64072	.016	2.51	.06861	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



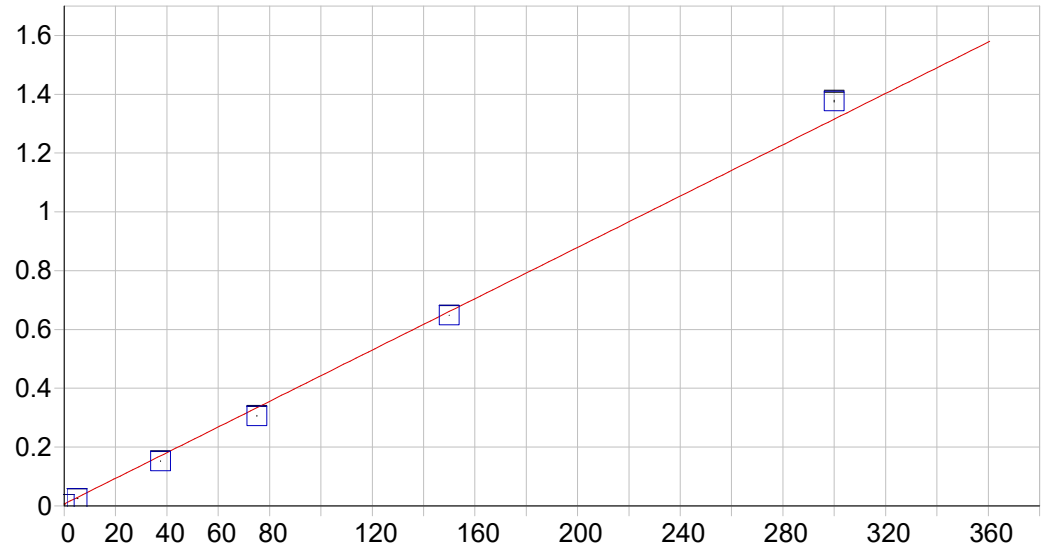
Zn 213.856 {158}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000333	Re-Slope:	1.000000
A1 (Gain):	0.280823	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999657	Status:	OK.
Std Error of Est:	0.000525		
Predicted MDL:	0.001393		
Predicted MQL:	0.004643		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00034	.000	1
S1	.06000	.05688	-.003	-5.19	.01641	.000	1
S3	7.5000	7.1692	-.331	-4.41	2.0215	.005	1
S4	15.000	14.893	-.107	-.711	4.1986	.010	1
S5	30.000	30.634	.634	2.11	8.6348	.049	1
S2	3.7500	3.5565	-.194	-5.16	1.0030	.003	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



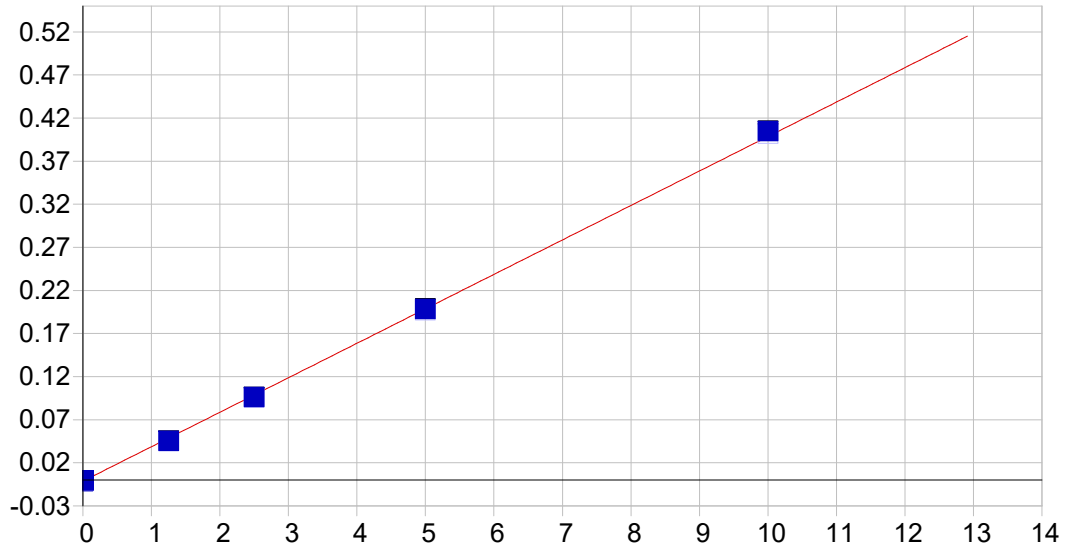
K 769.896 { 44}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.006523	Re-Slope:	1.000000
A1 (Gain):	0.004363	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998431	Status:	OK.
Std Error of Est:	0.000504		
Predicted MDL:	0.041565		
Predicted MQL:	0.138550		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00154	.002	.000	.00653	.000	1
S2	37.500	33.499	-4.00	-10.7	.15269	.001	1
S3	75.000	68.640	-6.36	-8.48	.30602	.002	1
S4	150.00	147.06	-2.94	-1.96	.64818	.001	1
S5	300.00	314.03	14.0	4.68	1.3767	.004	1
S1	5.0000	4.2801	-.720	-14.4	.02520	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

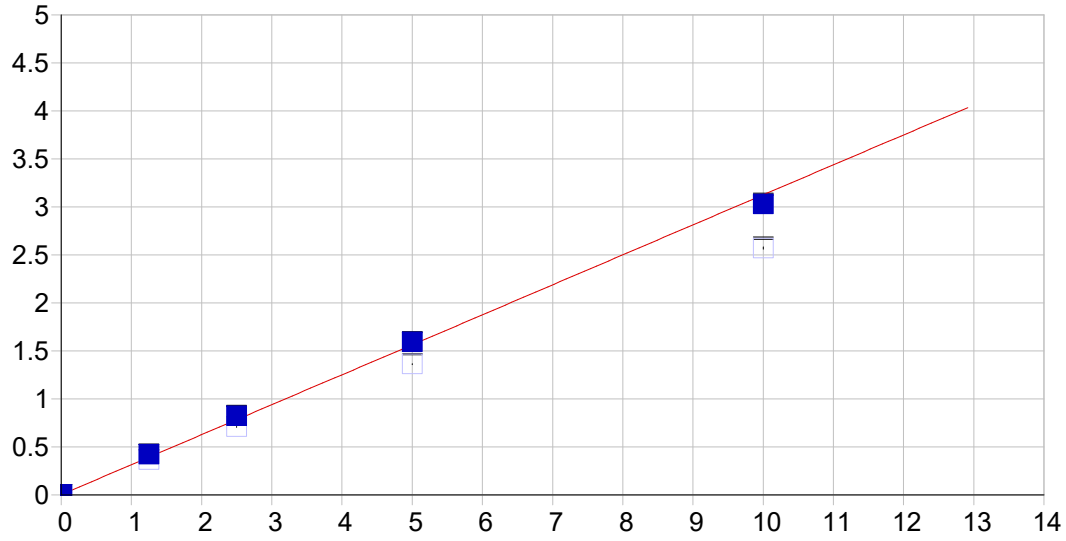


P 177.495 {490}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001238	Re-Slope:	1.000000
A1 (Gain):	0.039980	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999740	Status:	OK.
Std Error of Est:	0.000015		
Predicted MDL:	0.002351		
Predicted MQL:	0.007838		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00124	.000	1
S1	.01000	.00979	-.000	-2.10	-.00085	.000	1
S3	2.5000	2.4364	-.064	-2.54	.09546	.000	1
S4	5.0000	4.9925	-.008	-.151	.19693	.001	1
S5	10.000	10.155	.155	1.55	.40190	.000	1
S2	1.2500	1.1663	-.084	-6.69	.04503	.000	1



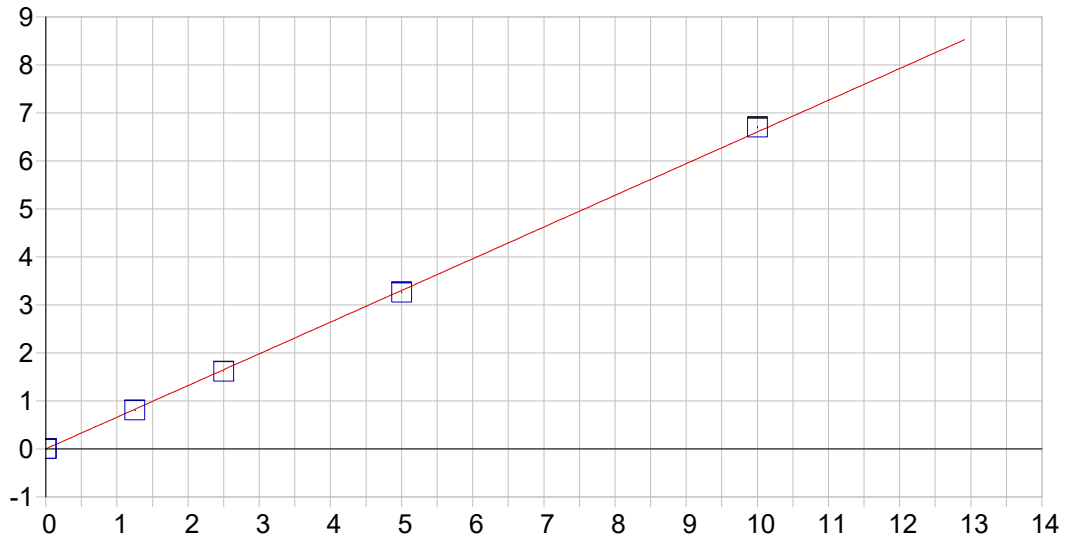
B 249.678 {135}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002564	Re-Slope:	1.000000
A1 (Gain):	0.312262	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998709	Status:	OK.
Std Error of Est:	0.000227		
Predicted MDL:	0.000709		
Predicted MQL:	0.002364		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00257	.000	1
S1	.01000	-.00019	-.010	-102.	.00234	.000	1
S3	2.5000	2.6300	.130	5.20	.70897	.005	1
S4	5.0000	5.0905	.091	1.81	1.3625	.005	1
S5	10.000	9.6957	-.304	-3.04	2.5708	.011	1
S2	1.2500	1.3451	.095	7.61	.36518	.003	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



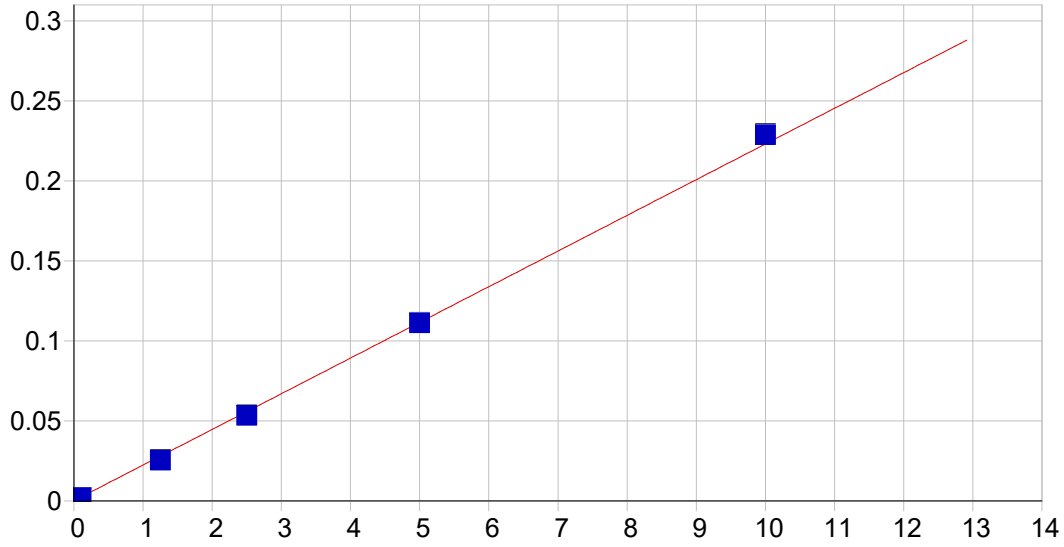
Mo 202.030 {467}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000005	Re-Slope:	1.000000
A1 (Gain):	0.660333	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999872	Status:	OK.
Std Error of Est:	0.000177		
Predicted MDL:	0.000293		
Predicted MQL:	0.000975		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00001	.000	1
S1	.01000	.01011	.000	1.08	.00668	.000	1
S3	2.5000	2.4458	-.054	-2.17	1.6150	.002	1
S4	5.0000	4.9412	-.059	-1.18	3.2628	.011	1
S5	10.000	10.145	.145	1.45	6.6990	.014	1
S2	1.2500	1.2181	-.032	-2.55	.80434	.001	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



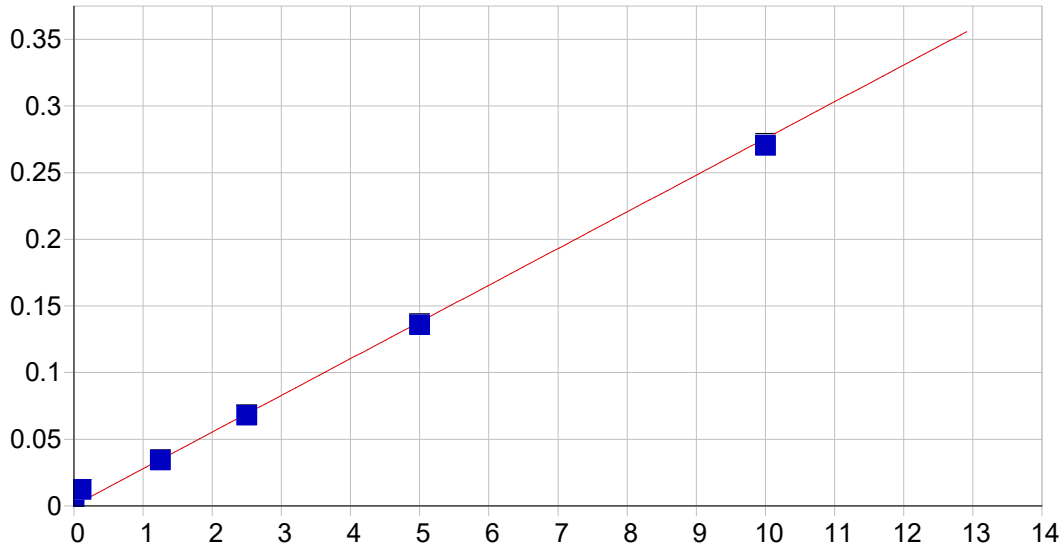
S 182.034 {485}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000116	Re-Slope:	1.000000
A1 (Gain):	0.022294	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999361	Status:	OK.
Std Error of Est:	0.000042		
Predicted MDL:	0.004097		
Predicted MQL:	0.013658		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00003	.000	.000	.00012	.000	1
S1	.10000	.08447	-.016	-15.5	.00200	.000	1
S3	2.5000	2.3887	-.111	-4.45	.05344	.000	1
S4	5.0000	4.9844	-.016	-.313	.11138	.000	1
S5	10.000	10.256	.256	2.56	.22904	.000	1
S2	1.2500	1.1369	-.113	-9.04	.02550	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



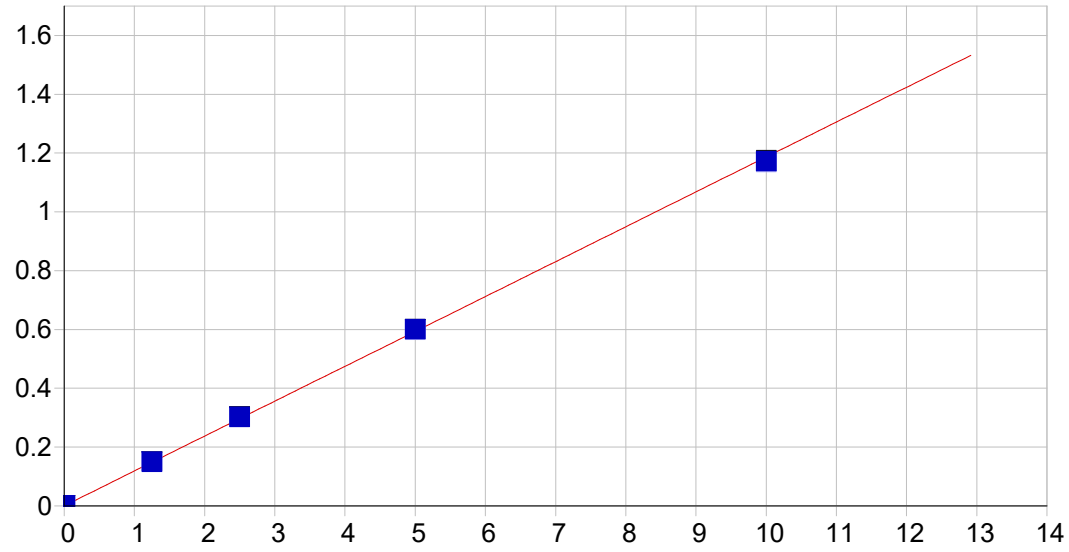
Si 251.611 {134}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000336	Re-Slope:	1.000000
A1 (Gain):	0.027533	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.971718	Status:	OK.
Std Error of Est:	0.000357		
Predicted MDL:	0.004696		
Predicted MQL:	0.015653		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00033	-.000	.000	.00033	.000	1
S1	.10000	.43357	.334	334.	.01227	.000	1
S3	2.5000	2.4577	-.042	-1.69	.06821	.000	1
S4	5.0000	4.9251	-.075	-1.50	.13635	.001	1
S5	10.000	9.8027	-.197	-1.97	.27106	.001	1
S2	1.2500	1.2317	-.018	-1.46	.03435	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



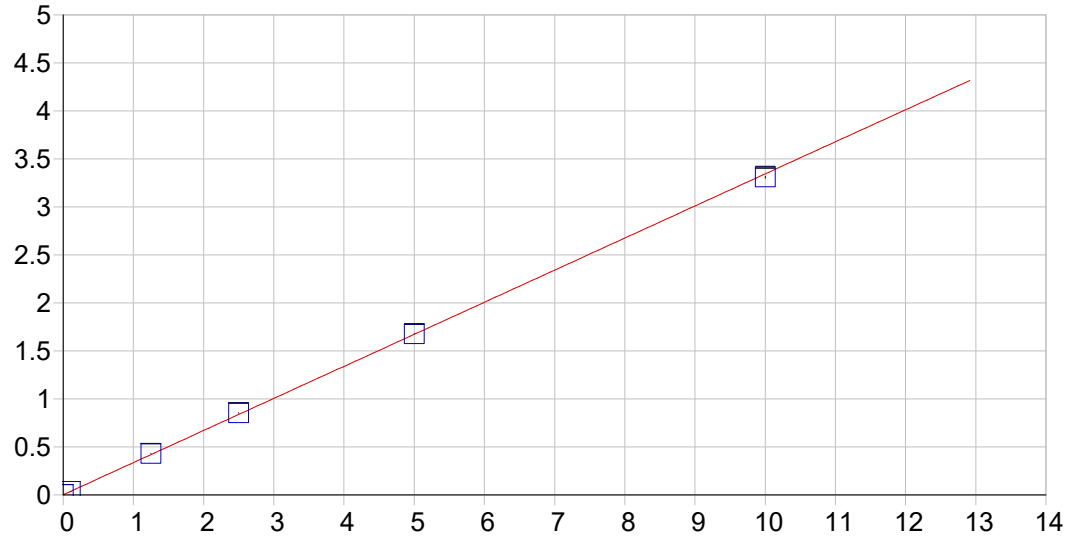
Sn 189.989 {478}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000182	Re-Slope:	1.000000
A1 (Gain):	0.118648	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999904	Status:	OK.
Std Error of Est:	0.000023		
Predicted MDL:	0.000869		
Predicted MQL:	0.002896		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00018	.000	1
S1	.00700	.00600	-.001	-14.3	.00086	.000	1
S3	2.5000	2.5516	.052	2.06	.30200	.001	1
S4	5.0000	5.0606	.061	1.21	.59878	.000	1
S5	10.000	9.8769	-.123	-1.23	1.1684	.003	1
S2	1.2500	1.2618	.012	.946	.14944	.000	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



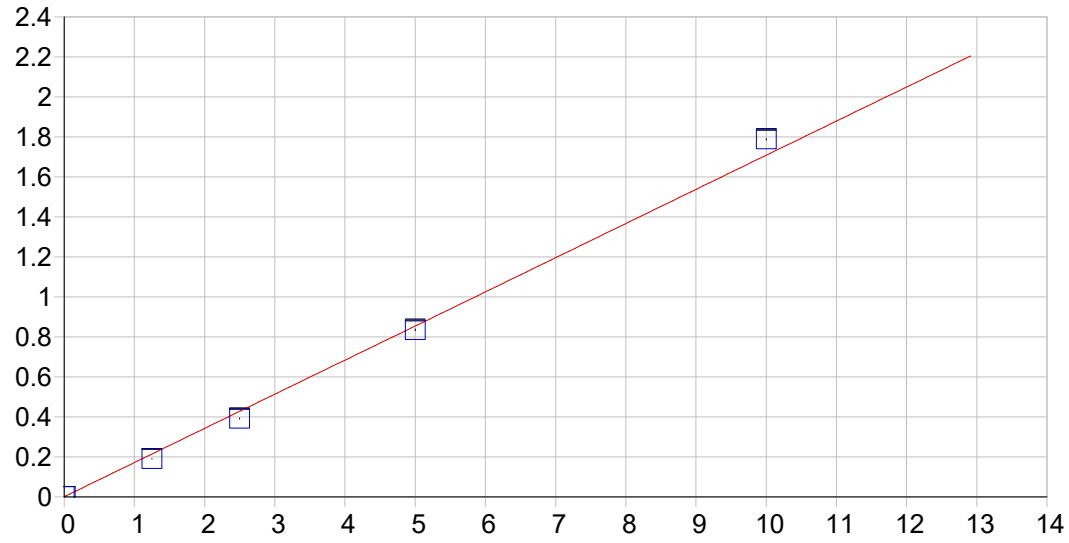
Ti 336.121 {100}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002490	Re-Slope:	1.000000
A1 (Gain):	0.334116	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999918	Status:	OK.
Std Error of Est:	0.000227		
Predicted MDL:	0.000778		
Predicted MQL:	0.002592		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00249	.000	1
S1	.10000	.10246	.002	2.46	.03672	.000	1
S3	2.5000	2.5512	.051	2.05	.85490	.002	1
S4	5.0000	5.0134	.013	.267	1.6775	.003	1
S5	10.000	9.8992	-.101	-1.01	3.3100	.009	1
S2	1.2500	1.2837	.034	2.70	.43141	.002	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



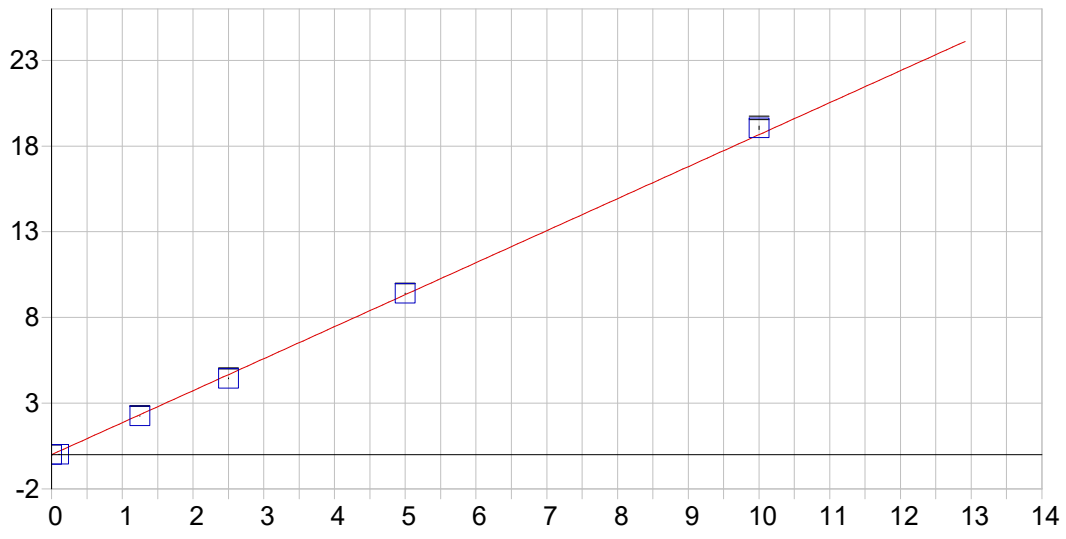
Li 670.784 { 50}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001120	Re-Slope:	1.000000
A1 (Gain):	0.170700	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998448	Status:	OK.
Std Error of Est:	0.000196		
Predicted MDL:	0.001077		
Predicted MQL:	0.003589		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00112	.000	1
S5	10.000	10.469	.469	4.69	1.7882	.004	1
S4	5.0000	4.8830	-.117	-2.34	.83464	.005	1
S3	2.5000	2.2911	-.209	-8.36	.39221	.003	1
S1	.01500	.01232	-.003	-17.9	.00322	.000	1
S2	1.2500	1.1098	-.140	-11.2	.19056	.002	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



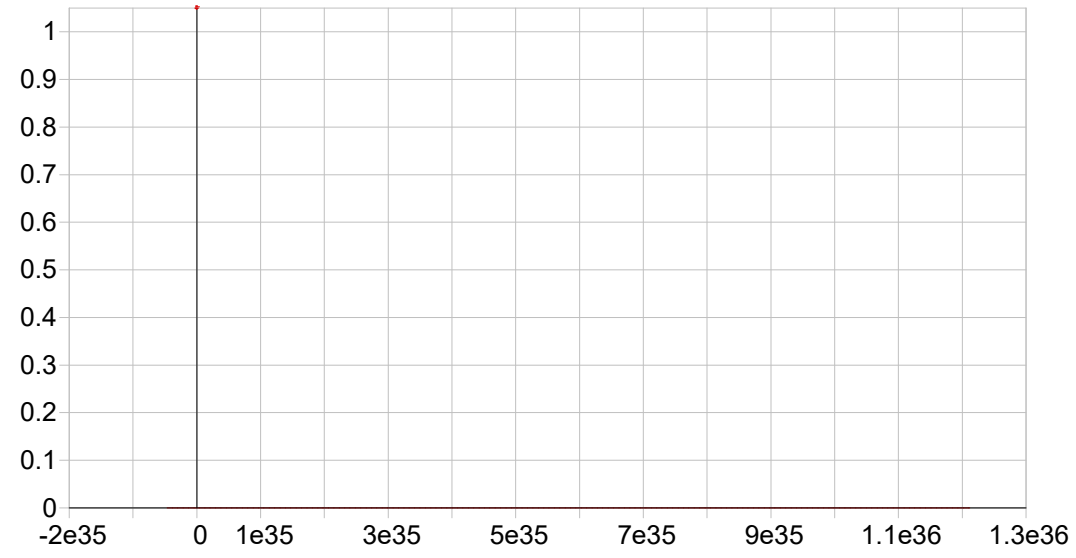
Sr 407.771 { 83}

Date of Fit:	3/4/2025 16:10:25	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000033	Re-Slope:	1.000000
A1 (Gain):	1.866476	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.997531	Status:	OK.
Std Error of Est:	0.006983		
Predicted MDL:	0.000052		
Predicted MQL:	0.000174		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00010	.000	.000	.00014	.000	1
S1	.10000	.00962	-.090	-90.4	.01793	.000	1
S3	2.5000	2.3824	-.118	-4.70	4.4466	.029	1
S4	5.0000	5.0357	.036	.713	9.3989	.018	1
S5	10.000	10.213	.213	2.13	19.062	.105	1
S2	1.2500	1.2093	-.041	-3.26	2.2570	.012	1

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

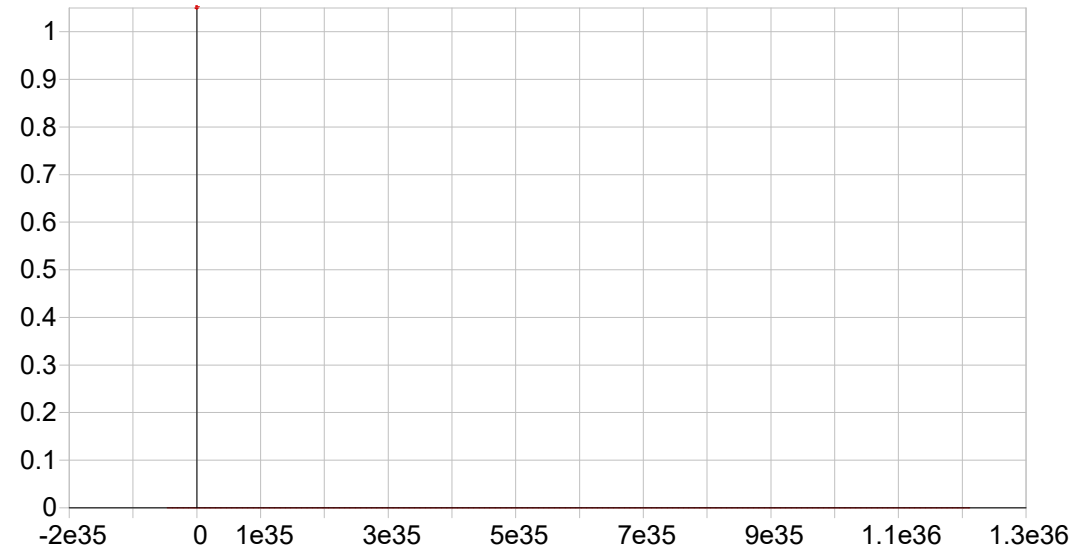


Y 224.306 {450}*

Date of Fit:	3/4/2025 16:10:25	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}*

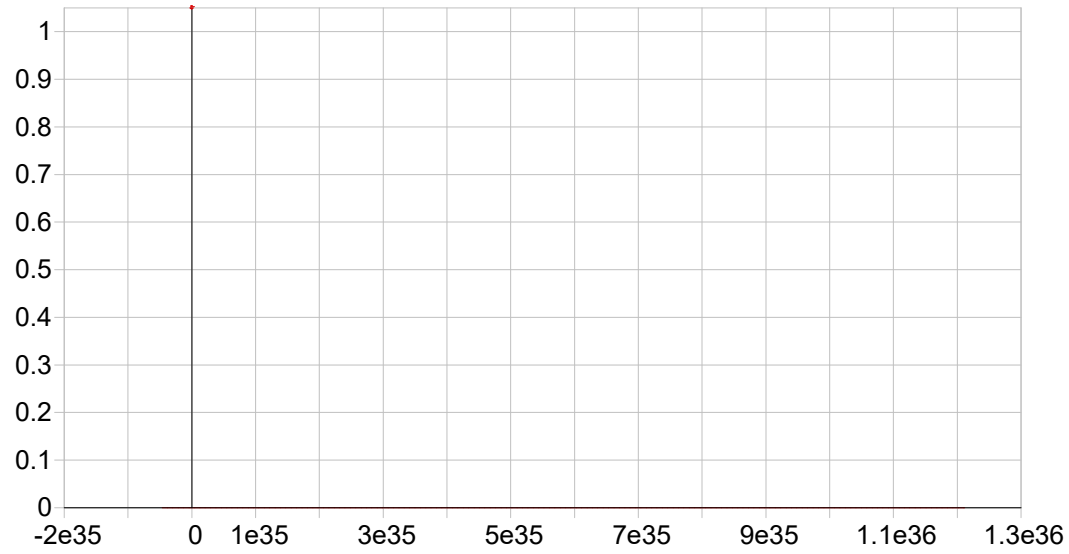
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

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

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



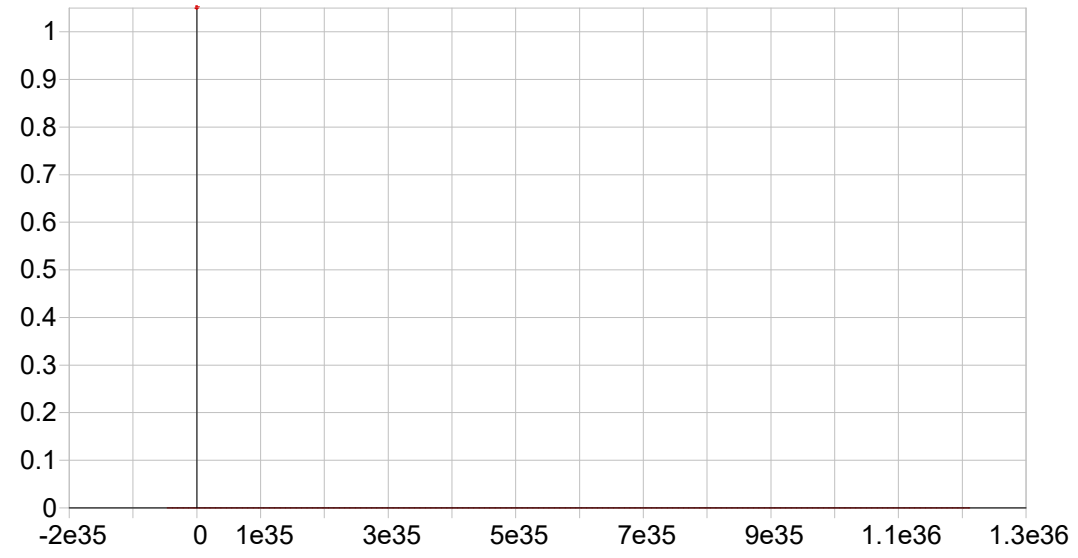
Y 371.030 { 91}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

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

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

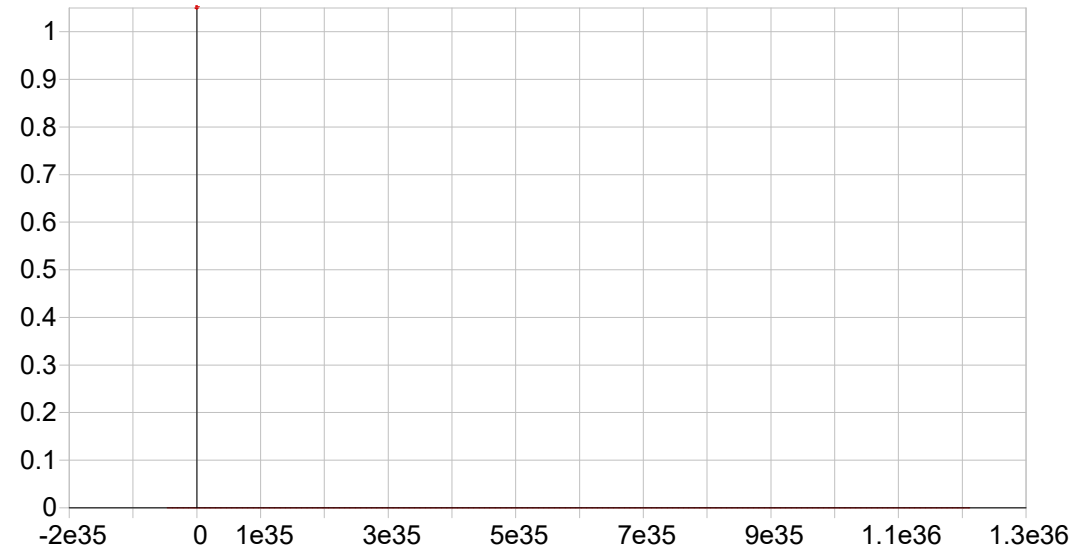


Y 224.306 {150}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

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



In 230.606 {446}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

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

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S0 Acquired: 3/4/2025 15:34:47 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 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	**-.00006**	**.00004**	**-.00013**	**.00031**	**-.00010**	**.00006**	**.00235**	**-.00005**
Stddev	.00003	.00006	.00020	.00008	.00011	.00007	.00030	.00026
%RSD	51.514	144.76	154.91	24.542	105.31	103.67	12.575	531.16
#1	-.00002	.00010	-.00027	.00024	-.00017	.00014	.00209	-.00035
#2	-.00008	-.00001	.00010	.00030	-.00016	.00001	.00229	.00008
#3	-.00006	.00003	-.00021	.00039	.00002	.00004	.00267	.00012

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**.00008**	**.00007**	**-.00017**	**.00043**	**.00002**	**-.00001**	**-.00003**
Stddev	.00008	.00009	.00003	.00002	.00015	.00000	.00001	.00003
%RSD	10687.	110.64	37.304	14.518	34.771	23.443	114.14	72.980
#1	.00008	.00003	.00010	-.00016	.00044	.00001	-.00002	-.00001
#2	-.00000	.00019	.00007	-.00019	.00028	.00002	-.00002	-.00005
#3	-.00008	.00003	.00005	-.00014	.00058	.00002	.00000	-.00004

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**-.00021**	**-.00107**	**-.00003**	**.00034**	**.00653**	**-.00124**	**.00257**
Stddev	.00020	.00005	.00055	.00008	.00006	.00016	.00003	.00010
%RSD	99.803	22.240	50.855	293.24	16.732	2.4913	2.6333	3.7176
#1	-.00029	-.00025	-.00151	.00005	.00034	.00660	-.00125	.00262
#2	-.00034	-.00016	-.00046	-.00003	.00039	.00665	-.00127	.00262
#3	.00003	-.00022	-.00125	-.00010	.00027	.00634	-.00120	.00246

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00012**	**.00033**	**.00018**	**.00249**	**.00112**	**.00014**
Stddev	.00018	.00003	.00006	.00012	.00004	.00021	.00004
%RSD	3233.8	21.561	18.069	66.801	1.5179	18.889	24.240
#1	.00009	.00009	.00031	.00018	.00246	.00130	.00018
#2	-.00020	.00014	.00039	.00006	.00247	.00117	.00014
#3	.00013	.00012	.00027	.00031	.00253	.00089	.00012

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S0 Acquired: 3/4/2025 15:34:47 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 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	3578.4	77251.	16345.	3281.3	5036.2
Stddev	7.4	79.	47.	2.1	14.4
%RSD	.20552	.10277	.28998	.06383	.28524
#1	3571.4	77296.	16291.	3283.5	5019.7
#2	3577.8	77298.	16362.	3279.3	5042.7
#3	3586.1	77159.	16381.	3281.1	5046.2

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S1 Acquired: 3/4/2025 15:38:59 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	**.00049**	**.00156**	**.00168**	**.00219**	**.00797**	**.00249**	**.08355**	**.01487**
Stddev	.00004	.00015	.00021	.00019	.00017	.00009	.00056	.00003
%RSD	7.6401	9.5018	12.699	8.5062	2.1799	3.8180	.67361	.18999
#1	.00052	.00173	.00179	.00239	.00815	.00259	.08322	.01490
#2	.00051	.00149	.00181	.00203	.00781	.00241	.08323	.01485
#3	.00045	.00145	.00143	.00214	.00796	.00246	.08420	.01488

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01141**	**.04114**	**.00165**	**.03495**	**.00525**	**.00056**	**.00134**	**.01271**
Stddev	.00018	.00015	.00005	.00009	.00023	.00003	.00003	.00005
%RSD	1.6050	.37313	2.9349	.24741	4.4606	4.7402	2.2254	.37366
#1	.01124	.04119	.00162	.03490	.00499	.00059	.00137	.01268
#2	.01137	.04096	.00163	.03491	.00545	.00056	.00131	.01269
#3	.01160	.04126	.00171	.03505	.00532	.00054	.00133	.01277

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01983**	**.00225**	**.02160**	**.00566**	**.01641**	**.02520**	**-.00085**	**.00234**
Stddev	.00016	.00003	.00067	.00013	.00016	.00016	.00004	.00007
%RSD	.81963	1.3853	3.0977	2.3154	.99592	.65274	4.9403	3.0695
#1	.01996	.00227	.02116	.00558	.01622	.02510	-.00083	.00234
#2	.01989	.00222	.02238	.00559	.01653	.02511	-.00082	.00242
#3	.01965	.00227	.02127	.00581	.01646	.02539	-.00090	.00227

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00668**	**.00200**	**.01227**	**.00086**	**.03672**	**.00322**	**.01793**
Stddev	.00003	.00013	.00010	.00005	.00020	.00019	.00020
%RSD	.39606	6.3362	.80794	6.1881	.55648	5.9607	1.1036
#1	.00670	.00192	.01235	.00080	.03695	.00325	.01794
#2	.00665	.00193	.01230	.00088	.03665	.00302	.01773
#3	.00669	.00214	.01216	.00090	.03657	.00340	.01812

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S1 Acquired: 3/4/2025 15:38:59 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	3580.2	76367.	16041.	3277.2	4915.7
Stddev	1.3	291.	118.	12.1	2.3
%RSD	.03505	.38125	.73483	.37032	.04755
#1	3581.0	76141.	15968.	3263.3	4913.7
#2	3580.8	76695.	15979.	3282.7	4915.3
#3	3578.7	76264.	16177.	3285.6	4918.3

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S2 Acquired: 3/4/2025 15:43:13 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	**.06226**	**.07575**	**1.2073**	**.06806**	**.16560**	**.48292**	**1.0838**	**.36165**
Stddev	.00016	.00037	.0019	.00019	.00067	.00305	.0128	.00288
%RSD	.25667	.48813	.15788	.27683	.40453	.63240	1.1800	.79536
#1	.06223	.07604	1.2077	.06811	.16631	.47970	1.0710	.36472
#2	.06244	.07587	1.2090	.06821	.16552	.48328	1.0838	.36122
#3	.06212	.07533	1.2053	.06785	.16498	.48577	1.0966	.35902

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.4458**	**.52534**	**.60447**	**.44273**	**.58099**	**.19910**	**.33828**	**.17000**
Stddev	.0024	.00355	.00138	.00052	.00018	.00129	.00339	.00037
%RSD	.16258	.67501	.22893	.11841	.03117	.64724	1.0012	.21999
#1	1.4470	.52176	.60543	.44276	.58083	.19774	.33501	.16964
#2	1.4474	.52541	.60289	.44324	.58095	.19926	.33804	.16998
#3	1.4431	.52885	.60510	.44219	.58119	.20030	.34178	.17039

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.31589**	**.07718**	**.16641**	**.06861**	**1.0030**	**.15269**	**.04503**	**.36518**
Stddev	.00091	.00013	.00091	.00031	.0029	.00117	.00013	.00341
%RSD	.28665	.16915	.54854	.45336	.29371	.76832	.28790	.93411
#1	.31594	.07724	.16577	.06853	.99971	.15157	.04510	.36888
#2	.31676	.07727	.16601	.06836	1.0053	.15259	.04488	.36449
#3	.31495	.07703	.16746	.06896	1.0041	.15391	.04512	.36217

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.80434**	**.02550**	**.03435**	**.14944**	**.43141**	**.19056**	**2.2570**
Stddev	.00061	.00007	.00026	.00039	.00161	.00197	.0117
%RSD	.07645	.27342	.75770	.26172	.37204	1.0323	.51772
#1	.80490	.02543	.03407	.14910	.43028	.18877	2.2445
#2	.80444	.02550	.03440	.14987	.43070	.19026	2.2676
#3	.80368	.02557	.03458	.14934	.43324	.19267	2.2591

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S2 Acquired: 3/4/2025 15:43:13 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	3441.3	74109.	16209.	3148.1	4455.0
Stddev	5.9	105.	89.	2.5	8.2
%RSD	.17049	.14149	.55155	.07815	.18433
#1	3434.9	74146.	16109.	3146.1	4447.4
#2	3442.4	74191.	16236.	3150.8	4453.8
#3	3446.5	73991.	16281.	3147.3	4463.7

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S3 Acquired: 3/4/2025 15:47:16 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	**.12789**	**.15034**	**2.4290**	**.13917**	**.34133**	**.98371**	**2.1885**	**.71170**
Stddev	.00042	.00055	.0047	.00092	.00065	.00521	.0057	.00346
%RSD	.32497	.36495	.19170	.66222	.19068	.53008	.26003	.48616
#1	.12749	.15097	2.4257	.13889	.34071	.97812	2.1859	.71461
#2	.12786	.14997	2.4271	.13843	.34128	.98455	2.1950	.71262
#3	.12832	.15009	2.4343	.14020	.34201	.98845	2.1845	.70788

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.9192**	**1.0646**	**1.1897**	**.89285**	**1.1464**	**.39652**	**.68323**	**.34902**
Stddev	.0028	.0073	.0009	.00221	.0020	.00231	.00580	.00214
%RSD	.09692	.69041	.07559	.24765	.17245	.58306	.84837	.61290
#1	2.9178	1.0562	1.1887	.89091	1.1486	.39385	.67669	.34661
#2	2.9172	1.0680	1.1904	.89238	1.1458	.39772	.68530	.34975
#3	2.9224	1.0697	1.1900	.89526	1.1448	.39798	.68771	.35070

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.63581**	**.15610**	**.33531**	**.13705**	**2.0215**	**.30602**	**.09546**	**.70897**
Stddev	.00137	.00023	.00100	.00051	.0050	.00181	.00015	.00498
%RSD	.21494	.14607	.29699	.36970	.24653	.59249	.15818	.70177
#1	.63514	.15625	.33526	.13675	2.0176	.30403	.09562	.71404
#2	.63490	.15583	.33632	.13763	2.0271	.30646	.09531	.70879
#3	.63738	.15620	.33434	.13677	2.0199	.30758	.09544	.70409

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.6150**	**.05344**	**.06821**	**.30200**	**.85490**	**.39221**	**4.4466**
Stddev	.0023	.00015	.00014	.00051	.00164	.00332	.0293
%RSD	.14441	.27972	.20654	.16964	.19172	.84676	.65820
#1	1.6147	.05340	.06825	.30151	.85348	.38858	4.4351
#2	1.6129	.05332	.06833	.30196	.85669	.39297	4.4249
#3	1.6175	.05361	.06805	.30254	.85453	.39509	4.4799

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S3 Acquired: 3/4/2025 15:47:16 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	3253.1	72182.	16025.	3046.8	4150.9
Stddev	6.2	186.	67.	1.9	5.9
%RSD	.19148	.25827	.41567	.06262	.14318
#1	3256.4	72290.	15948.	3045.0	4154.6
#2	3256.9	72288.	16065.	3046.7	4154.0
#3	3245.9	71966.	16062.	3048.8	4144.0

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S4 Acquired: 3/4/2025 15:51:24 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	.26829	.29370	4.8400	.28714	.71426	2.1013	4.5394	1.3981
Stddev	.00095	.00095	.0049	.00162	.00185	.0043	.0399	.0046
%RSD	.35267	.32460	.10159	.56267	.25885	.20634	.87937	.32836
#1	.26772	.29275	4.8455	.28656	.71363	2.1053	4.5855	1.3932
#2	.26777	.29370	4.8361	.28589	.71281	2.0967	4.5156	1.3990
#3	.26939	.29466	4.8384	.28896	.71634	2.1018	4.5171	1.4022

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.7797	2.1802	2.3455	1.7797	2.3281	.81181	1.3919	.73501
Stddev	.0059	.0098	.0044	.0024	.0041	.00263	.0088	.00243
%RSD	.10257	.45020	.18693	.13509	.17453	.32401	.63334	.33111
#1	5.7866	2.1884	2.3419	1.7823	2.3255	.81301	1.4000	.73682
#2	5.7760	2.1694	2.3443	1.7775	2.3328	.80879	1.3825	.73225
#3	5.7766	2.1829	2.3504	1.7794	2.3261	.81362	1.3934	.73597

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.2615	.32295	.66825	.26941	4.1986	.64818	.19693	1.3625
Stddev	.0017	.00061	.00099	.00046	.0099	.00093	.00071	.0046
%RSD	.13351	.18822	.14885	.17024	.23558	.14348	.35895	.33801
#1	1.2625	.32244	.66932	.26940	4.1978	.64923	.19775	1.3574
#2	1.2596	.32280	.66735	.26895	4.1891	.64746	.19655	1.3664
#3	1.2624	.32362	.66808	.26987	4.2089	.64785	.19650	1.3636

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.2628	.11138	.13635	.59878	1.6775	.83464	9.3989
Stddev	.0107	.00020	.00051	.00041	.0031	.00489	.0183
%RSD	.32676	.17671	.37140	.06770	.18599	.58590	.19494
#1	3.2579	.11133	.13680	.59924	1.6808	.84001	9.4191
#2	3.2555	.11121	.13644	.59856	1.6746	.83043	9.3834
#3	3.2751	.11160	.13580	.59853	1.6772	.83349	9.3942

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S4 Acquired: 3/4/2025 15:51:24 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	2956.5	66880.	15497.	2833.1	3772.0
Stddev	8.4	111.	14.	10.4	4.7
%RSD	.28576	.16639	.08744	.36821	.12437
#1	2960.4	66808.	15509.	2828.3	3769.2
#2	2962.3	67008.	15483.	2845.0	3777.5
#3	2946.8	66825.	15501.	2825.8	3769.4

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S5 Acquired: 3/4/2025 15:55:28 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	**.57405**	**.56216**	**9.5250**	**.60705**	**1.5250**	**4.4191**	**9.3713**	**2.7337**
Stddev	.00159	.00207	.0251	.00161	.0033	.0516	.0673	.0086
%RSD	.27695	.36882	.26383	.26591	.21703	1.1677	.71766	.31484
#1	.57251	.56422	9.5328	.60544	1.5214	4.4510	9.2938	2.7436
#2	.57395	.56221	9.4969	.60867	1.5278	4.4466	9.4136	2.7280
#3	.57569	.56007	9.5452	.60704	1.5259	4.3595	9.4066	2.7295

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**11.244**	**4.4051**	**4.4886**	**3.5241**	**4.6933**	**1.6360**	**2.7843**	**1.5164**
Stddev	.025	.0369	.0197	.0069	.0083	.0025	.0393	.0011
%RSD	.22123	.83715	.43986	.19492	.17591	.15337	1.4127	.07238
#1	11.256	4.4258	4.4659	3.5280	4.7014	1.6334	2.8263	1.5176
#2	11.215	4.4270	4.4983	3.5162	4.6935	1.6384	2.7484	1.5158
#3	11.260	4.3625	4.5017	3.5282	4.6849	1.6362	2.7783	1.5157

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.4799**	**.67467**	**1.3350**	**.52763**	**8.6348**	**1.3767**	**.40190**	**2.5708**
Stddev	.0064	.00045	.0028	.00248	.0486	.0036	.00044	.0114
%RSD	.25709	.06670	.20915	.46979	.56336	.25801	.10995	.44328
#1	2.4823	.67519	1.3380	.53021	8.6667	1.3736	.40209	2.5835
#2	2.4727	.67442	1.3345	.52526	8.5788	1.3806	.40222	2.5614
#3	2.4848	.67439	1.3325	.52741	8.6590	1.3761	.40140	2.5676

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6.6990**	**.22904**	**.27106**	**1.1684**	**3.3100**	**1.7882**	**19.062**
Stddev	.0142	.00046	.00086	.0032	.0086	.0041	.105
%RSD	.21196	.19909	.31648	.27162	.26067	.22757	.54970
#1	6.6848	.22873	.27173	1.1714	3.3195	1.7835	19.183
#2	6.6990	.22883	.27009	1.1651	3.3028	1.7907	19.006
#3	6.7132	.22956	.27134	1.1687	3.3075	1.7903	18.998

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S5 Acquired: 3/4/2025 15:55:28 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	2583.3	62454.	15114.	2592.3	3387.3
Stddev	9.0	86.	53.	11.7	3.1
%RSD	.34875	.13698	.34912	.45143	.09190
#1	2593.7	62467.	15053.	2583.3	3390.7
#2	2578.1	62362.	15143.	2605.6	3386.4
#3	2578.0	62532.	15146.	2588.1	3384.7

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: S6 Acquired: 3/4/2025 16:00:03 Type: Cal
Method: EPA SFAM01.0(v66) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S06 Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Ca3736	Fe2598	Mg2790	Na8183
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	11.767	7.1950	4.3108	2.5060	3.6943
Stddev	.023	.0300	.0138	.0091	.0040
%RSD	.19491	.41710	.32124	.36213	.10841
#1	11.789	7.1876	4.3230	2.5133	3.6967
#2	11.743	7.2281	4.3136	2.5088	3.6965
#3	11.769	7.1694	4.2957	2.4958	3.6897

Int. Std.	Y_3600	Y_3710
Units	Cts/S	Cts/S
Avg	59662.	14579.
Stddev	129.	25.
%RSD	.21619	.16858
#1	59553.	14590.
#2	59630.	14597.
#3	59804.	14551.

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICV001 Acquired: 3/4/2025 17:17:14 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV001 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9757523**	**1.059134**	**.9983013**	**.9155289**	**.9089349**	**2.439686**
Stddev	.0024942	.007982	.0006607	.0064169	.0029569	.017388
%RSD	.2556229	.7536789	.0661815	.7008960	.3253176	.7127034
#1	.9783942	1.065001	.9990626	.9229026	.9122557	2.456543
#2	.9754247	1.050044	.9979648	.9124732	.9079621	2.440701
#3	.9734381	1.062357	.9978767	.9112110	.9065870	2.421812

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5227809**	**.5207138**	**.4943777**	**9.115492**	**.5542646**	**.4899510**
Stddev	.0034528	.0022223	.0011799	.033030	.0010464	.0000507
%RSD	.6604600	.4267800	.2386582	.3623517	.1887832	.0103422
#1	.5267175	.5183640	.4940000	9.149136	.5550321	.4899650
#2	.5213597	.5209958	.4934329	9.114227	.5530727	.4899932
#3	.5202656	.5227817	.4957002	9.083112	.5546889	.4898948

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5236324**	**9.545833**	**.4808668**	**5.436558**	**.5083980**	**.2300223**
Stddev	.0015670	.016769	.0008333	.005301	.0010673	.0007363
%RSD	.2992559	.1756680	.1732956	.0975020	.2099330	.3201082
#1	.5220772	9.565093	.4817816	5.434010	.5089372	.2294331
#2	.5252110	9.537931	.4806680	5.433012	.5090881	.2308477
#3	.5236090	9.534475	.4801509	5.442652	.5071687	.2297862

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.802175**	**.5246378**	**.9341918**	**9.090877**	F **4.108315**	**4.628924**
Stddev	.052676	.0010025	.0059205	.055343	.011933	.024774
%RSD	.5373924	.1910762	.6337525	.6087805	.2904529	.5351937
#1	9.829676	.5236351	.9366023	9.134100	4.104629	4.600688
#2	9.741440	.5256401	.9385267	9.110031	4.098660	4.639071
#3	9.835410	.5246380	.9274463	9.028501	4.121655	4.647014

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICV001 Acquired: 3/4/2025 17:17:14 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV001 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.635639	F 3.808251	F .0189475	F -.001025	F -.001839	F .0000995
Stddev	.005100	.014496	.0032247	.000516	.000316	.0006314
%RSD	.1100221	.3806550	17.01941	50.32800	17.19854	634.7996
#1	4.641247	3.824467	.0210241	-.001374	-.001934	.0007586
#2	4.634389	3.796549	.0205858	-.001268	-.001486	-.000500
#3	4.631279	3.803736	.0152324	-.000433	-.002096	.000040

Elem	Sr4077
Units	ppm
Avg	F .0012035
Stddev	.0000285
%RSD	2.368484
#1	.0012102
#2	.0012280
#3	.0011722

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3604.087	77803.02	16366.60	3275.122	4892.592
Stddev	7.079	126.75	51.22	5.168	5.908
%RSD	.1964198	.1629125	.3129529	.1577900	.1207462
#1	3597.271	77669.93	16415.77	3269.869	4885.937
#2	3603.587	77922.30	16370.47	3275.296	4894.624
#3	3611.403	77816.83	16313.55	3280.200	4897.216

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICB001 Acquired: 3/4/2025 17:23:05 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB001 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000596**	**.0007404**	**-.000052**	**.0007103**	**.0013687**	**.0022003**	**.0004262**
Stddev	.001317	.0006890	.001639	.0013206	.0004839	.0059819	.0009516
%RSD	221.1703	93.06229	3153.896	185.9323	35.35434	271.8734	223.2466
#1	.000815	.0001838	.000235	.0002331	.0018498	.0073747	-.000671
#2	-.001794	.0015110	.001424	-.000305	.0008820	.0035757	.001027
#3	-.000808	.0005263	-.001815	.002203	.0013744	-.004350	.000923

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000028**	**-.000037**	**.0043802**	**-.000142**	**.0001045**	**.0017013**	**-.003071**
Stddev	.000019	.000048	.0043554	.000148	.0001177	.0009294	.003102
%RSD	68.02114	131.4725	99.43355	104.0898	112.6401	54.63020	101.0057
#1	-.000035	-.000027	-.000608	-.000171	-.000001	.0010717	-.006078
#2	-.000007	-.000089	.006321	-.000274	.000082	.0012635	.000117
#3	-.000044	.000006	.007428	.000018	.000232	.0027688	-.003251

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000177**	**.0125515**	**.0000947**	**.0000503**	**.0970367**	**-.000148**	**.0005299**
Stddev	.000155	.0021631	.0003189	.0002415	.0829883	.000519	.0013276
%RSD	87.70487	17.23389	336.6411	480.2951	85.52253	350.3249	250.5224
#1	-.000244	.0105756	.0001497	.0002675	.1144349	.000388	.0018820
#2	-.000287	.0122163	-.000248	.0000931	.1699467	-.000647	-.000772
#3	.000000	.0148627	.000383	-.000210	.0067287	-.000186	.000480

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.045200**	**.0006547**	**-.000283**	**.0001078**	**.0015336**	**.0064356**	**-.000518**
Stddev	.024865	.0022180	.000620	.0003404	.0042342	.0041949	.000906
%RSD	55.01174	338.8130	219.3874	315.8203	276.0965	65.18337	174.7304
#1	-.073693	.0032141	.000011	.0004126	-.003197	.0067930	-.001522
#2	-.034020	-.000543	-.000995	-.000260	.004968	.0020733	-.000273
#3	-.027887	-.000707	.000136	.000170	.002829	.0104403	.000239

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICB001 Acquired: 3/4/2025 17:23:05 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB001 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001039	-.000903	-.000001
Stddev	.000599	.000774	.000049
%RSD	57.64046	85.68663	4084.608
#1	-.000364	-.000024	.000007
#2	-.001249	-.001481	-.000054
#3	-.001505	-.001204	.000043

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3655.831	79486.21	16109.19	3349.315	5140.191
Stddev	10.289	100.07	78.37	5.411	8.477
%RSD	.2814464	.1258942	.4864719	.1615447	.1649220
#1	3666.228	79578.37	16199.02	3343.153	5148.490
#2	3655.614	79500.49	16073.70	3351.502	5140.537
#3	3645.653	79379.76	16054.84	3353.289	5131.546

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICSA001 Acquired: 3/4/2025 17:27:13 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA001 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000689**	**-.001196**	**.0038281**	**.0165994**	**.0121148**	**229.1883**
Stddev	.0007743	.001260	.0022444	.0011695	.0028495	2.0034
%RSD	1124.443	105.3159	58.62926	7.045510	23.52060	.8741165
#1	-.000071	-.002171	.0061503	.0153520	.0154010	227.0926
#2	-.000626	-.001645	.0016706	.0167751	.0103306	229.3879
#3	.000904	.000227	.0036634	.0176712	.0106127	231.0844

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0053003**	**-.000453**	**.0013161**	**243.8951**	**.0531602**	**.0014963**
Stddev	.0007790	.000054	.0000951	1.0670	.0003833	.0002976
%RSD	14.69648	11.97663	7.225449	.4374831	.7210111	19.89099
#1	.0059270	-.000511	.0013161	243.5645	.0531445	.0018318
#2	.0055457	-.000404	.0012210	243.0325	.0527850	.0012642
#3	.0044282	-.000444	.0014112	245.0882	.0535511	.0013928

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005455**	**101.1526**	**.0115480**	**238.6516**	**.0042979**	**-.000781**
Stddev	.000808	.5259	.0003312	1.2057	.0007464	.000208
%RSD	14.80449	.5198916	2.867898	.5052092	17.36559	26.68433
#1	-.005962	100.9691	.0111664	238.0069	.0036551	-.000801
#2	-.005880	100.7432	.0117601	237.9054	.0041222	-.000563
#3	-.004524	101.7457	.0117175	240.0426	.0051165	-.000978

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2237193**	**-.005530**	**-.006310**	**-.061088**	**.0054810**	F **.4102497**
Stddev	.0899429	.000809	.001387	.062419	.0021186	.0023679
%RSD	40.20347	14.62142	21.97214	102.1789	38.65277	.5771863
#1	.2081997	-.004806	-.005719	-.039292	.0079253	.4100892
#2	.3204122	-.005382	-.005318	-.131483	.0043448	.4079661
#3	.1425461	-.006403	-.007895	-.012490	.0041730	.4126938

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICSA001 Acquired: 3/4/2025 17:27:13 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA001 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008847	.0255738	.0068683	-.005114	-.003761	.0055475
Stddev	.0003449	.0077007	.0034404	.000825	.000357	.0004357
%RSD	38.98839	30.11188	50.09124	16.13674	9.484753	7.854546
#1	.0012365	.0166853	.0085156	-.004396	-.003982	.0055225
#2	.0005470	.0302356	.0091755	-.006015	-.003350	.0051248
#3	.0008708	.0298004	.0029140	-.004930	-.003952	.0059952

Elem	Sr4077
Units	ppm
Avg	F .1027541
Stddev	.0005091
%RSD	.4954516
#1	.1024423
#2	.1024784
#3	.1033416

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3191.842	68335.57	15478.32	2914.217	3972.032
Stddev	7.999	173.96	50.03	10.974	8.198
%RSD	.2506001	.2545725	.3232489	.3765639	.2064002
#1	3186.949	68314.48	15457.08	2921.630	3963.161
#2	3187.505	68519.12	15442.41	2919.411	3973.605
#3	3201.073	68173.11	15535.47	2901.611	3979.330

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICSAB001 Acquired: 3/4/2025 17:31:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB001 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0895532**	**.1100796**	**.0532360**	**.0650995**	**.5613490**	**224.6757**
Stddev	.0029818	.0053782	.0036427	.0023078	.0046070	1.3520
%RSD	3.329645	4.885768	6.842514	3.545083	.8207021	.6017522
#1	.0925701	.1154529	.0554569	.0658028	.5578637	224.0072
#2	.0866077	.1100895	.0490320	.0669738	.5596112	223.7883
#3	.0894818	.1046965	.0552190	.0625218	.5665722	226.2318

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4987148**	**.5178272**	**1.018132**	**239.6125**	**.5994386**	**.5139315**
Stddev	.0007993	.0000632	.002859	.4830	.0016999	.0004215
%RSD	.1602640	.0122107	.2808214	.2015707	.2835834	.0820087
#1	.4983890	.5177704	1.021317	239.5091	.5981458	.5142390
#2	.4996255	.5178953	1.015788	239.1896	.6013641	.5134511
#3	.4981299	.5178158	1.017290	240.1388	.5988058	.5141045

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5119050**	**99.63112**	**.5122889**	**234.3081**	**1.031419**	**.2011393**
Stddev	.0004205	.13291	.0023527	.8225	.001059	.0005250
%RSD	.0821445	.1334018	.4592593	.3510514	.1026835	.2610232
#1	.5119341	99.59320	.5096165	234.0566	1.032589	.2009148
#2	.5123101	99.52129	.5140480	233.6406	1.031144	.2007640
#3	.5114707	99.77887	.5132023	235.2270	1.030525	.2017393

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1318018**	**.5036661**	**.9861088**	**-.280740**	**.0088285**	F **.9897836**
Stddev	.3474414	.0009982	.0059327	.032910	.0016856	.0011623
%RSD	263.6090	.1981885	.6016263	11.72251	19.09229	.1174300
#1	-.076465	.5029310	.9836471	-.318582	.0078415	.9885534
#2	-.061024	.5048025	.9818033	-.264827	.0107748	.9908634
#3	.532894	.5032647	.9928761	-.258811	.0078693	.9899339

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: ICSAB001 Acquired: 3/4/2025 17:31:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB001 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .6259309	.0245610	F .5229054	F .6469798	F .6587108	.0047873
Stddev	.0019805	.0035649	.0071188	.0016893	.0013233	.0006499
%RSD	.3164031	14.51441	1.361393	.2611104	.2008841	13.57519
#1	.6242327	.0221334	.5301529	.6488409	.6589825	.0054503
#2	.6254535	.0228958	.5226405	.6465553	.6572728	.0047602
#3	.6281064	.0286537	.5159227	.6455432	.6598771	.0041514

Elem	Sr4077
Units	ppm
Avg	F .1019428
Stddev	.0001289
%RSD	.1264560
#1	.1019508
#2	.1020675
#3	.1018100

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3197.733	69404.19	15714.52	2943.505	3993.566
Stddev	4.382	84.58	30.00	5.571	9.654
%RSD	.1370408	.1218667	.1909115	.1892794	.2417463
#1	3200.512	69311.82	15681.07	2949.302	3985.468
#2	3192.681	69477.85	15739.05	2938.191	3990.980
#3	3200.006	69422.89	15723.43	2943.022	4004.250

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCV001 Acquired: 3/4/2025 17:35:31 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV001 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.783277**	**4.643900**	**24.08654**	**4.756181**	**4.798694**	**381.9284**
Stddev	.015362	.036916	.02327	.007135	.015568	.9577
%RSD	.3211548	.7949460	.0965919	.1500194	.3244308	.2507467
#1	4.784264	4.686143	24.09250	4.762673	4.801606	382.8012
#2	4.767445	4.617833	24.06088	4.748542	4.781875	382.0801
#3	4.798121	4.627724	24.10625	4.757326	4.812601	380.9040

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.999945**	**.4894614**	**2.459426**	**392.4143**	**15.24319**	**2.447529**
Stddev	.030742	.0019819	.002210	2.6194	.02714	.002211
%RSD	.3074251	.4049056	.0898406	.6674968	.1780337	.0903217
#1	10.03436	.4905758	2.461277	392.6985	15.25188	2.446493
#2	9.97519	.4871732	2.456980	394.8800	15.26492	2.446026
#3	9.99030	.4906352	2.460022	389.6644	15.21277	2.450067

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.88897**	**394.6198**	**14.98056**	**391.2684**	**2.445293**	**1.260010**
Stddev	.02805	1.8053	.07025	1.7417	.002304	.003287
%RSD	.1883696	.4574779	.4689247	.4451328	.0942176	.2608517
#1	14.91598	394.0575	14.91160	390.4459	2.442932	1.260432
#2	14.89092	396.6393	15.05202	393.2690	2.445414	1.263066
#3	14.85999	393.1625	14.97805	390.0904	2.447535	1.256533

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**392.2296**	**2.449349**	**14.97379**	**151.4958**	**4.998382**	F **5.837700**
Stddev	.3098	.007408	.10322	.8478	.006300	.009705
%RSD	.0789940	.3024296	.6893145	.5596349	.1260416	.1662467
#1	392.2617	2.441665	14.86977	151.4857	5.000490	5.848181
#2	392.5221	2.449938	15.07619	152.3486	4.991298	5.829025
#3	391.9050	2.456445	14.97541	150.6531	5.003358	5.835894

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCV001 Acquired: 3/4/2025 17:35:31 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV001 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.778150**	**4.917816**	**4.908993**	**4.867207**	**4.936024**	**5.009632**
Stddev	.005411	.010150	.012106	.003298	.012390	.024493
%RSD	.1132355	.2064004	.2466063	.0677517	.2510154	.4889271
#1	4.780736	4.911717	4.903792	4.865545	4.923084	4.994079
#2	4.771931	4.912198	4.900356	4.865070	4.937209	5.037866
#3	4.781782	4.929533	4.922830	4.871004	4.947779	4.996950

Elem	Sr4077
Units	ppm
Avg	**5.073647**
Stddev	.077853
%RSD	1.534461
#1	5.113932
#2	5.123103
#3	4.983906

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2815.996**	**64217.45**	**15206.59**	**2683.696**	**3524.671**
Stddev	5.646	281.56	51.14	7.454	6.524
%RSD	.2004903	.4384499	.3362975	.2777602	.1851024
#1	2814.912	64078.19	15148.39	2688.802	3524.847
#2	2822.105	64032.65	15244.36	2675.142	3531.105
#3	2810.970	64541.50	15227.00	2687.144	3518.060

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCB001 Acquired: 3/4/2025 17:39:49 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB001 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001639**	**.0008607**	**-.000837**	**-.000573**	**.0020872**	**.0030185**	**.0019393**
Stddev	.000435	.0003131	.000175	.000762	.0020032	.0017360	.0005472
%RSD	26.54528	36.37589	20.91142	132.9967	95.97785	57.51315	28.21703
#1	-.001769	.0009997	-.000709	-.001309	.0031030	.0019445	.0025250
#2	-.001154	.0010801	-.001036	-.000621	.0033790	.0020896	.0018517
#3	-.001994	.0005022	-.000765	.000212	-.000220	.0050213	.0014411

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000040**	**-.000002**	**.0073259**	**.0001268**	**.0002938**	**.0004610**	**.0096947**
Stddev	.000029	.000010	.0015020	.0001308	.0001663	.0012375	.0066020
%RSD	71.89303	574.3992	20.50258	103.1514	56.58945	268.4338	68.09916
#1	-.000072	.000003	.0087207	.0000011	.0001043	.0008726	.0173181
#2	-.000015	-.000013	.0075212	.0001171	.0004151	.0014403	.0058643
#3	-.000034	.000005	.0057358	.0002621	.0003621	-.000930	.0059018

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002030**	**.0117241**	**.0000301**	**-.000174**	**.1470418**	**.0005659**	**.0019820**
Stddev	.0002700	.0125312	.0001371	.000058	.0698594	.0012832	.0004103
%RSD	133.0072	106.8838	455.4212	33.17382	47.50988	226.7693	20.70070
#1	-.000103	.0235217	-.000053	-.000241	.2261155	.0000236	.0016216
#2	.000406	-.001430	-.000045	-.000138	.1213197	-.000357	.0024285
#3	.000306	.013081	.000188	-.000144	.0936902	.002031	.0018959

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.021902**	**.0025090**	**.0019566**	**.0000299**	**.0001536**	**.0065354**	**-.000009**
Stddev	.025007	.0002902	.0001840	.0000746	.0004415	.0022408	.000210
%RSD	114.1761	11.56630	9.402027	249.8479	287.4868	34.28674	2216.237
#1	-.017439	.0021871	.0017548	.0000263	-.000040	.0054601	.000184
#2	.000573	.0027507	.0021150	-.000043	.000659	.0050349	-.000233
#3	-.048840	.0025891	.0020002	.000106	-.000158	.0091111	.000020

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCB001 Acquired: 3/4/2025 17:39:49 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB001 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.001545**	**-.000136**	**.0000749**
Stddev	.000403	.000609	.0000311
%RSD	26.05149	446.0872	41.51306
#1	-.001977	-.000070	.0001067
#2	-.001479	.000436	.0000733
#3	-.001180	-.000775	.0000446

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3672.061**	**81486.34**	**16135.11**	**3401.075**	**5150.058**
Stddev	5.320	250.63	58.63	17.065	2.817
%RSD	.1448855	.3075673	.3633642	.5017457	.0547055
#1	3672.806	81330.91	16092.52	3381.848	5150.419
#2	3676.969	81775.46	16110.83	3406.955	5147.078
#3	3666.407	81352.65	16201.98	3414.423	5152.678

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166911BL Acquired: 3/4/2025 17:43:59 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBW911 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001343**	**.0010056**	**.0005247**	**-.000743**	**.0007510**	**.0113519**	**.0028732**
Stddev	.001438	.0003713	.0009033	.001234	.0015107	.0002190	.0006392
%RSD	107.0867	36.92741	172.1698	166.1250	201.1684	1.928816	22.24797
#1	-.002448	.0011724	-.000412	-.002109	.0017346	.0115779	.0036060
#2	.000283	.0005801	.001390	.000291	-.000988	.0111407	.0025838
#3	-.001863	.0012643	.000596	-.000411	.001507	.0113372	.0024299

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000005**	**-.000034**	**.0000177**	**-.000584**	**.0001036**	**.0008024**	**.0043854**
Stddev	.000020	.000009	.0083856	.000385	.0002199	.0008322	.0080948
%RSD	409.0563	26.37201	47390.74	65.96226	212.3220	103.7104	184.5832
#1	.000015	-.000044	.0009508	-.000248	.0003444	.0006098	.0108850
#2	-.000025	-.000028	.0078977	-.001004	.0000531	.0000834	.0069531
#3	-.000004	-.000029	-.008795	-.000500	-.000087	.0017141	-.004682

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007834**	**.0072324**	**.0001082**	**-.000022**	**.1853126**	**-.000013**	**.0009252**
Stddev	.0001869	.0057405	.0001967	.000231	.0999641	.000964	.0011573
%RSD	23.85331	79.37130	181.7814	1069.406	53.94350	7217.763	125.0854
#1	.0006108	.0074023	-.000015	-.000244	.0809276	-.000078	-.000300
#2	.0007575	.0014089	.000005	.000216	.1948360	-.000943	.001076
#3	.0009818	.0128860	.000335	-.000036	.2801743	.000982	.001999

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-1.29683**	**.0036042**	**-.002391**	**-.000114**	**.0069871**	**.0113110**	**-.001286**
Stddev	.02071	.0011363	.000537	.000071	.0033686	.0021839	.000591
%RSD	1.596923	31.52782	22.46374	62.59025	48.21231	19.30734	45.97188
#1	-1.31085	.0034524	-.002844	-.000096	.0108741	.0136033	-.001898
#2	-1.30660	.0048088	-.001798	-.000192	.0049151	.0110750	-.001244
#3	-1.27304	.0025514	-.002532	-.000053	.0051722	.0092548	-.000718

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166911BL Acquired: 3/4/2025 17:43:59 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBW911 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001520	-.002629	.0000253
Stddev	.000619	.000553	.0000088
%RSD	40.73715	21.03160	34.66438
#1	-.001180	-.003149	.0000166
#2	-.001145	-.002690	.0000341
#3	-.002234	-.002048	.0000252

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3750.723	81744.54	16762.36	3467.477	5326.357
Stddev	17.497	184.46	30.51	16.622	18.293
%RSD	.4665101	.2256564	.1820264	.4793777	.3434456
#1	3769.118	81937.86	16739.16	3486.303	5345.300
#2	3748.763	81725.32	16750.99	3454.827	5324.980
#3	3734.288	81570.45	16796.92	3461.300	5308.792

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166911BS Acquired: 3/4/2025 17:48:09 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS911 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0179368**	**.0545362**	**.0192926**	**.0647526**	**.1110369**	**.3301169**	**.3616292**
Stddev	.0014926	.0002725	.0005069	.0014687	.0016277	.0019615	.0020552
%RSD	8.321515	.4997275	2.627232	2.268212	1.465933	.5941709	.5683123
#1	.0165806	.0547516	.0193238	.0663700	.1108799	.3322574	.3631533
#2	.0176939	.0546273	.0197832	.0643854	.1094933	.3296878	.3624423
#3	.0195360	.0542298	.0187709	.0635022	.1127374	.3284055	.3592918

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0109574**	**.0098745**	**9.327481**	**.0211459**	**.0980017**	**.0550549**	**.1960601**
Stddev	.0000844	.0001240	.041994	.0000904	.0002366	.0003509	.0001152
%RSD	.7699514	1.256186	.4502194	.4272491	.2413685	.6374387	.0587632
#1	.0108946	.0097666	9.356171	.0210476	.0979481	.0551708	.1961158
#2	.0110533	.0098469	9.346990	.0212253	.0977966	.0546607	.1961369
#3	.0109243	.0100101	9.279281	.0211648	.0982605	.0553333	.1959276

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0301442**	**8.554508**	**.0791466**	**.0187391**	**10.02950**	**.1073704**	**.1142378**
Stddev	.0000741	.021835	.0006478	.0002888	.06705	.0003331	.0034025
%RSD	.2457737	.2552490	.8184335	1.541048	.6685283	.3102630	2.978402
#1	.0300754	8.579358	.0785242	.0186644	10.00254	.1071159	.1169779
#2	.0301345	8.545776	.0798171	.0184951	10.10583	.1077474	.1104294
#3	.0302226	8.538390	.0790985	.0190579	9.98013	.1072479	.1153062

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.250703**	**.0212375**	**-.001972**	**.0201817**	**.1771263**	**.8795541**	**.0125139**
Stddev	.041577	.0021602	.000223	.0002318	.0033644	.0025346	.0000994
%RSD	.5734238	10.17183	11.30691	1.148322	1.899419	.2881636	.7942900
#1	7.292630	.0225660	-.002149	.0203796	.1749157	.8811453	.0124145
#2	7.209485	.0224015	-.002044	.0202388	.1809982	.8808857	.0125138
#3	7.249994	.0187448	-.001721	.0199268	.1754651	.8766313	.0126133

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166911BS Acquired: 3/4/2025 17:48:09 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS911 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2054802	.0221070	.0547619
Stddev	.0010853	.0007827	.0000630
%RSD	.5281747	3.540356	.1150250
#1	.2063964	.0229722	.0548187
#2	.2057627	.0214482	.0547728
#3	.2042816	.0219006	.0546941

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3650.485	78770.99	16577.77	3347.351	5052.915
Stddev	11.815	218.34	68.70	10.070	18.274
%RSD	.3236639	.2771796	.4143932	.3008441	.3616572
#1	3661.692	78975.31	16649.81	3347.844	5071.591
#2	3651.621	78540.92	16513.00	3357.166	5052.083
#3	3638.143	78796.74	16570.50	3337.043	5035.071

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB168913BL Acquired: 3/4/2025 17:52:14 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBW913 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000134**	**.0007821**	**.0015176**	**-.001726**	**-.000734**	**.0029565**	**.0016546**
Stddev	.000677	.0015639	.0006248	.000725	.001490	.0060464	.0005231
%RSD	503.6619	199.9624	41.17344	42.02653	203.0353	204.5097	31.61633
#1	-.000733	.0023482	.0017325	-.002479	.000894	-.003008	.0019140
#2	-.000270	-.000780	.0008136	-.001666	-.002028	.009082	.0019972
#3	.000600	.000778	.0020065	-.001032	-.001067	.002796	.0010524

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000041**	**-.000076**	**.0061948**	**-.000251**	**.0002156**	**.0014128**	**.0061474**
Stddev	.000042	.000043	.0021337	.000104	.0000995	.0011487	.0035332
%RSD	102.6949	56.43401	34.44252	41.29079	46.14583	81.30381	57.47501
#1	-.000002	-.000049	.0075507	-.000296	.0002990	.0008531	.0021809
#2	-.000035	-.000054	.0072984	-.000324	.0001055	.0006513	.0089575
#3	-.000087	-.000126	.0037354	-.000132	.0002425	.0027341	.0073037

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008569**	**.0062505**	**.0010550**	**-.000088**	**.1813444**	**.0007164**	**.0003392**
Stddev	.0001131	.0103358	.0002280	.000424	.1899671	.0006344	.0004662
%RSD	13.20231	165.3608	21.61134	482.4641	104.7549	88.55276	137.4174
#1	.0007329	-.002324	.0009436	.000167	.0491603	.0001452	.0007332
#2	.0009545	.003348	.0009041	.000147	.3990380	.0006049	.0004598
#3	.0008833	.017727	.0013172	-.000578	.0958349	.0013993	-.000175

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-1.32713**	**.0041839**	**-.003586**	**.0001058**	**.0059002**	**.0085354**	**-.001540**
Stddev	.02008	.0010639	.000182	.0000767	.0030241	.0032270	.000339
%RSD	1.513024	25.42788	5.082598	72.44613	51.25397	37.80693	22.02124
#1	-1.30690	.0039456	-.003580	.0000525	.0049817	.0075567	-.001159
#2	-1.32744	.0053466	-.003406	.0001936	.0092771	.0121384	-.001808
#3	-1.34705	.0032593	-.003771	.0000713	.0034419	.0059111	-.001653

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB168913BL Acquired: 3/4/2025 17:52:14 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBW913 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001311	-.003360	.0000192
Stddev	.000558	.001034	.0000252
%RSD	42.56035	30.78053	131.2343
#1	-.000699	-.004539	.0000466
#2	-.001792	-.002609	-.000003
#3	-.001443	-.002931	.000014

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3704.965	80636.75	17079.58	3409.887	5282.046
Stddev	7.812	657.09	45.90	28.343	15.482
%RSD	.2108647	.8148811	.2687456	.8312138	.2931090
#1	3713.671	80620.10	17131.20	3431.139	5297.309
#2	3702.660	79988.15	17043.36	3377.706	5282.475
#3	3698.566	81302.02	17064.19	3420.816	5266.354

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB168913BS Acquired: 3/4/2025 17:56:24 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS913 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0173637**	**.0553181**	**.0200804**	**.0655415**	**.1121334**	**.3420377**	**.3711617**
Stddev	.0000472	.0006276	.0006882	.0005826	.0004143	.0009286	.0019391
%RSD	.2715879	1.134504	3.427110	.8888956	.3695072	.2714780	.5224289
#1	.0174164	.0549954	.0201487	.0653118	.1120294	.3430603	.3694344
#2	.0173495	.0549176	.0193606	.0662039	.1125899	.3418054	.3732591
#3	.0173253	.0560414	.0207319	.0651087	.1117810	.3412473	.3707916

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0110183**	**.0101110**	**9.497683**	**.0215456**	**.0996129**	**.0570309**	**.2043318**
Stddev	.0000189	.0000702	.028726	.0001314	.0002768	.0013272	.0074079
%RSD	.1718344	.6942961	.3024510	.6096638	.2779180	2.327095	3.625420
#1	.0110051	.0101077	9.491516	.0216962	.0998902	.0571176	.2011716
#2	.0110400	.0101827	9.528992	.0214860	.0996119	.0583125	.2127957
#3	.0110098	.0100424	9.472542	.0214546	.0993365	.0556625	.1990280

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0316861**	**8.695119**	**.0806095**	**.0191185**	**10.13795**	**.1066642**	**.1155710**
Stddev	.0002538	.025975	.0002850	.0002284	.06648	.0014307	.0015496
%RSD	.8008086	.2987305	.3535338	1.194650	.6557990	1.341363	1.340822
#1	.0313963	8.698877	.0806863	.0190960	10.20229	.1050211	.1142981
#2	.0318686	8.719010	.0802940	.0189022	10.14204	.1076351	.1151184
#3	.0317934	8.667469	.0808483	.0193573	10.06951	.1073363	.1172965

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.390756**	**.0220402**	**-.002131**	**.0201233**	**.1855129**	**.8887660**	**.0125893**
Stddev	.066466	.0004172	.000426	.0001309	.0044740	.0013997	.0003884
%RSD	.8993182	1.892966	20.00283	.6504853	2.411671	.1574849	3.085157
#1	7.431131	.0225209	-.002212	.0199939	.1906667	.8879008	.0122792
#2	7.427093	.0217721	-.001671	.0202556	.1826273	.8903808	.0124639
#3	7.314042	.0218276	-.002512	.0201203	.1832447	.8880163	.0130250

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB168913BS Acquired: 3/4/2025 17:56:24 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS913 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2072646	.0229000	.0558827
Stddev	.0006366	.0007762	.0001559
%RSD	.3071192	3.389528	.2789886
#1	.2079186	.0237543	.0558175
#2	.2072284	.0227075	.0560607
#3	.2066470	.0222381	.0557701

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3608.157	77835.07	16605.65	3302.737	4949.054
Stddev	10.889	84.05	40.04	12.902	6.436
%RSD	.3017767	.1079878	.2411087	.3906573	.1300442
#1	3607.904	77820.31	16611.46	3315.200	4945.728
#2	3619.170	77759.38	16642.46	3303.575	4956.472
#3	3597.398	77925.53	16563.02	3289.436	4944.961

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166912BL Acquired: 3/4/2025 18:00:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBW912 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004012**	**.0003892**	**.0007915**	**-.002718**	**.0006209**	**-.003204**	**.0022702**
Stddev	.0009102	.0009520	.0005957	.002220	.0008449	.001640	.0011108
%RSD	226.8999	244.6371	75.26664	81.66663	136.0834	51.19817	48.93019
#1	.0013480	-.000127	.0001379	-.000156	-.000323	-.001561	.0024623
#2	.0003228	.001488	.0013041	-.004070	.001307	-.003208	.0010759
#3	-.000467	-.000193	.0009325	-.003928	.000879	-.004842	.0032725

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000006**	**-.000022**	**-.001800**	**-.000284**	**-.000001**	**-.000366**	**.0047279**
Stddev	.000100	.000056	.003897	.000277	.000170	.000791	.0009178
%RSD	1688.267	256.0100	216.4849	97.77097	16753.82	215.7343	19.41264
#1	-.000092	.000034	-.002421	-.000493	-.000126	.000540	.0048742
#2	.000104	-.000021	.002370	.000031	.000192	-.000915	.0037457
#3	-.000029	-.000079	-.005350	-.000389	-.000069	-.000724	.0055638

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0017259**	**-.000068**	**-.000169**	**-.000132**	**.0063867**	**.0006610**	**.0020970**
Stddev	.0004374	.014114	.000349	.000040	.1377496	.0009330	.0008081
%RSD	25.34235	20687.86	207.2886	30.26111	2156.824	141.1450	38.53441
#1	.0013365	-.014711	-.000567	-.000168	-.109191	.0016823	.0014192
#2	.0021991	.013449	-.000021	-.000089	-.030462	-.000147	.0029912
#3	.0016420	.001057	.000083	-.000138	.158813	.000447	.0018805

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-1.29231**	**.0035040**	**-.003831**	**-.000163**	**.0121659**	**.0060335**	**-.001182**
Stddev	.00590	.0009082	.000180	.000259	.0024751	.0038903	.000203
%RSD	.4562216	25.92013	4.697880	158.7519	20.34423	64.47877	17.14931
#1	-1.28609	.0043841	-.003776	-.000267	.0116464	.0096491	-.000957
#2	-1.29782	.0025700	-.003685	-.000353	.0099918	.0065344	-.001351
#3	-1.29301	.0035579	-.004032	.000132	.0148594	.0019170	-.001239

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166912BL Acquired: 3/4/2025 18:00:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBW912 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001063	-.003667	.0000138
Stddev	.000734	.000709	.0000312
%RSD	69.00660	19.34383	225.6795
#1	-.001330	-.004486	.0000498
#2	-.000233	-.003280	-.000003
#3	-.001626	-.003236	-.000005

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3726.276	80913.44	16682.74	3402.797	5302.754
Stddev	.591	85.97	90.56	2.147	9.241
%RSD	.0158474	.1062538	.5428460	.0631064	.1742772
#1	3726.557	80822.11	16622.98	3400.414	5294.258
#2	3726.674	80992.80	16786.94	3403.394	5312.594
#3	3725.598	80925.42	16638.31	3404.583	5301.411

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166912BS Acquired: 3/4/2025 18:04:38 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS912 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0171076**	**.0554193**	**.0196948**	**.0654070**	**.1087742**	**.3188282**	**.3525765**
Stddev	.0003762	.0002954	.0010421	.0013373	.0012729	.0075653	.0020635
%RSD	2.198939	.5330490	5.291129	2.044634	1.170264	2.372852	.5852545
#1	.0168412	.0555776	.0187388	.0656381	.1078219	.3176774	.3503539
#2	.0175379	.0556017	.0195398	.0666137	.1102200	.3119042	.3529443
#3	.0169436	.0550785	.0208056	.0639691	.1082807	.3269029	.3544314

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0110444**	**.0099862**	**9.143752**	**.0211322**	**.0979633**	**.0562579**	**.1938309**
Stddev	.0001607	.0000753	.035024	.0002574	.0004980	.0015427	.0014954
%RSD	1.454900	.7538400	.3830385	1.218204	.5084097	2.742248	.7714961
#1	.0111883	.0100384	9.104207	.0210144	.0977232	.0575481	.1926831
#2	.0110737	.0098999	9.170863	.0209549	.0976307	.0545491	.1955220
#3	.0108710	.0100203	9.156185	.0214275	.0985359	.0566767	.1932874

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0299789**	**8.377492**	**.0792053**	**.0185567**	**10.18266**	**.1065800**	**.1111447**
Stddev	.0003391	.012266	.0005354	.0002499	.03024	.0003471	.0005869
%RSD	1.131195	.1464110	.6759446	1.346611	.2969475	.3256216	.5280578
#1	.0295970	8.366170	.0785946	.0182964	10.20360	.1062855	.1117046
#2	.0302447	8.390522	.0795938	.0187947	10.19639	.1069626	.1105340
#3	.0300951	8.375785	.0794273	.0185791	10.14799	.1064920	.1111954

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.046785**	**.0203169**	**-.002545**	**.0197880**	**.1909622**	**.8857590**	**.0128278**
Stddev	.049032	.0016731	.000803	.0001885	.0022697	.0055711	.0005449
%RSD	.6958072	8.235162	31.54955	.9523889	1.188544	.6289635	4.247815
#1	6.995119	.0184327	-.001772	.0197222	.1926288	.8870545	.0125595
#2	7.052564	.0208894	-.002487	.0196412	.1883773	.8905681	.0134548
#3	7.092671	.0216287	-.003375	.0200005	.1918806	.8796542	.0124690

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: PB166912BS Acquired: 3/4/2025 18:04:38 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS912 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2031212	.0219520	.0528752
Stddev	.0004627	.0018113	.0006307
%RSD	.2277862	8.251158	1.192792
#1	.2027274	.0202692	.0523636
#2	.2036308	.0217178	.0526821
#3	.2030053	.0238690	.0535798

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3612.540	78514.63	16242.26	3327.619	4963.514
Stddev	12.037	389.99	132.02	.358	18.399
%RSD	.3332077	.4967087	.8128352	.0107500	.3706774
#1	3621.818	78907.75	16210.84	3328.032	4980.142
#2	3616.863	78127.85	16128.79	3327.417	4966.651
#3	3598.938	78508.29	16387.16	3327.407	4943.748

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-01 Acquired: 3/4/2025 18:21:07 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F5 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007459**	**.0010195**	**.0003624**	**.0000353**	**-.000443**	**.0310448**
Stddev	.0012076	.0006429	.0010280	.0014092	.000878	.0051127
%RSD	161.8929	63.06756	283.6566	3995.594	198.2967	16.46870
#1	.0018053	.0005054	.0012418	.0015933	.000566	.0295032
#2	.0010015	.0017404	.0006133	-.001150	-.000859	.0367509
#3	-.000569	.0008127	-.000768	-.000337	-.001036	.0268804

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2187321**	**.0000708**	**.0001082**	**7.704541**	**-.000547**	**.0103477**
Stddev	.0007396	.0000535	.0000832	.007049	.000251	.0001276
%RSD	.3381364	75.54912	76.93956	.0914871	45.87165	1.233209
#1	.2195771	.0000660	.0002009	7.711198	-.000376	.0102016
#2	.2182021	.0001265	.0000837	7.705269	-.000430	.0104378
#3	.2184171	.0000199	.0000399	7.697157	-.000836	.0104036

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0023377**	**.0732435**	**.3004728**	**4.475223**	**.0098320**	**-.000345**
Stddev	.0013433	.0038242	.0012949	.008821	.0004098	.000066
%RSD	57.46385	5.221191	.4309366	.1971157	4.167827	19.23944
#1	.0019413	.0772460	.3017284	4.478418	.0102533	-.000268
#2	.0038347	.0696269	.2991420	4.482002	.0094348	-.000387
#3	.0012372	.0728576	.3005479	4.465250	.0098080	-.000379

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.558566**	**.0011862**	**.0703462**	**.5750073**	**.0059917**	**.0853404**
Stddev	.179800	.0014117	.0004717	.0108196	.0014861	.0010554
%RSD	3.234650	119.0126	.6705725	1.881645	24.80241	1.236656
#1	5.766010	.0016686	.0700024	.5644555	.0044412	.0858441
#2	5.447558	-.000403	.0708840	.5860761	.0061301	.0860496
#3	5.462128	.002293	.0701523	.5744902	.0074037	.0841276

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-01 Acquired: 3/4/2025 18:21:07 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F5 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011450	F 10.93622	6.487493	-.000225	.0008419	.0041691
Stddev	.0002422	.02674	.014390	.000439	.0006813	.0009130
%RSD	21.14814	.2444641	.2218085	195.3820	80.92388	21.90063
#1	.0011660	10.94702	6.499290	-.000367	.0002234	.0040359
#2	.0013760	10.90577	6.491727	-.000575	.0015721	.0051414
#3	.0008930	10.95586	6.471461	.000268	.0007301	.0033299

Elem	Sr4077
Units	ppm
Avg	.0503843
Stddev	.0001117
%RSD	.2215987
#1	.0504178
#2	.0502598
#3	.0504755

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3659.691	80212.20	16567.11	3351.723	5127.232
Stddev	4.264	102.00	25.80	7.860	3.276
%RSD	.1165074	.1271675	.1557138	.2344915	.0638932
#1	3658.486	80095.29	16565.16	3360.697	5125.636
#2	3656.159	80283.09	16542.35	3348.412	5125.060
#3	3664.427	80258.20	16593.83	3346.061	5131.000

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-02 Acquired: 3/4/2025 18:25:13 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002443**	**.0017075**	**.0002814**	**-.000072**	**-.000062**	**.0047420**
Stddev	.002326	.0009953	.0011373	.002541	.001323	.0017119
%RSD	95.20092	58.29008	404.2071	3518.982	2132.294	36.10143
#1	-.000348	.0006585	-.000243	-.002911	.000415	.0033854
#2	-.004946	.0018253	.001586	.000703	.000956	.0041751
#3	-.002036	.0026386	-.000499	.001991	-.001558	.0066654

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2287303**	**.0000459**	**.0000032**	**8.540349**	**.0002454**	**.0002413**
Stddev	.0008298	.0000241	.0000615	.010162	.0000715	.0002593
%RSD	.3627912	52.45276	1892.429	.1189884	29.12233	107.4744
#1	.2286113	.0000191	.0000698	8.533365	.0003220	-.000018
#2	.2279664	.0000529	-.000008	8.552007	.0002339	.000242
#3	.2296132	.0000657	-.000052	8.535674	.0001804	.000500

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0020129**	**.0552031**	**.0210459**	**2.418827**	**.0013922**	**-.000308**
Stddev	.0010822	.0054112	.0003738	.011769	.0002176	.000083
%RSD	53.76272	9.802274	1.775996	.4865395	15.63279	27.01492
#1	.0015184	.0505851	.0212694	2.431127	.0011454	-.000311
#2	.0012663	.0611572	.0206144	2.407674	.0014749	-.000389
#3	.0032540	.0538671	.0212539	2.417679	.0015564	-.000223

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.294818**	**.0009838**	**.1208162**	**5.930394**	**.0531299**	**.1074794**
Stddev	.078926	.0007901	.0008763	.035395	.0033967	.0012428
%RSD	1.837715	80.30676	.7253207	.5968452	6.393104	1.156274
#1	4.245804	.0010092	.1198865	5.890886	.0502167	.1085412
#2	4.252784	.0017609	.1216270	5.941083	.0568607	.1077846
#3	4.385865	.0001814	.1209351	5.959213	.0523123	.1061125

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-02 Acquired: 3/4/2025 18:25:13 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000092	F 10.60747	2.775803	-.001845	-.001169	-.000587
Stddev	.000144	.02058	.010721	.000392	.000620	.000663
%RSD	156.4327	.1940203	.3862479	21.26736	53.08717	113.0467
#1	-.000081	10.59076	2.784944	-.001581	-.001583	.000110
#2	.000046	10.60120	2.778463	-.001658	-.001468	-.001211
#3	-.000241	10.63046	2.764002	-.002296	-.000455	-.000659

Elem	Sr4077
Units	ppm
Avg	.0643553
Stddev	.0003776
%RSD	.5867368
#1	.0639333
#2	.0644715
#3	.0646612

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3652.337	79513.80	16404.99	3353.281	5104.087
Stddev	10.377	320.93	44.87	17.010	12.116
%RSD	.2841242	.4036181	.2735274	.5072721	.2373867
#1	3662.445	79854.54	16411.07	3345.866	5116.371
#2	3652.856	79217.27	16357.39	3341.238	5103.747
#3	3641.710	79469.59	16446.52	3372.741	5092.145

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-03 Acquired: 3/4/2025 18:29:18 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001241**	**.0010590**	**.0008028**	**-.000438**	**.0014031**	**-.000228**
Stddev	.001125	.0011423	.0004914	.001083	.0006601	.000627
%RSD	90.64722	107.8598	61.20570	247.6273	47.04396	275.2568
#1	-.001110	.0018279	.0004188	-.001334	.0011742	-.000432
#2	-.002426	-.000254	.0013565	-.000745	.0008880	-.000728
#3	-.000188	.001603	.0006331	.000766	.0021472	.000476

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2453863**	**.0000394**	**-.000045**	**8.583123**	**.0028607**	**.0002334**
Stddev	.0017946	.0000835	.000018	.031180	.0002327	.0002590
%RSD	.7313218	211.8915	39.03022	.3632746	8.135779	110.9625
#1	.2473175	.0001341	-.000026	8.609783	.0027930	.0004885
#2	.2450712	.0000082	-.000062	8.590748	.0031198	.0002410
#3	.2437701	-.000024	-.000048	8.548837	.0026693	-.000029

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0029312**	**.0356899**	**.0237299**	**2.435683**	**.0025637**	**-.000129**
Stddev	.0009150	.0051935	.0001067	.016464	.0002989	.000152
%RSD	31.21575	14.55171	.4497811	.6759520	11.66073	117.3763
#1	.0038190	.0353318	.0236071	2.440201	.0022655	-.000122
#2	.0029834	.0410531	.0238000	2.449415	.0028634	-.000284
#3	.0019912	.0306847	.0237826	2.417431	.0025624	.000019

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.331572**	**.0012034**	**.1178039**	**5.931486**	**.0516194**	**.1052195**
Stddev	.172369	.0009399	.0014323	.079874	.0014798	.0010816
%RSD	3.979368	78.10192	1.215831	1.346602	2.866753	1.027949
#1	4.307771	.0003488	.1169245	5.971452	.0533010	.1043089
#2	4.514605	.0022101	.1170306	5.983488	.0510408	.1049347
#3	4.172340	.0010514	.1194567	5.839518	.0505162	.1064151

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-03 Acquired: 3/4/2025 18:29:18 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7D Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000207	F 10.64341	2.735890	-.001896	-.001499	-.001589
Stddev	.000048	.03231	.007526	.000632	.000503	.000620
%RSD	23.01146	.3035481	.2750707	33.33218	33.57058	38.98829
#1	-.000259	10.61734	2.738203	-.002604	-.002052	-.002264
#2	-.000165	10.63335	2.727479	-.001387	-.001068	-.001046
#3	-.000198	10.67956	2.741988	-.001699	-.001377	-.001458

Elem	Sr4077
Units	ppm
Avg	.0659159
Stddev	.0003955
%RSD	.6000435
#1	.0662533
#2	.0660138
#3	.0654806

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3622.326	79159.38	16676.45	3336.450	5064.857
Stddev	12.297	120.53	106.31	15.084	11.655
%RSD	.3394866	.1522657	.6374569	.4520941	.2301093
#1	3633.922	79220.19	16793.17	3352.320	5074.380
#2	3623.625	79020.56	16650.99	3322.299	5068.331
#3	3609.431	79237.39	16585.19	3334.730	5051.861

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-02LX5 Acquired: 3/4/2025 18:33:23 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7L Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002278**	**-.000454**	**-.000144**	**.0001769**	**.0015127**	**-.004652**	**.0479725**
Stddev	.001032	.000314	.000207	.0032863	.0003898	.002940	.0007514
%RSD	45.32677	69.10594	143.2421	1857.236	25.76588	63.19994	1.566244
#1	-.002172	-.000429	-.000185	.0024279	.0018812	-.008021	.0488214
#2	-.003359	-.000780	.000080	.0016972	.0015522	-.003328	.0473928
#3	-.001302	-.000154	-.000328	-.003594	.0011047	-.002606	.0477034

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000241**	**-.000018**	**1.737021**	**.0001037**	**.0001377**	**.0006540**	**.0124318**
Stddev	.0000992	.000000	.003999	.0001670	.0001764	.0024591	.0042198
%RSD	411.5549	1.599682	.2302046	161.0088	128.0849	375.9974	33.94347
#1	-.000075	-.000018	1.736536	.0001437	.0001906	-.002160	.0112159
#2	.000124	-.000018	1.741240	.0002470	.0002816	.001731	.0089535
#3	.000023	-.000017	1.733287	-.000080	-.000059	.002390	.0171261

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0047114**	**.4936916**	**.0002516**	**-.000139**	**1.009166**	**.0001946**	**.0243706**
Stddev	.0002373	.0077469	.0000856	.000091	.169901	.0005125	.0007233
%RSD	5.036293	1.569169	34.03217	65.55390	16.83583	263.4137	2.967786
#1	.0044598	.4978598	.0003225	-.000245	.856058	-.000138	.0236001
#2	.0047434	.4847530	.0001565	-.000086	.979490	.000785	.0244767
#3	.0049311	.4984619	.0002758	-.000088	1.191950	-.000063	.0250349

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.133430**	**.0114289**	**.0171419**	**.0000495**	**2.091560**	**.5541019**	**-.000914**
Stddev	.021080	.0017129	.0001407	.0000812	.010580	.0028960	.000807
%RSD	1.859880	14.98745	.8206225	163.9604	.5058520	.5226536	88.29672
#1	1.133276	.0128658	.0171755	-.000044	2.082231	.5512571	-.001846
#2	1.154587	.0095334	.0169875	.000101	2.089393	.5540018	-.000440
#3	1.112427	.0118876	.0172628	.000092	2.103056	.5570466	-.000456

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-02LX5 Acquired: 3/4/2025 18:33:23 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7L Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.001272**	**-.001692**	**.0133725**
Stddev	.000596	.000389	.0000195
%RSD	46.85801	22.99695	.1457838
#1	-.001960	-.001627	.0133904
#2	-.000912	-.002109	.0133753
#3	-.000944	-.001339	.0133517

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3627.210**	**78269.26**	**16348.83**	**3307.768**	**5071.795**
Stddev	2.697	274.97	54.37	10.305	4.800
%RSD	.0743585	.3513173	.3325487	.3115373	.0946494
#1	3624.870	77971.63	16345.17	3300.569	5072.886
#2	3626.599	78513.84	16404.94	3319.573	5075.956
#3	3630.160	78322.33	16296.38	3303.164	5066.543

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-04 Acquired: 3/4/2025 18:37:32 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7S Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0354359**	**.0544647**	**.0194313**	**.0931132**	**.0890442**	**1.629387**
Stddev	.0013359	.0014540	.0010559	.0027134	.0021724	.004115
%RSD	3.769869	2.669589	5.433764	2.914128	2.439733	.2525255
#1	.0369759	.0528517	.0190765	.0903673	.0892698	1.633539
#2	.0345884	.0556747	.0206188	.0957930	.0867678	1.625311
#3	.0347435	.0548675	.0185984	.0931793	.0910951	1.629310

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.104036**	**.0517610**	**.0478778**	**8.602371**	**.2169044**	**.4835087**
Stddev	.009848	.0002210	.0001705	.045507	.0003316	.0004987
%RSD	.4680531	.4270118	.3561537	.5290073	.1528780	.1031418
#1	2.115214	.0519507	.0479197	8.647669	.2172573	.4837643
#2	2.100257	.0515183	.0476902	8.556658	.2168563	.4838278
#3	2.096638	.0518139	.0480234	8.602787	.2165994	.4829340

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2539618**	**1.018252**	**.5238261**	**2.430842**	**.4943250**	**.0372146**
Stddev	.0006450	.001710	.0045514	.004330	.0004939	.0001742
%RSD	.2539609	.1679533	.8688689	.1781396	.0999092	.4680538
#1	.2535358	1.018572	.5283706	2.434828	.4944236	.0372641
#2	.2536458	1.019779	.5192679	2.431462	.4937893	.0373588
#3	.2547039	1.016404	.5238398	2.426235	.4947622	.0370211

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.533853**	**.5120076**	**.5957890**	**6.377023**	**.0457276**	**.1134568**
Stddev	.199946	.0036562	.0030820	.059096	.0014014	.0002761
%RSD	3.613144	.7140852	.5172986	.9267079	3.064721	.2433058
#1	5.305242	.5155850	.5923227	6.427048	.0472419	.1131404
#2	5.620204	.5082774	.5982201	6.311817	.0454644	.1135819
#3	5.676112	.5121605	.5968242	6.392205	.0444764	.1136482

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-04 Acquired: 3/4/2025 18:37:32 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F7S Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000016	F 10.94559	2.773442	-.000486	-.002356	-.000308
Stddev	.000262	.02176	.012775	.000355	.000586	.000087
%RSD	1660.391	.1988046	.4606293	73.12898	24.89389	28.35134
#1	-.000194	10.92428	2.787644	-.000333	-.002807	-.000394
#2	-.000138	10.94473	2.762888	-.000893	-.002568	-.000220
#3	.000285	10.96777	2.769791	-.000233	-.001693	-.000309

Elem	Sr4077
Units	ppm
Avg	.0656533
Stddev	.0002388
%RSD	.3637562
#1	.0658243
#2	.0657552
#3	.0653804

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3607.523	78516.68	16813.16	3297.957	5025.473
Stddev	11.456	312.47	87.65	21.723	8.340
%RSD	.3175705	.3979653	.5213161	.6586726	.1659561
#1	3620.735	78204.52	16783.23	3317.667	5032.662
#2	3601.490	78829.46	16911.85	3301.537	5027.428
#3	3600.343	78516.05	16744.39	3274.666	5016.329

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-05 Acquired: 3/4/2025 18:41:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F8 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002728**	**.0014563**	**.0001815**	**.0002180**	**-.000570**	**.0013538**
Stddev	.002417	.0017405	.0011979	.0025769	.000575	.0031590
%RSD	88.60174	119.5159	659.9122	1182.145	100.8615	233.3447
#1	-.000619	-.000553	-.000624	.0029416	-.000997	-.002144
#2	-.005366	.002461	.001558	-.000106	.000084	.002206
#3	-.002200	.002461	-.000389	-.002181	-.000798	.004000

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2187264**	**.0000463**	**-.000053**	**11.22635**	**-.000111**	**.0011601**
Stddev	.0004883	.0000594	.000044	.03062	.000153	.0001633
%RSD	.2232385	128.3306	81.47675	.2727748	138.2007	14.07151
#1	.2188419	.0000470	-.000041	11.22991	.000020	.0011462
#2	.2181907	-.000013	-.000102	11.19410	-.000279	.0010042
#3	.2191466	.000105	-.000017	11.25503	-.000074	.0013299

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0025233**	**.0237438**	**.0548450**	**2.796959**	**.0028927**	**-.000220**
Stddev	.0015737	.0006722	.0003637	.009613	.0001685	.000255
%RSD	62.36739	2.831245	.6632144	.3437104	5.825637	116.2888
#1	.0031615	.0229956	.0546329	2.785869	.0027039	-.000508
#2	.0036776	.0242970	.0546371	2.802935	.0030278	-.000130
#3	.0007307	.0239387	.0552650	2.802071	.0029465	-.000021

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.039365**	**-.000951**	**.0956217**	**.5154199**	**.0054343**	**.0913727**
Stddev	.181371	.001025	.0009055	.0129866	.0012663	.0002389
%RSD	4.490078	107.7871	.9469160	2.519623	23.30116	.2614358
#1	3.888412	.000099	.0952001	.5016122	.0041290	.0911623
#2	3.989123	-.001001	.0966610	.5172579	.0066575	.0916324
#3	4.240560	-.001949	.0950039	.5273896	.0055163	.0913234

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-05 Acquired: 3/4/2025 18:41:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F8 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000855	F 10.42044	4.435494	-.001895	-.000655	.0000504
Stddev	.0002447	.01268	.018354	.000587	.000305	.0006973
%RSD	286.3317	.1216820	.4137872	30.96849	46.56712	1383.293
#1	.0000363	10.41267	4.456017	-.002201	-.000595	.0001854
#2	.0003510	10.43507	4.420654	-.002266	-.000384	.0006704
#3	-.000131	10.41358	4.429812	-.001218	-.000985	-.000704

Elem	Sr4077
Units	ppm
Avg	.0829427
Stddev	.0002752
%RSD	.3318350
#1	.0828396
#2	.0827339
#3	.0832546

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3651.234	79485.05	16835.76	3335.350	5117.146
Stddev	3.511	49.82	37.61	13.378	8.229
%RSD	.0961527	.0626733	.2233691	.4011123	.1608135
#1	3647.760	79541.79	16844.51	3344.968	5109.371
#2	3651.162	79448.46	16794.55	3320.072	5116.301
#3	3654.781	79464.92	16868.22	3341.010	5125.764

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-06 Acquired: 3/4/2025 18:45:35 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001950**	**.0019779**	**.0017261**	**.0008782**	**.0005282**	**.0080998**
Stddev	.000820	.0012046	.0006800	.0029857	.0004723	.0021525
%RSD	42.03199	60.90233	39.39718	339.9580	89.41388	26.57523
#1	-.002651	.0007605	.0010965	.0040717	.0002565	.0063799
#2	-.001049	.0020041	.0024472	.0004065	.0002546	.0074057
#3	-.002150	.0031693	.0016345	-.001843	.0010736	.0105137

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2244081**	**.0000394**	**.0000709**	**10.51109**	**-.000327**	**.0011233**
Stddev	.0020755	.0000315	.0000868	.06389	.000077	.0002329
%RSD	.9249015	80.13820	122.4275	.6078246	23.56534	20.73109
#1	.2221742	.0000467	.0001446	10.43810	-.000343	.0009259
#2	.2247733	.0000665	-.000025	10.55691	-.000244	.0013802
#3	.2262768	.0000048	.000093	10.53825	-.000396	.0010639

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0638279**	**.1130931**	**.0457415**	**2.815161**	**.0064358**	**-.000282**
Stddev	.0008445	.0064563	.0004362	.002474	.0004246	.000220
%RSD	1.323070	5.708850	.9535012	.0878819	6.598036	78.03435
#1	.0643733	.1073948	.0452436	2.817942	.0069164	-.000534
#2	.0642551	.1201053	.0459254	2.814337	.0061111	-.000174
#3	.0628551	.1117792	.0460556	2.813204	.0062801	-.000136

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.068907**	**.0001375**	**.1009236**	**2.401737**	**.0070323**	**.0930860**
Stddev	.033586	.0012991	.0010912	.048336	.0015002	.0007629
%RSD	.8254419	945.1377	1.081248	2.012548	21.33229	.8195326
#1	4.050407	-.000109	.0998533	2.346908	.0056681	.0938792
#2	4.107676	-.001021	.1020346	2.420114	.0067899	.0930212
#3	4.048638	.001542	.1008829	2.438190	.0086389	.0923576

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-06 Acquired: 3/4/2025 18:45:35 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E3 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000332	F 12.52599	4.262223	.0004434	-.000564	-.000593
Stddev	.0001878	.03142	.021120	.0001877	.000244	.000884
%RSD	565.6601	.2508157	.4955065	42.33646	43.37870	149.0416
#1	-.000103	12.56167	4.266133	.0003617	-.000313	-.001320
#2	-.000045	12.50248	4.281114	.0003103	-.000802	-.000850
#3	.000247	12.51381	4.239421	.0006581	-.000576	.000391

Elem	Sr4077
Units	ppm
Avg	.0775730
Stddev	.0006490
%RSD	.8366872
#1	.0770052
#2	.0774333
#3	.0782806

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3681.958	80090.60	16754.33	3350.990	5153.061
Stddev	7.810	267.95	121.36	14.235	11.920
%RSD	.2121225	.3345549	.7243655	.4247936	.2313213
#1	3687.376	80325.92	16679.81	3361.359	5150.048
#2	3685.493	79798.97	16688.81	3334.760	5166.199
#3	3673.005	80146.92	16894.37	3356.850	5142.937

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-07 Acquired: 3/4/2025 18:49:42 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E4 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0028771**	**.0006836**	**.0026253**	**.0005884**	**.0026577**	**2.263554**
Stddev	.0008690	.0005004	.0013094	.0028183	.0007383	.025697
%RSD	30.20344	73.20306	49.87546	478.9359	27.77984	1.135259
#1	.0038433	.0011988	.0016742	.0031046	.0028320	2.234030
#2	.0021596	.0006526	.0020830	-.002457	.0018479	2.275745
#3	.0026284	.0001994	.0041187	.001118	.0032933	2.280886

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2963460**	**.0000949**	**.0000497**	**8.713595**	**.0044895**	**.0011692**
Stddev	.0045401	.0000153	.0000131	.094204	.0002107	.0001820
%RSD	1.532033	16.14786	26.39803	1.081113	4.692467	15.56257
#1	.2911490	.0000996	.0000527	8.608477	.0045026	.0009697
#2	.2995411	.0001072	.0000354	8.790383	.0042726	.0012119
#3	.2983479	.0000777	.0000611	8.741924	.0046934	.0013261

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0200767**	**4.560862**	**.0536513**	**5.196772**	**.0067936**	**-.000143**
Stddev	.0007941	.048162	.0006673	.023990	.0002360	.000355
%RSD	3.955272	1.055980	1.243773	.4616357	3.474149	247.4692
#1	.0193697	4.505254	.0528849	5.184830	.0065843	.000266
#2	.0199245	4.589238	.0541037	5.224390	.0070494	-.000326
#3	.0209358	4.588095	.0539652	5.181097	.0067470	-.000370

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.04695**	**.0087211**	**.1471100**	**-.653826**	**.0793028**	**.2597965**
Stddev	.04031	.0011860	.0009049	.011616	.0029653	.0017041
%RSD	.2364826	13.59912	.6151507	1.776644	3.739279	.6559202
#1	17.07316	.0075334	.1465136	-.663086	.0777597	.2617311
#2	17.00053	.0087246	.1466650	-.657600	.0827215	.2591406
#3	17.06716	.0099054	.1481513	-.640792	.0774271	.2585179

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-07 Acquired: 3/4/2025 18:49:42 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E4 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006315	F 14.22080	5.954356	-.001173	.0256354	.0009987
Stddev	.0003268	.03715	.024296	.000145	.0001604	.0001970
%RSD	51.74795	.2612366	.4080354	12.37605	.6255900	19.72933
#1	.0004017	14.17808	5.939666	-.001006	.0256135	.0010720
#2	.0004872	14.24552	5.941003	-.001248	.0258056	.0011486
#3	.0010056	14.23880	5.982400	-.001267	.0254871	.0007755

Elem	Sr4077
Units	ppm
Avg	.0780896
Stddev	.0008146
%RSD	1.043094
#1	.0771544
#2	.0786442
#3	.0784701

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3680.030	79744.11	16787.41	3349.196	5085.890
Stddev	10.146	467.36	95.42	21.130	7.173
%RSD	.2756934	.5860802	.5683864	.6309030	.1410377
#1	3691.005	80281.26	16680.84	3369.563	5094.072
#2	3670.993	79430.49	16864.92	3327.378	5082.913
#3	3678.093	79520.57	16816.47	3350.647	5080.685

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-08 Acquired: 3/4/2025 18:53:43 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E5 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0089852**	**.0005120**	**.0020455**	**-.000441**	**.0014553**	**3.556112**
Stddev	.0010206	.0002112	.0020186	.001786	.0011558	.016255
%RSD	11.35886	41.24963	98.68653	404.6334	79.41467	.4571138
#1	.0098527	.0007385	.0006692	-.001570	.0027712	3.553814
#2	.0092423	.0003204	.0011044	.001618	.0006048	3.541128
#3	.0078606	.0004772	.0043628	-.001372	.0009900	3.573395

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2072981**	**.0000641**	**.0001296**	**7.061671**	**.0070667**	**.0005759**
Stddev	.0008520	.0000140	.0000065	.023433	.0000643	.0002313
%RSD	.4109825	21.90397	5.016582	.3318295	.9099219	40.16799
#1	.2082332	.0000712	.0001256	7.080786	.0071222	.0006535
#2	.2065659	.0000732	.0001371	7.035529	.0069962	.0003157
#3	.2070951	.0000479	.0001260	7.068700	.0070816	.0007584

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0269217**	**10.01719**	**.0143468**	**5.250453**	**.0061975**	**-.000079**
Stddev	.0008887	.01753	.0001697	.018127	.0002888	.000072
%RSD	3.301022	.1749757	1.182735	.3452445	4.659949	92.23738
#1	.0278758	10.03378	.0145303	5.266377	.0059941	.000004
#2	.0261174	9.99885	.0141956	5.230726	.0060704	-.000131
#3	.0267719	10.01893	.0143144	5.254255	.0065281	-.000108

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.84171**	**.0084212**	**.1451805**	**-.779276**	**.1696207**	**.3462104**
Stddev	.18200	.0006910	.0020908	.032718	.0017309	.0018481
%RSD	1.080643	8.205846	1.440166	4.198531	1.020466	.5337992
#1	16.72872	.0079858	.1440038	-.807205	.1712929	.3448428
#2	16.74474	.0092180	.1475945	-.743278	.1678365	.3483129
#3	17.05166	.0080598	.1439431	-.787345	.1697327	.3454756

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-08 Acquired: 3/4/2025 18:53:43 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E5 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013525	F 12.34218	F 12.88746	-.002553	.0150619	-.001174
Stddev	.0000475	.01131	.03924	.000461	.0007803	.001268
%RSD	3.511260	.0916695	.3044604	18.06852	5.180515	107.9964
#1	.0013718	12.33305	12.93174	-.002024	.0146892	-.000814
#2	.0013873	12.33866	12.85701	-.002874	.0159586	-.000125
#3	.0012984	12.35484	12.87362	-.002760	.0145378	-.002584

Elem	Sr4077
Units	ppm
Avg	.0525010
Stddev	.0002088
%RSD	.3977300
#1	.0523076
#2	.0524730
#3	.0527224

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3618.319	77606.25	16371.39	3294.532	5016.215
Stddev	11.617	24.19	11.51	8.168	16.305
%RSD	.3210515	.0311651	.0702859	.2479257	.3250371
#1	3626.385	77633.57	16368.68	3297.795	5026.347
#2	3623.567	77597.60	16361.47	3285.237	5024.891
#3	3605.004	77587.57	16384.00	3300.564	4997.407

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-09 Acquired: 3/4/2025 18:57:46 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E6 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0179781**	**.0008715**	**-.000692**	**-.000573**	**.0051743**	**.0248737**
Stddev	.0021969	.0016400	.001157	.002940	.0014407	.0024997
%RSD	12.21983	188.1855	167.2540	513.3037	27.84377	10.04947
#1	.0154483	-.000969	.000514	.002043	.0035515	.0220293
#2	.0190803	.002179	-.000797	-.000007	.0056687	.0258713
#3	.0194057	.001404	-.001792	-.003755	.0063028	.0267205

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2572652**	**.0000735**	**.0121531**	**8.775677**	**-.000658**	**.0189388**
Stddev	.0012696	.0000281	.0000295	.016666	.000236	.0000479
%RSD	.4935066	38.21931	.2425813	.1899147	35.84962	.2527117
#1	.2586367	.0000866	.0121221	8.786034	-.000553	.0189319
#2	.2561310	.0000926	.0121808	8.756452	-.000493	.0189898
#3	.2570278	.0000412	.0121563	8.784545	-.000929	.0188948

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0916875**	**.2341841**	**.2932943**	**4.419433**	**.1905679**	**-.000055**
Stddev	.0012745	.0014002	.0017671	.008455	.0002889	.000141
%RSD	1.390103	.5978867	.6025027	.1913154	.1515797	255.3938
#1	.0917890	.2343237	.2949411	4.426940	.1902456	.000008
#2	.0903652	.2327194	.2914275	4.410273	.1906550	.000043
#3	.0929082	.2355093	.2935144	4.421085	.1908033	-.000216

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.499423**	**-.000130**	**.3272578**	**.9973908**	**.0075032**	**.1787714**
Stddev	.155214	.000710	.0049981	.0331020	.0008082	.0024279
%RSD	2.822376	545.9401	1.527274	3.318859	10.77201	1.358119
#1	5.597325	.000570	.3306472	1.033955	.0066833	.1769005
#2	5.320461	-.000850	.3296084	.969463	.0082992	.1815151
#3	5.580483	-.000110	.3215177	.988755	.0075270	.1778986

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-09 Acquired: 3/4/2025 18:57:46 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E6 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044288	F 12.30294	3.119909	.0002057	-.000793	.0000751
Stddev	.0003001	.00391	.011225	.0006798	.000478	.0004164
%RSD	6.776450	.0317474	.3597961	330.4093	60.32614	554.0673
#1	.0043990	12.30068	3.132864	-.000579	-.000906	.0005475
#2	.0041446	12.30069	3.113793	.000573	-.000268	-.000083
#3	.0047426	12.30745	3.113069	.000623	-.001205	-.000239

Elem	Sr4077
Units	ppm
Avg	.0671135
Stddev	.0002671
%RSD	.3980144
#1	.0673923
#2	.0668599
#3	.0670881

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3629.743	78821.07	16533.37	3306.874	5123.368
Stddev	7.072	161.83	28.07	3.725	10.190
%RSD	.1948389	.2053105	.1698048	.1126395	.1989021
#1	3630.881	78913.14	16564.06	3310.667	5127.902
#2	3636.177	78915.85	16527.07	3303.221	5130.504
#3	3622.171	78634.21	16508.98	3306.736	5111.697

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-10 Acquired: 3/4/2025 19:01:48 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E7 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002594**	**.0010407**	**-.000195**	**.0003082**	**.0006883**	**.1213552**
Stddev	.000799	.0018458	.001062	.0005217	.0014131	.0037065
%RSD	30.80488	177.3646	544.4120	169.2571	205.3070	3.054262
#1	-.003196	.0009272	.000458	-.000071	.0004842	.1225274
#2	-.001687	-.000746	-.001420	.000093	.0021923	.1243339
#3	-.002897	.002941	.000377	.000903	-.000612	.1172044

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2423809**	**.0000562**	**.0000599**	**8.702707**	**-.000449**	**.0100130**
Stddev	.0018562	.0000818	.0000211	.033172	.000301	.0001365
%RSD	.7658065	145.4084	35.28512	.3811632	67.02687	1.362981
#1	.2440467	.0000006	.0000455	8.739287	-.000335	.0098577
#2	.2427161	.0000180	.0000500	8.694256	-.000790	.0100673
#3	.2403800	.0001501	.0000841	8.674579	-.000222	.0101140

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0045496**	**.2366423**	**.4837634**	**4.682626**	**.0124773**	**.0000208**
Stddev	.0014379	.0042207	.0039288	.020502	.0001581	.0001394
%RSD	31.60441	1.783562	.8121407	.4378273	1.267383	670.4989
#1	.0032842	.2324661	.4880382	4.706062	.0123563	.0001156
#2	.0061132	.2365549	.4829416	4.668012	.0126562	-.000139
#3	.0042515	.2409060	.4803105	4.673805	.0124193	.000086

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.621666**	**.0006980**	**.1077113**	**.4150637**	**.0083415**	**.1120411**
Stddev	.089623	.0001722	.0015282	.0120416	.0015801	.0007336
%RSD	1.594247	24.67382	1.418779	2.901137	18.94239	.6547805
#1	5.695447	.0005225	.1074772	.4076454	.0076866	.1128840
#2	5.647623	.0008668	.1093430	.4085884	.0101438	.1115467
#3	5.521930	.0007048	.1063136	.4289575	.0071942	.1116925

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-10 Acquired: 3/4/2025 19:01:48 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E7 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032772	F 11.65353	6.200803	-.002006	.0120678	.0006016
Stddev	.0000805	.01734	.044737	.000263	.0003529	.0007979
%RSD	2.454850	.1487567	.7214748	13.13128	2.924669	132.6170
#1	.0032622	11.65513	6.244066	-.001967	.0124586	-.000127
#2	.0033640	11.63545	6.203619	-.002286	.0119724	.001454
#3	.0032052	11.67001	6.154724	-.001763	.0117723	.000478

Elem	Sr4077
Units	ppm
Avg	.0600433
Stddev	.0000448
%RSD	.0746550
#1	.0600459
#2	.0599973
#3	.0600868

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3607.645	79420.18	16476.35	3325.838	5053.649
Stddev	2.275	123.81	38.76	3.970	5.235
%RSD	.0630505	.1558939	.2352428	.1193640	.1035847
#1	3605.607	79295.65	16433.43	3329.728	5054.665
#2	3607.228	79543.26	16508.81	3325.992	5058.300
#3	3610.099	79421.62	16486.80	3321.793	5047.980

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCV002 Acquired: 3/4/2025 19:10:12 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.755896**	**4.587989**	**24.00093**	**4.729530**	**4.788339**	**379.8439**
Stddev	.019184	.018107	.02845	.020427	.025246	3.0559
%RSD	.4033819	.3946683	.1185332	.4318935	.5272315	.8045182
#1	4.761353	4.568297	23.98886	4.714176	4.767643	377.2385
#2	4.734574	4.591748	23.98050	4.721701	4.780908	383.2075
#3	4.771760	4.603921	24.03342	4.752713	4.816466	379.0856

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.05931**	**.4987569**	**2.442195**	**392.1501**	**15.20272**	**2.441246**
Stddev	.08680	.0032750	.004580	2.3692	.05805	.003848
%RSD	.8628359	.6566285	.1875243	.6041559	.3818643	.1576259
#1	9.97733	.5023397	2.438101	390.0285	15.13611	2.439264
#2	10.15023	.4980134	2.441345	391.7151	15.22949	2.438792
#3	10.05036	.4959175	2.447141	394.7066	15.24255	2.445680

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.88332**	**391.3229**	**15.03568**	**388.8268**	**2.439884**	**1.263020**
Stddev	.04406	2.8423	.14140	2.6521	.004682	.002844
%RSD	.2960324	.7263231	.9404217	.6820704	.1918860	.2251449
#1	14.90386	388.1173	14.87241	385.7681	2.438917	1.259997
#2	14.83274	392.3163	15.11891	390.2263	2.435761	1.263422
#3	14.91337	393.5352	15.11571	390.4860	2.444974	1.265641

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**394.3437**	**2.469730**	**14.90992**	**149.5045**	**5.030191**	F **5.903684**
Stddev	.2917	.006572	.01640	1.3231	.010916	.015579
%RSD	.0739777	.2661002	.1099634	.8850091	.2170193	.2638885
#1	394.6739	2.474185	14.89132	148.0806	5.036706	5.921672
#2	394.1207	2.472824	14.91618	149.7369	5.036279	5.894495
#3	394.2366	2.462183	14.92227	150.6960	5.017588	5.894885

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCV002 Acquired: 3/4/2025 19:10:12 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV002 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.768266**	**4.902772**	**5.004950**	**4.834159**	**4.976191**	**4.967891**
Stddev	.013831	.010454	.004451	.005631	.004769	.062511
%RSD	.2900561	.2132280	.0889265	.1164743	.0958385	1.258304
#1	4.761137	4.906389	5.002046	4.830683	4.972370	4.896928
#2	4.759454	4.910937	5.002730	4.831139	4.974666	4.991935
#3	4.784207	4.890989	5.010074	4.840655	4.981536	5.014810

Elem	Sr4077
Units	ppm
Avg	**4.908750**
Stddev	.066507
%RSD	1.354863
#1	4.833228
#2	4.934449
#3	4.958573

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2807.709**	**63998.98**	**14984.83**	**2659.972**	**3519.707**
Stddev	9.162	263.60	78.38	2.880	7.278
%RSD	.3263015	.4118819	.5230432	.1082729	.2067675
#1	2811.940	64298.44	14895.58	2656.709	3523.292
#2	2813.990	63896.45	15016.49	2662.159	3524.497
#3	2797.196	63802.05	15042.43	2661.048	3511.332

Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCB002 Acquired: 3/4/2025 19:14:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000880**	**.0012578**	**-.000358**	**-.000523**	**-.000785**	**-.000869**	**.0002063**
Stddev	.000673	.0008810	.000694	.001375	.000133	.003176	.0004696
%RSD	76.53336	70.04383	193.8948	262.6238	16.98067	365.4333	227.6709
#1	-.000356	.0002405	-.001085	.001057	-.000665	-.000775	.0007106
#2	-.001639	.0017613	-.000286	-.001182	-.000763	-.004091	.0001266
#3	-.000643	.0017716	.000297	-.001445	-.000929	.002259	-.000218

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000051**	**-.000025**	**.0068577**	**.0002989**	**.0002538**	**.0015030**	**.0068148**
Stddev	.0000717	.000043	.0004203	.0002743	.0001117	.0015468	.0018850
%RSD	1410.771	168.4062	6.129058	91.76367	44.00831	102.9159	27.66033
#1	.0000861	-.000071	.0069725	.0005688	.0001471	.0007031	.0089718
#2	-.000020	-.000017	.0063919	.0000203	.0003699	.0005199	.0059885
#3	-.000051	.000013	.0072086	.0003077	.0002445	.0032860	.0054841

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001799**	**.0091036**	**.0001189**	**-.000051**	**.1604646**	**.0008247**	**.0004940**
Stddev	.0002267	.0045791	.0000538	.000278	.1027192	.0017539	.0013121
%RSD	126.0559	50.30027	45.24001	545.6206	64.01361	212.6740	265.6243
#1	.0001908	.0124928	.0001774	.000260	.0419070	-.000779	.0015721
#2	.0004010	.0038943	.0000715	-.000275	.2166928	.000556	-.000967
#3	-.000052	.0109236	.0001079	-.000138	.2227941	.002697	.000877

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0328211**	**-.000035**	**.0014947**	**.0002298**	**.0017523**	**.0068487**	**-.000488**
Stddev	.0238270	.001694	.0003589	.0001269	.0049342	.0020860	.000249
%RSD	72.59643	4890.481	24.01200	55.20895	281.5850	30.45776	50.99547
#1	.0362447	-.001875	.0018929	.0003119	.0056335	.0090340	-.000216
#2	.0547511	.001461	.0011962	.0000837	-.003801	.0048788	-.000544
#3	.0074675	.000310	.0013950	.0002938	.003424	.0066334	-.000703

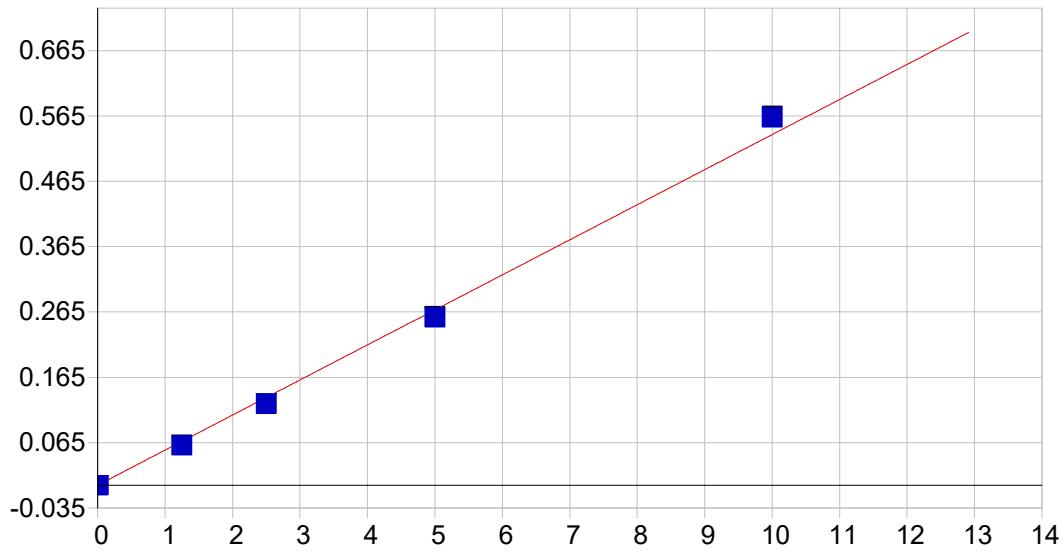
Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCB002 Acquired: 3/4/2025 19:14:29 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB002 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001164	.0001902	.0000784
Stddev	.000580	.0012004	.0000126
%RSD	49.80266	631.2592	16.11835
#1	-.000706	.0014715	.0000872
#2	-.001815	.0000072	.0000639
#3	-.000970	-.000908	.0000840

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3642.130	78159.06	16064.86	3311.722	5116.611
Stddev	.238	171.25	45.26	5.058	7.183
%RSD	.0065243	.2191040	.2817370	.1527218	.1403859
#1	3642.187	78095.46	16023.23	3310.657	5115.157
#2	3641.869	78353.01	16113.04	3307.282	5110.266
#3	3642.334	78028.70	16058.30	3317.228	5124.409

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



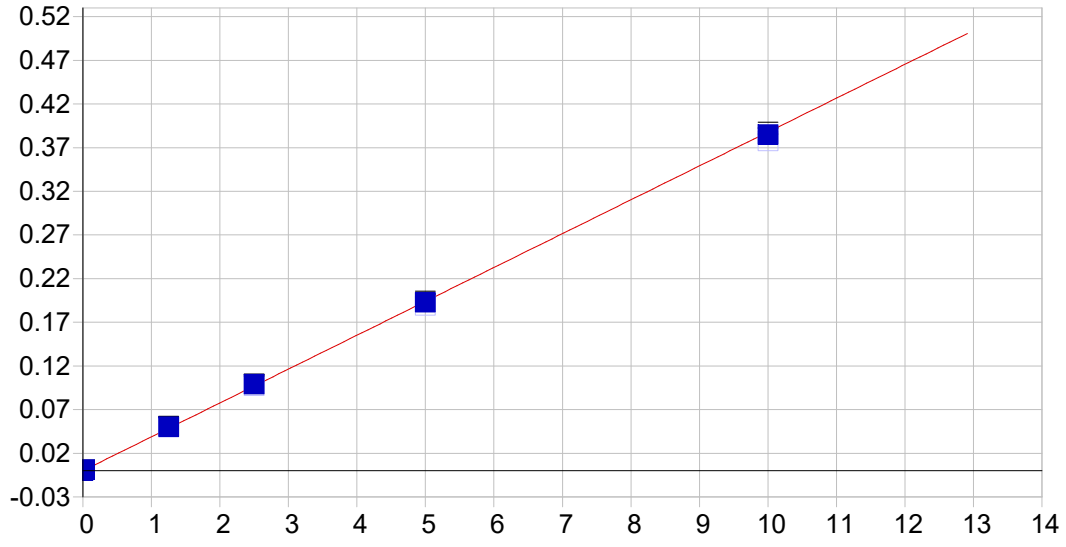
As 189.042 {479}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000175	Re-Slope:	1.000000
A1 (Gain):	0.053674	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998523	Status:	OK.
Std Error of Est:	0.000049		
Predicted MDL:	0.002746		
Predicted MQL:	0.009153		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00018	.000	1
S1	.01000	.01080	.001	8.00	.00040	.000	1
S3	2.5000	2.3243	-.176	-7.03	.12434	.000	1
S4	5.0000	4.7897	-.210	-4.21	.25643	.002	1
S5	10.000	10.495	.495	4.95	.56216	.002	1
S2	1.2500	1.1405	-.110	-8.76	.06092	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



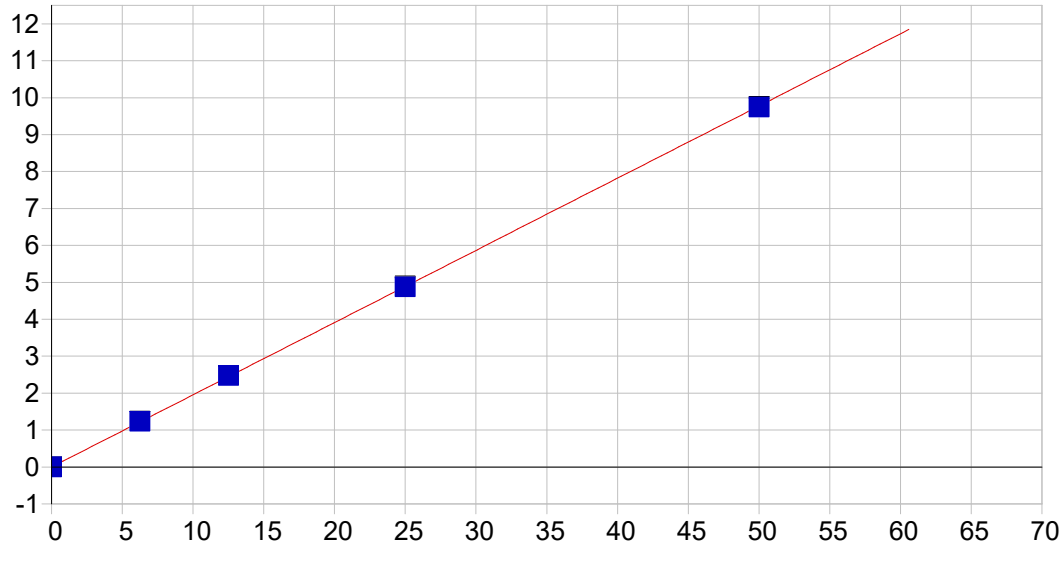
Tl 190.856 {477}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000017	Re-Slope:	1.000000
A1 (Gain):	0.038784	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999883	Status:	OK.
Std Error of Est:	0.000015		
Predicted MDL:	0.002879		
Predicted MQL:	0.009595		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00002	.000	1
S1	.02500	.02878	.004	15.1	.00109	.000	1
S3	2.5000	2.5519	.052	2.08	.09712	.000	1
S4	5.0000	4.9715	-.028	-.569	.18908	.001	1
S5	10.000	9.9248	-.075	-.752	.37744	.003	1
S2	1.2500	1.2981	.048	3.84	.04942	.001	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



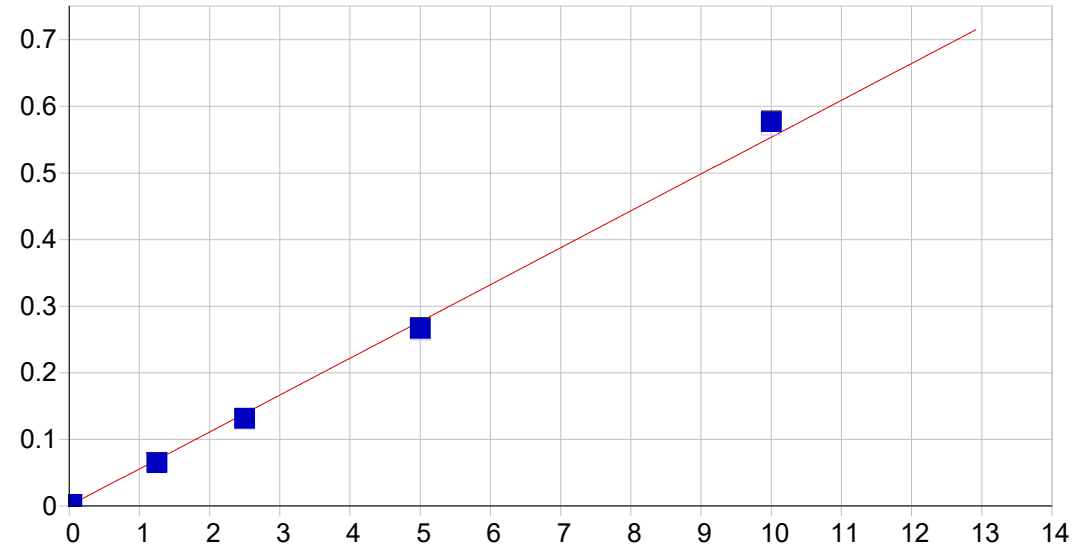
Pb 220.353 {453}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000254	Re-Slope:	1.000000
A1 (Gain):	0.195513	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999980	Status:	OK.
Std Error of Est:	0.000046		
Predicted MDL:	0.001478		
Predicted MQL:	0.004926		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00025	.000	1
S1	.01000	.01052	.001	5.20	.00179	.000	1
S3	12.500	12.641	.141	1.12	2.4691	.007	1
S4	25.000	24.945	-.055	-.219	4.8728	.021	1
S5	50.000	49.824	-.176	-.353	9.7327	.019	1
S2	6.2500	6.3402	.090	1.44	1.2383	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



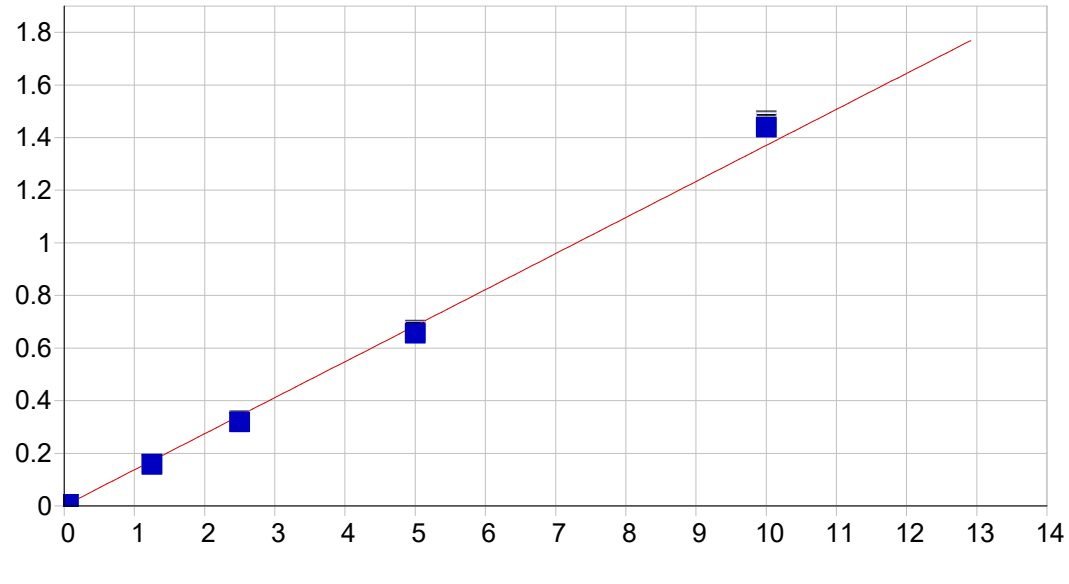
Se 196.090 {472}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000324	Re-Slope:	1.000000
A1 (Gain):	0.055335	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998994	Status:	OK.
Std Error of Est:	0.000077		
Predicted MDL:	0.003238		
Predicted MQL:	0.010792		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00032	.000	1
S1	.03500	.03155	-.003	-9.86	.00207	.000	1
S3	2.5000	2.3621	-.138	-5.52	.12975	.001	1
S4	5.0000	4.8094	-.191	-3.81	.26390	.001	1
S5	10.000	10.411	.411	4.11	.57133	.002	1
S2	1.2500	1.1706	-.079	-6.35	.06446	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



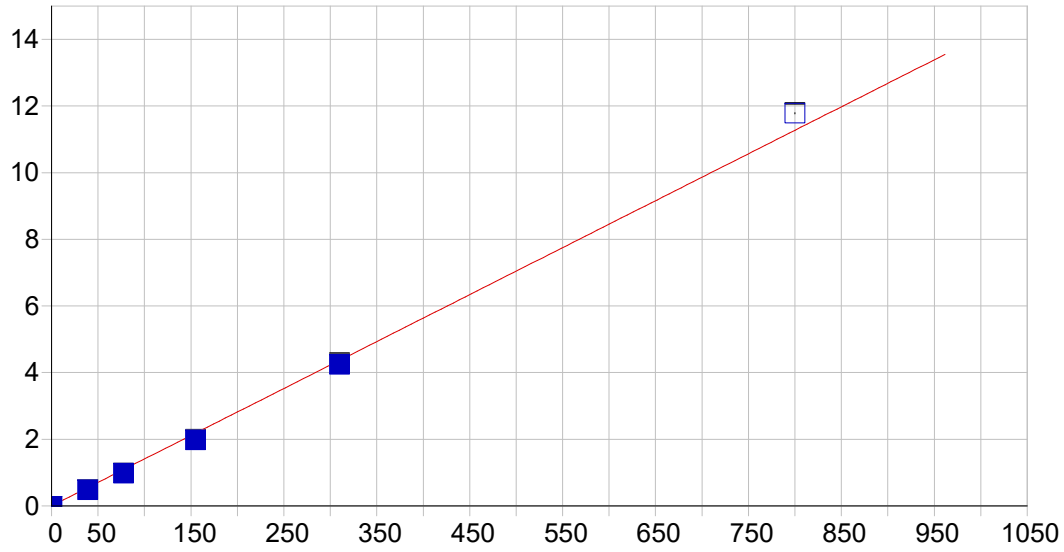
Sb 206.833 {463}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000252	Re-Slope:	1.000000
A1 (Gain):	0.136982	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998555	Status:	OK.
Std Error of Est:	0.000307		
Predicted MDL:	0.001644		
Predicted MQL:	0.005479		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00025	.000	1
S1	.06000	.05492	-.005	-8.46	.00776	.000	1
S3	2.5000	2.3282	-.172	-6.87	.32375	.001	1
S4	5.0000	4.7834	-.217	-4.33	.66462	.003	1
S5	10.000	10.501	.501	5.01	1.4569	.006	1
S2	1.2500	1.1426	-.107	-8.59	.15906	.001	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



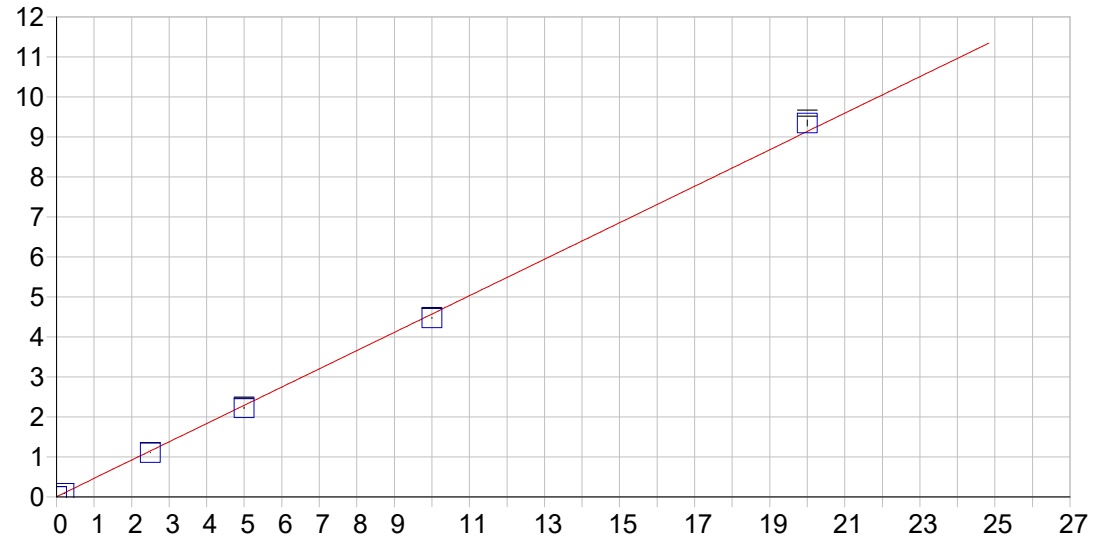
Al 396.152 { 85}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000123	Re-Slope:	1.000000
A1 (Gain):	0.014091	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998299	Status:	OK.
Std Error of Est:	0.000512		
Predicted MDL:	0.007776		
Predicted MQL:	0.025921		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00010	.000	.000	.00012	.000	1
S1	.20000	.15898	-.041	-20.5	.00237	.000	1
S3	77.500	69.319	-8.18	-10.6	.97817	.004	1
S4	155.00	140.41	-14.6	-9.41	1.9812	.015	1
S5	310.00	301.46	-8.54	-2.75	4.2531	.036	1
S2	38.750	33.933	-4.82	-12.4	.47890	.001	1
S6	800.00	836.21	36.2	4.53	11.783	.020	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



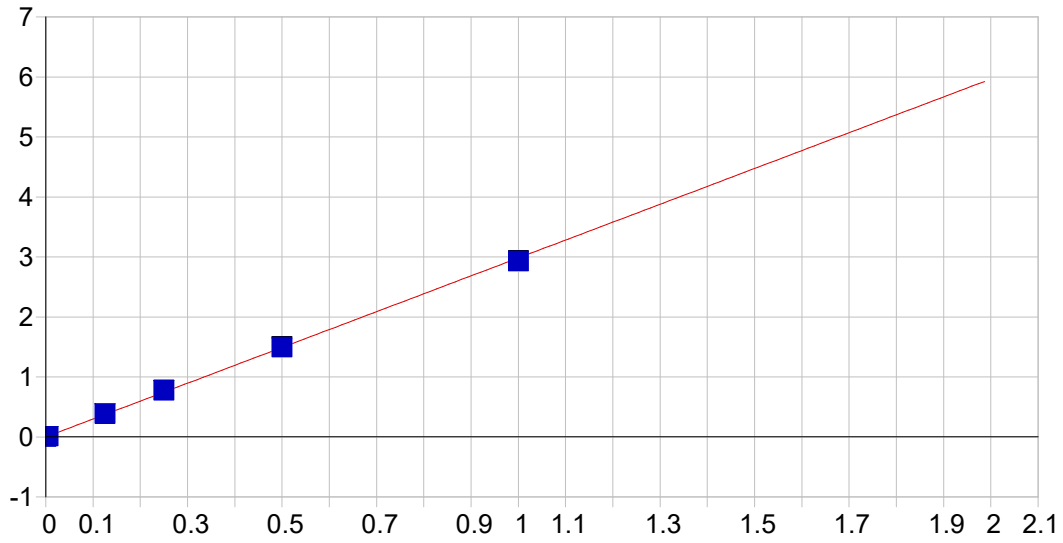
Ba 493.409 { 68}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.007602	Re-Slope:	1.000000
A1 (Gain):	0.456430	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999673	Status:	OK.
Std Error of Est:	0.001242		
Predicted MDL:	0.000847		
Predicted MQL:	0.002823		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00004	.000	.000	.00762	.000	1
S1	.20000	.17705	-.023	-11.5	.08842	.000	1
S3	5.0000	4.8641	-.136	-2.72	2.2277	.023	1
S4	10.000	9.7878	-.212	-2.12	4.4751	.010	1
S5	20.000	20.461	.461	2.31	9.3466	.074	1
S2	2.5000	2.4100	-.090	-3.60	1.1076	.004	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



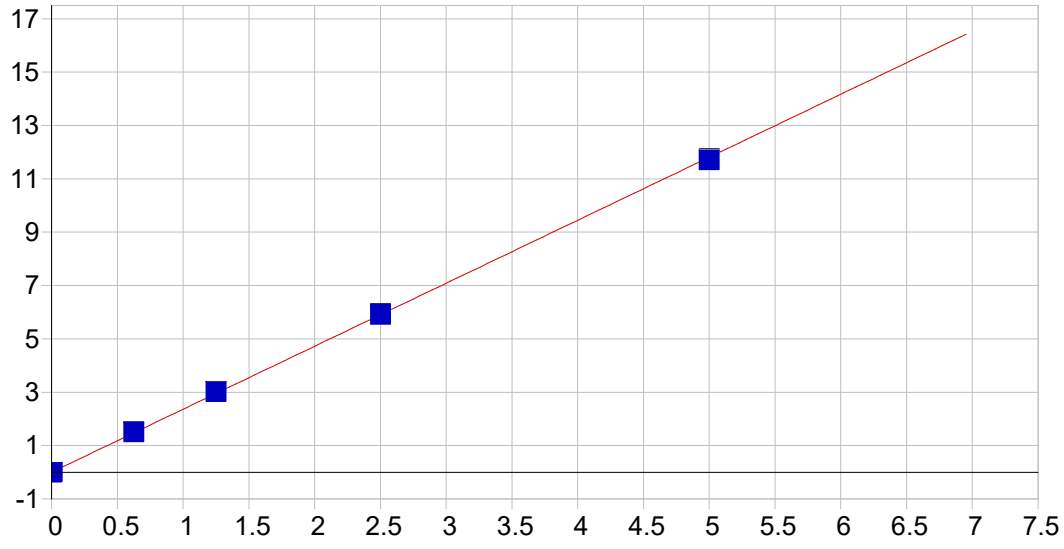
Be 234.861 {144}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000074	Re-Slope:	1.000000
A1 (Gain):	2.982524	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999757	Status:	OK.
Std Error of Est:	0.000246		
Predicted MDL:	0.000081		
Predicted MQL:	0.000269		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00008	.000	1
S1	.00500	.00521	.000	4.11	.01543	.000	1
S3	.25000	.26023	.010	4.09	.77271	.003	1
S4	.50000	.50126	.001	.252	1.4882	.013	1
S5	1.0000	.98332	-.017	-1.67	2.9193	.008	1
S2	.12500	.12998	.005	3.98	.38591	.001	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



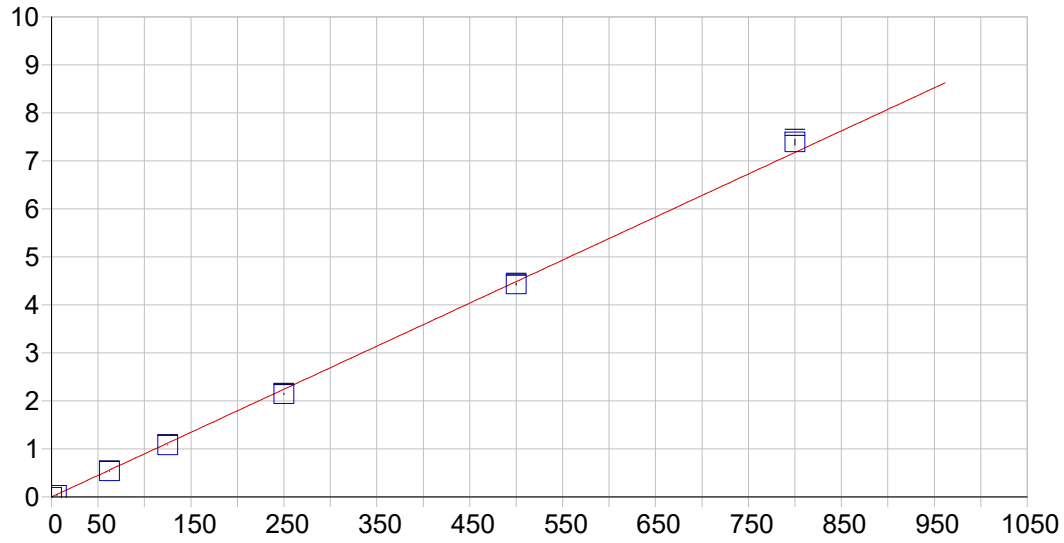
Cd 214.438 {457}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000037	Re-Slope:	1.000000
A1 (Gain):	2.362019	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999939	Status:	OK.
Std Error of Est:	0.000219		
Predicted MDL:	0.000079		
Predicted MQL:	0.000263		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00004	.000	1
S1	.00500	.00492	-.000	-1.56	.01160	.000	1
S3	1.2500	1.2763	.026	2.11	3.0205	.006	1
S4	2.5000	2.5036	.004	.144	5.9252	.020	1
S5	5.0000	4.9580	-.042	-.840	11.734	.017	1
S2	.62500	.63713	.012	1.94	1.5078	.002	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



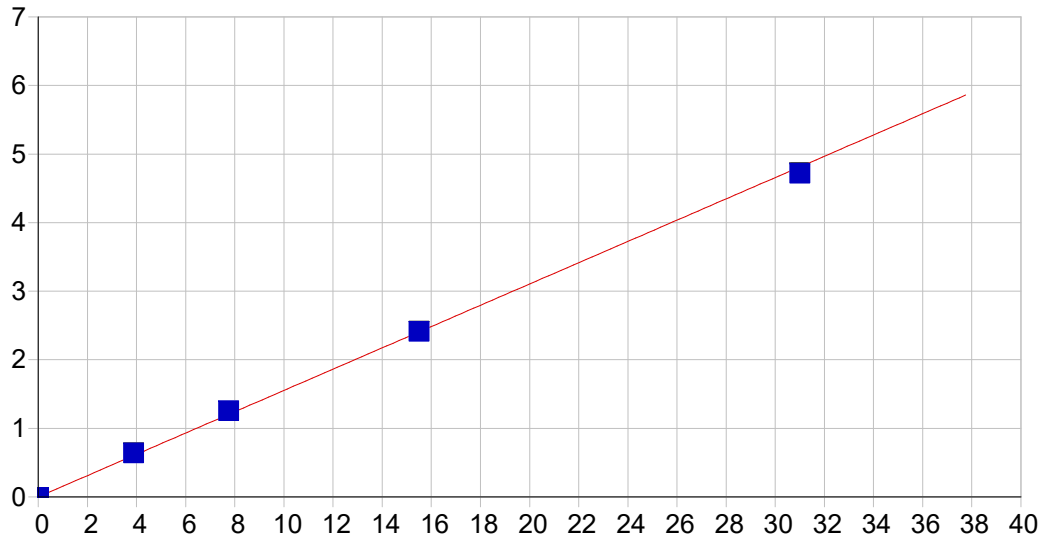
Ca 373.690 { 90}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000071	Re-Slope:	1.000000
A1 (Gain):	0.008971	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999558	Status:	OK.
Std Error of Est:	0.000931		
Predicted MDL:	0.009393		
Predicted MQL:	0.031311		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00096	.001	.000	.00008	.000	1
S2	62.500	59.940	-2.56	-4.10	.53779	.001	1
S3	125.00	120.65	-4.35	-3.48	1.0824	.003	1
S4	250.00	239.24	-10.8	-4.31	2.1463	.013	1
S5	500.00	494.23	-5.77	-1.15	4.4338	.021	1
S1	5.0000	4.5468	-.453	-9.06	.04086	.000	1
S6	800.00	823.90	23.9	2.99	7.3912	.063	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



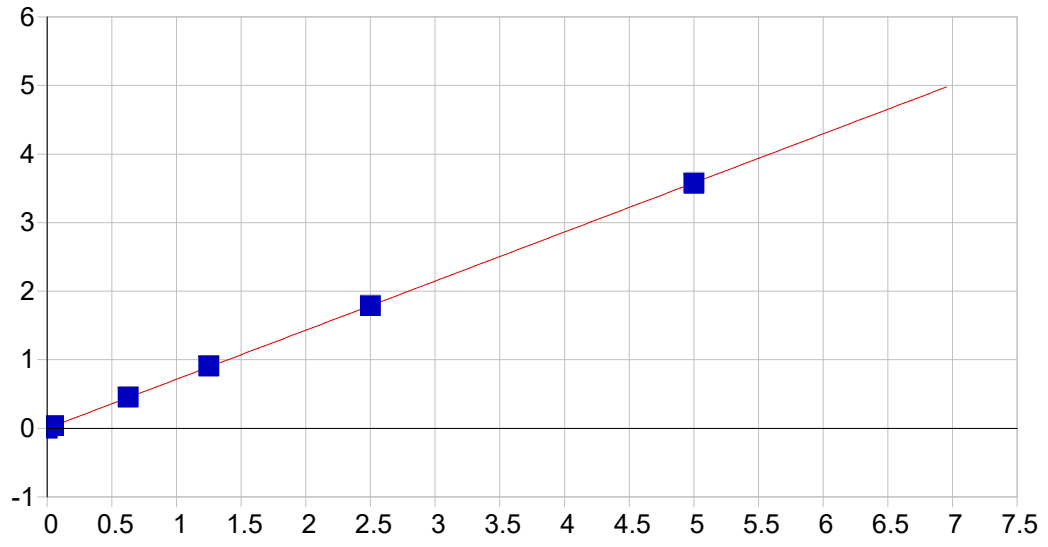
Cr 267.716 {126}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000112	Re-Slope:	1.000000
A1 (Gain):	0.155242	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999635	Status:	OK.
Std Error of Est:	0.000124		
Predicted MDL:	0.000432		
Predicted MQL:	0.001438		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00011	.000	1
S1	.01000	.01066	.001	6.64	.00177	.000	1
S3	7.7500	8.0934	.343	4.43	1.2580	.000	1
S4	15.500	15.531	.031	.201	2.4141	.003	1
S5	31.000	30.384	-.616	-1.99	4.7228	.010	1
S2	3.8750	4.1159	.241	6.22	.63980	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



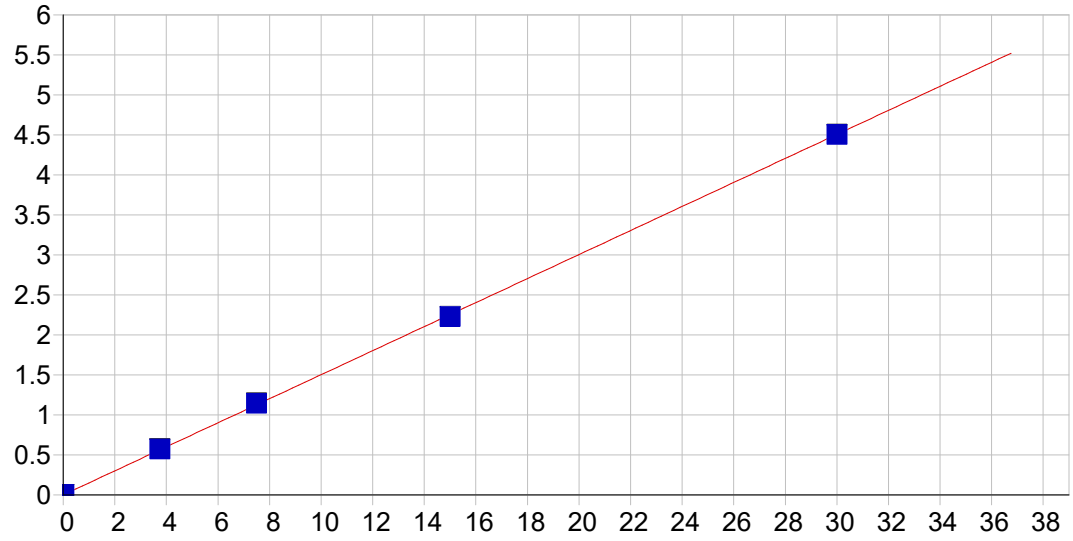
Co 228.616 {448}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000083	Re-Slope:	1.000000
A1 (Gain):	0.715878	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999980	Status:	OK.
Std Error of Est:	0.000120		
Predicted MDL:	0.000281		
Predicted MQL:	0.000936		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00008	.000	1
S1	.05000	.04918	-.001	-1.65	.03526	.000	1
S3	1.2500	1.2659	.016	1.27	.90952	.002	1
S4	2.5000	2.4924	-.008	-.306	1.7909	.007	1
S5	5.0000	4.9851	-.015	-.298	3.5822	.007	1
S2	.62500	.63250	.007	1.20	.45441	.001	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



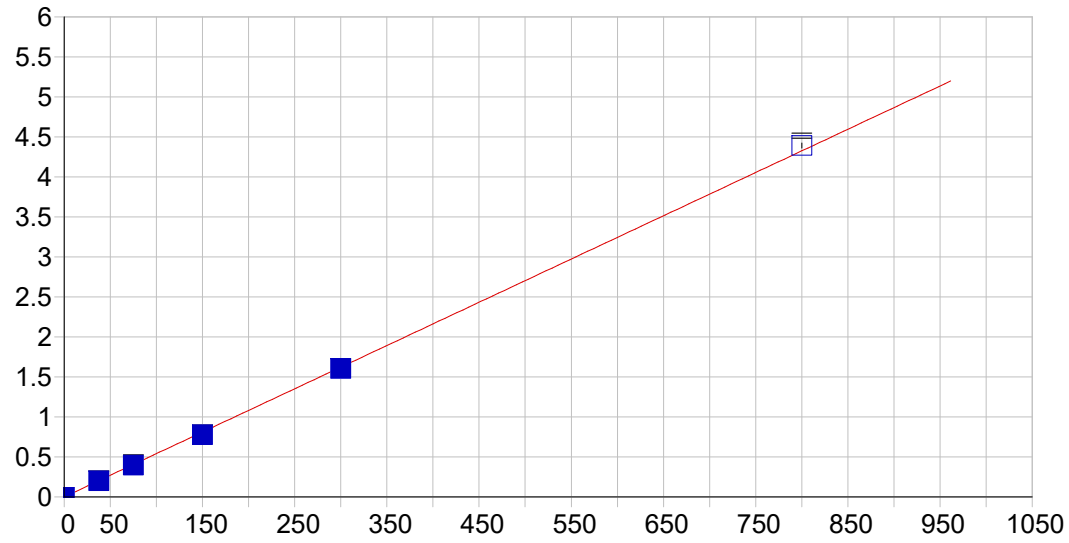
Cu 324.754 {104}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000471	Re-Slope:	1.000000
A1 (Gain):	0.150201	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999952	Status:	OK.
Std Error of Est:	0.000068		
Predicted MDL:	0.002093		
Predicted MQL:	0.006976		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00047	.000	1
S1	.02500	.02860	.004	14.4	.00477	.000	1
S3	7.5000	7.6223	.122	1.63	1.1452	.002	1
S4	15.000	14.826	-.174	-1.16	2.2271	.003	1
S5	30.000	29.991	-.009	-.030	4.5047	.004	1
S2	3.7500	3.8073	.057	1.53	.57228	.002	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



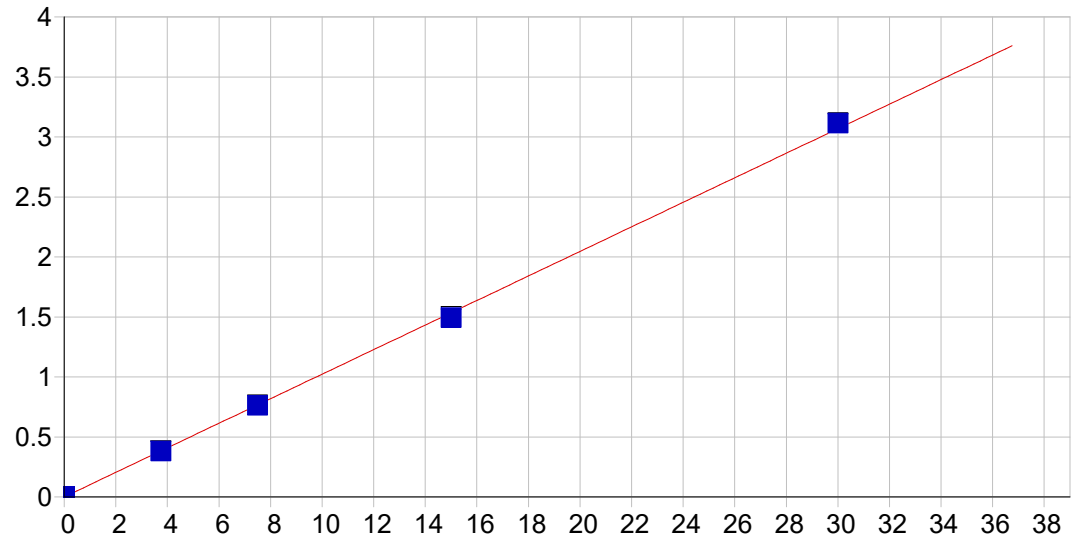
Fe 259.837 {130}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000048	Re-Slope:	1.000000
A1 (Gain):	0.005406	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999796	Status:	OK.
Std Error of Est:	0.000048		
Predicted MDL:	0.006240		
Predicted MQL:	0.020800		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00005	.000	1
S1	.10000	.09457	-.005	-5.43	.00055	.000	1
S3	75.000	73.522	-1.48	-1.97	.39712	.001	1
S4	150.00	143.40	-6.60	-4.40	.77451	.005	1
S5	300.00	296.42	-3.58	-1.19	1.6010	.002	1
S2	37.500	36.968	-.532	-1.42	.19970	.001	1
S6	800.00	812.18	12.2	1.52	4.3909	.031	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

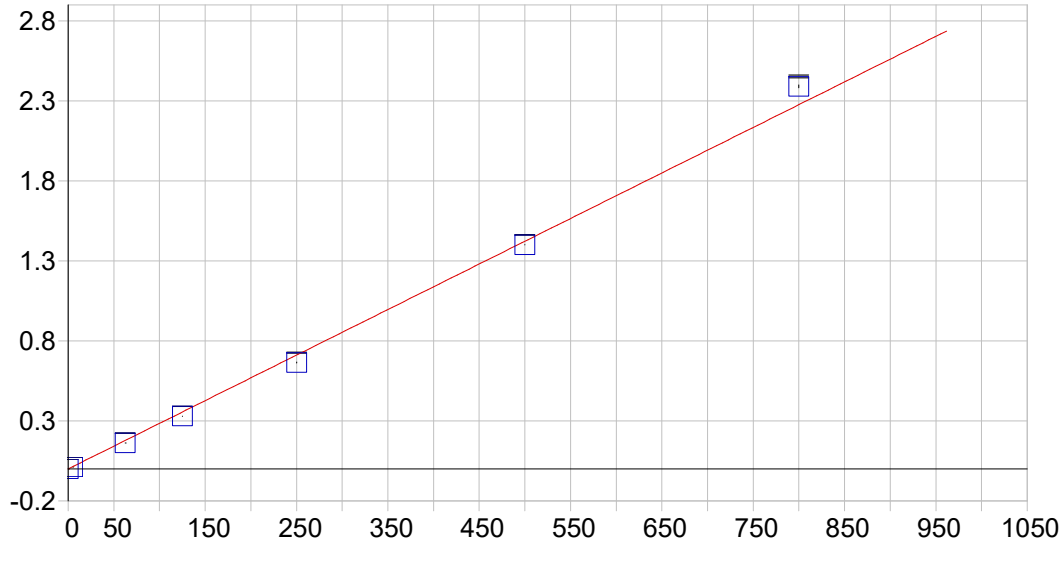


Mn 257.610 {131}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000019	Re-Slope:	1.000000
A1 (Gain):	0.102283	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999847	Status:	OK.
Std Error of Est:	0.000064		
Predicted MDL:	0.000328		
Predicted MQL:	0.001093		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00002	.000	1
S1	.01500	.01439	-.001	-4.07	.00149	.000	1
S3	7.5000	7.4660	-.034	-.453	.76313	.002	1
S4	15.000	14.603	-.397	-2.65	1.4926	.010	1
S5	30.000	30.441	.441	1.47	3.1115	.003	1
S2	3.7500	3.7409	-.009	-.241	.38239	.001	1



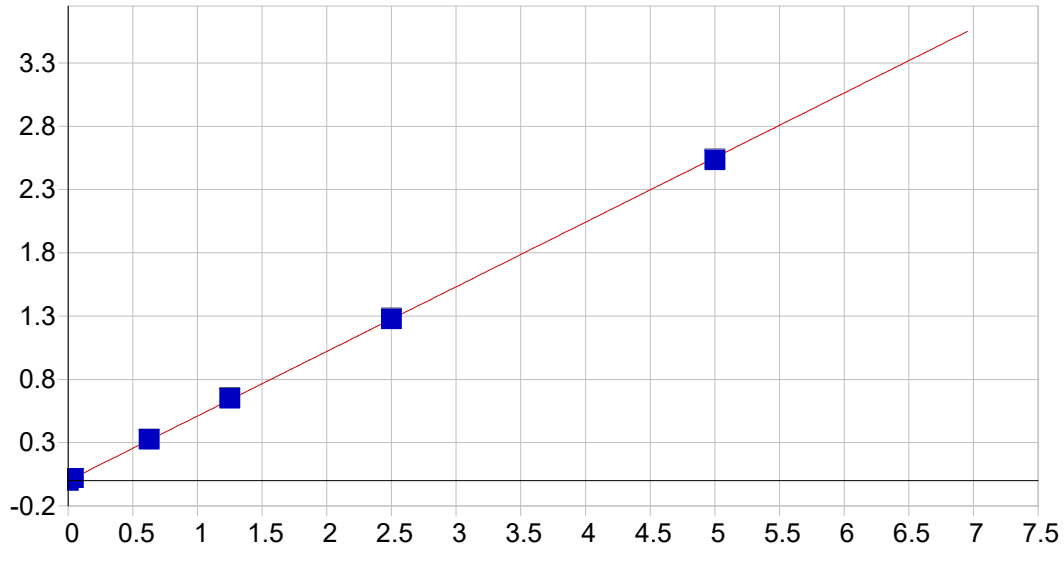
Mg 279.079 {121}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000060	Re-Slope:	1.000000
A1 (Gain):	0.002846	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998681	Status:	OK.
Std Error of Est:	0.000511		
Predicted MDL:	0.015551		
Predicted MQL:	0.051835		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00191	.002	.000	-.00005	.000	1
S2	62.500	56.740	-5.76	-9.22	.16141	.000	1
S3	125.00	115.71	-9.29	-7.43	.32922	.001	1
S4	250.00	233.54	-16.5	-6.58	.66454	.003	1
S5	500.00	492.28	-7.72	-1.54	1.4008	.002	1
S1	5.0000	4.0823	-.918	-18.4	.01156	.000	1
S6	800.00	840.14	40.1	5.02	2.3907	.009	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



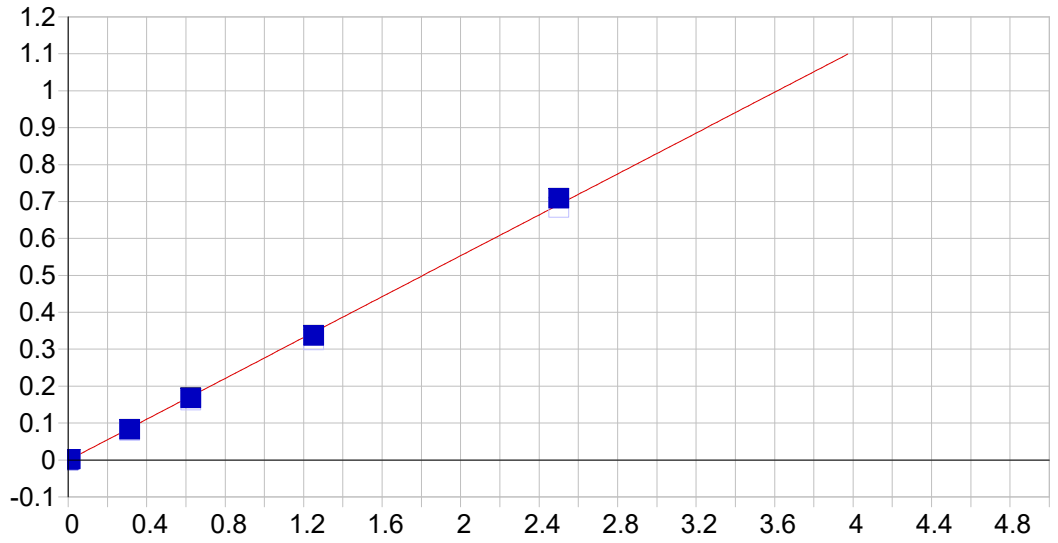
Ni 231.604 {446}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000052	Re-Slope:	1.000000
A1 (Gain):	0.510539	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999944	Status:	OK.
Std Error of Est:	0.000129		
Predicted MDL:	0.000440		
Predicted MQL:	0.001466		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00005	.000	1
S1	.04000	.03971	-.000	-.737	.02024	.000	1
S3	1.2500	1.2747	.025	1.97	.65221	.002	1
S4	2.5000	2.4997	-.000	-.011	1.2791	.005	1
S5	5.0000	4.9625	-.038	-.750	2.5395	.003	1
S2	.62500	.63842	.013	2.15	.32663	.001	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



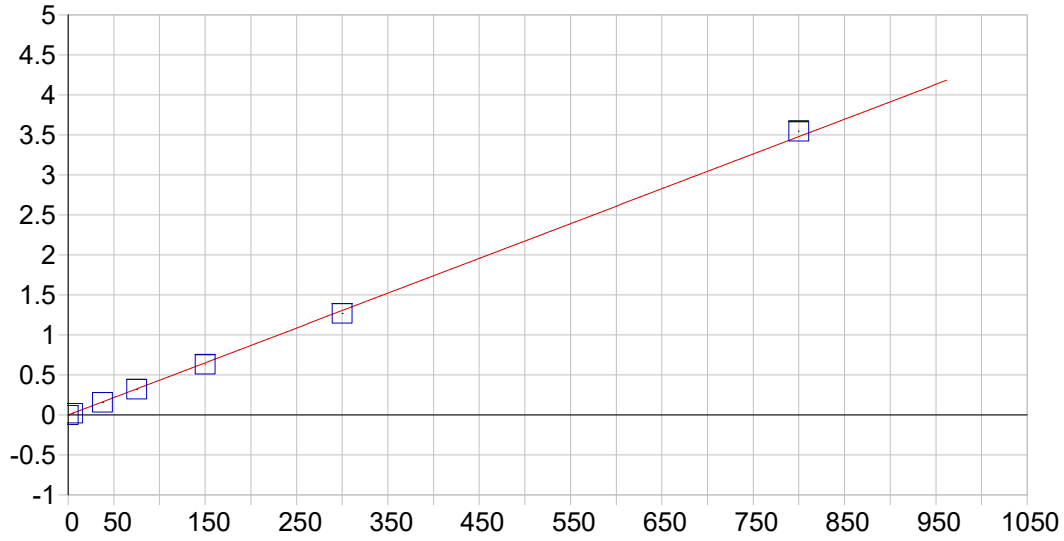
Ag 328.068 {103}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000514	Re-Slope:	1.000000
A1 (Gain):	0.276836	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999642	Status:	OK.
Std Error of Est:	0.000060		
Predicted MDL:	0.000396		
Predicted MQL:	0.001320		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00051	.000	1
S1	.01000	.00948	-.001	-5.19	.00209	.000	1
S3	.62500	.60819	-.017	-2.69	.16176	.000	1
S4	1.2500	1.2189	-.031	-2.49	.32474	.000	1
S5	2.5000	2.5601	.060	2.40	.68382	.001	1
S2	.31250	.30082	-.012	-3.74	.07971	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



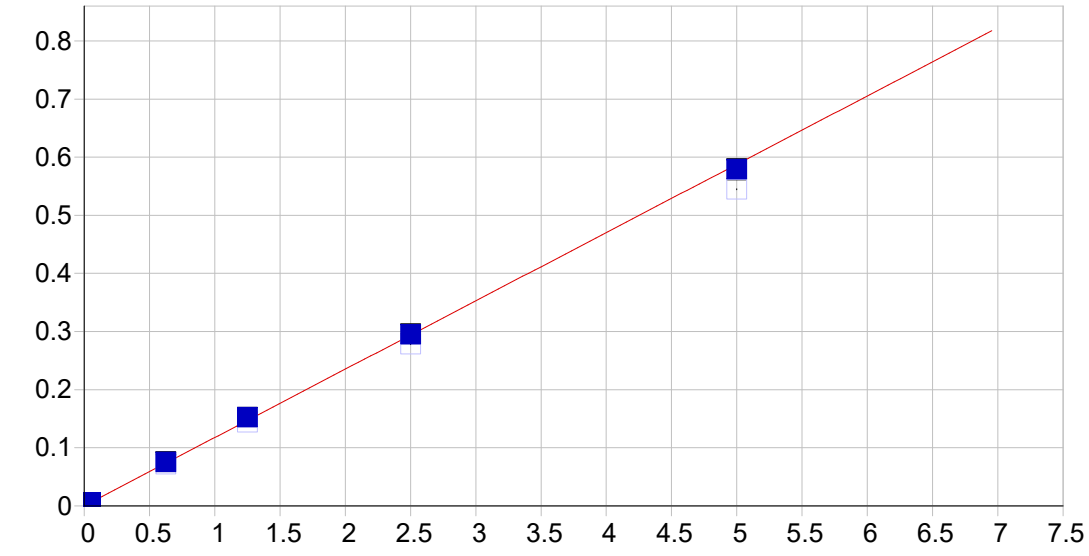
Na 818.326 { 41}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001100	Re-Slope:	1.000000
A1 (Gain):	0.004351	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999735	Status:	OK.
Std Error of Est:	0.000310		
Predicted MDL:	0.218728		
Predicted MQL:	0.729094		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00046	.000	.000	-.00110	.001	1
S2	37.500	36.351	-1.15	-3.06	.15705	.001	1
S3	75.000	73.949	-1.05	-1.40	.32063	.000	1
S4	150.00	145.27	-4.73	-3.16	.63090	.002	1
S5	300.00	291.66	-8.34	-2.78	1.2678	.001	1
S1	5.0000	4.9611	-.039	-.779	.02048	.000	1
S6	800.00	815.31	15.3	1.91	3.5460	.004	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



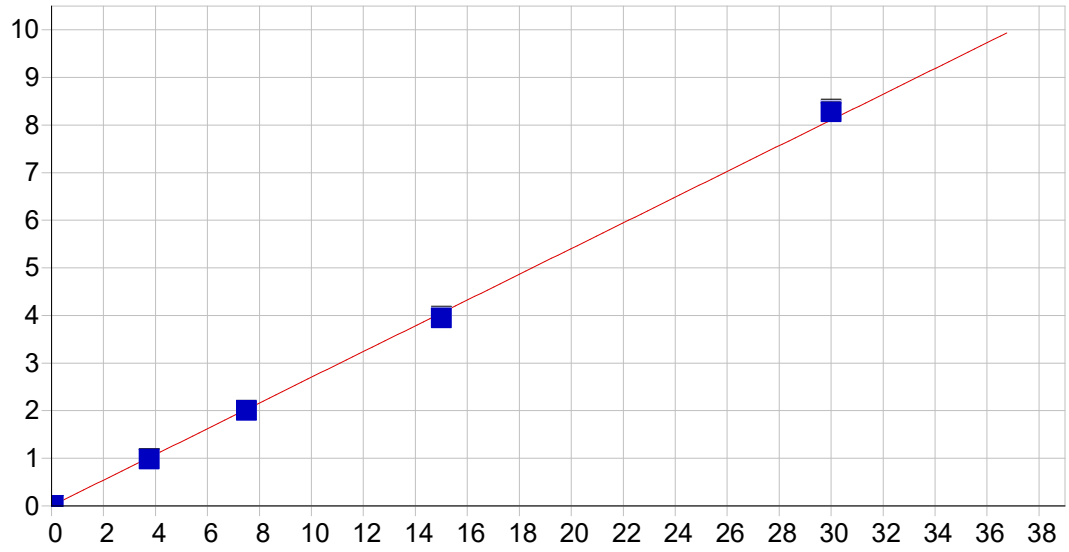
V 292.402 {115}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000196	Re-Slope:	1.000000
A1 (Gain):	0.117517	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999807	Status:	OK.
Std Error of Est:	0.000058		
Predicted MDL:	0.001990		
Predicted MQL:	0.006632		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00020	.000	1
S1	.05000	.05093	.001	1.85	.00617	.000	1
S3	1.2500	1.2948	.045	3.58	.14376	.000	1
S4	2.5000	2.5102	.010	.408	.27801	.001	1
S5	5.0000	4.9266	-.073	-1.47	.54479	.001	1
S2	.62500	.64250	.018	2.80	.07141	.001	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



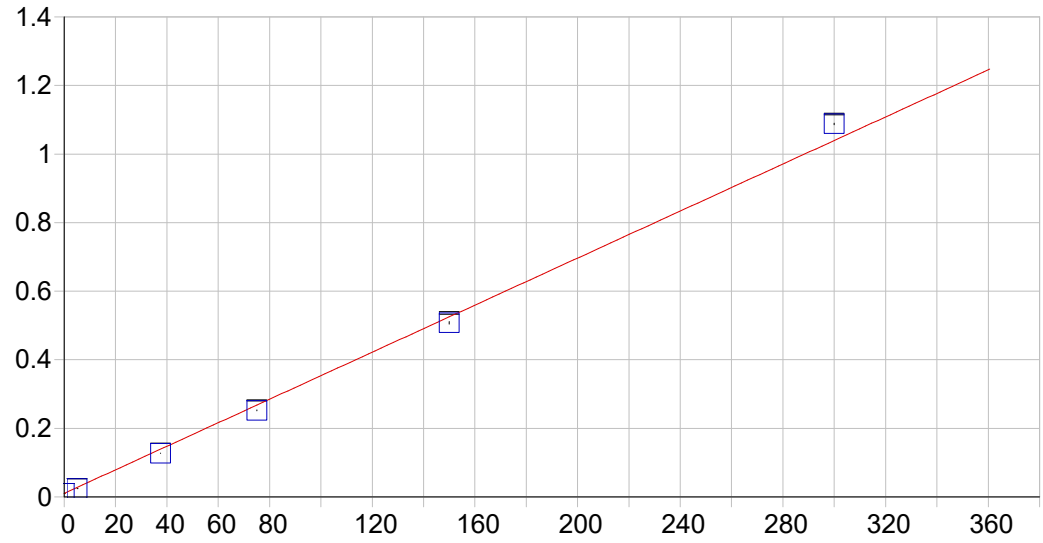
Zn 213.856 {158}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000811	Re-Slope:	1.000000
A1 (Gain):	0.270214	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999742	Status:	OK.
Std Error of Est:	0.000438		
Predicted MDL:	0.001518		
Predicted MQL:	0.005059		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00081	.000	1
S1	.06000	.05310	-.007	-11.5	.01525	.000	1
S3	7.5000	7.4041	-.096	-1.28	2.0091	.003	1
S4	15.000	14.609	-.391	-2.61	3.9635	.026	1
S5	30.000	30.620	.620	2.07	8.3053	.030	1
S2	3.7500	3.6240	-.126	-3.36	.98388	.008	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



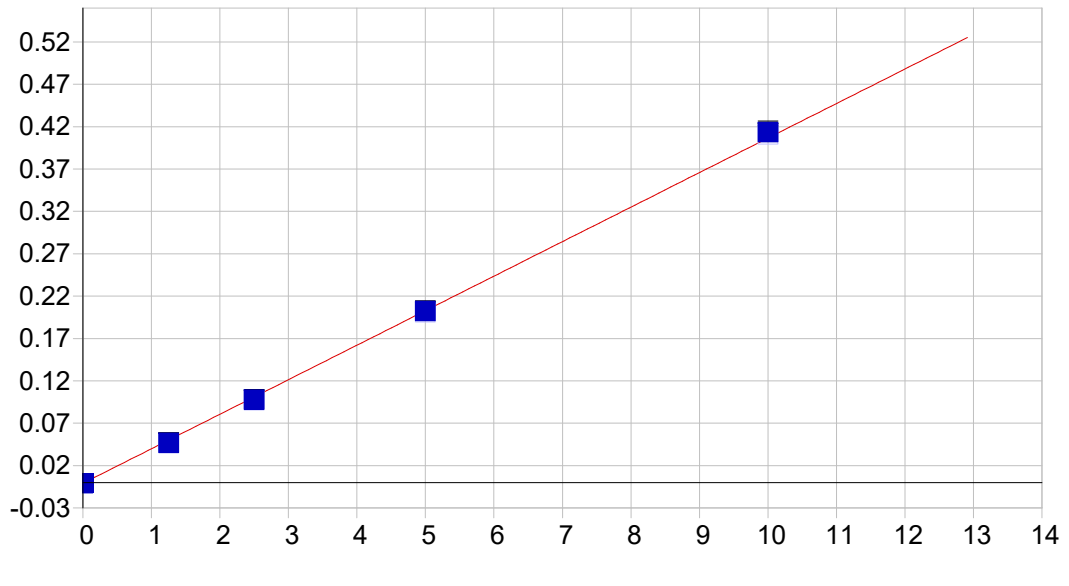
K 769.896 { 44}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.010471	Re-Slope:	1.000000
A1 (Gain):	0.003430	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998565	Status:	OK.
Std Error of Est:	0.000379		
Predicted MDL:	0.060283		
Predicted MQL:	0.200943		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00170	.002	.000	.01048	.000	1
S2	37.500	34.057	-3.44	-9.18	.12730	.001	1
S3	75.000	70.461	-4.54	-6.05	.25218	.001	1
S4	150.00	144.86	-5.14	-3.42	.50741	.004	1
S5	300.00	314.12	14.1	4.71	1.0880	.002	1
S1	5.0000	4.0004	-1.000	-20.0	.02419	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



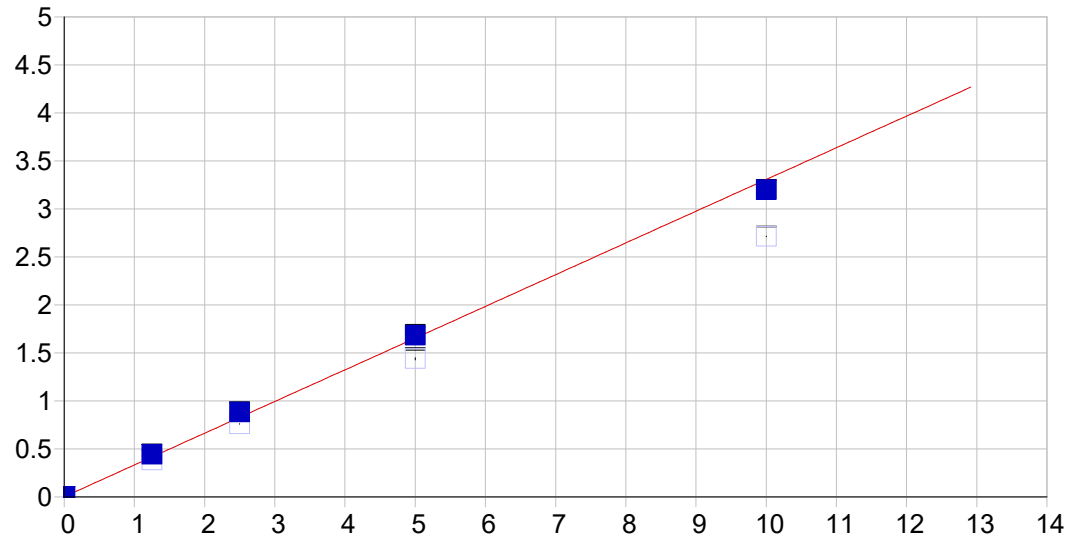
P 177.495 {490}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000925	Re-Slope:	1.000000
A1 (Gain):	0.040747	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999716	Status:	OK.
Std Error of Est:	0.000016		
Predicted MDL:	0.002385		
Predicted MQL:	0.007949		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00092	.000	1
S1	.01000	.01033	.000	3.30	-.00051	.000	1
S3	2.5000	2.4191	-.081	-3.24	.09692	.001	1
S4	5.0000	4.9868	-.013	-.264	.20082	.000	1
S5	10.000	10.172	.172	1.72	.41064	.001	1
S2	1.2500	1.1718	-.078	-6.26	.04646	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



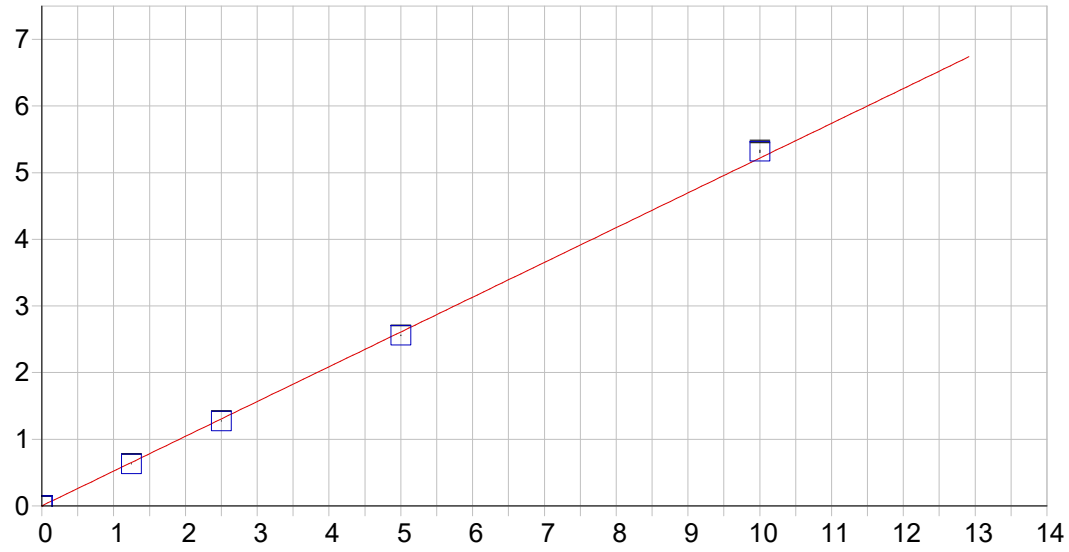
B 249.678 {135}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002409	Re-Slope:	1.000000
A1 (Gain):	0.330375	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998539	Status:	OK.
Std Error of Est:	0.000256		
Predicted MDL:	0.000782		
Predicted MQL:	0.002606		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00241	.000	1
S1	.01000	-.00063	-.011	-106.	.00203	.000	1
S3	2.5000	2.6623	.162	6.49	.76047	.003	1
S4	5.0000	5.0830	.083	1.66	1.4387	.011	1
S5	10.000	9.6776	-.322	-3.22	2.7137	.004	1
S2	1.2500	1.3390	.089	7.12	.38402	.001	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



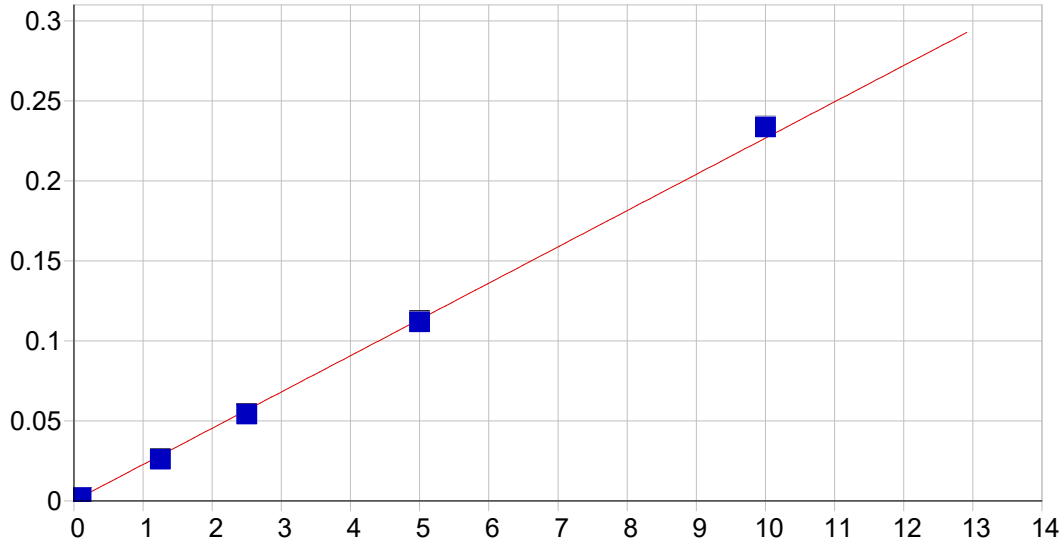
Mo 202.030 {467}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000484	Re-Slope:	1.000000
A1 (Gain):	0.521828	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999779	Status:	OK.
Std Error of Est:	0.000184		
Predicted MDL:	0.000384		
Predicted MQL:	0.001279		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00048	.000	1
S1	.01000	.00936	-.001	-6.36	.00537	.000	1
S3	2.5000	2.4408	-.059	-2.37	1.2742	.003	1
S4	5.0000	4.9067	-.093	-1.87	2.5609	.005	1
S5	10.000	10.194	.194	1.94	5.3200	.020	1
S2	1.2500	1.2090	-.041	-3.28	.63140	.003	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



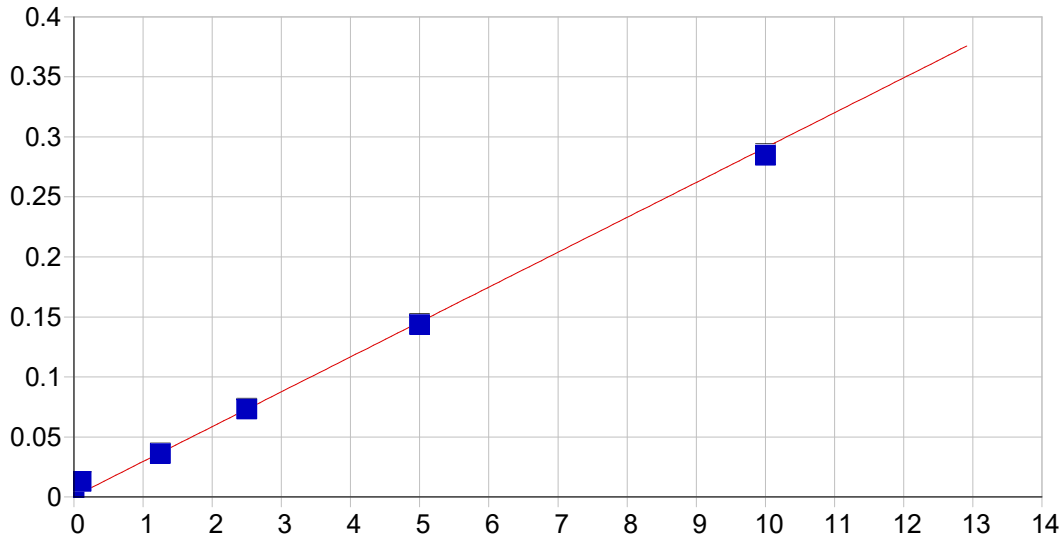
S 182.034 {485}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000103	Re-Slope:	1.000000
A1 (Gain):	0.022665	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999300	Status:	OK.
Std Error of Est:	0.000045		
Predicted MDL:	0.004282		
Predicted MQL:	0.014273		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00002	.000	.000	.00010	.000	1
S1	.10000	.08683	-.013	-13.2	.00207	.000	1
S3	2.5000	2.3841	-.116	-4.64	.05421	.000	1
S4	5.0000	4.9309	-.069	-1.38	.11201	.001	1
S5	10.000	10.305	.305	3.05	.23395	.000	1
S2	1.2500	1.1433	-.107	-8.53	.02605	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



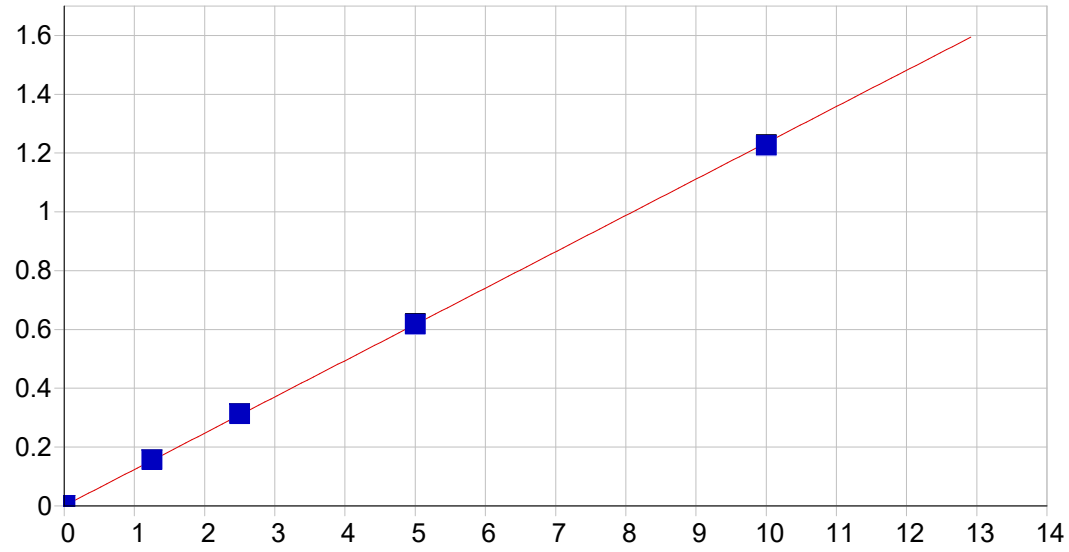
Si 251.611 {134}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000438	Re-Slope:	1.000000
A1 (Gain):	0.029063	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.972822	Status:	OK.
Std Error of Est:	0.000369		
Predicted MDL:	0.005239		
Predicted MQL:	0.017463		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00032	-.000	.000	.00043	.000	1
S1	.10000	.42655	.327	327.	.01284	.000	1
S3	2.5000	2.5026	.003	.106	.07339	.001	1
S4	5.0000	4.9195	-.080	-1.61	.14385	.000	1
S5	10.000	9.7743	-.226	-2.26	.28538	.000	1
S2	1.2500	1.2278	-.022	-1.77	.03623	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



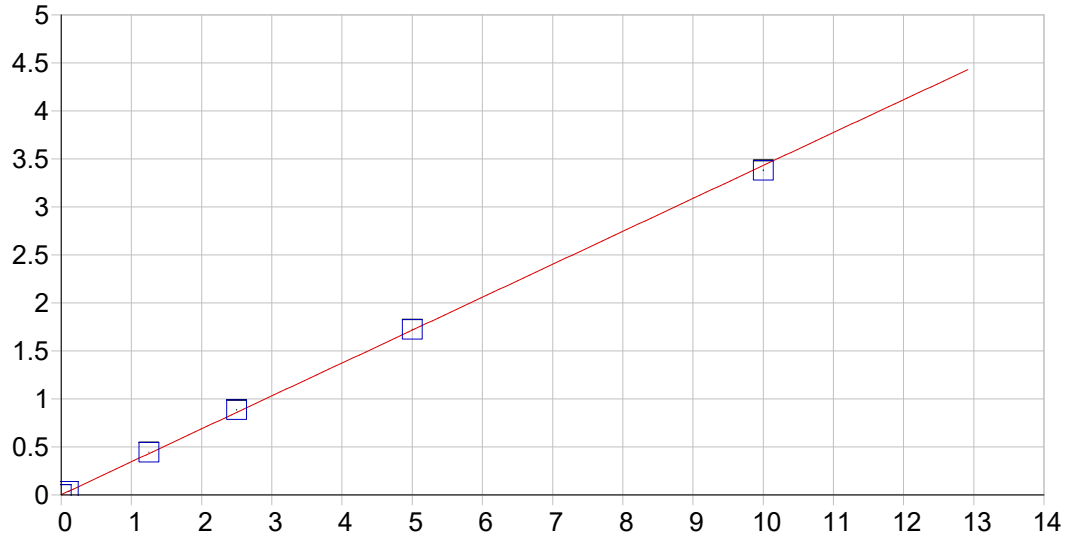
Sn 189.989 {478}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000222	Re-Slope:	1.000000
A1 (Gain):	0.123445	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999965	Status:	OK.
Std Error of Est:	0.000014		
Predicted MDL:	0.000886		
Predicted MQL:	0.002955		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00022	.000	1
S1	.00700	.00673	-.000	-3.84	.00101	.000	1
S3	2.5000	2.5383	.038	1.53	.31260	.001	1
S4	5.0000	5.0075	.007	.150	.61646	.002	1
S5	10.000	9.9360	-.064	-.640	1.2229	.002	1
S2	1.2500	1.2685	.018	1.48	.15633	.000	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



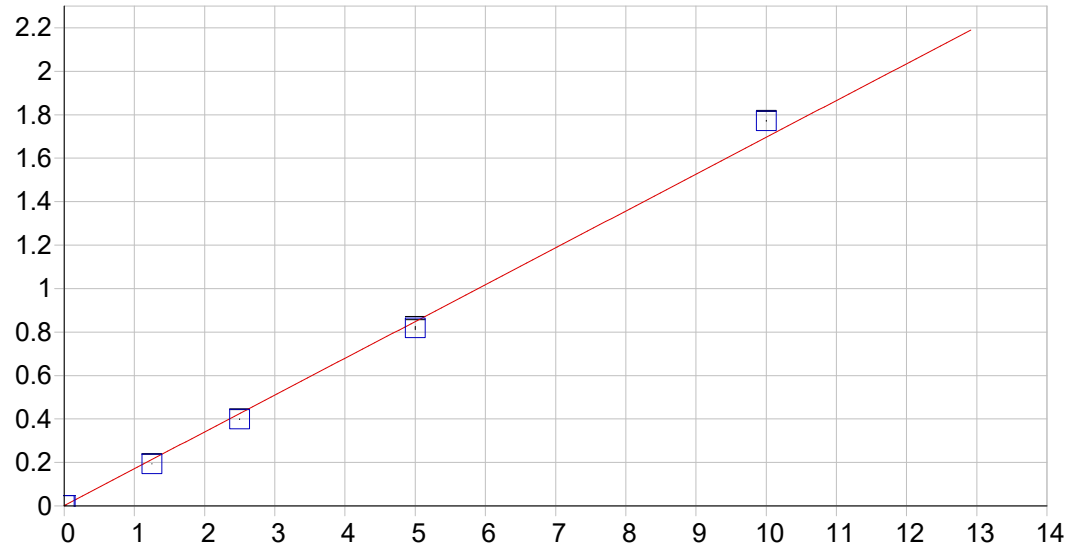
Ti 336.121 {100}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002191	Re-Slope:	1.000000
A1 (Gain):	0.342873	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999842	Status:	OK.
Std Error of Est:	0.000324		
Predicted MDL:	0.000929		
Predicted MQL:	0.003097		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00219	.000	1
S1	.10000	.10242	.002	2.42	.03731	.000	1
S3	2.5000	2.5783	.078	3.13	.88622	.002	1
S4	5.0000	5.0241	.024	.482	1.7248	.003	1
S5	10.000	9.8557	-.144	-1.44	3.3814	.004	1
S2	1.2500	1.2895	.039	3.16	.44431	.002	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

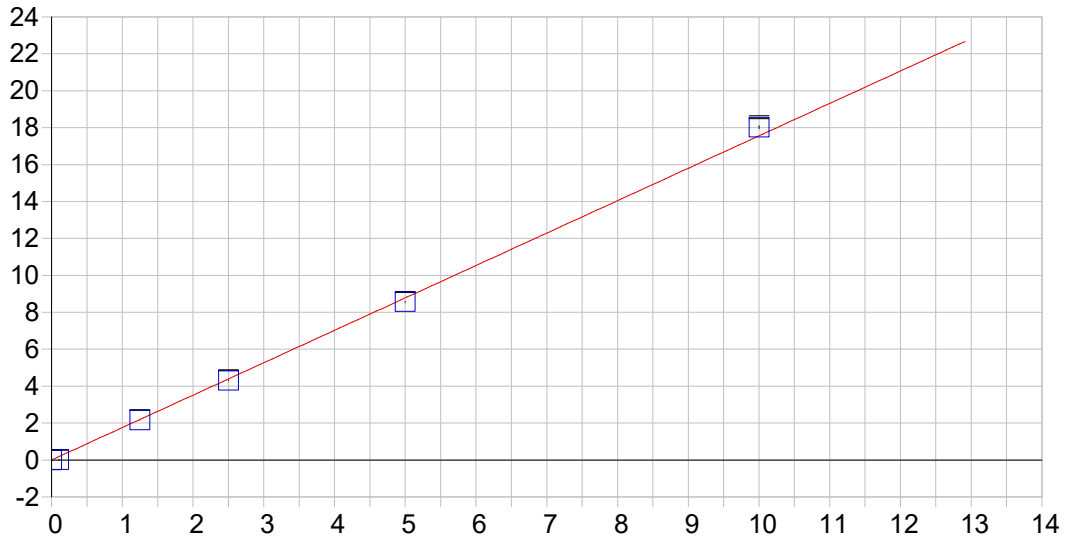


Li 670.784 { 50}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001529	Re-Slope:	1.000000
A1 (Gain):	0.169419	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998727	Status:	OK.
Std Error of Est:	0.000176		
Predicted MDL:	0.001248		
Predicted MQL:	0.004160		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00153	.000	1
S5	10.000	10.450	.450	4.50	1.7720	.003	1
S4	5.0000	4.8231	-.177	-3.54	.81866	.007	1
S3	2.5000	2.3479	-.152	-6.08	.39932	.002	1
S1	.01500	.01103	-.004	-26.5	.00340	.000	1
S2	1.2500	1.1326	-.117	-9.39	.19341	.001	1



Sr 407.771 { 83}

Date of Fit:	3/5/2025 17:08:41	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000080	Re-Slope:	1.000000
A1 (Gain):	1.755791	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.997527	Status:	OK.
Std Error of Est:	0.006574		
Predicted MDL:	0.000065		
Predicted MQL:	0.000215		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00009	.000	.000	.00008	.000	1
S1	.10000	.00917	-.091	-90.8	.01603	.000	1
S3	2.5000	2.4578	-.042	-1.69	4.3152	.020	1
S4	5.0000	4.8799	-.120	-2.40	8.5680	.024	1
S5	10.000	10.268	.268	2.68	18.029	.073	1
S2	1.2500	1.2350	-.015	-1.20	2.1683	.007	1

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
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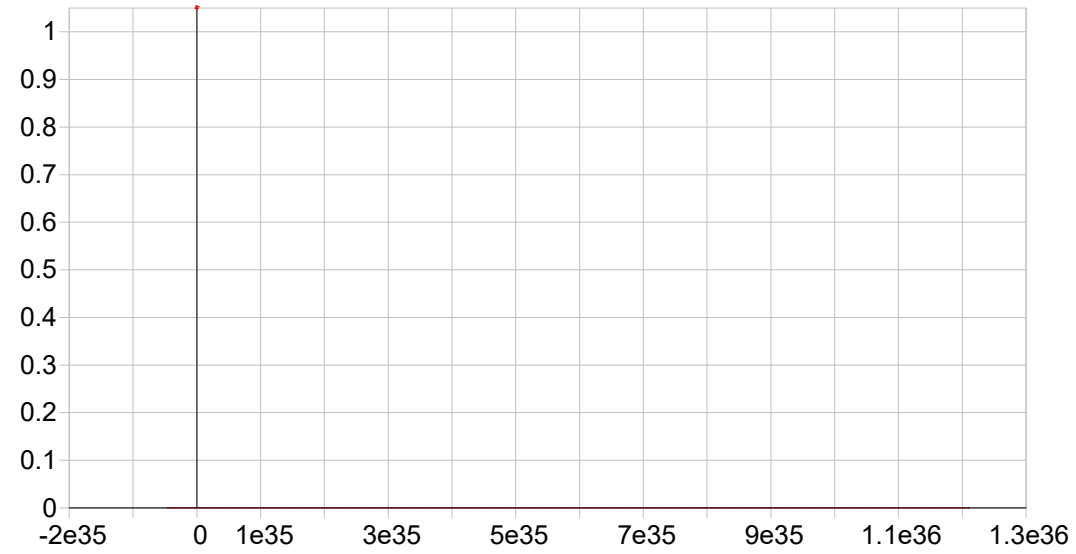
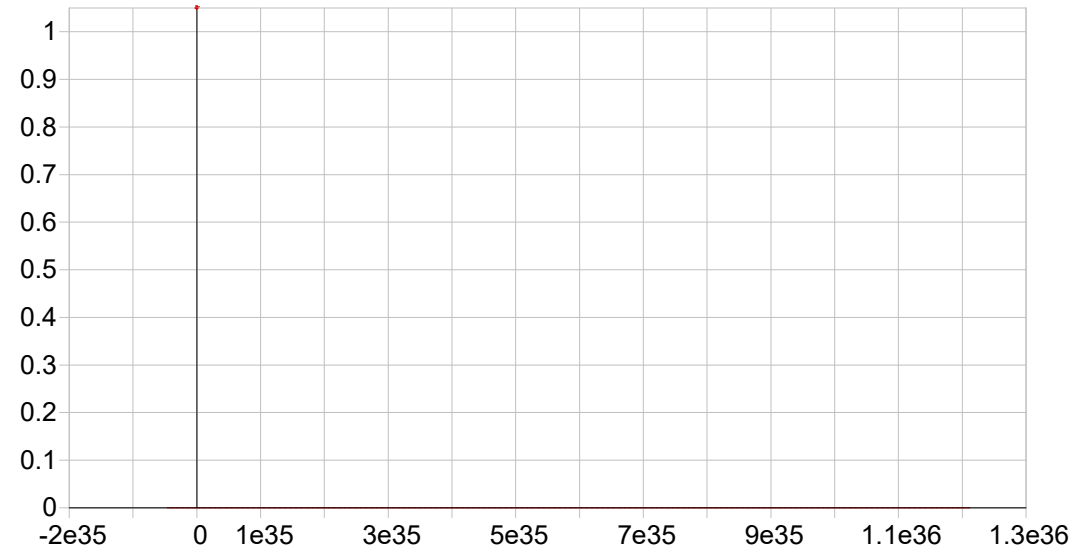


Y 224.306 {450}*

Date of Fit:	3/5/2025 17:08:41	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

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On:3/7/2025 12:26:46 PM
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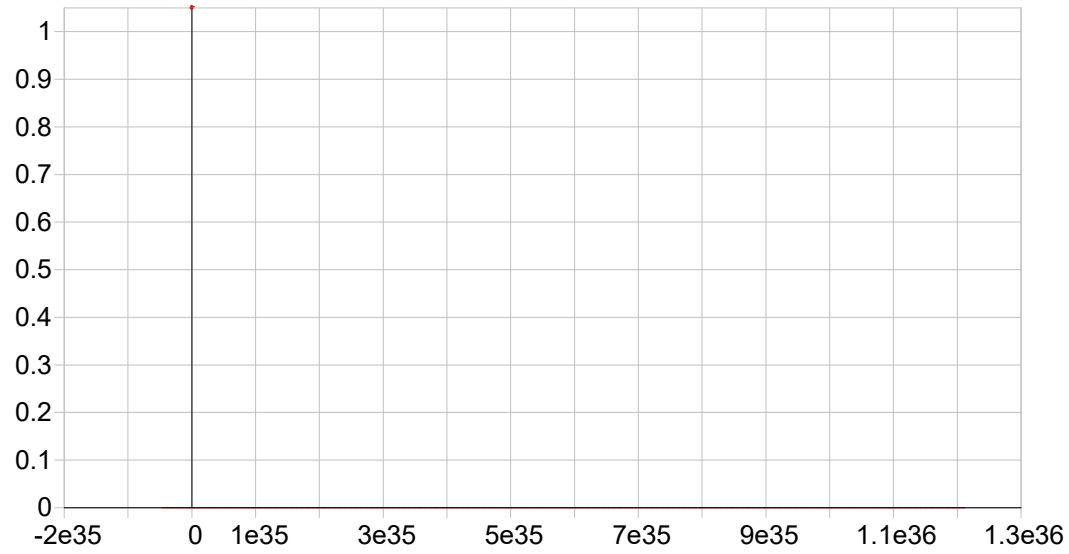
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

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



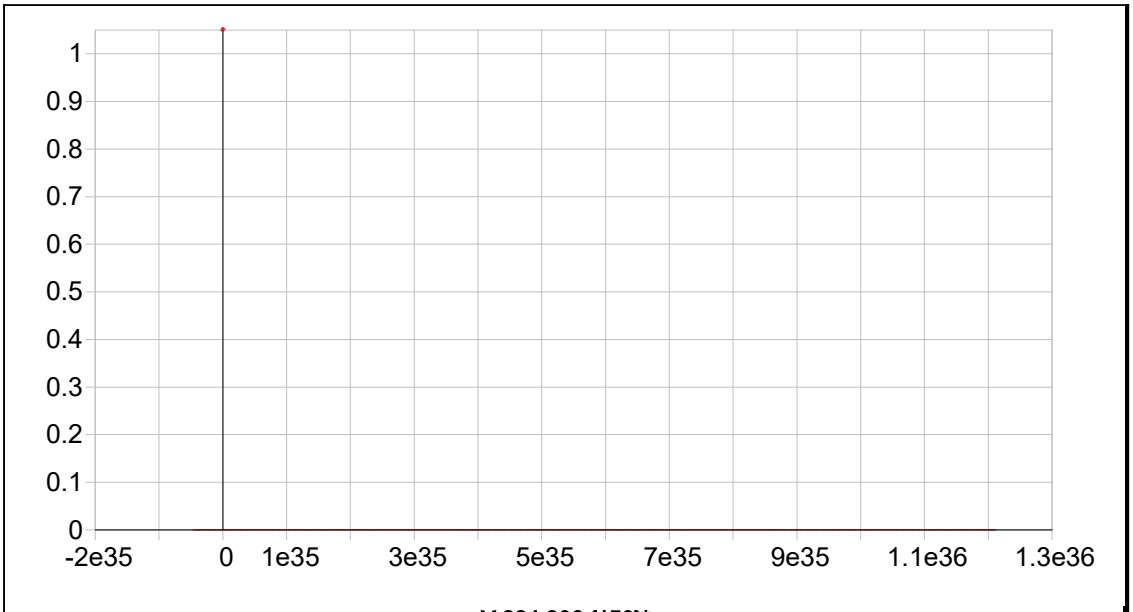
Y 371.030 { 91}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

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

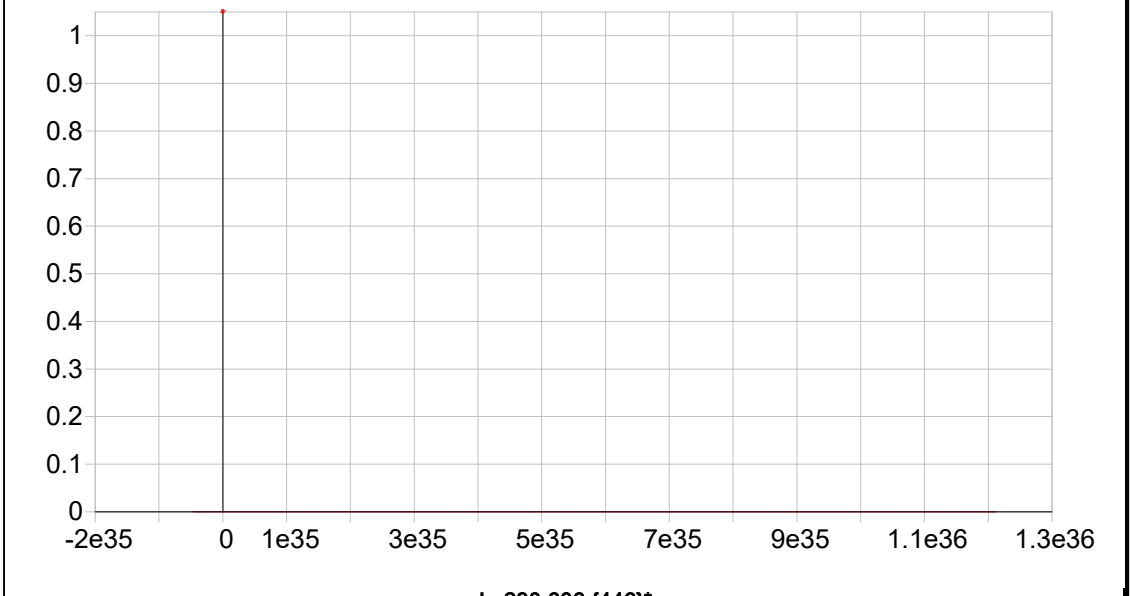
Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



Y 224.306 {150}*

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

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



In 230.606 {446}*

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

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

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

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S0 Acquired: 3/5/2025 14:34:28 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 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	**-.00018**	**.00002**	**-.00025**	**.00032**	**.00025**	**.00012**	**.00762**	**-.00008**
Stddev	.00002	.00008	.00011	.00008	.00013	.00008	.00025	.00015
%RSD	10.984	465.57	42.381	24.470	51.083	67.753	3.2427	201.83
#1	-.00016	.00009	-.00018	.00023	.00012	.00003	.00787	-.00023
#2	-.00020	.00003	-.00020	.00038	.00037	.00020	.00738	.00007
#3	-.00017	-.00007	-.00038	.00036	.00027	.00014	.00761	-.00007

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00008**	**.00011**	**-.00008**	**.00047**	**.00005**	**.00002**	**-.00005**
Stddev	.00008	.00003	.00002	.00006	.00022	.00003	.00002	.00003
%RSD	218.75	32.079	15.340	70.578	47.739	55.305	86.237	50.211
#1	-.00013	.00010	.00011	-.00002	.00056	.00002	.00003	-.00006
#2	.00002	.00005	.00013	-.00010	.00064	.00008	.00003	-.00008
#3	-.00000	.00008	.00009	-.00013	.00022	.00004	.00000	-.00002

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**-.00051**	**-.00110**	**.00020**	**.00081**	**.01048**	**-.00092**	**.00241**
Stddev	.00019	.00007	.00056	.00016	.00015	.00011	.00008	.00007
%RSD	368.67	13.828	51.437	80.736	18.354	1.0624	8.7800	2.7404
#1	-.00022	-.00045	-.00118	.00006	.00088	.01055	-.00100	.00234
#2	.00016	-.00059	-.00050	.00037	.00064	.01053	-.00084	.00244
#3	-.00009	-.00050	-.00162	.00016	.00092	.01035	-.00093	.00246

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00010**	**.00043**	**.00022**	**.00219**	**.00153**	**.00008**
Stddev	.00012	.00005	.00005	.00005	.00008	.00016	.00006
%RSD	23.719	44.630	11.040	20.528	3.8452	10.760	67.657
#1	.00043	.00010	.00042	.00018	.00218	.00138	.00006
#2	.00041	.00015	.00038	.00021	.00211	.00150	.00015
#3	.00062	.00006	.00048	.00027	.00228	.00171	.00004

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S0 Acquired: 3/5/2025 14:34:28 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 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	3474.3	72469.	14441.	3095.1	4792.9
Stddev	9.6	285.	70.	13.6	15.8
%RSD	.27572	.39373	.48692	.43895	.32994
#1	3466.6	72198.	14374.	3082.2	4778.5
#2	3471.2	72442.	14435.	3093.9	4790.5
#3	3485.0	72767.	14515.	3109.3	4809.9

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S1 Acquired: 3/5/2025 14:38:40 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	**.00040**	**.00109**	**.00179**	**.00207**	**.00776**	**.00237**	**.08842**	**.01543**
Stddev	.00009	.00008	.00019	.00027	.00006	.00005	.00019	.00020
%RSD	21.208	7.6932	10.871	12.852	.78720	2.2151	.21910	1.3230
#1	.00043	.00111	.00162	.00184	.00769	.00232	.08860	.01521
#2	.00031	.00100	.00200	.00236	.00778	.00243	.08843	.01549
#3	.00047	.00117	.00175	.00200	.00781	.00235	.08821	.01561

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01160**	**.04086**	**.00177**	**.03526**	**.00477**	**.00055**	**.00149**	**.01156**
Stddev	.00010	.00016	.00002	.00017	.00023	.00003	.00002	.00006
%RSD	.83424	.39477	1.2956	.47463	4.7576	5.4023	1.0869	.54776
#1	.01168	.04094	.00176	.03518	.00453	.00058	.00151	.01162
#2	.01162	.04096	.00176	.03545	.00499	.00055	.00149	.01150
#3	.01149	.04067	.00180	.03514	.00478	.00052	.00147	.01155

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02024**	**.00209**	**.02048**	**.00617**	**.01525**	**.02419**	**-.00051**	**.00203**
Stddev	.00025	.00011	.00038	.00024	.00041	.00020	.00005	.00010
%RSD	1.2499	5.4197	1.8672	3.9207	2.6985	.84717	10.130	5.0481
#1	.02019	.00221	.02089	.00599	.01478	.02439	-.00045	.00214
#2	.02052	.00207	.02044	.00608	.01549	.02421	-.00054	.00202
#3	.02002	.00199	.02012	.00644	.01549	.02398	-.00053	.00194

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00537**	**.00207**	**.01284**	**.00101**	**.03731**	**.00340**	**.01603**
Stddev	.00008	.00005	.00029	.00004	.00038	.00017	.00003
%RSD	1.4946	2.6092	2.2668	3.7757	1.0094	4.9778	.15926
#1	.00545	.00202	.01250	.00106	.03688	.00357	.01601
#2	.00538	.00213	.01297	.00098	.03750	.00340	.01602
#3	.00529	.00206	.01304	.00100	.03756	.00323	.01605

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S1 Acquired: 3/5/2025 14:38:40 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	3421.8	73211.	14501.	3139.0	4597.8
Stddev	3.2	215.	93.	10.5	5.8
%RSD	.09228	.29415	.64060	.33532	.12681
#1	3418.3	72985.	14598.	3150.2	4591.9
#2	3422.6	73234.	14491.	3137.5	4597.8
#3	3424.5	73414.	14413.	3129.3	4603.6

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S2 Acquired: 3/5/2025 14:42:51 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	.06092	.04942	1.2383	.06446	.15906	.47890	1.1076	.38591
Stddev	.00008	.00074	.0001	.00018	.00056	.00091	.0044	.00136
%RSD	.13846	1.4932	.01222	.28594	.35358	.19025	.39896	.35128
#1	.06101	.04926	1.2382	.06443	.15936	.47995	1.1127	.38553
#2	.06084	.04878	1.2383	.06430	.15841	.47844	1.1044	.38478
#3	.06091	.05023	1.2385	.06466	.15940	.47832	1.1058	.38741

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.5078	.53779	.63980	.45441	.57228	.19970	.38239	.16141
Stddev	.0023	.00140	.00037	.00055	.00225	.00062	.00066	.00028
%RSD	.15458	.26079	.05745	.12050	.39389	.30895	.17170	.17400
#1	1.5083	.53927	.63940	.45503	.57426	.20041	.38310	.16141
#2	1.5053	.53649	.64011	.45401	.56983	.19938	.38180	.16112
#3	1.5098	.53760	.63990	.45418	.57277	.19931	.38227	.16168

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.32663	.07971	.15705	.07141	.98388	.12730	.04646	.38402
Stddev	.00059	.00021	.00078	.00050	.00806	.00056	.00022	.00051
%RSD	.17953	.26672	.49444	.70644	.81916	.44103	.46842	.13312
#1	.32721	.07965	.15794	.07196	.99319	.12786	.04667	.38343
#2	.32665	.07995	.15648	.07097	.97945	.12674	.04623	.38428
#3	.32604	.07954	.15673	.07129	.97901	.12729	.04647	.38436

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.63140	.02605	.03623	.15633	.44431	.19341	2.1683
Stddev	.00322	.00012	.00025	.00017	.00171	.00077	.0068
%RSD	.51056	.45389	.69234	.10823	.38538	.39815	.31354
#1	.63171	.02593	.03625	.15653	.44576	.19425	2.1756
#2	.62803	.02617	.03597	.15622	.44242	.19324	2.1673
#3	.63446	.02606	.03647	.15625	.44476	.19274	2.1621

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S2 Acquired: 3/5/2025 14:42:51 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	**3242.1**	**67362.**	**14390.**	**2922.5**	**4109.7**
Stddev	8.8	126.	57.	18.6	11.5
%RSD	.27074	.18773	.39688	.63679	.27875
#1	3233.6	67274.	14376.	2903.4	4096.5
#2	3251.2	67507.	14453.	2940.5	4115.6
#3	3241.6	67305.	14342.	2923.5	4116.9

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S3 Acquired: 3/5/2025 14:46:42 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	.12434	.09712	2.4691	.12975	.32375	.97817	2.2277	.77271
Stddev	.00014	.00034	.0070	.00054	.00080	.00358	.0230	.00286
%RSD	.11636	.35058	.28519	.41715	.24763	.36555	1.0315	.37002
#1	.12418	.09751	2.4670	.12993	.32391	.98171	2.2499	.77022
#2	.12436	.09692	2.4633	.12914	.32288	.97823	2.2040	.77209
#3	.12447	.09691	2.4769	.13018	.32445	.97456	2.2292	.77583

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.0205	1.0824	1.2580	.90952	1.1452	.39712	.76313	.32922
Stddev	.0062	.0032	.0005	.00153	.0015	.00101	.00174	.00067
%RSD	.20442	.29387	.03820	.16807	.13133	.25409	.22770	.20389
#1	3.0220	1.0857	1.2585	.90957	1.1470	.39791	.76401	.32959
#2	3.0138	1.0823	1.2576	.90797	1.1445	.39747	.76426	.32962
#3	3.0258	1.0793	1.2580	.91103	1.1442	.39598	.76113	.32845

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.65221	.16176	.32063	.14376	2.0091	.25218	.09692	.76047
Stddev	.00154	.00023	.00037	.00027	.0027	.00124	.00055	.00313
%RSD	.23539	.14468	.11609	.18862	.13457	.49219	.56328	.41122
#1	.65208	.16164	.32100	.14359	2.0112	.25325	.09639	.75741
#2	.65074	.16203	.32062	.14362	2.0101	.25248	.09687	.76033
#3	.65381	.16160	.32026	.14407	2.0061	.25082	.09748	.76366

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.2742	.05421	.07339	.31260	.88622	.39932	4.3152
Stddev	.0026	.00021	.00053	.00064	.00239	.00187	.0201
%RSD	.20750	.38407	.72497	.20606	.26948	.46891	.46583
#1	1.2750	.05425	.07383	.31291	.88806	.40130	4.2987
#2	1.2712	.05398	.07280	.31186	.88353	.39906	4.3376
#3	1.2763	.05439	.07355	.31303	.88708	.39759	4.3095

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S3 Acquired: 3/5/2025 14:46:42 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	3093.7	65273.	14030.	2809.6	3884.8
Stddev	6.5	45.	50.	6.2	8.1
%RSD	.21002	.06870	.35786	.21934	.20816
#1	3090.4	65276.	14056.	2809.0	3879.6
#2	3101.2	65317.	14062.	2816.1	3894.1
#3	3089.6	65227.	13972.	2803.8	3880.7

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S4 Acquired: 3/5/2025 14:50:38 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	**.25643**	**.18908**	**4.8728**	**.26390**	**.66462**	**1.9812**	**4.4751**	**1.4882**
Stddev	.00160	.00132	.0214	.00122	.00347	.0152	.0098	.0125
%RSD	.62290	.69721	.43939	.46275	.52244	.76631	.21958	.84134
#1	.25580	.18884	4.8533	.26330	.66369	1.9982	4.4864	1.4739
#2	.25524	.18790	4.8694	.26310	.66172	1.9761	4.4690	1.4968
#3	.25824	.19051	4.8957	.26531	.66847	1.9692	4.4697	1.4941

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5.9252**	**2.1463**	**2.4141**	**1.7909**	**2.2271**	**.77451**	**1.4926**	**.66454**
Stddev	.0195	.0132	.0028	.0065	.0033	.00541	.0101	.00323
%RSD	.32938	.61250	.11535	.36319	.14998	.69821	.67871	.48531
#1	5.9073	2.1612	2.4155	1.7846	2.2292	.78031	1.5031	.66800
#2	5.9224	2.1408	2.4160	1.7906	2.2289	.77361	1.4916	.66399
#3	5.9460	2.1367	2.4109	1.7976	2.2233	.76961	1.4829	.66162

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.2791**	**.32474**	**.63090**	**.27801**	**3.9635**	**.50741**	**.20082**	**1.4387**
Stddev	.0048	.00048	.00151	.00078	.0259	.00383	.00040	.0111
%RSD	.37770	.14824	.23940	.28053	.65224	.75515	.19936	.76959
#1	1.2743	.32520	.63261	.27714	3.9929	.51174	.20086	1.4260
#2	1.2792	.32477	.63034	.27822	3.9533	.50444	.20040	1.4460
#3	1.2840	.32424	.62975	.27866	3.9444	.50606	.20119	1.4442

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.5609**	**.11201**	**.14385**	**.61646**	**1.7248**	**.81866**	**8.5680**
Stddev	.0055	.00058	.00035	.00212	.0026	.00699	.0238
%RSD	.21459	.51644	.24532	.34431	.15246	.85412	.27721
#1	2.5622	.11143	.14367	.61495	1.7275	.82672	8.5940
#2	2.5549	.11199	.14362	.61554	1.7222	.81430	8.5475
#3	2.5657	.11259	.14426	.61888	1.7248	.81495	8.5625

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S4 Acquired: 3/5/2025 14:50:38 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	2863.7	63425.	13901.	2699.3	3599.8
Stddev	11.6	216.	79.	7.9	10.9
%RSD	.40391	.34050	.57058	.29321	.30345
#1	2864.8	63269.	13988.	2690.5	3605.5
#2	2874.6	63334.	13832.	2701.8	3606.7
#3	2851.6	63672.	13881.	2705.7	3587.2

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S5 Acquired: 3/5/2025 14:54:40 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	**.56216**	**.37744**	**9.7327**	**.57133**	**1.4569**	**4.2531**	**9.3466**	**2.9193**
Stddev	.00172	.00302	.0191	.00180	.0064	.0363	.0738	.0076
%RSD	.30682	.79980	.19579	.31448	.43959	.85381	.78976	.26207
#1	.56090	.37598	9.7311	.56956	1.4511	4.2736	9.4211	2.9279
#2	.56145	.38091	9.7145	.57129	1.4560	4.2112	9.2734	2.9166
#3	.56413	.37543	9.7525	.57315	1.4638	4.2745	9.3454	2.9134

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**11.734**	**4.4338**	**4.7228**	**3.5822**	**4.5047**	**1.6010**	**3.1115**	**1.4008**
Stddev	.017	.0206	.0097	.0070	.0040	.0020	.0032	.0018
%RSD	.14347	.46379	.20534	.19534	.08841	.12613	.10157	.13077
#1	11.725	4.4546	4.7340	3.5803	4.5001	1.6003	3.1083	1.4026
#2	11.724	4.4331	4.7163	3.5765	4.5072	1.5994	3.1114	1.3989
#3	11.754	4.4135	4.7183	3.5900	4.5068	1.6032	3.1147	1.4010

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.5395**	**.68382**	**1.2678**	**.54479**	**8.3053**	**1.0880**	**.41064**	**2.7137**
Stddev	.0027	.00063	.0011	.00098	.0303	.0021	.00132	.0044
%RSD	.10733	.09190	.08977	.18006	.36475	.19427	.32141	.16257
#1	2.5395	.68441	1.2676	.54590	8.3177	1.0881	.41178	2.7181
#2	2.5367	.68316	1.2668	.54444	8.2708	1.0859	.41095	2.7136
#3	2.5422	.68389	1.2690	.54403	8.3275	1.0901	.40920	2.7093

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5.3200**	**.23395**	**.28538**	**1.2229**	**3.3814**	**1.7720**	**18.029**
Stddev	.0197	.00019	.00038	.0016	.0044	.0028	.073
%RSD	.37087	.08205	.13484	.12808	.13021	.15554	.40377
#1	5.3001	.23401	.28582	1.2215	3.3865	1.7730	18.004
#2	5.3204	.23410	.28509	1.2227	3.3783	1.7689	17.971
#3	5.3396	.23373	.28523	1.2246	3.3796	1.7742	18.110

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S5 Acquired: 3/5/2025 14:54:40 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	**2481.3**	**58576.**	**13632.**	**2474.3**	**3235.2**
Stddev	6.5	21.	23.	9.0	3.7
%RSD	.26007	.03601	.16756	.36188	.11520
#1	2486.0	58561.	13634.	2470.0	3235.5
#2	2483.9	58568.	13609.	2484.5	3238.8
#3	2473.9	58601.	13655.	2468.2	3231.3

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: S6 Acquired: 3/5/2025 14:59:06 Type: Cal
Method: EPA SFAM01.0(v68) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S06 Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Ca3736	Fe2598	Mg2790	Na8183
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**11.783**	**7.3912**	**4.3909**	**2.3907**	**3.5460**
Stddev	.020	.0626	.0312	.0086	.0042
%RSD	.17252	.84732	.71132	.35803	.11779
#1	11.805	7.3232	4.3605	2.3831	3.5451
#2	11.765	7.4465	4.4229	2.4000	3.5506
#3	11.778	7.4039	4.3894	2.3891	3.5424

Int. Std.	Y_3600	Y_3710
Units	Cts/S	Cts/S
Avg	**54988.**	**13253.**
Stddev	154.	21.
%RSD	.27975	.16105
#1	55159.	13248.
#2	54861.	13276.
#3	54944.	13234.

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICV002 Acquired: 3/5/2025 15:23:45 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.017953**	**1.086542**	**1.008888**	**.9491856**	**.9021604**	**2.331069**
Stddev	.000302	.012682	.001857	.0023774	.0021723	.004856
%RSD	.0296520	1.167197	.1840815	.2504663	.2407828	.2083149
#1	1.017775	1.097598	1.010394	.9497503	.9036895	2.327307
#2	1.018301	1.072698	1.006813	.9465768	.8996739	2.329349
#3	1.017782	1.089331	1.009456	.9512299	.9031178	2.336551

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4807985**	**.5286550**	**.5001740**	**9.204995**	**.5630205**	**.5069390**
Stddev	.0037186	.0003526	.0007154	.018494	.0010046	.0006083
%RSD	.7734127	.0667036	.1430367	.2009080	.1784366	.1199941
#1	.4823905	.5285920	.5000693	9.211440	.5624709	.5073811
#2	.4765490	.5290348	.4995166	9.184142	.5624106	.5062452
#3	.4834560	.5283380	.5009360	9.219404	.5641801	.5071906

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5289641**	**9.647678**	**.4981502**	**6.164677**	**.5148806**	**.2387577**
Stddev	.0009708	.034354	.0010644	.011875	.0005245	.0003674
%RSD	.1835368	.3560871	.2136651	.1926219	.1018765	.1538629
#1	.5278630	9.631789	.4974997	6.177129	.5148910	.2384256
#2	.5293324	9.624146	.4975725	6.153479	.5153998	.2391523
#3	.5296969	9.687101	.4993786	6.163425	.5143509	.2386953

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.912988**	**.5260871**	**1.010611**	**9.403473**	F **.0024426**	F **.0420760**
Stddev	.153377	.0024421	.006708	.019476	.0015042	.0009903
%RSD	1.547229	.4642076	.6637598	.2071157	61.57934	2.353696
#1	9.974070	.5285798	1.007469	9.383179	.0013465	.0411826
#2	9.738481	.5236989	1.006051	9.405226	.0018239	.0419045
#3	10.02641	.5259825	1.018313	9.422013	.0041575	.0431409

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICV002 Acquired: 3/5/2025 15:23:45 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV002 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.000677	F .0058548	F .0058681	F -.001254	F -.001493	F -.001128
Stddev	.000347	.0011948	.0038393	.000179	.000534	.000267
%RSD	51.23241	20.40756	65.42654	14.27127	35.78232	23.71303
#1	-.000831	.0053044	.0083577	-.001332	-.000978	-.000821
#2	-.000280	.0050343	.0078000	-.001380	-.002045	-.001250
#3	-.000921	.0072256	.0014466	-.001049	-.001457	-.001313

Elem	Sr4077
Units	ppm
Avg	F .0012535
Stddev	.0000106
%RSD	.8475435
#1	.0012636
#2	.0012545
#3	.0012424

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3456.797	71653.18	14659.94	3058.027	4621.188
Stddev	3.309	144.95	47.84	10.181	2.015
%RSD	.0957328	.2022974	.3263640	.3329344	.0435955
#1	3454.758	71795.16	14685.54	3065.544	4620.226
#2	3460.615	71505.43	14604.74	3046.441	4623.503
#3	3455.018	71658.95	14689.54	3062.097	4619.834

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICB002 Acquired: 3/5/2025 15:27:41 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0023455**	**.0012899**	**.0000739**	**-.000190**	**.0006203**	**-.000007**	**.0001446**
Stddev	.0013807	.0013212	.0002347	.001151	.0005778	.003280	.0005091
%RSD	58.86803	102.4197	317.4901	605.2975	93.14868	44624.44	352.1234
#1	.0007604	.0025598	.0002091	-.000300	.0001634	.003689	.0007271
#2	.0029896	.0013873	.0002097	.001012	.0004276	-.002572	-.000216
#3	.0032864	-.000077	-.000197	-.001283	.0012697	-.001139	-.000078

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000284**	**.0000097**	**.0031356**	**-.000228**	**.0000161**	**-.000681**	**-.002619**
Stddev	.0000632	.0000541	.0016914	.000175	.0002478	.000725	.007683
%RSD	222.9256	558.5520	53.93986	76.99400	1543.217	106.3826	293.3161
#1	.0000161	.0000465	.0023221	-.000425	.0002705	-.000959	-.011480
#2	.0000968	-.000052	.0050801	-.000088	.0000022	-.001226	.002202
#3	-.000028	.000035	.0020048	-.000171	-.000225	.000141	.001419

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000145**	**.0030339**	**-.000158**	**.0001146**	**-.120899**	**-.001057**	**-.000642**
Stddev	.000165	.0077733	.000417	.0001712	.114820	.001605	.000834
%RSD	114.1274	256.2134	264.6636	149.4758	94.97195	151.9176	129.9549
#1	-.000045	.0009689	.000316	.0002746	-.236666	-.001008	-.000399
#2	-.000335	-.003498	-.000318	-.000066	-.007051	.000524	-.001570
#3	-.000053	.011631	-.000471	.000135	-.118979	-.002686	.000044

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.037758**	**.0006146**	**-.000196**	**-.000259**	**.0007855**	**.0040497**	**-.000139**
Stddev	.051227	.0012459	.000705	.000306	.0068893	.0036342	.000477
%RSD	135.6719	202.7195	359.3060	118.4382	877.1023	89.73953	341.8176
#1	-.068324	-.000366	.000306	-.000339	.0058039	-.000140	-.000383
#2	-.066333	.000194	.000108	.000080	.0036218	.005947	-.000445
#3	.021383	.002016	-.001002	-.000516	-.007069	.006343	.000410

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICB002 Acquired: 3/5/2025 15:27:41 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB002 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.000497**	**-.001340**	**.0000823**
Stddev	.000707	.000689	.0000492
%RSD	142.1388	51.44778	59.75905
#1	-.001053	-.001943	.0000273
#2	-.000737	-.001489	.0000977
#3	.000298	-.000588	.0001220

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3492.602**	**73305.40**	**14514.43**	**3134.409**	**4798.352**
Stddev	2.514	107.94	77.58	9.393	2.730
%RSD	.0719798	.1472513	.5344686	.2996771	.0568872
#1	3491.346	73202.91	14439.10	3141.723	4796.566
#2	3490.963	73418.07	14510.12	3123.816	4796.995
#3	3495.496	73295.22	14594.07	3137.688	4801.494

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICSA002 Acquired: 3/5/2025 15:31:50 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0037769**	**-.005160**	**.0023437**	**.0119705**	**.0065746**	**216.7620**
Stddev	.0017425	.002725	.0012897	.0022582	.0012914	1.3997
%RSD	46.13609	52.80683	55.02873	18.86514	19.64210	.6457502
#1	.0023042	-.006995	.0022007	.0132251	.0071551	216.2091
#2	.0057006	-.002029	.0011315	.0093635	.0050948	215.7232
#3	.0033260	-.006455	.0036990	.0133228	.0074738	218.3538

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0070671**	**-.000190**	**.0001556**	**235.2950**	**.0526549**	**.0014303**
Stddev	.0005195	.000107	.0000934	.3086	.0005767	.0001354
%RSD	7.350972	56.44135	60.07342	.1311477	1.095215	9.463462
#1	.0075956	-.000176	.0001776	235.6133	.0526214	.0013404
#2	.0065571	-.000303	.0002361	234.9972	.0520958	.0015859
#3	.0070485	-.000090	.0000531	235.2745	.0532477	.0013644

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002539**	**96.77429**	**.0111126**	**229.3974**	**.0046920**	**-.002315**
Stddev	.000874	.07229	.0001348	.1748	.0000400	.000391
%RSD	34.43164	.0747006	1.212603	.0762120	.8533053	16.90265
#1	-.002113	96.81936	.0111819	229.3667	.0047202	-.002583
#2	-.001960	96.69091	.0111986	229.5856	.0046461	-.002496
#3	-.003544	96.81260	.0109573	229.2400	.0047096	-.001866

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0813398**	**-.008235**	**-.007386**	**-.199845**	**.0022862**	F **.4066362**
Stddev	.3353192	.001542	.000530	.048426	.0018276	.0006211
%RSD	412.2450	18.72695	7.181652	24.23201	79.94248	.1527367
#1	-.303051	-.009647	-.007926	-.197807	.0037060	.4073522
#2	.313805	-.006589	-.007367	-.152469	.0002241	.4063137
#3	.233266	-.008470	-.006865	-.249257	.0029284	.4062426

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICSA002 Acquired: 3/5/2025 15:31:50 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA002 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004898	.0207503	.0020592	-.004832	-.002715	.0042300
Stddev	.0002493	.0058034	.0047185	.001746	.000754	.0013494
%RSD	50.90827	27.96780	229.1367	36.14132	27.77528	31.89993
#1	.0003543	.0140491	-.002111	-.005601	-.001912	.0032855
#2	.0003375	.0241004	.001108	-.002833	-.003408	.0057755
#3	.0007775	.0241013	.007181	-.006062	-.002826	.0036291

Elem	Sr4077
Units	ppm
Avg	F .1000162
Stddev	.0002865
%RSD	.2864051
#1	.0999714
#2	.0997547
#3	.1003223

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3116.633	64511.51	14132.27	2803.519	3792.651
Stddev	6.132	117.24	12.88	11.808	12.712
%RSD	.1967579	.1817411	.0911464	.4211945	.3351806
#1	3115.885	64376.18	14131.06	2800.939	3794.881
#2	3123.105	64575.76	14120.03	2793.214	3804.101
#3	3110.909	64582.58	14145.71	2816.404	3778.971

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICSAB002 Acquired: 3/5/2025 15:36:04 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0970928**	**.0937214**	**.0523289**	**.0548482**	**.5439589**	**221.7099**
Stddev	.0027207	.0024679	.0023631	.0023280	.0015348	2.0776
%RSD	2.802193	2.633264	4.515801	4.244375	.2821567	.9370922
#1	.0949170	.0922677	.0546140	.0535984	.5428292	221.8329
#2	.0962181	.0923256	.0524777	.0534121	.5457063	219.5735
#3	.1001433	.0965709	.0498949	.0575342	.5433411	223.7233

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4948349**	**.5086568**	**.9925617**	**234.4833**	**.5912165**	**.4988430**
Stddev	.0016746	.0002494	.0002633	.5009	.0013427	.0004543
%RSD	.3384211	.0490360	.0265276	.2136152	.2271131	.0910644
#1	.4962732	.5089108	.9926510	234.3982	.5926755	.4983356
#2	.4952349	.5084122	.9927687	235.0213	.5900326	.4989813
#3	.4929964	.5086473	.9922654	234.0305	.5909414	.4992120

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5026221**	**97.38144**	**.5189971**	**229.7069**	**1.002110**	**.1983804**
Stddev	.0020021	.11720	.0019738	.4954	.001788	.0008797
%RSD	.3983287	.1203492	.3803189	.2156867	.1783898	.4434233
#1	.5016833	97.29831	.5168131	229.2949	1.000123	.1973919
#2	.5012620	97.51548	.5206536	230.2567	1.003588	.1990771
#3	.5049211	97.33053	.5195246	229.5691	1.002619	.1986723

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.046131**	**.4889379**	**.9799523**	**-.526446**	**.0059862**	F **1.414832**
Stddev	.275860	.0028754	.0069805	.070767	.0022281	.000294
%RSD	597.9990	.5880983	.7123331	13.44244	37.22017	.0207789
#1	-.363481	.4886657	.9719628	-.483572	.0043693	1.414728
#2	.088767	.4919397	.9848711	-.608127	.0050615	1.415164
#3	.136322	.4862081	.9830229	-.487639	.0085277	1.414605

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: ICSAB002 Acquired: 3/5/2025 15:36:04 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB002 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.062896	.0298267	F .8886964	F 1.109835	F 1.127515	.0039716
Stddev	.000980	.0069715	.0048500	.002480	.005326	.0007213
%RSD	.0921706	23.37323	.5457448	.2234846	.4723615	18.16199
#1	1.062119	.0319316	.8930165	1.109048	1.127032	.0044086
#2	1.063997	.0355032	.8896228	1.112613	1.133066	.0043671
#3	1.062572	.0220454	.8834501	1.107844	1.122447	.0031390

Elem	Sr4077
Units	ppm
Avg	F .1020303
Stddev	.0005256
%RSD	.5151538
#1	.1014312
#2	.1022457
#3	.1024140

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3106.012	63610.71	14105.34	2757.996	3803.729
Stddev	5.096	114.50	23.60	9.362	1.847
%RSD	.1640579	.1799936	.1673115	.3394599	.0485446
#1	3108.530	63594.35	14081.89	2768.415	3804.769
#2	3109.359	63505.26	14105.05	2750.289	3804.821
#3	3100.148	63732.50	14129.09	2755.284	3801.597

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCV004 Acquired: 3/5/2025 15:40:06 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV004 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.784442**	**4.641491**	**24.13149**	**4.761084**	**4.810445**	**380.6601**
Stddev	.020995	.031628	.04448	.014358	.009961	2.8918
%RSD	.4388171	.6814159	.1843163	.3015662	.2070658	.7596815
#1	4.797801	4.630669	24.09118	4.770430	4.818028	383.9959
#2	4.760243	4.616696	24.12410	4.744552	4.799164	379.1222
#3	4.795283	4.677110	24.17921	4.768270	4.814142	378.8621

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.20924**	**.4869148**	**2.448287**	**390.0573**	**15.34238**	**2.450297**
Stddev	.07998	.0023597	.005940	1.3188	.02696	.003710
%RSD	.7833857	.4846292	.2426127	.3381127	.1757062	.1514153
#1	10.28709	.4844557	2.442874	390.8653	15.36715	2.449820
#2	10.21332	.4871280	2.447344	390.7711	15.34631	2.446848
#3	10.12729	.4891607	2.454641	388.5354	15.31367	2.454222

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.97889**	**394.8225**	**15.28973**	**389.6361**	**2.450685**	**1.264723**
Stddev	.02300	2.1897	.08009	1.9133	.004167	.001759
%RSD	.1535201	.5546055	.5238236	.4910561	.1700141	.1391164
#1	14.99500	397.1993	15.37023	391.5205	2.447937	1.265951
#2	14.98912	394.3812	15.28890	389.6928	2.448639	1.265510
#3	14.95256	392.8871	15.21005	387.6951	2.455479	1.262707

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**389.8428**	**2.441783**	**15.38187**	**157.1729**	**4.876232**	F **5.869769**
Stddev	.3987	.005445	.07391	1.1758	.017942	.011335
%RSD	.1022643	.2229978	.4804830	.7480933	.3679441	.1931127
#1	389.7882	2.440857	15.46589	158.1308	4.856868	5.856905
#2	390.2659	2.436859	15.35281	157.5272	4.879535	5.874111
#3	389.4742	2.447631	15.32691	155.8607	4.892293	5.878292

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCV004 Acquired: 3/5/2025 15:40:06 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV004 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.780271**	**4.911754**	**4.882538**	**4.874401**	**4.909130**	**5.195051**
Stddev	.017082	.018034	.009394	.018444	.009159	.040343
%RSD	.3573417	.3671571	.1923961	.3783923	.1865727	.7765665
#1	4.778399	4.921162	4.872036	4.863618	4.912708	5.240604
#2	4.764203	4.890962	4.885441	4.863887	4.898722	5.180714
#3	4.798212	4.923139	4.890138	4.895698	4.915960	5.163834

Elem	Sr4077
Units	ppm
Avg	**5.189237**
Stddev	.036102
%RSD	.6957182
#1	5.172491
#2	5.230672
#3	5.164549

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2723.741**	**59670.57**	**13828.85**	**2531.550**	**3358.568**
Stddev	4.388	192.01	44.48	4.727	2.422
%RSD	.1610942	.3217868	.3216807	.1867126	.0721185
#1	2722.676	59519.32	13880.18	2526.092	3360.579
#2	2728.563	59605.79	13804.87	2534.259	3359.248
#3	2719.983	59886.59	13801.50	2534.299	3355.879

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCB004 Acquired: 3/5/2025 15:44:24 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB004 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006488**	**.0017241**	**.0007093**	**-.001589**	**-.000045**	**-.003132**	**.0001028**
Stddev	.0031932	.0018801	.0002931	.000772	.001386	.004052	.0006257
%RSD	492.1532	109.0488	41.32083	48.54906	3087.243	129.3403	608.9826
#1	.0043269	.0031516	.0009966	-.001640	-.001586	-.000412	-.000424
#2	-.001414	.0024269	.0007204	-.000794	.001099	-.001196	.000794
#3	-.000966	-.000406	.0004108	-.002335	.000353	-.007789	-.000062

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000007**	**.0000575**	**-.000119**	**.0002269**	**.0001274**	**.0008159**	**.0031150**
Stddev	.000015	.0000436	.005708	.0000386	.0002155	.0018033	.0027241
%RSD	217.7650	75.91330	4808.310	17.01284	169.2309	221.0133	87.45128
#1	-.000010	.0000976	.006148	.0001908	.0003701	.0028039	.0043694
#2	-.000019	.0000110	-.005022	.0002676	-.000041	-.000715	.0049859
#3	.000009	.0000638	-.001482	.0002225	.000053	.000358	-.000010

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000092**	**.0091592**	**-.000222**	**.0003308**	**-.051490**	**-.001026**	**-.001720**
Stddev	.000075	.0044629	.000415	.0002619	.385934	.001164	.000892
%RSD	80.94844	48.72586	186.8259	79.14500	749.5250	113.4907	51.83480
#1	-.000156	.0140807	-.000090	.0000444	.012656	.000236	-.002116
#2	-.000010	.0053749	-.000687	.0005579	.298351	-.001254	-.000699
#3	-.000111	.0080221	.000110	.0003902	-.465478	-.002059	-.002346

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.082181**	**-.000686**	**.0045131**	**.0002714**	**.0029328**	**.0075030**	**-.000719**
Stddev	.010165	.002064	.0003145	.0000734	.0012846	.0021582	.000555
%RSD	12.36947	300.7973	6.969038	27.05664	43.80079	28.76415	77.21107
#1	-.093282	-.001878	.0047860	.0002325	.0015394	.0071018	-.000287
#2	-.073326	-.001879	.0045843	.0002255	.0031891	.0055736	-.000525
#3	-.079936	.001697	.0041691	.0003561	.0040699	.0098336	-.001346

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCB004 Acquired: 3/5/2025 15:44:24 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB004 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0002575	-.001033	.0001221
Stddev	.0002384	.001074	.0000286
%RSD	92.55814	103.9983	23.42398
#1	-.000009	-.002247	.0001117
#2	.000333	-.000645	.0001545
#3	.000449	-.000206	.0001002

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3499.564	72694.89	14540.80	3128.837	4801.282
Stddev	2.729	99.51	84.02	9.197	2.452
%RSD	.0779802	.1368905	.5778507	.2939500	.0510615
#1	3496.413	72777.09	14571.01	3123.852	4800.091
#2	3501.113	72723.33	14605.54	3123.209	4799.654
#3	3501.166	72584.26	14445.85	3139.451	4804.102

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: PB166911TB Acquired: 3/5/2025 15:48:33 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LEB911 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019726	-.000109	-.000209	-.002614	.0002936	-.003387	.0002611
Stddev	.0021024	.001631	.000588	.000956	.0005332	.002251	.0005390
%RSD	106.5826	1491.048	281.8289	36.58403	181.6032	66.45071	206.4112
#1	.0031569	-.001913	.000291	-.001521	-.000223	-.000797	-.000100
#2	.0032156	.001260	-.000856	-.003023	.000842	-.004867	.000003
#3	-.000455	.000326	-.000061	-.003298	.000261	-.004498	.000881

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000252	.0000159	-.002212	.0000486	.0001025	-.000328	.0011851
Stddev	.0000247	.0001031	.006534	.0000482	.0002280	.000858	.0025235
%RSD	97.80693	649.9610	295.4101	99.22612	222.4177	261.5241	212.9372
#1	.0000207	.0001321	-.007065	-.000007	.0003595	.000386	-.001183
#2	.0000518	-.000020	-.004787	.000075	.0000233	-.001279	.003839
#3	.0000031	-.000065	.005217	.000078	-.000075	-.000090	.000899

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000025	-.001154	-.000076	-.000017	.0550964	-.000656	-.002014
Stddev	.000085	.011258	.000246	.000079	.1653868	.001828	.000932
%RSD	343.0391	975.8393	324.4326	467.0727	300.1772	278.7441	46.30007
#1	.000040	-.013185	.000143	-.000054	.0424088	-.000784	-.002429
#2	.000007	.000600	-.000028	.000074	.2264616	.001233	-.000946
#3	-.000121	.009124	-.000343	-.000071	-.103581	-.002416	-.002667

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.047515	-.000501	.0015069	-.000252	.0014522	.0023354	-.000240
Stddev	.097894	.000784	.0004622	.000191	.0047465	.0044635	.000638
%RSD	206.0282	156.3385	30.67047	75.96686	326.8378	191.1229	265.6920
#1	-.113513	.000393	.0019752	-.000096	.0059982	.0020430	-.000261
#2	-.093991	-.000827	.0014945	-.000195	-.003472	-.001975	-.000868
#3	.064960	-.001070	.0010511	-.000466	.001831	.006938	.000408

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: PB166911TB Acquired: 3/5/2025 15:48:33 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LEB911 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.000149**	**-.001944**	**.0000570**
Stddev	.000189	.000815	.0000371
%RSD	126.8733	41.93608	65.08263
#1	.000043	-.001014	.0000792
#2	-.000334	-.002534	.0000142
#3	-.000155	-.002284	.0000777

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3528.898**	**72353.98**	**14455.08**	**3109.866**	**4875.918**
Stddev	2.721	1560.10	51.73	64.996	2.611
%RSD	.0771147	2.156202	.3578875	2.090002	.0535590
#1	3531.967	73483.77	14402.33	3156.281	4872.981
#2	3526.780	73004.24	14457.17	3137.733	4877.977
#3	3527.947	70573.94	14505.73	3035.582	4876.797

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: PB166912TB Acquired: 3/5/2025 15:52:42 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LEB912 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017705	.0001682	.0002583	.0005032	-.000538	-.007545	-.001126
Stddev	.0005322	.0020328	.0016828	.0020435	.001282	.007038	.000245
%RSD	30.06053	1208.395	651.4933	406.0782	238.3101	93.29172	21.75310
#1	.0014162	.0024258	-.001525	-.001809	.000932	.000577	-.001112
#2	.0015128	-.001517	.000480	.002067	-.001424	-.011343	-.000888
#3	.0023825	-.000404	.001819	.001252	-.001122	-.011868	-.001378

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000055	-.000040	-.003607	-.000109	.0000820	-.001436	-.004265
Stddev	.000111	.000033	.003852	.000438	.0000727	.000653	.006640
%RSD	202.6555	83.06878	106.7916	402.5628	88.68721	45.47762	155.6919
#1	-.000181	-.000075	-.003632	-.000431	.0000315	-.000984	-.008576
#2	-.000012	-.000008	.000257	.000389	.0000492	-.002185	-.007602
#3	.000029	-.000037	-.007447	-.000284	.0001654	-.001140	.003382

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000326	-.004335	.0001077	.0002317	-.062402	-.002289	-.001585
Stddev	.000094	.005494	.0002746	.0001581	.287011	.001335	.000783
%RSD	28.69953	126.7508	255.0361	68.23532	459.9370	58.33410	49.39345
#1	-.000384	.001914	-.000194	.0001971	-.377280	-.003697	-.002352
#2	-.000376	-.006509	.000175	.0000937	.005515	-.001040	-.001614
#3	-.000218	-.008409	.000343	.0004042	.184559	-.002130	-.000787

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.188130	-.001240	-.000006	-.000094	-.000954	.0038213	.0000175
Stddev	.029555	.001803	.000227	.000221	.003195	.0020139	.0005615
%RSD	15.70974	145.4054	4102.111	234.8228	334.7077	52.70214	3205.895
#1	-.177280	.000575	-.000216	.000041	-.003967	.0015929	-.000605
#2	-.165534	-.001264	-.000036	.000026	-.001291	.0055113	.000486
#3	-.221577	-.003032	.000236	-.000350	.002395	.0043597	.000172

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: PB166912TB Acquired: 3/5/2025 15:52:42 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LEB912 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0001620	-.002692	.0000534
Stddev	.0005198	.000783	.0000579
%RSD	320.8630	29.09679	108.5935
#1	-.000154	-.001872	.0000523
#2	-.000122	-.002773	.0001118
#3	.000762	-.003432	-.000004

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3476.097	73491.91	14250.39	3166.529	4771.338
Stddev	1.456	188.35	41.18	16.296	6.342
%RSD	.0418739	.2562863	.2889951	.5146447	.1329261
#1	3474.507	73319.15	14206.69	3149.233	4764.021
#2	3476.418	73692.71	14288.48	3181.597	4775.264
#3	3477.365	73463.87	14256.02	3168.756	4774.729

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: PB166913TB Acquired: 3/5/2025 15:56:52 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LEB913 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015733**	**.0016516**	**-.000163**	**.0006842**	**.0011148**	**-.007052**	**-.000822**
Stddev	.0017023	.0005766	.000732	.0035988	.0009650	.008257	.000619
%RSD	108.1973	34.91364	450.4731	526.0124	86.56365	117.0951	75.27620
#1	-.000325	.0015106	-.000696	-.000388	.0000008	-.009879	-.000205
#2	.002083	.0011585	.000672	-.002256	.0016933	.002248	-.000819
#3	.002963	.0022856	-.000464	.004697	.0016505	-.013523	-.001442

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000022**	**-.000068**	**-.002264**	**-.000297**	**.0001351**	**-.000690**	**-.001735**
Stddev	.000048	.000102	.005638	.000040	.0000502	.001520	.001998
%RSD	219.6244	150.3906	249.0301	13.57672	37.17694	220.2424	115.1692
#1	-.000024	-.000010	.001381	-.000250	.0001930	-.000976	-.003488
#2	-.000068	-.000185	.000584	-.000322	.0001088	-.002048	-.002158
#3	.000027	-.000008	-.008758	-.000318	.0001035	.000953	.000441

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000266**	**-.003268**	**-.000177**	**.0002585**	**-.143464**	**-.001718**	**-.000884**
Stddev	.0001613	.014129	.000154	.0000440	.059492	.000707	.000996
%RSD	607.0844	432.3599	87.18714	17.02657	41.46830	41.17000	112.6261
#1	-.000098	.006736	-.000169	.0002624	-.204794	-.002304	-.000050
#2	-.000031	-.019431	-.000027	.0003004	-.085999	-.001918	-.001986
#3	.000209	.002892	-.000334	.0002127	-.139597	-.000932	-.000616

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.180834**	**.0005044**	**-.001140**	**-.000013**	**.0015188**	**.0046431**	**-.000776**
Stddev	.035866	.0015649	.000817	.000035	.0018012	.0013216	.000584
%RSD	19.83344	310.2498	71.69034	278.6267	118.5903	28.46324	75.31413
#1	-.205985	.0014017	-.000809	-.000038	.0007528	.0031423	-.000798
#2	-.196752	.0014140	-.000540	-.000027	.0035764	.0051545	-.000181
#3	-.139764	-.001303	-.002071	.000028	.0002273	.0056326	-.001349

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: PB166913TB Acquired: 3/5/2025 15:56:52 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LEB913 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0004045	-.002391	.0000582
Stddev	.0008019	.000860	.0000306
%RSD	198.2656	35.94970	52.56419
#1	.0009549	-.001403	.0000789
#2	.0007741	-.002801	.0000727
#3	-.000516	-.002969	.0000231

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3466.514	73025.54	14596.48	3140.256	4773.655
Stddev	7.658	218.36	49.82	9.863	13.895
%RSD	.2209187	.2990137	.3413191	.3140701	.2910725
#1	3470.826	72774.96	14569.61	3130.285	4789.400
#2	3471.044	73175.05	14653.97	3140.478	4768.457
#3	3457.672	73126.61	14565.86	3150.006	4763.109

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-14 Acquired: 3/5/2025 16:01:00 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F9 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0014481**	**.0007229**	**-.000021**	**-.002073**	**-.000459**	**.0096734**
Stddev	.0010202	.0007156	.001436	.002465	.000585	.0060633
%RSD	70.44972	98.98166	6911.403	118.9109	127.4531	62.67992
#1	.0005369	.0005336	-.000429	-.004434	-.000185	.0108163
#2	.0025503	.0001211	-.001209	-.002270	-.000061	.0031200
#3	.0012571	.0015142	.001576	.000485	-.001130	.0150838

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1982158**	**.0000468**	**-.000017**	**11.32541**	**-.000507**	**.0007791**
Stddev	.0006610	.0000443	.000012	.02356	.000163	.0002100
%RSD	.3334862	94.53659	75.70895	.2079986	32.08177	26.95777
#1	.1989403	.0000303	-.000003	11.34705	-.000443	.0008282
#2	.1976455	.0000970	-.000028	11.30031	-.000691	.0009603
#3	.1980616	.0000132	-.000019	11.32886	-.000386	.0005489

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0014331**	**.0162522**	**.0622093**	**2.771226**	**.0020774**	**.0003846**
Stddev	.0018823	.0009852	.0003787	.003962	.0002238	.0002382
%RSD	131.3483	6.062030	.6088053	.1429766	10.77404	61.94673
#1	-.000737	.0173256	.0621046	2.770609	.0019620	.0005771
#2	.002621	.0153892	.0618938	2.775460	.0019348	.0004585
#3	.002416	.0160417	.0626293	2.767608	.0023353	.0001182

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.309943**	**-.001820**	**.0962680**	**-.894073**	**.0053961**	**.0963191**
Stddev	.018796	.000310	.0004095	.028756	.0014908	.0004489
%RSD	.4360972	17.04341	.4253876	3.216262	27.62680	.4660789
#1	4.293156	-.002176	.0957957	-.917240	.0070589	.0958019
#2	4.306424	-.001615	.0964854	-.903089	.0041790	.0965478
#3	4.330250	-.001668	.0965231	-.861890	.0049504	.0966077

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-14 Acquired: 3/5/2025 16:01:00 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F9 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000058**	F **10.57786**	**5.559839**	**-.002259**	**-.000207**	**-.001979**
Stddev	.000102	.03208	.010938	.000510	.000416	.001135
%RSD	175.4427	.3032916	.1967346	22.58701	200.5333	57.33433
#1	.000032	10.61295	5.554035	-.002848	.000091	-.001126
#2	-.000169	10.55003	5.572456	-.001942	-.000683	-.003266
#3	-.000037	10.57060	5.553027	-.001988	-.000030	-.001544

Elem	Sr4077
Units	ppm
Avg	**.0847194**
Stddev	.0002564
%RSD	.3026866
#1	.0844985
#2	.0846590
#3	.0850006

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3549.761**	**74983.73**	**15074.61**	**3227.919**	**4870.396**
Stddev	3.985	163.50	45.73	9.464	12.059
%RSD	.1122588	.2180409	.3033626	.2931887	.2475973
#1	3553.864	74815.48	15044.17	3235.901	4869.219
#2	3545.906	75142.01	15052.46	3230.393	4858.968
#3	3549.513	74993.71	15127.20	3217.464	4883.000

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-15 Acquired: 3/5/2025 16:05:06 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G0 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003819**	**-.000207**	**-.000795**	**.0011995**	**-.000263**	**.0042347**
Stddev	.0037596	.000160	.002082	.0020620	.000890	.0077350
%RSD	984.4946	77.09362	261.7956	171.9019	338.7729	182.6596
#1	-.003944	-.000029	-.001303	.0015596	-.000340	.0056860
#2	.002228	-.000255	.001494	.0030579	-.001112	.0111412
#3	.002861	-.000337	-.002577	-.001019	.000664	-.004123

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1723676**	**.0000610**	**.0001554**	**9.294944**	**-.000760**	**.0120175**
Stddev	.0003011	.0000299	.0000209	.027078	.000059	.0002723
%RSD	.1746798	49.07916	13.47383	.2913192	7.765470	2.266321
#1	.1722017	.0000581	.0001796	9.278812	-.000813	.0118910
#2	.1721859	.0000922	.0001433	9.279814	-.000769	.0118314
#3	.1727151	.0000326	.0001434	9.326205	-.000696	.0123301

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013095**	**.0192684**	**.3265044**	**6.310364**	**.0093566**	**.0002157**
Stddev	.0011794	.0036841	.0021474	.012687	.0002782	.0005568
%RSD	90.06244	19.11965	.6576889	.2010499	2.973485	258.1539
#1	.0020383	.0194623	.3257143	6.324907	.0092306	-.000392
#2	-.000051	.0154913	.3248639	6.301568	.0096755	.000339
#3	.001942	.0228518	.3289349	6.304615	.0091636	.000701

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.574548**	**-.002265**	**.0984608**	**2.688438**	**.0047328**	**.0861580**
Stddev	.104111	.002139	.0011447	.025978	.0013708	.0012354
%RSD	2.275881	94.43771	1.162562	.9662880	28.96477	1.433900
#1	4.686780	-.000531	.0979150	2.681476	.0033511	.0875433
#2	4.481122	-.001608	.0976913	2.666650	.0060925	.0857604
#3	4.555741	-.004656	.0997762	2.717187	.0047547	.0851703

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-15 Acquired: 3/5/2025 16:05:06 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G0 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004591	F 16.16807	7.147419	-.002224	-.000530	.0036062
Stddev	.0001850	.04719	.017477	.000059	.000496	.0003276
%RSD	40.28467	.2918624	.2445181	2.671121	93.54980	9.083382
#1	.0002556	16.13795	7.158873	-.002234	-.001102	.0032729
#2	.0005048	16.14381	7.156081	-.002278	-.000235	.0039277
#3	.0006169	16.22245	7.127303	-.002160	-.000253	.0036180

Elem	Sr4077
Units	ppm
Avg	.0709716
Stddev	.0003536
%RSD	.4981733
#1	.0708601
#2	.0706872
#3	.0713675

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3521.585	73263.33	15036.03	3157.909	4807.920
Stddev	4.121	130.57	57.33	4.554	7.897
%RSD	.1170134	.1782193	.3812635	.1442140	.1642556
#1	3524.447	73125.70	14979.76	3160.349	4812.964
#2	3523.446	73385.46	15033.99	3160.722	4811.977
#3	3516.862	73278.82	15094.36	3152.654	4798.819

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-16 Acquired: 3/5/2025 16:09:11 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000145**	**.0000124**	**.0016334**	**.0005239**	**.0013184**	**.0223487**
Stddev	.000193	.0047786	.0008242	.0021936	.0016804	.0021225
%RSD	132.5062	38556.03	50.45693	418.7094	127.4623	9.497353
#1	-.000359	.0002146	.0019136	.0030297	-.000473	.0227254
#2	.000014	-.004864	.0022810	-.000409	.001568	.0200631
#3	-.000091	.004687	.0007057	-.001049	.002860	.0242577

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2105119**	**.0000761**	**-.000022**	**28.27313**	**-.000857**	**.0001660**
Stddev	.0019965	.0000703	.000035	.12022	.000236	.0002188
%RSD	.9483827	92.36066	162.0800	.4251931	27.51948	131.7821
#1	.2094646	.0000613	-.000029	28.27412	-.000949	.0000494
#2	.2128141	.0000144	-.000052	28.39285	-.001034	.0000303
#3	.2092571	.0001526	.000017	28.15242	-.000589	.0004184

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011190**	**.1209693**	**.0168573**	**4.112027**	**.0006699**	**.0004437**
Stddev	.0012062	.0055828	.0002060	.004380	.0003860	.0002285
%RSD	107.8019	4.615030	1.222260	.1065226	57.62537	51.50126
#1	.0022629	.1212295	.0168191	4.110896	.0006965	.0006993
#2	-.000141	.1264174	.0170798	4.116863	.0010420	.0002592
#3	.001235	.1152610	.0166730	4.108324	.0002713	.0003726

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.145216**	**-.000495**	**.0453586**	**9.325681**	**.0041895**	**.0721348**
Stddev	.226997	.001471	.0015416	.036247	.0027947	.0007624
%RSD	3.693882	297.1083	3.398789	.3886845	66.70761	1.056929
#1	5.928119	-.002178	.0451475	9.343924	.0065666	.0714361
#2	6.126568	.000547	.0469950	9.349183	.0011109	.0720203
#3	6.380962	.000146	.0439334	9.283937	.0048910	.0729480

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-16 Acquired: 3/5/2025 16:09:11 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G1 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0358285	F 16.76881	2.119526	-.002181	.0051727	-.001312
Stddev	.0002476	.04082	.016478	.000367	.0005725	.000359
%RSD	.6909233	.2434284	.7774371	16.84935	11.06766	27.35967
#1	.0359106	16.81127	2.103268	-.002196	.0051526	-.001626
#2	.0360246	16.72986	2.119095	-.001806	.0057550	-.000921
#3	.0355504	16.76531	2.136216	-.002541	.0046105	-.001391

Elem	Sr4077
Units	ppm
Avg	.0978987
Stddev	.0004606
%RSD	.4705309
#1	.0981873
#2	.0981412
#3	.0973674

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3452.336	72678.26	14936.73	3141.445	4653.094
Stddev	6.907	166.47	76.44	11.455	1.575
%RSD	.2000605	.2290522	.5117578	.3646320	.0338569
#1	3460.220	72653.07	14993.60	3151.023	4654.118
#2	3447.354	72525.82	14966.76	3128.756	4653.884
#3	3449.433	72855.89	14849.84	3144.555	4651.280

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-17 Acquired: 3/5/2025 16:13:17 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008770	-.000986	.0004875	-.001742	-.000469	.0522927	.2059101
Stddev	.0017744	.000915	.0016659	.002740	.001687	.0077713	.0013098
%RSD	202.3379	92.83790	341.7374	157.3402	359.3985	14.86120	.6361014
#1	-.000484	-.000625	.0010383	.000815	-.001713	.0460348	.2072166
#2	.000231	-.002026	.0018082	-.001405	-.001147	.0609914	.2045970
#3	.002884	-.000306	-.001384	-.004635	.001451	.0498520	.2059168

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000810	.0000323	7.956813	-.000793	.0056559	-.000119	.0871925
Stddev	.0000285	.0000328	.033381	.000189	.0001368	.000820	.0053296
%RSD	35.21905	101.5413	.4195266	23.87928	2.418271	688.9936	6.112491
#1	.0001134	-.000000	7.967867	-.000600	.0055223	-.001066	.0843070
#2	.0000597	.000065	7.919307	-.000979	.0056498	.000376	.0839279
#3	.0000699	.000032	7.983265	-.000800	.0057956	.000332	.0933428

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5226066	4.216160	.0247420	.0002902	4.407702	-.001043	.0866572
Stddev	.0014694	.014071	.0000611	.0001246	.069874	.001143	.0006002
%RSD	.2811599	.3337472	.2471433	42.95233	1.585262	109.5804	.6926687
#1	.5239624	4.211872	.0247322	.0004309	4.406412	.000234	.0873502
#2	.5210453	4.204732	.0248074	.0002460	4.338483	-.001970	.0863244
#3	.5228120	4.231877	.0246863	.0001936	4.478212	-.001394	.0862971

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-1.81584	.0046932	.0945715	.0000575	9.597184	5.773860	-.001907
Stddev	.03030	.0004487	.0003919	.0000470	.011559	.026239	.000759
%RSD	1.668502	9.560036	.4144336	81.69143	.1204426	.4544398	39.81567
#1	-1.78355	.0042865	.0944537	.0001042	9.588113	5.802797	-.001066
#2	-1.84364	.0051745	.0942520	.0000102	9.610199	5.751617	-.002542
#3	-1.82033	.0046185	.0950088	.0000581	9.593240	5.767166	-.002115

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-17 Acquired: 3/5/2025 16:13:17 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G2 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0025560	.0012204	.0563580
Stddev	.0009932	.0005543	.0001731
%RSD	38.85638	45.41972	.3071111
#1	.0014975	.0018605	.0562648
#2	.0034675	.0009030	.0562515
#3	.0027029	.0008977	.0565577

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3502.471	72894.76	15065.44	3154.125	4825.467
Stddev	10.856	164.36	61.42	15.581	17.626
%RSD	.3099647	.2254691	.4076613	.4939908	.3652694
#1	3510.254	73039.19	15109.15	3172.112	4839.126
#2	3507.091	72929.16	14995.22	3145.492	4831.705
#3	3490.069	72715.92	15091.94	3144.771	4805.570

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-18 Acquired: 3/5/2025 16:17:23 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H9 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0027663**	**.0002609**	**.0020418**	**-.000212**	**.0001665**	**6.280752**
Stddev	.0023486	.0011389	.0013006	.000639	.0005777	.007938
%RSD	84.90333	436.5545	63.69994	301.6526	346.9438	.1263845
#1	.0000844	.0009016	.0007782	-.000661	.0001082	6.279518
#2	.0037579	.0009350	.0033765	-.000494	.0007711	6.289235
#3	.0044565	-.001054	.0019707	.000520	-.000380	6.273503

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2118234**	**.0001318**	**.0001271**	**16.24635**	**.0081491**	**.0029460**
Stddev	.0010177	.0000724	.0000308	.06762	.0000781	.0001364
%RSD	.4804375	54.92239	24.26492	.4162127	.9577699	4.631097
#1	.2117174	.0002130	.0001301	16.27285	.0080693	.0030296
#2	.2128899	.0000739	.0000948	16.29671	.0082252	.0030199
#3	.2108628	.0001085	.0001563	16.16949	.0081529	.0027886

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0458207**	**13.14169**	**.0340757**	**3.646024**	**.0177042**	**-.000470**
Stddev	.0021087	.05707	.0001706	.017875	.0004719	.000303
%RSD	4.602120	.4342440	.5007005	.4902668	2.665179	64.57147
#1	.0472081	13.15594	.0340882	3.628745	.0181801	-.000454
#2	.0433941	13.19028	.0338992	3.664441	.0172366	-.000174
#3	.0468599	13.07885	.0342398	3.644886	.0176958	-.000780

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.464915**	**.0135580**	**.1213216**	**-2.08672**	**.0909052**	**.3359927**
Stddev	.096740	.0012709	.0019587	.01682	.0006571	.0009389
%RSD	1.022096	9.373934	1.614495	.8061990	.7228466	.2794529
#1	9.500420	.0144152	.1211404	-2.06730	.0912290	.3358824
#2	9.538886	.0120979	.1194597	-2.09645	.0901491	.3351138
#3	9.355438	.0141610	.1233646	-2.09642	.0913376	.3369820

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-18 Acquired: 3/5/2025 16:17:23 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H9 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000060	F 11.80656	F 20.08820	-.001908	.0689182	.0003299
Stddev	.0001130	.01938	.06564	.000398	.0009508	.0004530
%RSD	1873.107	.1641410	.3267694	20.83576	1.379643	137.3428
#1	.0000012	11.78931	20.12787	-.001508	.0699682	.0000270
#2	-.000104	11.80285	20.01244	-.002303	.0686712	.0001119
#3	.000121	11.82753	20.12431	-.001915	.0681153	.0008507

Elem	Sr4077
Units	ppm
Avg	.0866197
Stddev	.0000910
%RSD	.1050514
#1	.0866522
#2	.0866899
#3	.0865169

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3488.390	72452.34	15133.48	3130.475	4736.137
Stddev	4.600	139.39	57.97	16.303	11.991
%RSD	.1318617	.1923836	.3830678	.5207855	.2531707
#1	3490.286	72292.87	15121.70	3139.925	4742.668
#2	3491.738	72550.94	15196.43	3139.850	4743.445
#3	3483.145	72513.21	15082.30	3111.650	4722.299

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-19 Acquired: 3/5/2025 16:21:27 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8J0 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0078214	.0002683	.0025126	.0009404	.0013531	2.585577
Stddev	.0013958	.0004701	.0007586	.0018408	.0007767	.014292
%RSD	17.84578	175.2220	30.19363	195.7543	57.40059	.5527583
#1	.0085297	-.000191	.0033158	.0022218	.0006743	2.569965
#2	.0062135	.000248	.0018082	-.001169	.0011850	2.588749
#3	.0087212	.000748	.0024138	.001768	.0022001	2.598016

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2388868	.0001473	.0001079	11.22501	.0031783	.0024455
Stddev	.0013904	.0000208	.0000276	.04872	.0001941	.0000618
%RSD	.5820161	14.11406	25.58770	.4340283	6.106783	2.525487
#1	.2386212	.0001526	.0000885	11.20019	.0030586	.0024195
#2	.2403908	.0001648	.0000958	11.28114	.0030741	.0025160
#3	.2376484	.0001243	.0001396	11.19369	.0034022	.0024011

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0122283	4.445778	.1277558	4.508342	.0047560	.0000747
Stddev	.0017812	.024575	.0008490	.009287	.0001969	.0001160
%RSD	14.56630	.5527716	.6645715	.2059898	4.139670	155.3095
#1	.0135277	4.423591	.1269954	4.497722	.0049672	.0000484
#2	.0101979	4.472193	.1286719	4.514940	.0045775	.0002016
#3	.0129594	4.441549	.1276001	4.512363	.0047233	-.000026

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.905939	.0115981	.2389384	-1.43159	1.546378	.2254010
Stddev	.146761	.0020516	.0027788	.04096	.004942	.0008691
%RSD	1.481543	17.68915	1.162962	2.861396	.3195687	.3855994
#1	10.05205	.0095842	.2401409	-1.46605	1.551808	.2260775
#2	9.75854	.0115246	.2357609	-1.44242	1.542145	.2257048
#3	9.90723	.0136855	.2409133	-1.38630	1.545182	.2244208

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-19 Acquired: 3/5/2025 16:21:27 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8J0 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029969	F 12.16589	4.901909	-.002963	.1106602	-.002624
Stddev	.0003047	.02050	.010091	.001012	.0011158	.000719
%RSD	10.16734	.1685240	.2058588	34.15526	1.008341	27.41514
#1	.0027184	12.18474	4.913495	-.004061	.1102172	-.003209
#2	.0029499	12.14406	4.895049	-.002760	.1119296	-.002843
#3	.0033223	12.16887	4.897182	-.002068	.1098340	-.001821

Elem	Sr4077
Units	ppm
Avg	.0763112
Stddev	.0004749
%RSD	.6223001
#1	.0759115
#2	.0768362
#3	.0761860

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3535.585	74271.48	14797.77	3183.770	4786.618
Stddev	4.270	160.76	48.88	7.092	5.649
%RSD	.1207612	.2164498	.3303494	.2227597	.1180178
#1	3530.844	74318.28	14769.50	3176.501	4784.001
#2	3539.128	74092.51	14854.22	3190.671	4793.101
#3	3536.783	74403.64	14769.59	3184.140	4782.752

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-20 Acquired: 3/5/2025 16:25:30 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8J1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013196**	**.0023577**	**.0000996**	**.0003504**	**.0010784**	**.0399204**
Stddev	.0039668	.0026892	.0003423	.0008227	.0007322	.0042643
%RSD	300.6062	114.0598	343.6504	234.7692	67.89503	10.68190
#1	.0058095	.0012711	.0001898	-.000451	.0011606	.0361836
#2	-.000141	.0003819	-.000279	.001192	.0017660	.0390118
#3	-.001710	.0054202	.000388	.000310	.0003086	.0445657

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1880731**	**.0001060**	**.0000294**	**9.087789**	**-.000760**	**.0068893**
Stddev	.0018387	.0000367	.0000207	.084589	.000130	.0002972
%RSD	.9776229	34.62895	70.46273	.9307967	17.05159	4.314386
#1	.1897405	.0001249	.0000511	9.166921	-.000895	.0069404
#2	.1883776	.0001294	.0000273	9.097809	-.000637	.0065698
#3	.1861012	.0000637	.0000098	8.998636	-.000747	.0071577

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011981**	**.0835628**	**.4044525**	**4.636337**	**.0081809**	**.0001870**
Stddev	.0007413	.0017888	.0018323	.029310	.0002722	.0002107
%RSD	61.87465	2.140663	.4530418	.6321890	3.327830	112.6837
#1	.0012843	.0842585	.4054078	4.656839	.0081313	.0002670
#2	.0018925	.0848992	.4056098	4.649405	.0084746	.0003459
#3	.0004174	.0815307	.4023399	4.602765	.0079369	-.000052

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.894538**	**.0009223**	**.0761843**	**-1.17473**	**.0050162**	**.0967618**
Stddev	.165168	.0016220	.0009782	.02993	.0013670	.0010375
%RSD	3.374536	175.8542	1.283946	2.548039	27.25254	1.072250
#1	5.072347	.0003520	.0758825	-1.17578	.0036785	.0959634
#2	4.745898	-.000337	.0772778	-1.20412	.0049592	.0963876
#3	4.865370	.002752	.0753926	-1.14429	.0064108	.0979346

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1106-20 Acquired: 3/5/2025 16:25:30 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8J1 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030081	F 11.38135	6.264019	-.002429	.0040992	-.000004
Stddev	.0002693	.01774	.025808	.000317	.0002974	.001309
%RSD	8.953754	.1558535	.4120057	13.03776	7.254626	31811.00
#1	.0029765	11.36197	6.293820	-.002081	.0042282	-.000951
#2	.0027559	11.38528	6.248982	-.002505	.0037591	.001489
#3	.0032918	11.39679	6.249257	-.002701	.0043102	-.000550

Elem	Sr4077
Units	ppm
Avg	.0600286
Stddev	.0002792
%RSD	.4650555
#1	.0601483
#2	.0602279
#3	.0597095

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3514.065	73845.43	15172.34	3176.375	4811.630
Stddev	9.299	282.94	36.64	5.374	11.840
%RSD	.2646222	.3831530	.2414836	.1691745	.2460621
#1	3521.734	73646.78	15187.10	3172.597	4819.440
#2	3516.738	73720.13	15199.30	3174.002	4817.442
#3	3503.722	74169.39	15130.63	3182.527	4798.007

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-01 Acquired: 3/5/2025 16:29:35 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0100188**	**-.000272**	**.0015647**	**-.000026**	**.0004417**	**1.717139**
Stddev	.0022199	.001898	.0005675	.001405	.0008612	.012314
%RSD	22.15697	696.5591	36.26884	5419.135	194.9676	.7171350
#1	.0121306	-.001541	.0021970	-.000186	.0007453	1.702960
#2	.0077047	-.001186	.0010993	.001452	-.000530	1.725149
#3	.0102212	.001910	.0013979	-.001344	.001110	1.723309

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2282163**	**.0001140**	**.0000069**	**7.191536**	**.0035814**	**.0030887**
Stddev	.0003739	.0000354	.0000101	.008829	.0003489	.0000726
%RSD	.1638466	31.06950	146.8325	.1227690	9.741992	2.349973
#1	.2285808	.0000743	-.000000	7.181655	.0031991	.0030089
#2	.2282343	.0001423	.000003	7.198651	.0038826	.0031508
#3	.2278336	.0001253	.000018	7.194301	.0036624	.0031064

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0132798**	**4.045941**	**.0864706**	**5.753338**	**.0089164**	**.0001313**
Stddev	.0014460	.007277	.0004333	.009697	.0002764	.0001321
%RSD	10.88839	.1798640	.5010581	.1685480	3.100186	100.6360
#1	.0126888	4.043967	.0859765	5.742251	.0087787	-.000002
#2	.0122230	4.039855	.0867855	5.757524	.0092346	.000133
#3	.0149277	4.054002	.0866499	5.760239	.0087359	.000262

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.884771**	**.0038472**	**.1956758**	**-2.19983**	**.1827427**	**.3312968**
Stddev	.196703	.0021334	.0012146	.02789	.0025561	.0031782
%RSD	2.857073	55.45352	.6207026	1.267891	1.398763	.9593283
#1	7.082394	.0043140	.1948129	-2.17532	.1856587	.3336300
#2	6.689001	.0015191	.1951498	-2.23018	.1816806	.3276770
#3	6.882918	.0057086	.1970647	-2.19400	.1808889	.3325835

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-01 Acquired: 3/5/2025 16:29:35 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004547	F 10.72400	6.281685	-.001521	.0389178	-.000635
Stddev	.0002505	.01266	.011634	.000343	.0008730	.001206
%RSD	55.08480	.1180137	.1852092	22.56855	2.243207	190.0246
#1	.0005141	10.71142	6.294591	-.001140	.0381057	.000640
#2	.0006701	10.72386	6.272003	-.001806	.0398411	-.000787
#3	.0001799	10.73673	6.278461	-.001618	.0388066	-.001757

Elem	Sr4077
Units	ppm
Avg	.0611160
Stddev	.0003467
%RSD	.5672495
#1	.0607167
#2	.0613404
#3	.0612908

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3529.689	73678.53	15218.21	3170.333	4844.082
Stddev	16.782	231.97	9.98	15.724	17.501
%RSD	.4754426	.3148414	.0655567	.4959837	.3612861
#1	3546.628	73895.82	15212.35	3170.608	4862.298
#2	3529.371	73705.54	15229.73	3185.918	4842.551
#3	3513.069	73434.24	15212.55	3154.473	4827.396

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-02 Acquired: 3/5/2025 16:33:38 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0096581**	**-.000266**	**.0019433**	**-.002915**	**.0003204**	**1.541497**
Stddev	.0031036	.000285	.0016550	.001915	.0003690	.007395
%RSD	32.13417	107.0287	85.16573	65.68648	115.1955	.4797133
#1	.0068115	.000046	.0013669	-.003669	.0000196	1.544983
#2	.0091961	-.000511	.0038094	-.000738	.0007321	1.546506
#3	.0129668	-.000334	.0006535	-.004338	.0002094	1.533004

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2310937**	**.0001144**	**-.000020**	**7.461494**	**.0030105**	**.0030499**
Stddev	.0002869	.0000606	.000046	.017646	.0002577	.0001190
%RSD	.1241429	53.04035	227.9979	.2364997	8.559130	3.903085
#1	.2313326	.0001683	.000023	7.443140	.0027751	.0031129
#2	.2307755	.0000487	-.000015	7.478335	.0032858	.0029126
#3	.2311730	.0001261	-.000069	7.463008	.0029707	.0031242

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0132454**	**4.020428**	**.0845938**	**5.889529**	**.0083648**	**.0001569**
Stddev	.0000974	.003921	.0005950	.023248	.0001526	.0000623
%RSD	.7352401	.0975355	.7034055	.3947272	1.824039	39.68737
#1	.0133469	4.021443	.0840433	5.906799	.0083115	.0002278
#2	.0132368	4.023742	.0852251	5.898692	.0082461	.0001112
#3	.0131527	4.016099	.0845130	5.863096	.0085369	.0001317

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.692818**	**.0032632**	**.2012941**	**-2.23695**	**.1815121**	**.3356718**
Stddev	.167072	.0014062	.0030118	.02848	.0031591	.0019058
%RSD	2.496287	43.09193	1.496237	1.273180	1.740450	.5677524
#1	6.561147	.0033767	.2027099	-2.20520	.1814771	.3353126
#2	6.880760	.0018038	.2033371	-2.24543	.1783706	.3339712
#3	6.636547	.0046092	.1978352	-2.26023	.1846886	.3377317

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-02 Acquired: 3/5/2025 16:33:38 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9D Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009502	F 10.94834	5.896723	-.001869	.0233238	-.000999
Stddev	.0002182	.02046	.018262	.000292	.0009332	.000819
%RSD	22.96028	.1868420	.3097054	15.62276	4.001217	81.96924
#1	.0011830	10.95100	5.876616	-.002205	.0222663	-.000094
#2	.0007505	10.92669	5.912282	-.001672	.0236731	-.001215
#3	.0009171	10.96734	5.901272	-.001732	.0240319	-.001688

Elem	Sr4077
Units	ppm
Avg	.0641450
Stddev	.0003011
%RSD	.4694123
#1	.0644485
#2	.0641401
#3	.0638464

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3499.715	72467.11	15228.58	3145.010	4795.434
Stddev	6.541	264.11	90.23	9.598	7.088
%RSD	.1869147	.3644486	.5925283	.3051715	.1478146
#1	3505.505	72505.09	15261.32	3146.972	4803.614
#2	3501.023	72710.17	15297.87	3153.475	4791.591
#3	3492.619	72186.07	15126.54	3134.583	4791.096

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-01LX5 Acquired: 3/5/2025 16:37:40 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9L Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006144	-.000681	.0003671	-.000460	.0010456	.3888220	.0449716
Stddev	.0032428	.001532	.0014652	.003470	.0011700	.0028678	.0007070
%RSD	527.8147	225.1521	399.1830	753.7554	111.8989	.7375473	1.572150
#1	-.002289	-.002300	.0018991	-.002193	.0016281	.3905846	.0444985
#2	.000018	-.000489	-.001021	.003535	.0018100	.3855130	.0457843
#3	.004114	.000747	.000223	-.002723	-.000301	.3903685	.0446319

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000496	.0000048	1.444480	.0005449	.0006829	.0023069	.8275896
Stddev	.0000341	.0000641	.003963	.0003655	.0002401	.0007394	.0030732
%RSD	68.66853	1343.429	.2743802	67.07224	35.15797	32.05172	.3713456
#1	.0000118	.0000770	1.441715	.0003995	.0008622	.0030556	.8247683
#2	.0000780	-.000045	1.449021	.0002744	.0007764	.0015772	.8308644
#3	.0000591	-.000017	1.442703	.0009606	.0004101	.0022880	.8271362

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0179638	1.144113	.0017402	.0003165	1.471213	.0004009	.0379814
Stddev	.0002738	.009556	.0001762	.0002811	.120172	.0010381	.0005350
%RSD	1.524219	.8352717	10.12581	88.81704	8.168213	258.9525	1.408620
#1	.0176500	1.148059	.0015400	.0000428	1.496508	.0012239	.0383858
#2	.0181538	1.151065	.0018717	.0006044	1.576724	.0007441	.0381837
#3	.0180877	1.133215	.0018089	.0003022	1.340408	-.000765	.0373747

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.642741	.0378440	.0670520	.0000191	2.199686	1.319920	-.001104
Stddev	.055063	.0012244	.0004673	.0001008	.004828	.006585	.000862
%RSD	8.566967	3.235456	.6968678	526.7120	.2194763	.4988980	78.08015
#1	-.703177	.0364324	.0665237	.0001068	2.204647	1.320781	-.001246
#2	-.595418	.0384803	.0674111	.0000416	2.199406	1.312947	-.000180
#3	-.629626	.0386193	.0672211	-.000091	2.195004	1.326033	-.001885

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-01LX5 Acquired: 3/5/2025 16:37:40 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9L Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0104674	-.002535	.0126347
Stddev	.0003799	.001276	.0001204
%RSD	3.629405	50.33626	.9525163
#1	.0100986	-.003965	.0126557
#2	.0108575	-.001514	.0127431
#3	.0104461	-.002125	.0125052

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3469.363	73286.71	14853.93	3159.697	4726.813
Stddev	5.057	121.68	40.46	14.516	6.064
%RSD	.1457509	.1660268	.2723589	.4594119	.1282989
#1	3464.443	73152.09	14836.86	3143.091	4720.778
#2	3474.546	73319.18	14900.13	3166.026	4732.906
#3	3469.100	73388.85	14824.82	3169.975	4726.753

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-03 Acquired: 3/5/2025 16:41:49 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9S Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0420327	.0550253	.0216006	.0834783	.0763366	3.070804
Stddev	.0020154	.0003205	.0011202	.0014270	.0017671	.004160
%RSD	4.794871	.5824388	5.185961	1.709472	2.314871	.1354761
#1	.0397879	.0553895	.0227283	.0835804	.0744106	3.071257
#2	.0436866	.0547863	.0215857	.0820029	.0767161	3.066436
#3	.0426237	.0549000	.0204880	.0848515	.0778832	3.074720

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.016872	.0507846	.0471848	6.915406	.2188844	.4780842
Stddev	.007186	.0002670	.0001074	.011627	.0006491	.0008541
%RSD	.3562857	.5257623	.2276911	.1681316	.2965628	.1786510
#1	2.018794	.0505094	.0472105	6.921369	.2193375	.4781365
#2	2.008921	.0510425	.0472771	6.922841	.2181407	.4772052
#3	2.022902	.0508020	.0470668	6.902007	.2191750	.4789110

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2677424	4.880335	.5532215	5.503581	.4916829	.0373694
Stddev	.0009579	.012499	.0004736	.020416	.0005403	.0002947
%RSD	.3577563	.2561082	.0856016	.3709569	.1098912	.7885442
#1	.2687727	4.894382	.5537647	5.525320	.4914655	.0372100
#2	.2675758	4.870441	.5530036	5.500609	.4912851	.0377094
#3	.2668788	4.876183	.5528960	5.484814	.4922980	.0371887

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.483312	.5101311	.6370034	-2.27143	.1798596	.3255358
Stddev	.057504	.0019956	.0038356	.02577	.0024982	.0009781
%RSD	.8869596	.3912033	.6021374	1.134745	1.388995	.3004589
#1	6.531419	.5096386	.6386636	-2.24188	.1773454	.3253546
#2	6.498895	.5123269	.6397293	-2.28314	.1823416	.3265919
#3	6.419622	.5084278	.6326173	-2.28927	.1798917	.3246610

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-03 Acquired: 3/5/2025 16:41:49 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9S Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006467	F 10.47021	5.963024	-.002171	.0237968	-.002518
Stddev	.0001607	.01177	.015565	.000148	.0004294	.000773
%RSD	24.85128	.1123898	.2610223	6.837218	1.804377	30.68180
#1	.0005747	10.46894	5.945564	-.002017	.0242919	-.003380
#2	.0005345	10.45913	5.968061	-.002313	.0235731	-.002288
#3	.0008308	10.48256	5.975447	-.002184	.0235255	-.001887

Elem	Sr4077
Units	ppm
Avg	.0589244
Stddev	.0001407
%RSD	.2388552
#1	.0590869
#2	.0588426
#3	.0588436

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3495.859	74392.13	15111.69	3208.555	4752.662
Stddev	10.766	43.23	55.01	2.764	10.263
%RSD	.3079608	.0581088	.3639948	.0861346	.2159437
#1	3497.815	74419.87	15159.79	3210.082	4752.517
#2	3505.514	74342.32	15051.72	3205.365	4762.996
#3	3484.250	74414.19	15123.57	3210.219	4742.471

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-04 Acquired: 3/5/2025 16:45:45 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D0 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012522**	**.0004746**	**.0008935**	**.0009543**	**-.000428**	**.2029042**
Stddev	.0019667	.0003300	.0007767	.0012393	.000904	.0018265
%RSD	157.0621	69.53000	86.91964	129.8662	211.3446	.9001810
#1	.0028489	.0008055	.0001562	.0020386	-.001010	.2031823
#2	.0018523	.0001455	.0008202	.0012208	.000614	.2045757
#3	-.000945	.0004728	.0017043	-.000397	-.000887	.2009546

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2231388**	**.0000829**	**.0000366**	**7.523916**	**-.000099**	**.0019309**
Stddev	.0010836	.0000069	.0000364	.003291	.000351	.0002529
%RSD	.4856044	8.318850	99.54961	.0437352	353.5758	13.09900
#1	.2243736	.0000895	-.000005	7.527136	.000200	.0016398
#2	.2226963	.0000757	.000061	7.520559	-.000012	.0020976
#3	.2223464	.0000837	.000054	7.524051	-.000485	.0020552

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009110**	**.3600723**	**.0474480**	**5.990488**	**.0033099**	**.0001356**
Stddev	.0023688	.0061022	.0002696	.021642	.0005188	.0002628
%RSD	260.0181	1.694714	.5682290	.3612780	15.67341	193.7210
#1	-.001789	.3635542	.0475803	5.983669	.0039084	.0004382
#2	.001883	.3636365	.0471378	5.973076	.0029899	.0000033
#3	.002639	.3530263	.0476260	6.014718	.0030314	-.000035

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.826539**	**.0007027**	**.1144020**	**-2.43956**	**.0258440**	**.1312680**
Stddev	.055120	.0004502	.0012499	.04640	.0009482	.0006897
%RSD	.9460115	64.05732	1.092579	1.901942	3.668852	.5254162
#1	5.885444	.0004315	.1136888	-2.46795	.0269290	.1310457
#2	5.817964	.0012224	.1136719	-2.46472	.0251744	.1307169
#3	5.776209	.0004544	.1158453	-2.38601	.0254287	.1320415

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-04 Acquired: 3/5/2025 16:45:45 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D0 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004453	F 11.79027	6.536879	-.002020	.0013554	.0020415
Stddev	.0001616	.02945	.004721	.000207	.0006246	.0006106
%RSD	36.30050	.2498218	.0722173	10.22373	46.08385	29.90835
#1	.0002594	11.76389	6.537282	-.001781	.0006454	.0017966
#2	.0005531	11.78485	6.541386	-.002144	.0016006	.0027365
#3	.0005233	11.82205	6.531970	-.002134	.0018202	.0015913

Elem	Sr4077
Units	ppm
Avg	.0650356
Stddev	.0002743
%RSD	.4218323
#1	.0653373
#2	.0648011
#3	.0649684

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3532.998	73389.68	15090.56	3173.822	4852.584
Stddev	9.220	53.48	58.08	7.622	12.265
%RSD	.2609784	.0728770	.3848785	.2401657	.2527530
#1	3542.352	73449.86	15156.96	3175.495	4865.463
#2	3532.724	73371.59	15049.24	3180.470	4851.246
#3	3523.918	73347.59	15065.46	3165.503	4841.043

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-05 Acquired: 3/5/2025 16:49:51 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0120905**	**-.000162**	**.0001732**	**.0040099**	**.0139315**	**-.029126**
Stddev	.0010017	.002892	.0001646	.0029266	.0015502	.008303
%RSD	8.284779	1781.184	95.05497	72.98332	11.12716	28.50600
#1	.0126596	-.003094	.0003525	.0046479	.0132091	-.019872
#2	.0109339	.002688	.0001380	.0065648	.0128742	-.031583
#3	.0126780	-.000081	.0000290	.0008170	.0157110	-.035922

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1866617**	**.0000557**	**.0000398**	**31.74412**	**-.000705**	**.0015635**
Stddev	.0022712	.0000591	.0000184	.21688	.000464	.0001005
%RSD	1.216765	106.0390	46.32544	.6832031	65.80917	6.424447
#1	.1864163	.0000097	.0000186	31.80747	-.000383	.0015141
#2	.1890457	.0000350	.0000517	31.92226	-.000495	.0014974
#3	.1845232	.0001223	.0000490	31.50262	-.001237	.0016791

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000445**	**.0028673**	**.3495302**	**9.020532**	**.0209539**	**.0002452**
Stddev	.0008983	.0018081	.0016886	.056508	.0003557	.0000438
%RSD	2017.181	63.05827	.4830973	.6264415	1.697368	17.86795
#1	-.000848	.0044964	.3480257	8.983423	.0212664	.0002739
#2	.000948	.0031836	.3513566	9.085566	.0210284	.0002670
#3	.000033	.0009220	.3492085	8.992606	.0205669	.0001948

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.100346**	**-.000238**	**.0426287**	**.1200979**	**.0047157**	**.0629625**
Stddev	.049483	.000951	.0019414	.0297706	.0023251	.0011835
%RSD	1.206812	399.4908	4.554316	24.78857	49.30628	1.879726
#1	4.121541	.000402	.0447726	.1417672	.0073913	.0635326
#2	4.043796	-.001330	.0421242	.0861523	.0035711	.0616018
#3	4.135702	.000214	.0409893	.1323743	.0031848	.0637530

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: Q1160-05 Acquired: 3/5/2025 16:49:51 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D3 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0275117	F 14.98930	1.577353	-.003623	-.001242	-.002063
Stddev	.0000417	.04810	.006992	.001246	.000652	.000608
%RSD	.1515865	.3209052	.4432968	34.38117	52.50982	29.46177
#1	.0274699	14.96544	1.569892	-.003689	-.001944	-.001823
#2	.0275533	14.95780	1.578411	-.004834	-.001126	-.001611
#3	.0275120	15.04467	1.583756	-.002346	-.000655	-.002753

Elem	Sr4077
Units	ppm
Avg	.2559100
Stddev	.0013442
%RSD	.5252518
#1	.2550037
#2	.2574544
#3	.2552719

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3454.016	72434.98	14991.13	3113.688	4678.652
Stddev	17.025	219.38	71.46	7.542	23.094
%RSD	.4929018	.3028615	.4766505	.2422174	.4936127
#1	3470.496	72274.25	14937.50	3111.171	4700.664
#2	3455.057	72345.78	15072.25	3122.166	4680.683
#3	3436.494	72684.90	14963.66	3107.727	4654.609

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCV005 Acquired: 3/5/2025 16:53:56 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV005 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.862150**	**4.675634**	**24.18608**	**4.858261**	**4.908140**	**380.2881**
Stddev	.008925	.008774	.03864	.020485	.012873	1.3034
%RSD	.1835588	.1876460	.1597557	.4216550	.2622691	.3427341
#1	4.872197	4.684329	24.16600	4.837148	4.893322	381.6631
#2	4.855139	4.675789	24.16162	4.878054	4.916557	379.0706
#3	4.859115	4.666784	24.23063	4.859581	4.914542	380.1306

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.15894**	**.4842867**	**2.446603**	**388.8020**	**15.26282**	**2.465737**
Stddev	.12726	.0036266	.004183	2.5551	.01720	.004382
%RSD	1.252649	.7488616	.1709593	.6571723	.1126820	.1777001
#1	10.01270	.4884593	2.442275	386.0330	15.24309	2.461463
#2	10.24448	.4825074	2.446910	389.3045	15.27466	2.465529
#3	10.21964	.4818933	2.450624	391.0686	15.27072	2.470219

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.09980**	**391.5785**	**15.19133**	**385.8059**	**2.463512**	**1.258514**
Stddev	.06495	2.9908	.08664	2.8171	.003805	.000848
%RSD	.4301428	.7637714	.5703310	.7301981	.1544551	.0674020
#1	15.17461	388.1322	15.09129	382.5533	2.459549	1.257755
#2	15.06699	393.1095	15.24200	387.4735	2.463849	1.259429
#3	15.05780	393.4938	15.24070	387.3909	2.467137	1.258357

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**390.3731**	**2.453758**	**15.32465**	**156.1515**	**4.858480**	F **5.837848**
Stddev	.3952	.004265	.09571	1.0732	.013002	.019711
%RSD	.1012428	.1738350	.6245579	.6872602	.2676112	.3376453
#1	390.8277	2.450722	15.21493	154.9145	4.869404	5.858961
#2	390.1116	2.451918	15.36802	156.8336	4.844099	5.834654
#3	390.1800	2.458635	15.39100	156.7062	4.861937	5.819929

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCV005 Acquired: 3/5/2025 16:53:56 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV005 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.859731**	**4.953713**	**4.872912**	**4.897500**	**4.908733**	**5.131578**
Stddev	.006903	.008748	.005688	.009801	.003661	.047506
%RSD	.1420493	.1765951	.1167357	.2001125	.0745724	.9257497
#1	4.851793	4.963807	4.869705	4.888574	4.910113	5.079622
#2	4.864336	4.948322	4.869552	4.895938	4.904583	5.142315
#3	4.863062	4.949011	4.879480	4.907987	4.911503	5.172795

Elem	Sr4077
Units	ppm
Avg	**5.187422**
Stddev	.020441
%RSD	.3940561
#1	5.207705
#2	5.187736
#3	5.166826

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2670.321**	**59932.86**	**13713.81**	**2530.710**	**3312.173**
Stddev	3.390	124.83	103.98	5.249	4.647
%RSD	.1269393	.2082902	.7582109	.2074065	.1402993
#1	2673.006	60050.24	13598.54	2536.317	3315.019
#2	2671.444	59801.71	13742.34	2529.898	3314.691
#3	2666.512	59946.63	13800.54	2525.914	3306.811

Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCB005 Acquired: 3/5/2025 16:58:15 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB005 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0027862	.0002487	-.000642	-.001465	-.000523	-.001681	.0005971
Stddev	.0024120	.0009290	.001692	.003327	.001254	.006671	.0005833
%RSD	86.56920	373.5590	263.3175	227.1605	239.9127	396.8074	97.69718
#1	.0007117	-.000181	-.001018	-.003545	-.000791	-.000639	.0008492
#2	.0054328	.001315	.001205	.002373	-.001621	.004408	-.000070
#3	.0022141	-.000388	-.002114	-.003222	.000844	-.008812	.001012

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000354	-.000009	.0020627	-.000175	.0002047	-.000103	.0052106
Stddev	.0000355	.000031	.0055796	.000253	.0001802	.001789	.0034158
%RSD	100.2044	359.0294	270.5027	144.7032	88.02806	1733.065	65.55465
#1	.0000155	.000019	.0052461	-.000294	.0003606	-.000745	.0083784
#2	.0000143	-.000003	.0053218	-.000346	.0000074	-.001483	.0015916
#3	.0000763	-.000043	-.004380	.000116	.0002460	.001919	.0056619

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000303	.0097633	.0000667	-.000184	-.000117	-.003080	-.001740
Stddev	.0001355	.0066341	.0001397	.000060	.241778	.000125	.001201
%RSD	447.3278	67.94962	209.5409	32.49347	205913.5	4.053939	69.01379
#1	.0001210	.0155010	-.000051	-.000119	.240096	-.003220	-.000838
#2	.0000953	.0024989	.000030	-.000197	.002983	-.003038	-.001278
#3	-.000125	.0112900	.000221	-.000236	-.243431	-.002982	-.003102

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.124716	.0016314	.0024691	-.000193	.0066566	.0081704	-.000148
Stddev	.044625	.0005019	.0012428	.000094	.0025143	.0014094	.000613
%RSD	35.78126	30.76315	50.33202	48.76120	37.77218	17.24965	413.4050
#1	-.169336	.0021707	.0035892	-.000155	.0065999	.0075960	-.000850
#2	-.080086	.0015454	.0026861	-.000299	.0041711	.0071389	.000281
#3	-.124726	.0011781	.0011322	-.000123	.0091988	.0097762	.000124

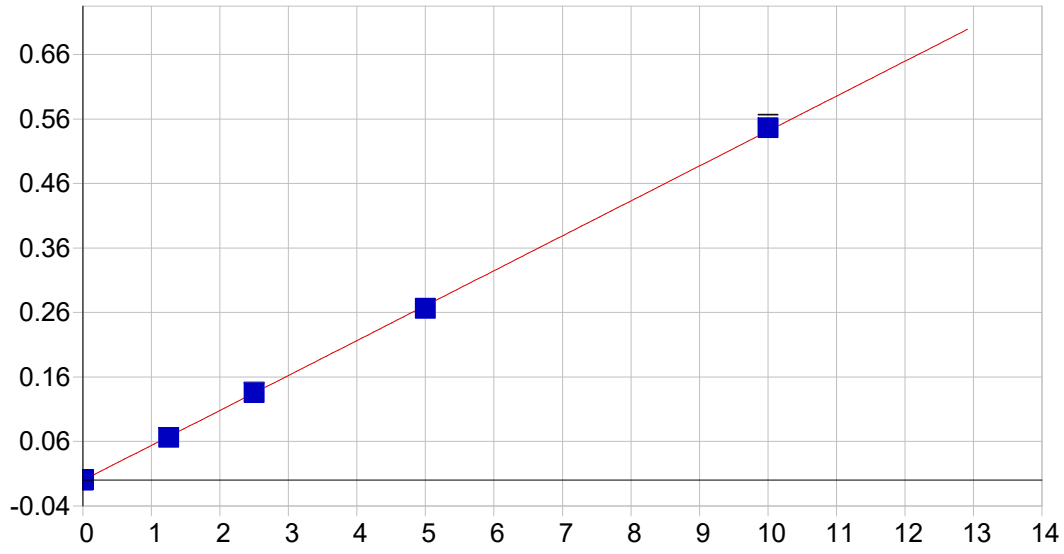
Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4

Sample Name: CCB005 Acquired: 3/5/2025 16:58:15 Type: Unk
Method: EPA SFAM01.0(v68) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB005 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000295	-.001990	.0001002
Stddev	.000187	.000624	.0000194
%RSD	63.36443	31.36706	19.39811
#1	-.000251	-.002602	.0001176
#2	-.000134	-.001354	.0000792
#3	-.000501	-.002015	.0001038

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3477.348	72132.64	14781.26	3121.311	4771.824
Stddev	7.584	361.72	109.67	10.108	6.485
%RSD	.2181024	.5014661	.7419475	.3238336	.1359106
#1	3473.009	71910.63	14808.90	3118.122	4771.094
#2	3486.105	71937.25	14660.42	3113.183	4778.644
#3	3472.929	72550.03	14874.47	3132.629	4765.735

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



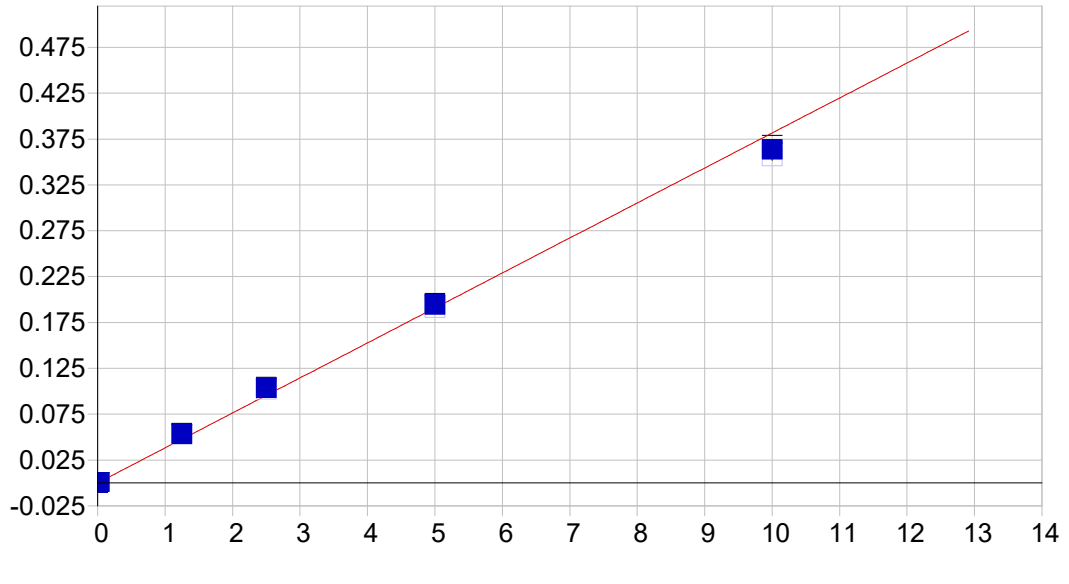
As 189.042 {479}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000153	Re-Slope:	1.000000
A1 (Gain):	0.054147	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999917	Status:	OK.
Std Error of Est:	0.000012		
Predicted MDL:	0.002820		
Predicted MQL:	0.009399		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00015	.000	1
S1	.01000	.01065	.001	6.53	.00042	.000	1
S3	2.5000	2.5114	.011	.455	.13559	.001	1
S4	5.0000	4.9148	-.085	-1.70	.26549	.001	1
S5	10.000	10.099	.099	.994	.54574	.005	1
S2	1.2500	1.2238	-.026	-2.10	.06599	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



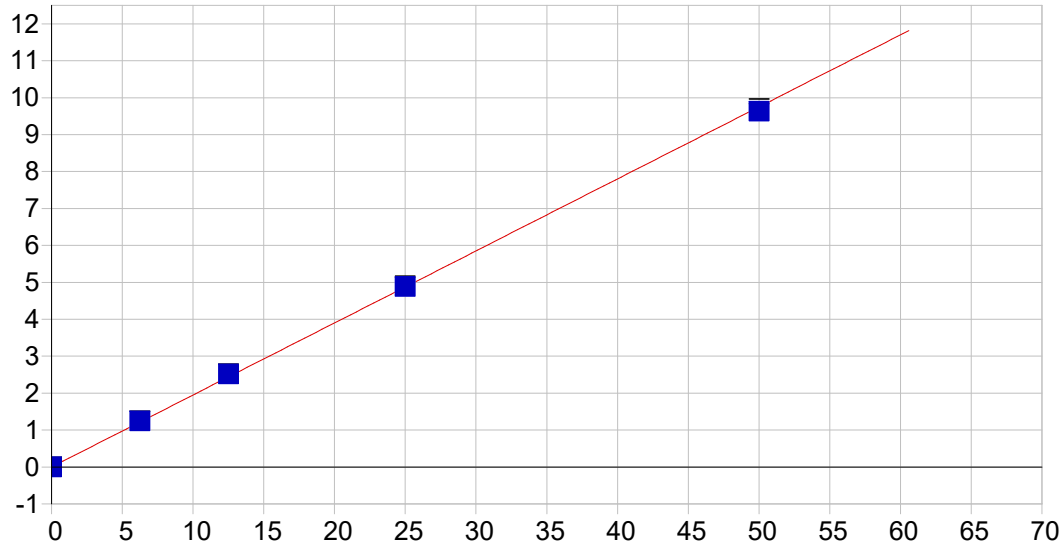
Tl 190.856 {477}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000063	Re-Slope:	1.000000
A1 (Gain):	0.038156	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998298	Status:	OK.
Std Error of Est:	0.000058		
Predicted MDL:	0.002843		
Predicted MQL:	0.009475		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00006	.000	1
S1	.02500	.02726	.002	9.03	.00106	.000	1
S3	2.5000	2.7167	.217	8.67	.10188	.001	1
S4	5.0000	5.0981	.098	1.96	.19089	.001	1
S5	10.000	9.5304	-.470	-4.70	.35632	.005	1
S2	1.2500	1.4027	.153	12.2	.05266	.001	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



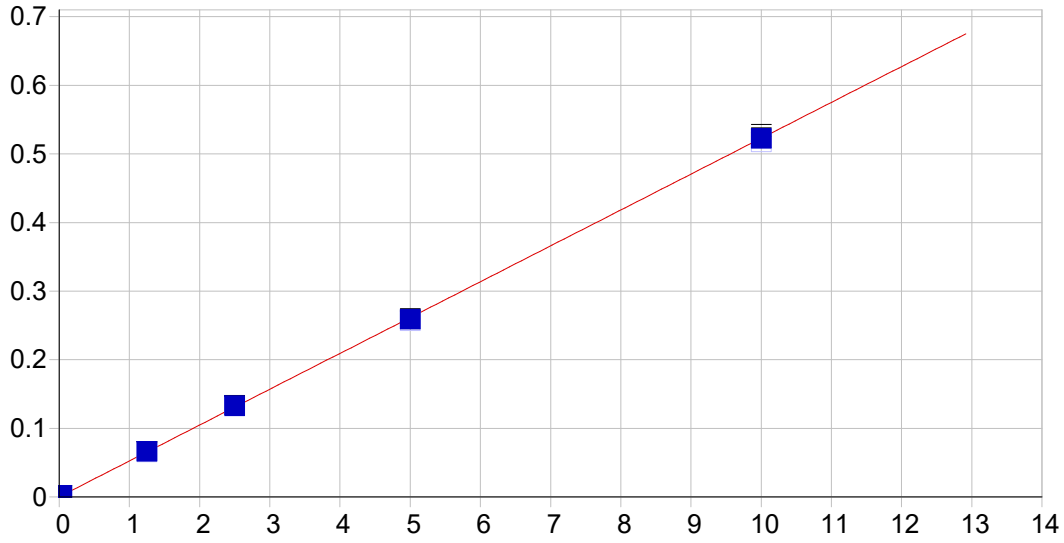
Pb 220.353 {453}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000275	Re-Slope:	1.000000
A1 (Gain):	0.195014	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999878	Status:	OK.
Std Error of Est:	0.000114		
Predicted MDL:	0.001430		
Predicted MQL:	0.004766		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00028	.000	1
S1	.01000	.01009	.000	.872	.00168	.000	1
S3	12.500	12.900	.400	3.20	2.5135	.006	1
S4	25.000	25.049	.049	.195	4.8805	.016	1
S5	50.000	49.414	-.586	-1.17	9.6280	.069	1
S2	6.2500	6.3865	.136	2.18	1.2442	.003	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



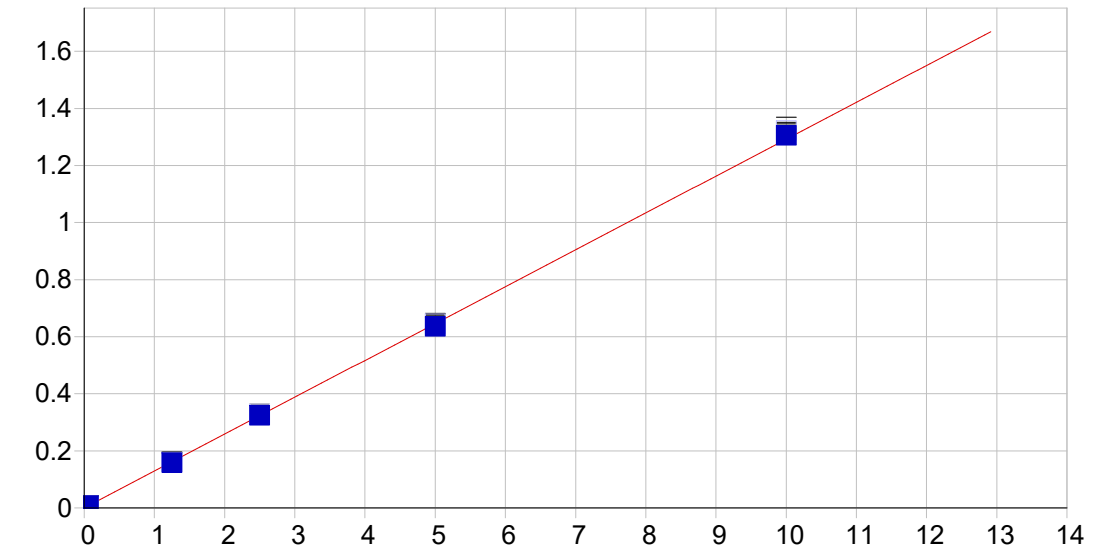
Se 196.090 {472}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000171	Re-Slope:	1.000000
A1 (Gain):	0.052261	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999963	Status:	OK.
Std Error of Est:	0.000014		
Predicted MDL:	0.003554		
Predicted MQL:	0.011847		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00017	.000	1
S1	.03500	.03465	-.000	-.989	.00198	.000	1
S3	2.5000	2.5451	.045	1.80	.13197	.000	1
S4	5.0000	4.9530	-.047	-.939	.25661	.001	1
S5	10.000	9.9911	-.009	-.089	.51750	.006	1
S2	1.2500	1.2611	.011	.888	.06547	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



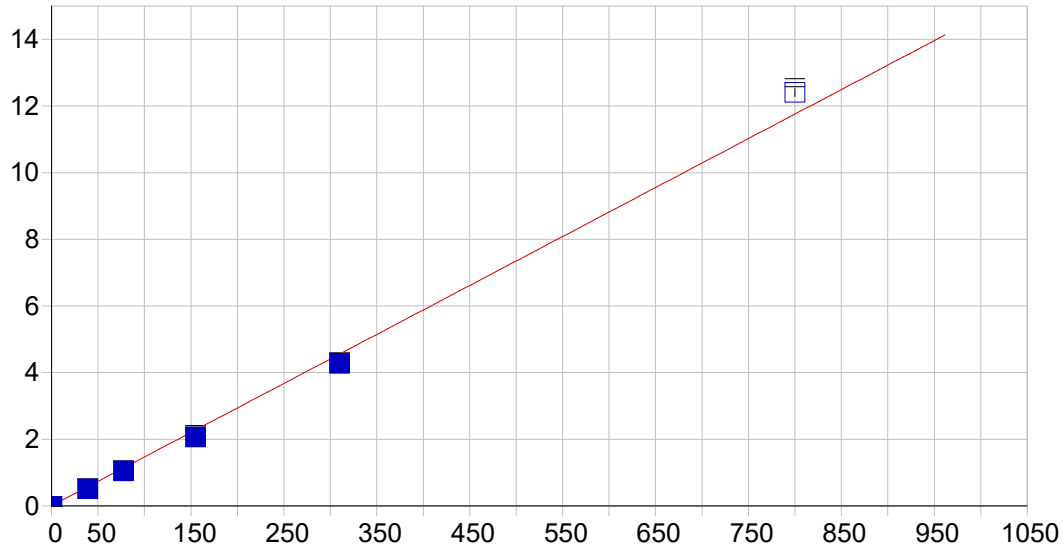
Sb 206.833 {463}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000334	Re-Slope:	1.000000
A1 (Gain):	0.129160	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999923	Status:	OK.
Std Error of Est:	0.000067		
Predicted MDL:	0.001743		
Predicted MQL:	0.005811		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00034	.000	1
S1	.06000	.05628	-.004	-6.19	.00759	.000	1
S3	2.5000	2.5049	.005	.196	.32818	.001	1
S4	5.0000	4.9221	-.078	-1.56	.64469	.002	1
S5	10.000	10.101	.101	1.01	1.3223	.012	1
S2	1.2500	1.2254	-.025	-1.97	.16076	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



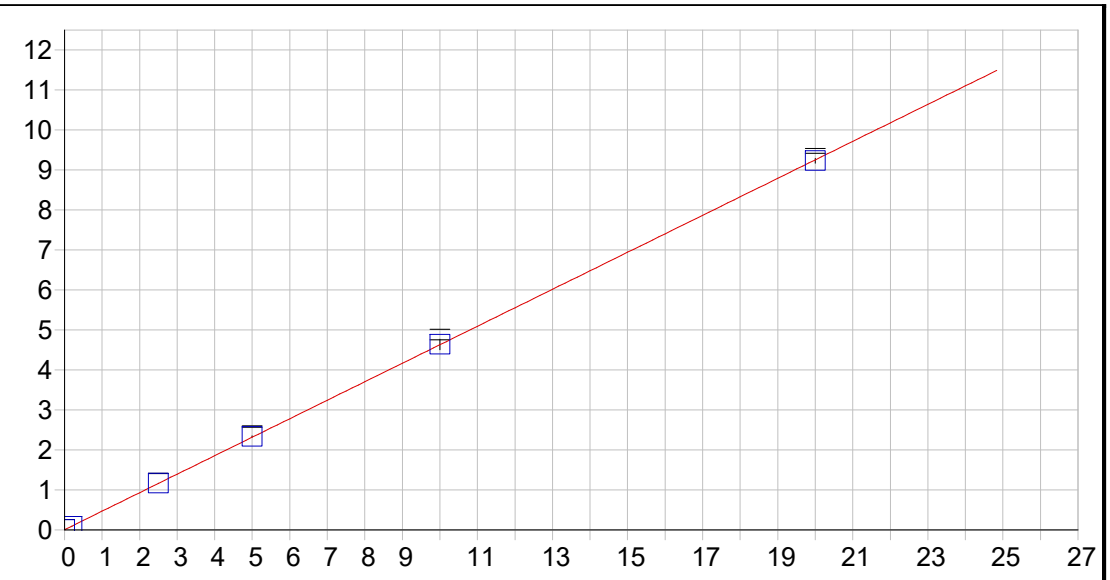
Al 396.152 { 85}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000057	Re-Slope:	1.000000
A1 (Gain):	0.014698	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.997890	Status:	OK.
Std Error of Est:	0.000595		
Predicted MDL:	0.006968		
Predicted MQL:	0.023228		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00009	.000	.000	.00006	.000	1
S1	.20000	.16493	-.035	-17.5	.00249	.000	1
S3	77.500	71.258	-6.24	-8.05	1.0488	.001	1
S4	155.00	140.61	-14.4	-9.29	2.0694	.039	1
S5	310.00	290.96	-19.0	-6.14	4.2821	.012	1
S2	38.750	34.643	-4.11	-10.6	.50992	.003	1
S6	800.00	843.87	43.9	5.48	12.404	.121	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



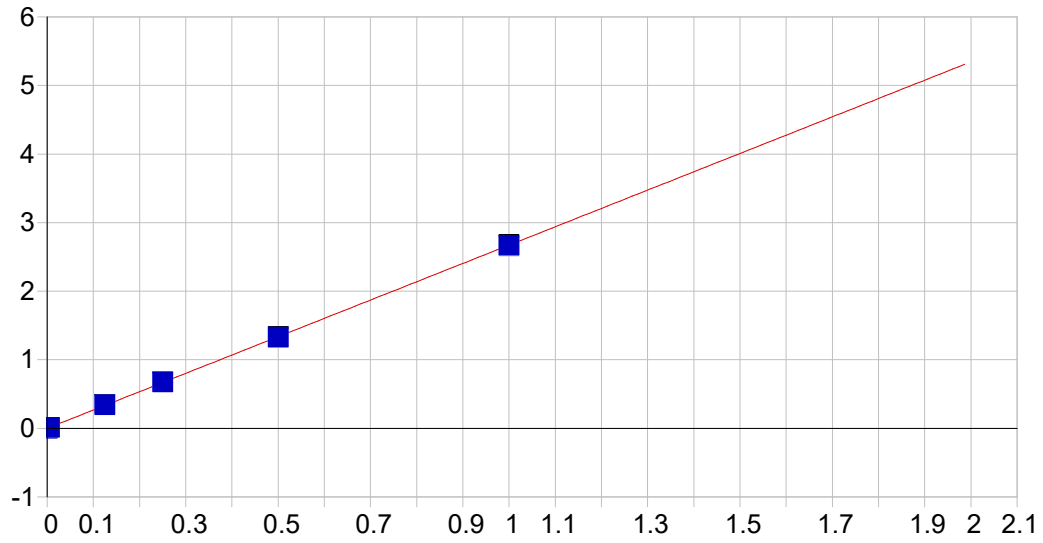
Ba 493.409 { 68}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.006231	Re-Slope:	1.000000
A1 (Gain):	0.462423	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999976	Status:	OK.
Std Error of Est:	0.000338		
Predicted MDL:	0.000801		
Predicted MQL:	0.002670		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00624	.000	1
S1	.20000	.18380	-.016	-8.10	.09123	.001	1
S3	5.0000	5.0382	.038	.764	2.3360	.015	1
S4	10.000	10.019	.019	.188	4.6391	.130	1
S5	20.000	19.951	-.049	-.243	9.2322	.061	1
S2	2.5000	2.5078	.008	.311	1.1659	.005	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



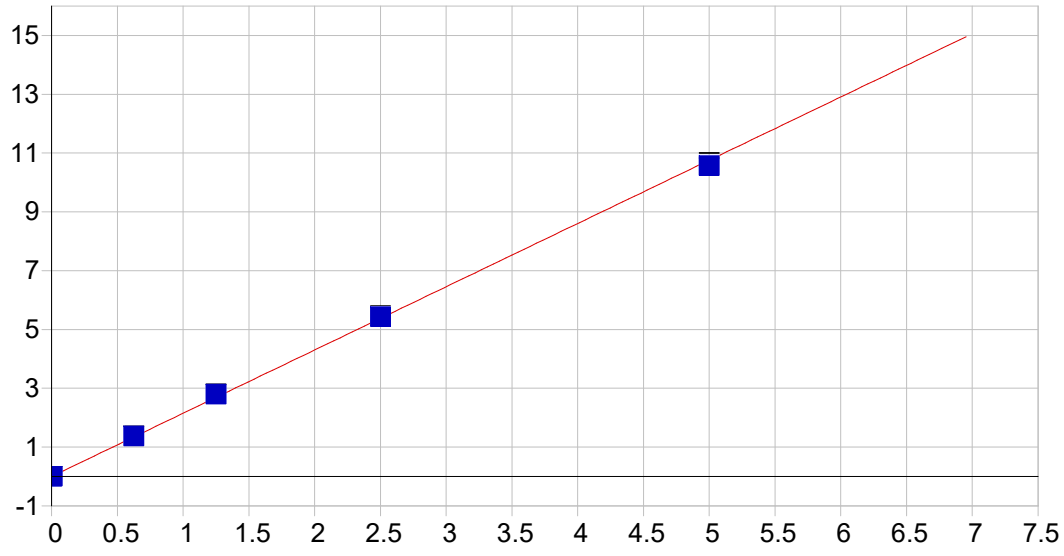
Be 234.861 {144}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000055	Re-Slope:	1.000000
A1 (Gain):	2.672211	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999971	Status:	OK.
Std Error of Est:	0.000076		
Predicted MDL:	0.000083		
Predicted MQL:	0.000276		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00005	.000	1
S1	.00500	.00514	.000	2.82	.01378	.000	1
S3	.25000	.25191	.002	.766	.67022	.002	1
S4	.50000	.49680	-.003	-.639	1.3216	.010	1
S5	1.0000	.99828	-.002	-.172	2.6556	.013	1
S2	.12500	.12786	.003	2.29	.34023	.001	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



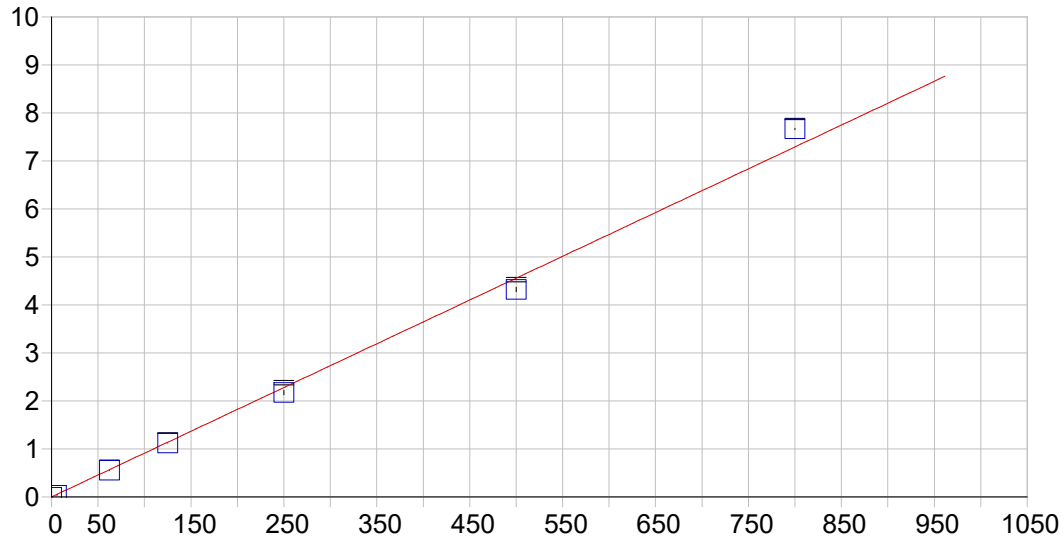
Cd 214.438 {457}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000007	Re-Slope:	1.000000
A1 (Gain):	2.151454	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999785	Status:	OK.
Std Error of Est:	0.000375		
Predicted MDL:	0.000082		
Predicted MQL:	0.000272		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00001	.000	1
S1	.00500	.00498	-.000	-.376	.01073	.000	1
S3	1.2500	1.2987	.049	3.89	2.7994	.009	1
S4	2.5000	2.5248	.025	.993	5.4427	.019	1
S5	5.0000	4.9118	-.088	-1.76	10.589	.084	1
S2	.62500	.63975	.015	2.36	1.3791	.004	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



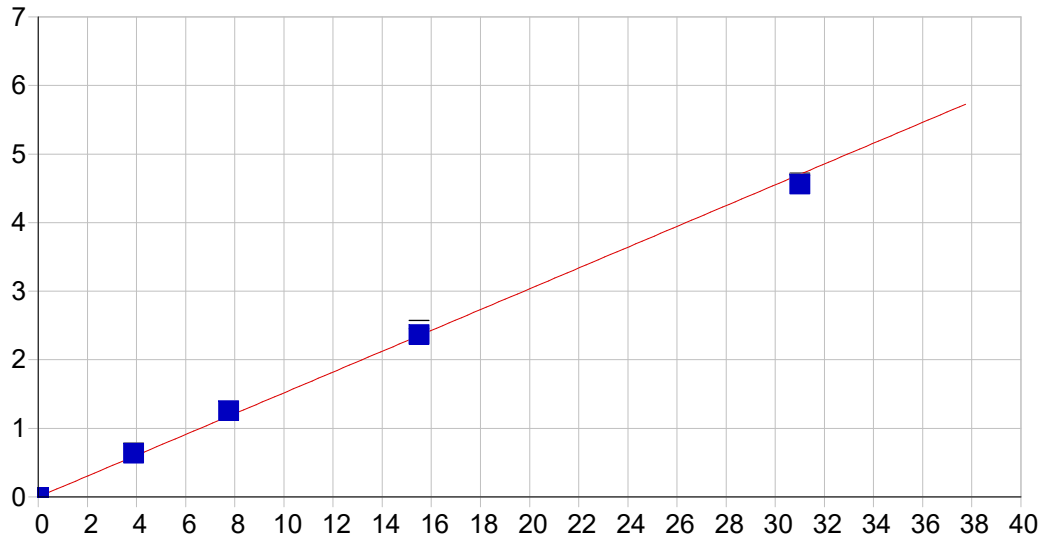
Ca 373.690 { 90}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000175	Re-Slope:	1.000000
A1 (Gain):	0.009114	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998823	Status:	OK.
Std Error of Est:	0.001545		
Predicted MDL:	0.008571		
Predicted MQL:	0.028570		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00084	.001	.000	.00018	.000	1
S2	62.500	61.030	-1.47	-2.35	.55638	.003	1
S3	125.00	123.04	-1.96	-1.57	1.1215	.003	1
S4	250.00	238.45	-11.5	-4.62	2.1733	.044	1
S5	500.00	474.09	-25.9	-5.18	4.3208	.047	1
S1	5.0000	4.5908	-.409	-8.18	.04201	.000	1
S6	800.00	841.30	41.3	5.16	7.6675	.015	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



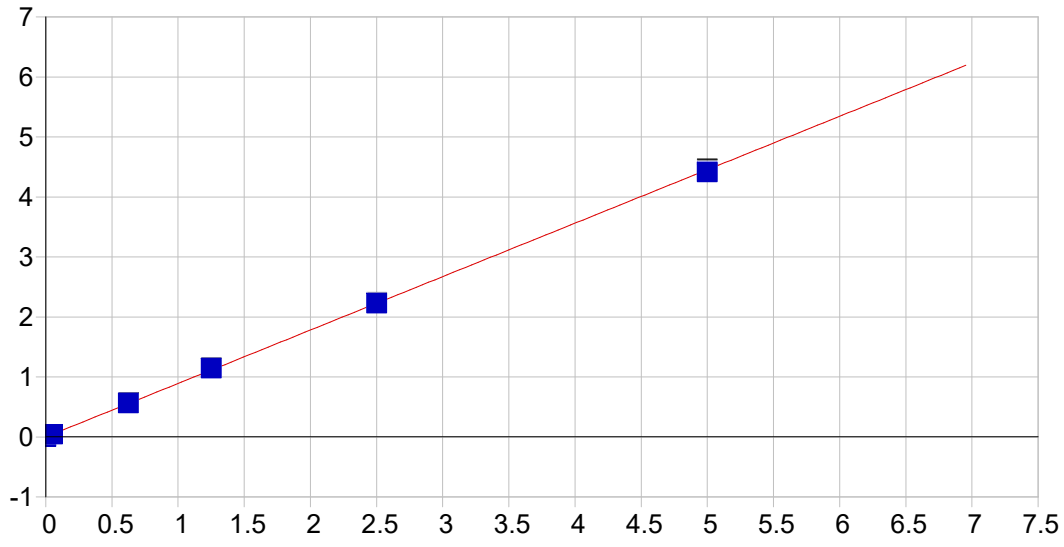
Cr 267.716 {126}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000140	Re-Slope:	1.000000
A1 (Gain):	0.151721	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999197	Status:	OK.
Std Error of Est:	0.000180		
Predicted MDL:	0.000413		
Predicted MQL:	0.001377		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00014	.000	1
S1	.01000	.01012	.000	1.17	.00168	.000	1
S3	7.7500	8.2862	.536	6.92	1.2588	.003	1
S4	15.500	15.602	.102	.659	2.3702	.061	1
S5	31.000	30.042	-.958	-3.09	4.5639	.013	1
S2	3.8750	4.1945	.319	8.24	.63725	.003	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



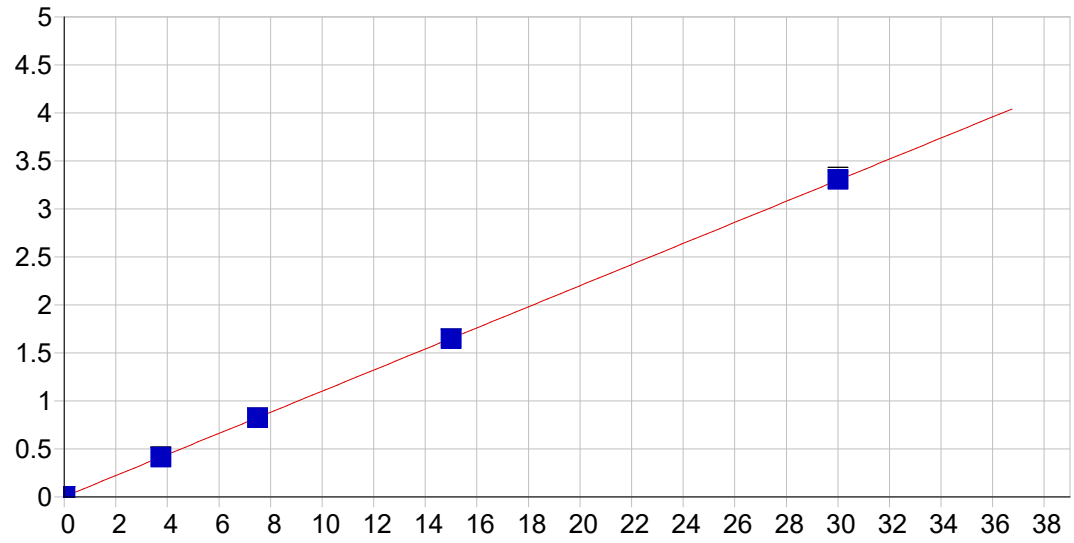
Co 228.616 {448}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000056	Re-Slope:	1.000000
A1 (Gain):	0.890554	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999920	Status:	OK.
Std Error of Est:	0.000301		
Predicted MDL:	0.000229		
Predicted MQL:	0.000763		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00005	.000	1
S1	.05000	.04901	-.001	-1.98	.04387	.000	1
S3	1.2500	1.2845	.035	2.76	1.1482	.003	1
S4	2.5000	2.5029	.003	.117	2.2375	.005	1
S5	5.0000	4.9544	-.046	-.911	4.4292	.036	1
S2	.62500	.63409	.009	1.45	.56686	.001	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



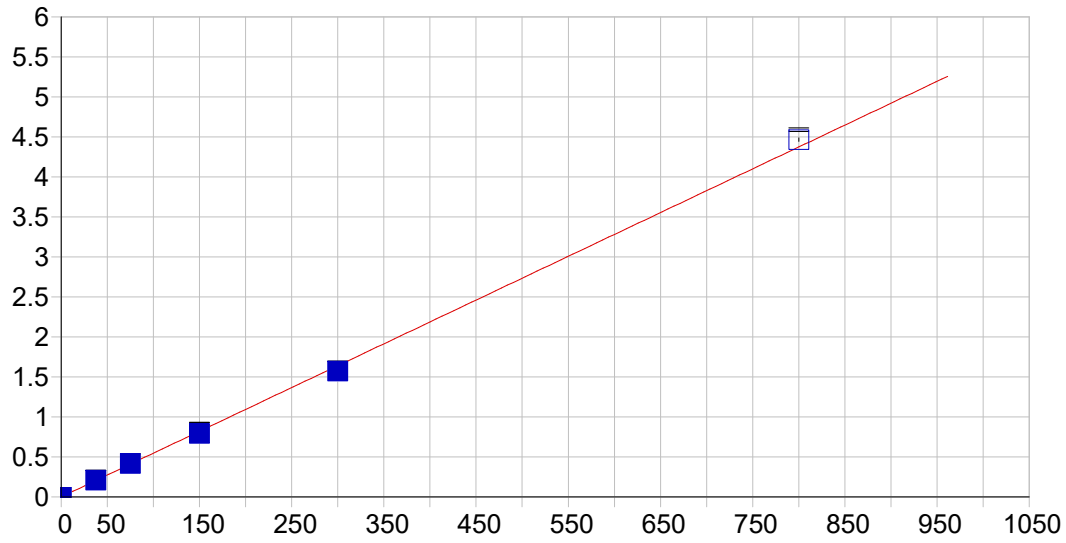
Cu 324.754 {104}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002658	Re-Slope:	1.000000
A1 (Gain):	0.109879	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999994	Status:	OK.
Std Error of Est:	0.000017		
Predicted MDL:	0.002282		
Predicted MQL:	0.007607		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00266	.000	1
S1	.02500	.02703	.002	8.13	.00563	.000	1
S3	7.5000	7.4704	-.030	-.395	.82341	.004	1
S4	15.000	14.950	-.050	-.332	1.6452	.001	1
S5	30.000	30.081	.081	.269	3.3076	.021	1
S2	3.7500	3.7466	-.003	-.090	.41429	.002	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



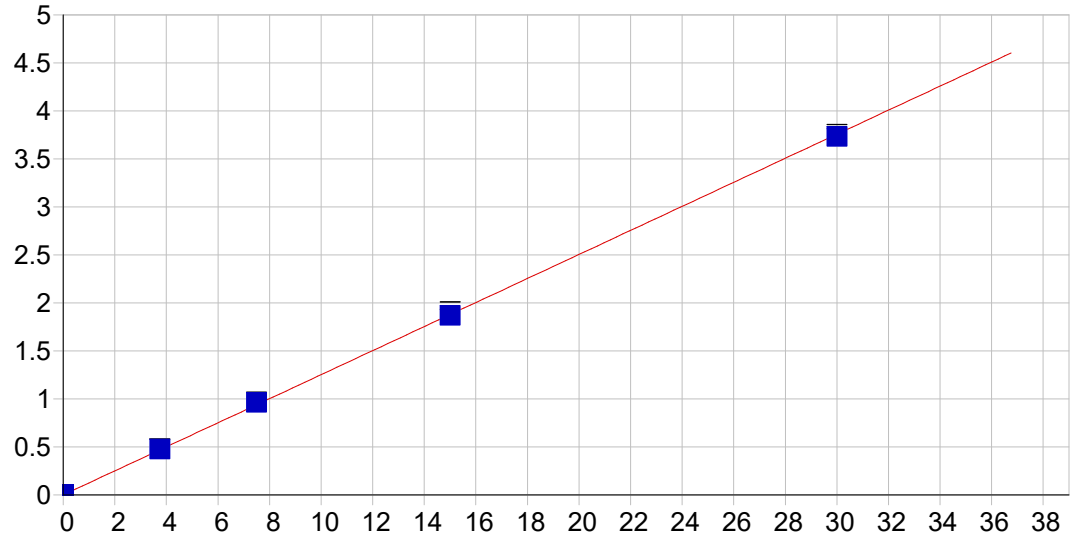
Fe 259.837 {130}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000055	Re-Slope:	1.000000
A1 (Gain):	0.005468	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999601	Status:	OK.
Std Error of Est:	0.000067		
Predicted MDL:	0.005736		
Predicted MQL:	0.019120		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00006	.000	1
S1	.10000	.09260	-.007	-7.40	.00055	.000	1
S3	75.000	75.922	.922	1.23	.41475	.001	1
S4	150.00	144.85	-5.15	-3.43	.79119	.016	1
S5	300.00	287.17	-12.8	-4.28	1.5685	.003	1
S2	37.500	37.941	.441	1.17	.20729	.001	1
S6	800.00	816.61	16.6	2.08	4.4649	.022	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



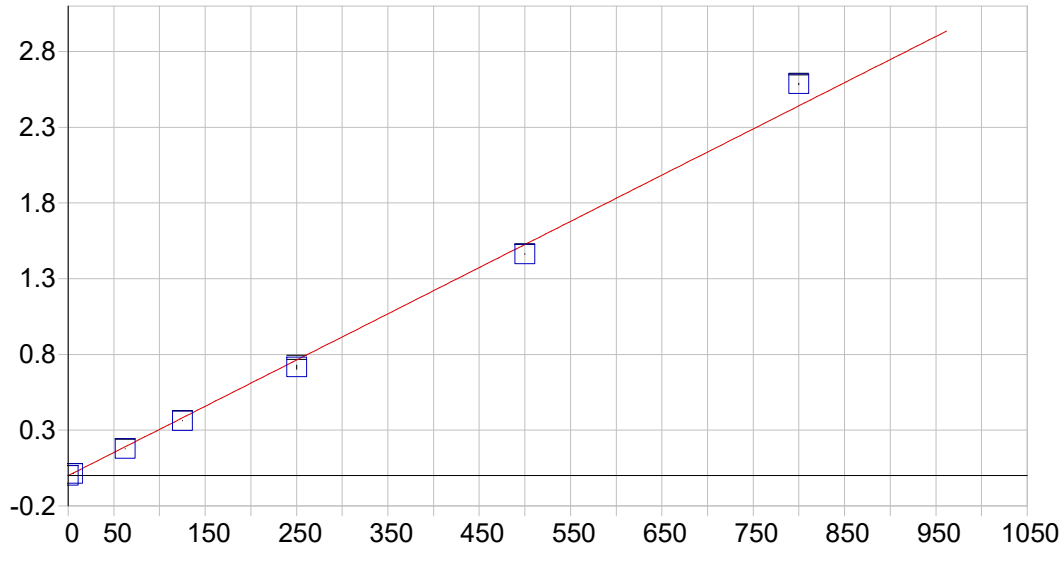
Mn 257.610 {131}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000020	Re-Slope:	1.000000
A1 (Gain):	0.125237	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999929	Status:	OK.
Std Error of Est:	0.000053		
Predicted MDL:	0.000265		
Predicted MQL:	0.000882		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00002	.000	1
S1	.01500	.01468	-.000	-2.13	.00186	.000	1
S3	7.5000	7.6977	.198	2.64	.96340	.003	1
S4	15.000	14.918	-.082	-.544	1.8670	.038	1
S5	30.000	29.818	-.182	-.606	3.7317	.022	1
S2	3.7500	3.8162	.066	1.77	.47763	.001	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



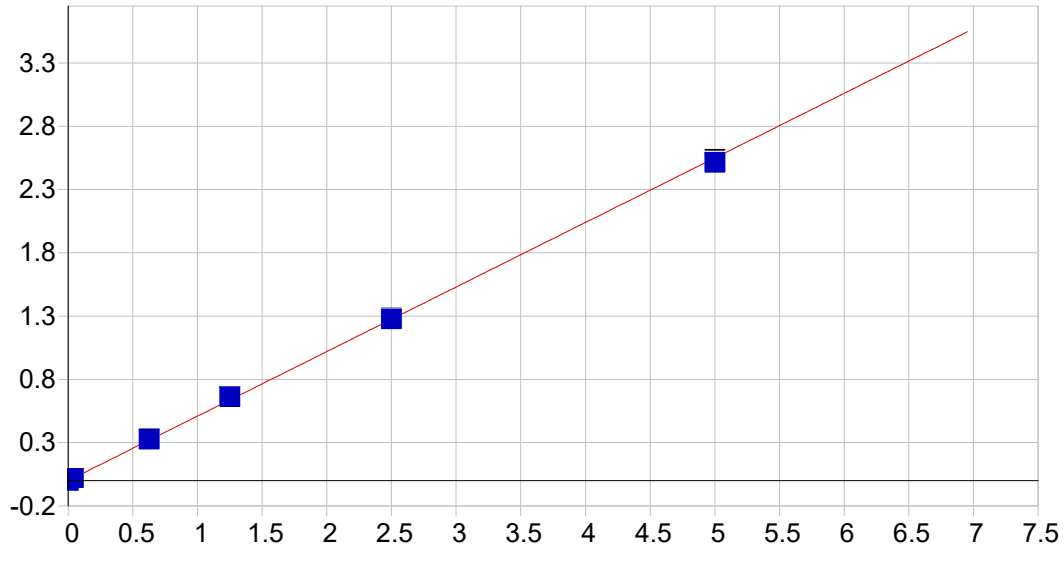
Mg 279.079 {121}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000011	Re-Slope:	1.000000
A1 (Gain):	0.003052	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998474	Status:	OK.
Std Error of Est:	0.000589		
Predicted MDL:	0.013319		
Predicted MQL:	0.044395		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00168	.002	.000	-.00001	.000	1
S2	62.500	58.050	-4.45	-7.12	.17716	.001	1
S3	125.00	118.91	-6.09	-4.88	.36288	.001	1
S4	250.00	234.79	-15.2	-6.08	.71656	.014	1
S5	500.00	479.38	-20.6	-4.12	1.4631	.002	1
S1	5.0000	4.1352	-.865	-17.3	.01261	.000	1
S6	800.00	847.24	47.2	5.90	2.5857	.006	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



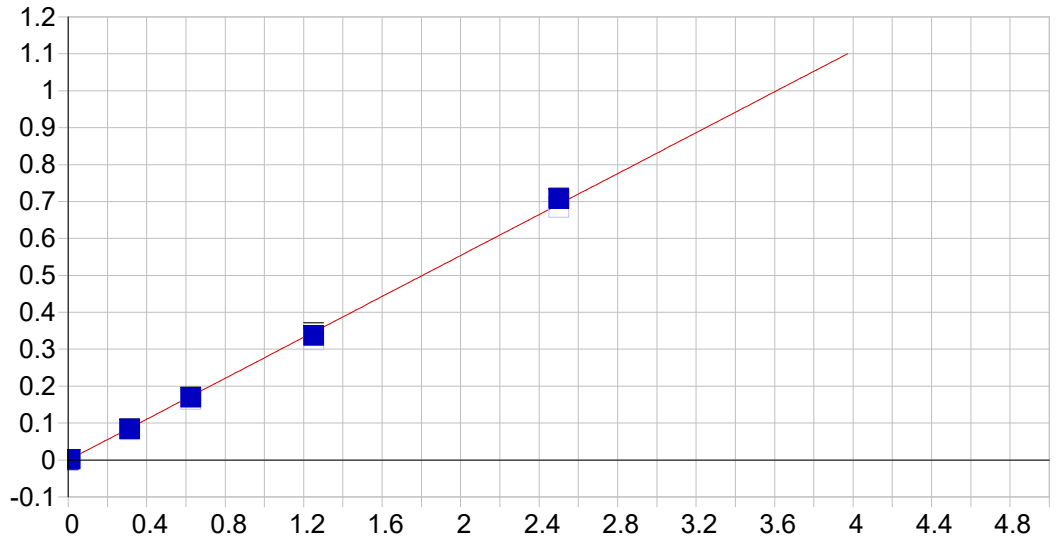
Ni 231.604 {446}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000330	Re-Slope:	1.000000
A1 (Gain):	0.510096	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999813	Status:	OK.
Std Error of Est:	0.000235		
Predicted MDL:	0.000427		
Predicted MQL:	0.001422		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00033	.000	1
S1	.04000	.03980	-.000	-.493	.02000	.000	1
S3	1.2500	1.3003	.050	4.02	.66443	.001	1
S4	2.5000	2.5057	.006	.229	1.2808	.004	1
S5	5.0000	4.9275	-.073	-1.45	2.5191	.020	1
S2	.62500	.64171	.017	2.67	.32775	.001	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



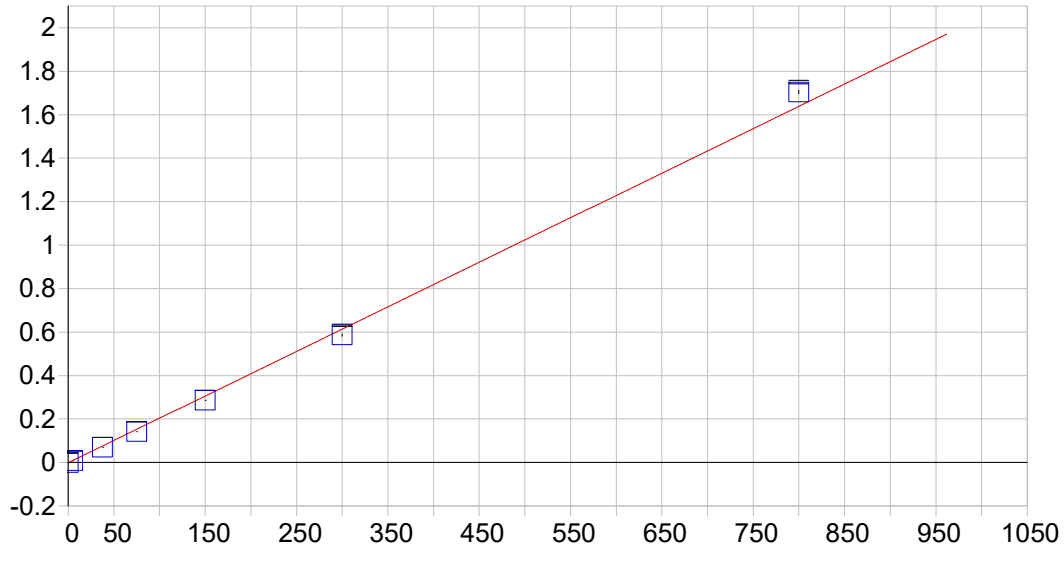
Ag 328.068 {103}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000340	Re-Slope:	1.000000
A1 (Gain):	0.277102	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999686	Status:	OK.
Std Error of Est:	0.000056		
Predicted MDL:	0.000368		
Predicted MQL:	0.001225		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00034	.000	1
S1	.01000	.00886	-.001	-11.4	.00210	.000	1
S3	.62500	.61344	-.012	-1.85	.16354	.001	1
S4	1.2500	1.2160	-.034	-2.72	.32441	.008	1
S5	2.5000	2.5555	.055	2.22	.68338	.001	1
S2	.31250	.30376	-.009	-2.80	.08078	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



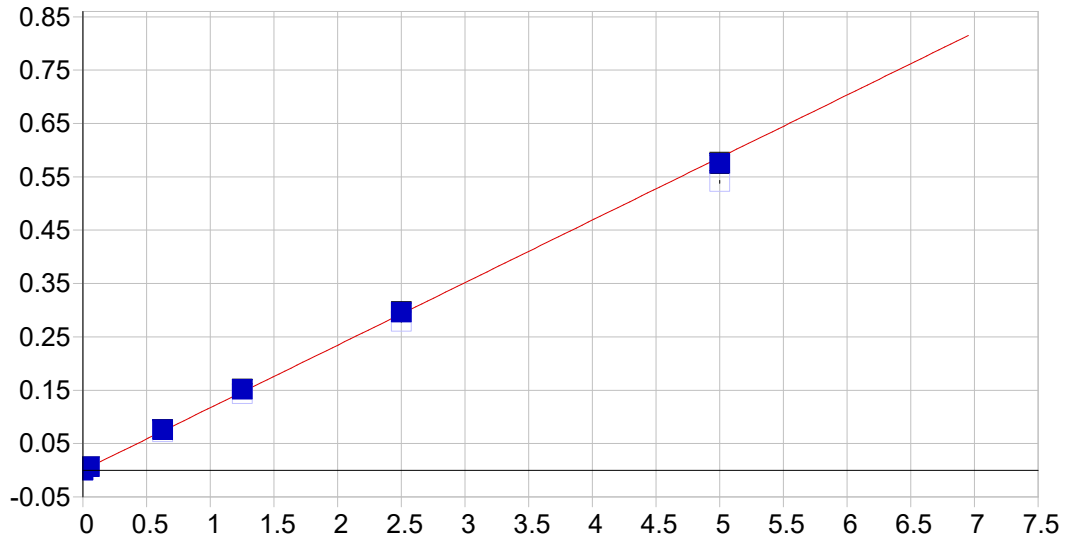
Na 818.326 { 41}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001576	Re-Slope:	1.000000
A1 (Gain):	0.002050	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998839	Status:	OK.
Std Error of Est:	0.000306		
Predicted MDL:	0.377463		
Predicted MQL:	1.258209		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00166	.002	.000	-.00157	.001	1
S2	37.500	34.782	-2.72	-7.25	.06974	.000	1
S3	75.000	69.669	-5.33	-7.11	.14127	.000	1
S4	150.00	140.19	-9.81	-6.54	.28587	.000	1
S5	300.00	286.44	-13.6	-4.52	.58572	.005	1
S1	5.0000	4.4105	-.589	-11.8	.00747	.000	1
S6	800.00	832.00	32.0	4.00	1.7043	.008	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



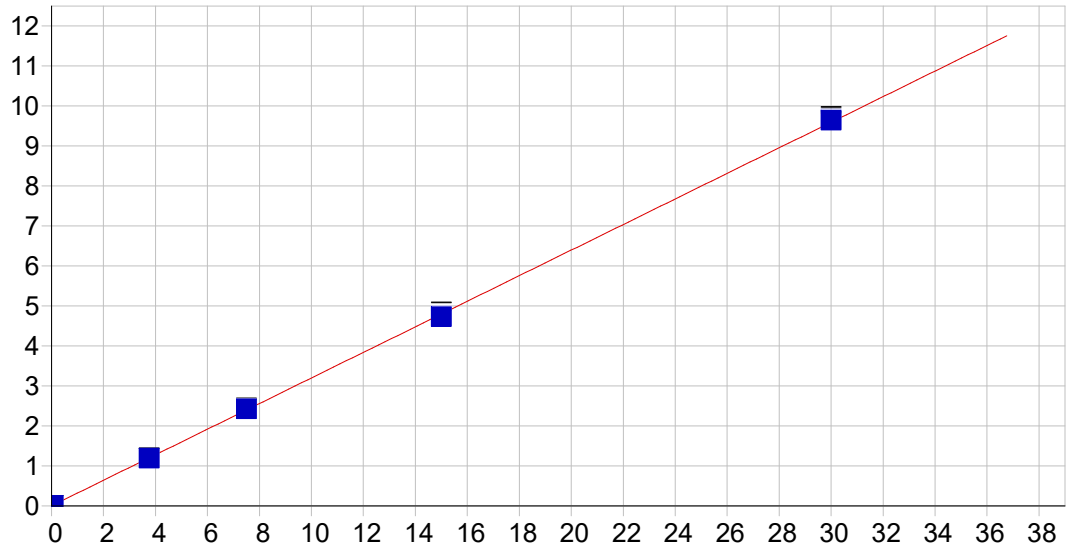
V 292.402 {115}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000057	Re-Slope:	1.000000
A1 (Gain):	0.117240	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999716	Status:	OK.
Std Error of Est:	0.000070		
Predicted MDL:	0.001821		
Predicted MQL:	0.006071		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	-.00006	.000	1
S1	.05000	.05375	.004	7.50	.00623	.000	1
S3	1.2500	1.2938	.044	3.50	.14305	.001	1
S4	2.5000	2.5259	.026	1.03	.27893	.001	1
S5	5.0000	4.9038	-.096	-1.92	.54058	.003	1
S2	.62500	.64759	.023	3.61	.07158	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



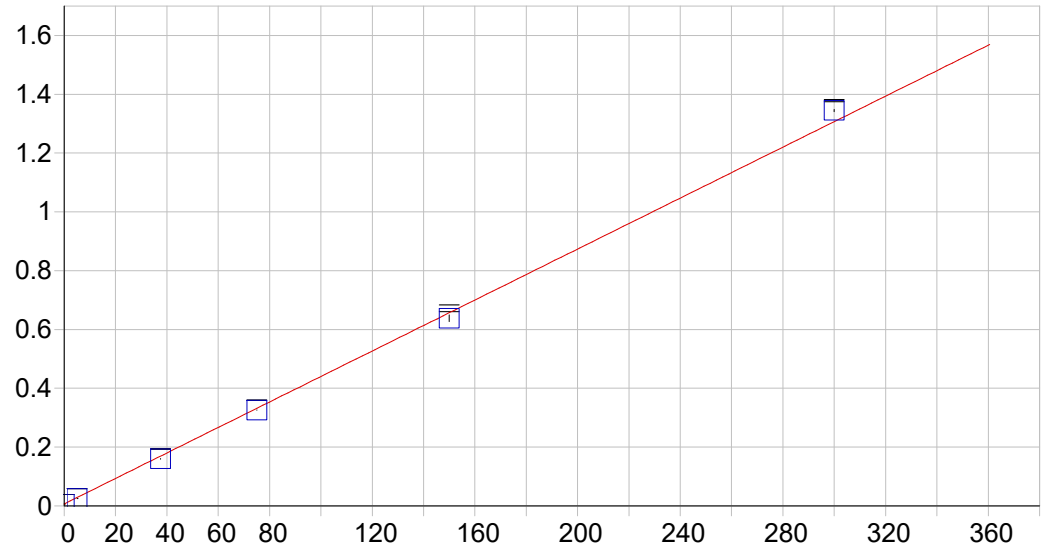
Zn 213.856 {158}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000741	Re-Slope:	1.000000
A1 (Gain):	0.319789	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999956	Status:	OK.
Std Error of Est:	0.000215		
Predicted MDL:	0.001702		
Predicted MQL:	0.005674		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00074	.000	1
S1	.06000	.05549	-.005	-7.52	.01860	.001	1
S3	7.5000	7.5883	.088	1.18	2.4364	.015	1
S4	15.000	14.798	-.202	-1.35	4.7510	.098	1
S5	30.000	30.147	.147	.490	9.6775	.064	1
S2	3.7500	3.7215	-.028	-.760	1.1954	.005	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



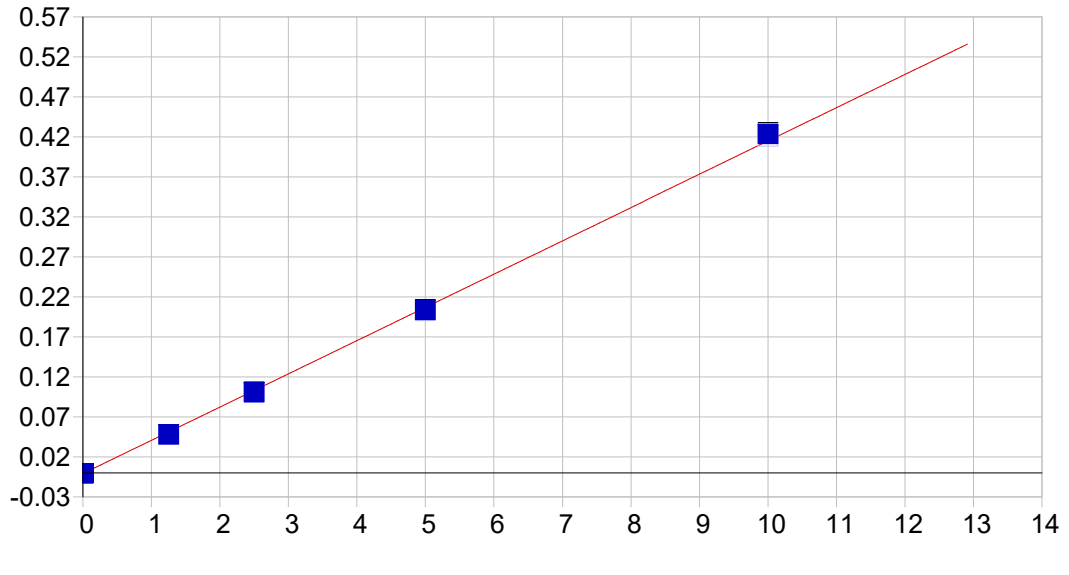
K 769.896 { 44}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.006844	Re-Slope:	1.000000
A1 (Gain):	0.004334	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999416	Status:	OK.
Std Error of Est:	0.000305		
Predicted MDL:	0.044212		
Predicted MQL:	0.147375		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00118	.001	.000	.00685	.000	1
S2	37.500	35.258	-2.24	-5.98	.15964	.001	1
S3	75.000	73.610	-1.39	-1.85	.32584	.000	1
S4	150.00	145.68	-4.32	-2.88	.63816	.012	1
S5	300.00	308.74	8.74	2.91	1.3448	.004	1
S1	5.0000	4.2137	-.786	-15.7	.02510	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

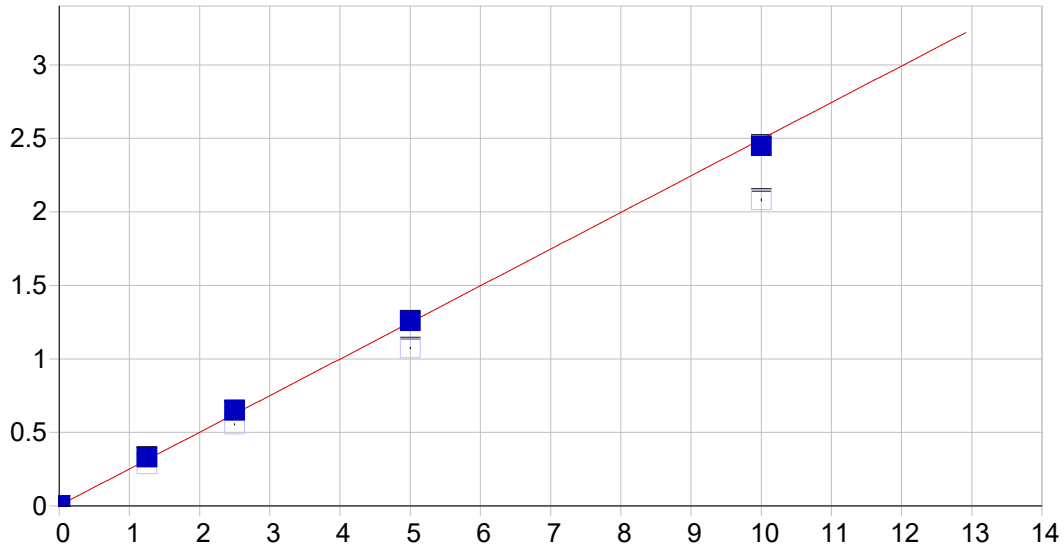


P 177.495 {490}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000935	Re-Slope:	1.000000
A1 (Gain):	0.041579	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999700	Status:	OK.
Std Error of Est:	0.000017		
Predicted MDL:	0.002290		
Predicted MQL:	0.007634		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00093	.000	1
S1	.01000	.00899	-.001	-10.1	-.00056	.000	1
S3	2.5000	2.4472	-.053	-2.11	.10008	.001	1
S4	5.0000	4.9229	-.077	-1.54	.20227	.001	1
S5	10.000	10.206	.206	2.06	.42044	.002	1
S2	1.2500	1.1754	-.075	-5.97	.04757	.000	1



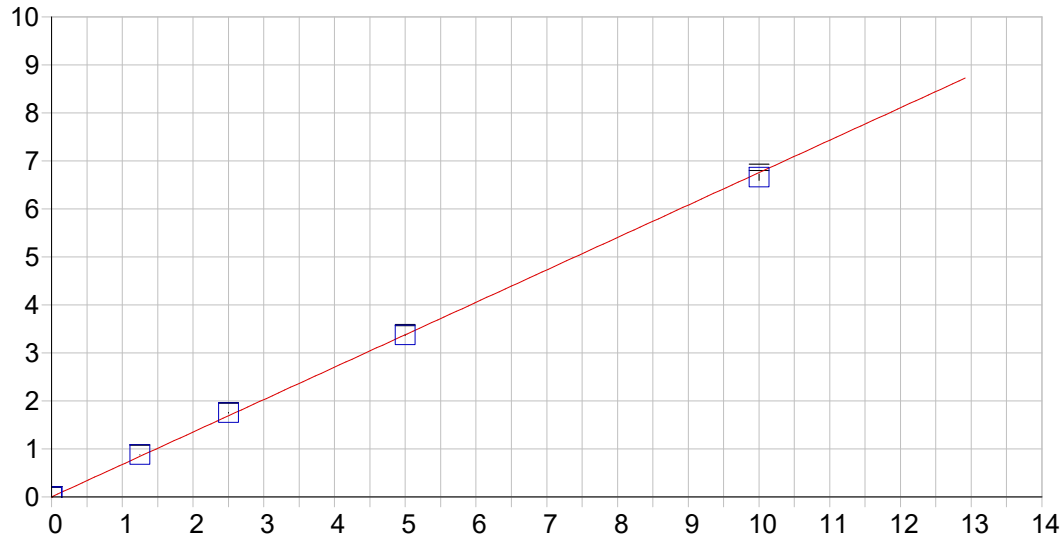
B 249.678 {135}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002378	Re-Slope:	1.000000
A1 (Gain):	0.249184	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999048	Status:	OK.
Std Error of Est:	0.000156		
Predicted MDL:	0.000960		
Predicted MQL:	0.003199		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00238	.000	1
S1	.01000	-.00223	-.012	-122.	.00170	.000	1
S3	2.5000	2.5896	.090	3.59	.55603	.004	1
S4	5.0000	5.0361	.036	.723	1.0740	.005	1
S5	10.000	9.8156	-.184	-1.84	2.0817	.008	1
S2	1.2500	1.3222	.072	5.78	.28603	.002	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



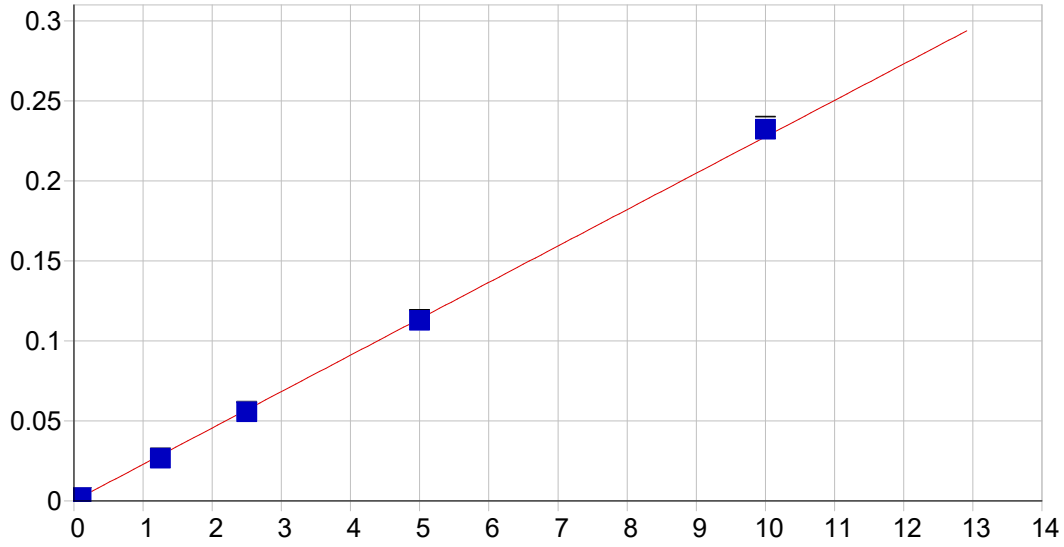
Mo 202.030 {467}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000309	Re-Slope:	1.000000
A1 (Gain):	0.675553	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999790	Status:	OK.
Std Error of Est:	0.000232		
Predicted MDL:	0.000306		
Predicted MQL:	0.001019		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00031	.000	1
S1	.01000	.01045	.000	4.46	.00737	.000	1
S3	2.5000	2.5979	.098	3.92	1.7554	.007	1
S4	5.0000	4.9917	-.008	-.166	3.3725	.011	1
S5	10.000	9.8594	-.141	-1.41	6.6609	.065	1
S2	1.2500	1.3005	.050	4.04	.87886	.002	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



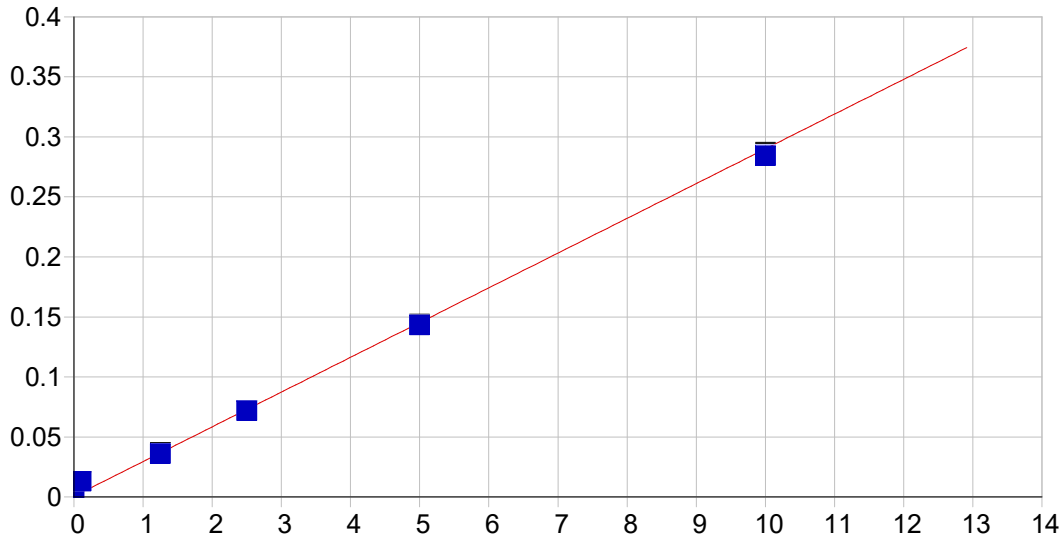
S 182.034 {485}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000072	Re-Slope:	1.000000
A1 (Gain):	0.022747	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999664	Status:	OK.
Std Error of Est:	0.000031		
Predicted MDL:	0.004170		
Predicted MQL:	0.013901		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00002	.000	.000	.00007	.000	1
S1	.10000	.08748	-.013	-12.5	.00206	.000	1
S3	2.5000	2.4391	-.061	-2.44	.05563	.000	1
S4	5.0000	4.9530	-.047	-.939	.11289	.000	1
S5	10.000	10.201	.201	2.01	.23240	.002	1
S2	1.2500	1.1695	-.080	-6.44	.02671	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



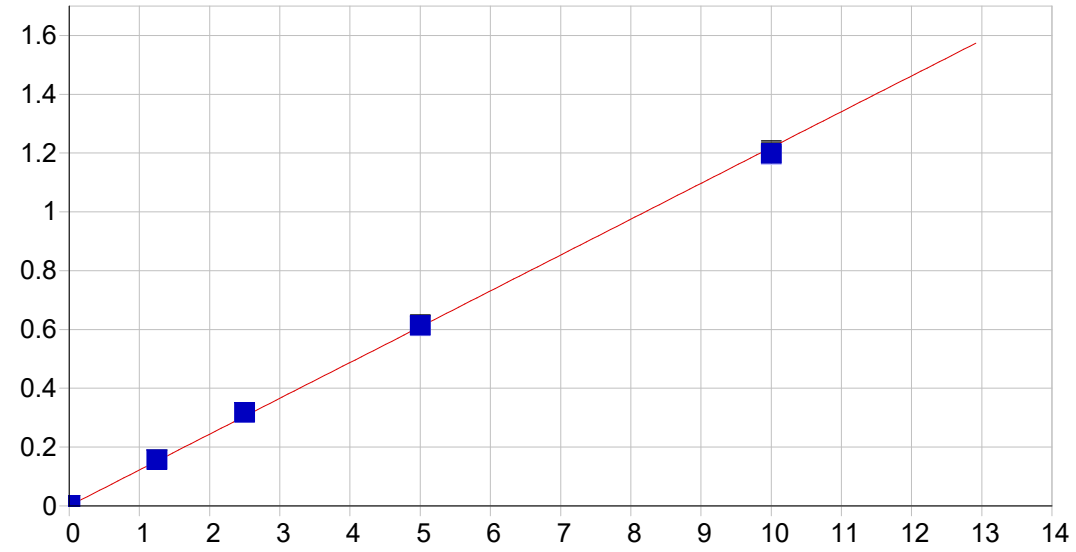
Si 251.611 {134}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000496	Re-Slope:	1.000000
A1 (Gain):	0.028955	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.971985	Status:	OK.
Std Error of Est:	0.000373		
Predicted MDL:	0.004814		
Predicted MQL:	0.016046		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00033	-.000	.000	.00049	.000	1
S1	.10000	.43192	.332	332.	.01300	.000	1
S3	2.5000	2.4586	-.041	-1.66	.07190	.000	1
S4	5.0000	4.9260	-.074	-1.48	.14356	.000	1
S5	10.000	9.8037	-.196	-1.96	.28523	.002	1
S2	1.2500	1.2306	-.019	-1.55	.03624	.001	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



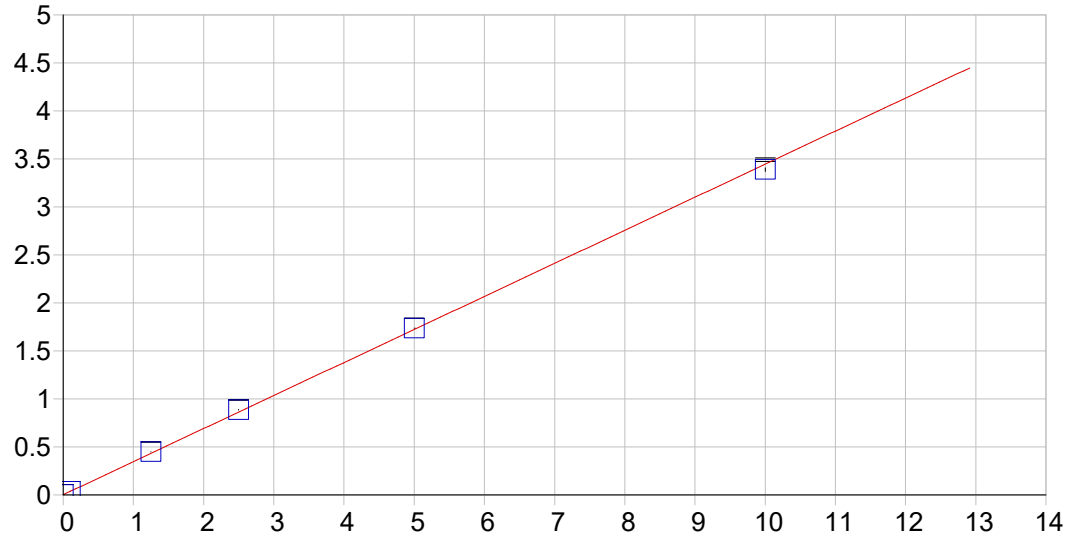
Sn 189.989 {478}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000221	Re-Slope:	1.000000
A1 (Gain):	0.121849	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999775	Status:	OK.
Std Error of Est:	0.000036		
Predicted MDL:	0.000871		
Predicted MQL:	0.002904		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00022	.000	1
S1	.00700	.00584	-.001	-16.5	.00090	.000	1
S3	2.5000	2.6019	.102	4.08	.31631	.001	1
S4	5.0000	5.0346	.035	.691	.61179	.002	1
S5	10.000	9.8305	-.169	-1.69	1.1943	.010	1
S2	1.2500	1.2842	.034	2.73	.15622	.000	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



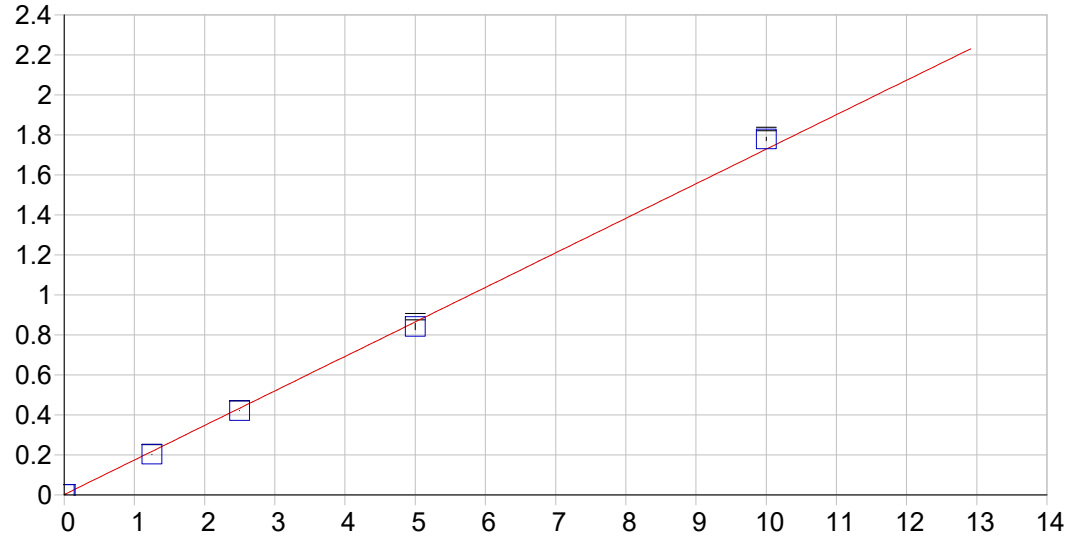
Ti 336.121 {100}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002107	Re-Slope:	1.000000
A1 (Gain):	0.344288	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999810	Status:	OK.
Std Error of Est:	0.000356		
Predicted MDL:	0.000843		
Predicted MQL:	0.002811		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00210	.000	1
S1	.10000	.10469	.005	4.69	.03815	.001	1
S3	2.5000	2.5721	.072	2.88	.88765	.004	1
S4	5.0000	5.0387	.039	.774	1.7369	.001	1
S5	10.000	9.8362	-.164	-1.64	3.3886	.018	1
S2	1.2500	1.2983	.048	3.86	.44910	.002	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



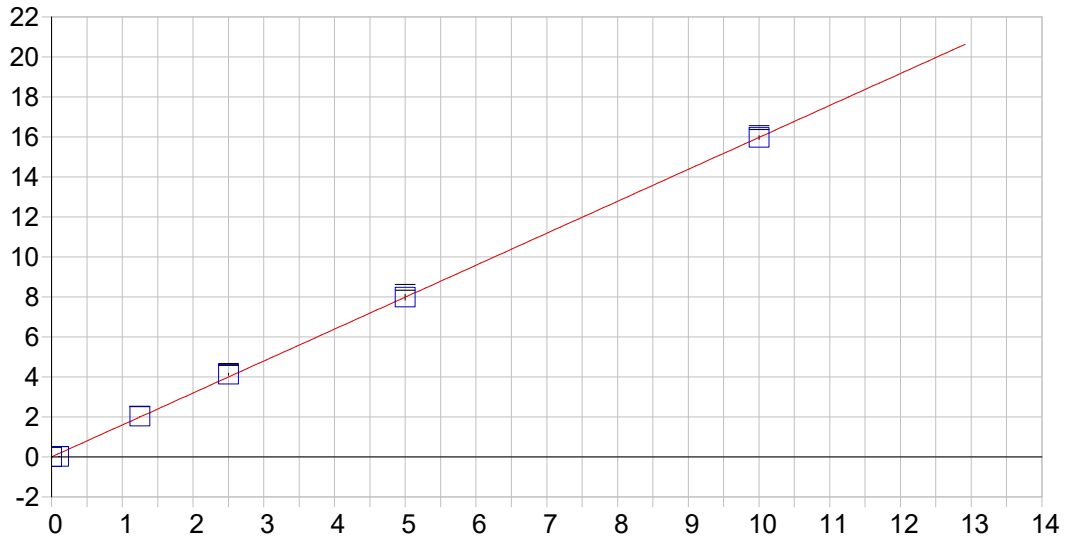
Li 670.784 { 50}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001799	Re-Slope:	1.000000
A1 (Gain):	0.172640	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999420	Status:	OK.
Std Error of Est:	0.000121		
Predicted MDL:	0.001130		
Predicted MQL:	0.003767		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00180	.000	1
S5	10.000	10.298	.298	2.98	1.7796	.009	1
S4	5.0000	4.8616	-.138	-2.77	.84111	.016	1
S3	2.5000	2.4296	-.070	-2.82	.42124	.001	1
S1	.01500	.01048	-.005	-30.1	.00361	.000	1
S2	1.2500	1.1653	-.085	-6.77	.20298	.001	1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



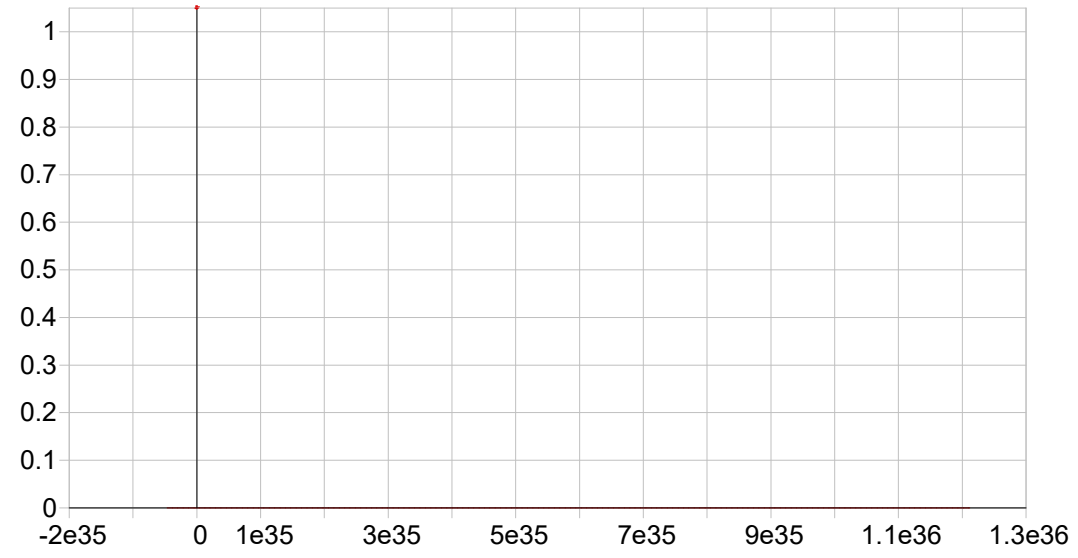
Sr 407.771 { 83}

Date of Fit:	3/7/2025 14:08:23	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000082	Re-Slope:	1.000000
A1 (Gain):	1.597507	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.997753	Status:	OK.
Std Error of Est:	0.005700		
Predicted MDL:	0.000064		
Predicted MQL:	0.000213		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00009	.000	.000	.00006	.000	1
S1	.10000	.00948	-.091	-90.5	.01506	.000	1
S3	2.5000	2.5826	.083	3.30	4.1256	.045	1
S4	5.0000	4.9977	-.002	-.046	7.9838	.144	1
S5	10.000	9.9930	-.007	-.070	15.964	.097	1
S2	1.2500	1.2672	.017	1.38	2.0243	.012	1

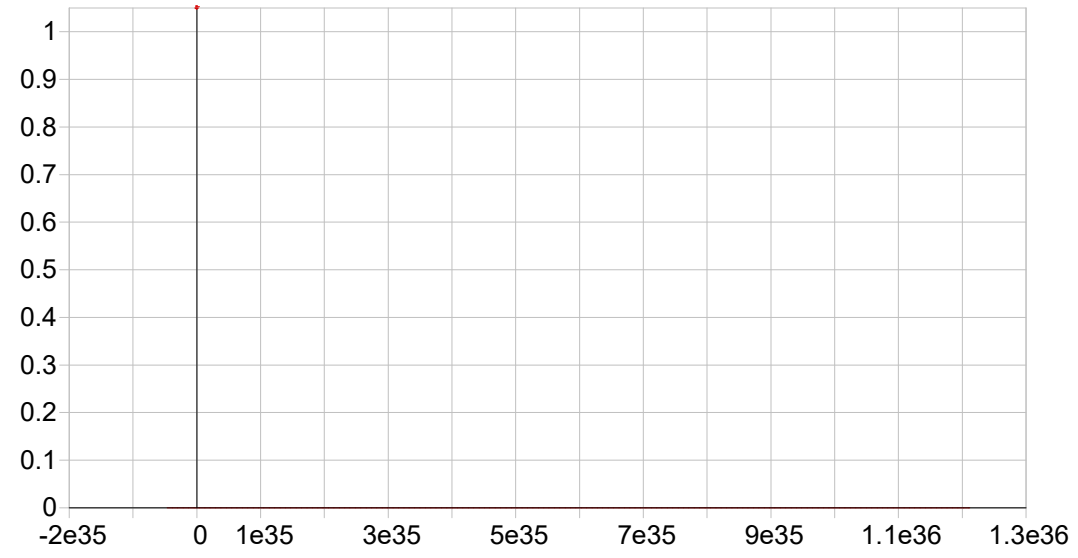
Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



Y 224.306 {450}*

Date of Fit:	3/7/2025 14:08:23	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



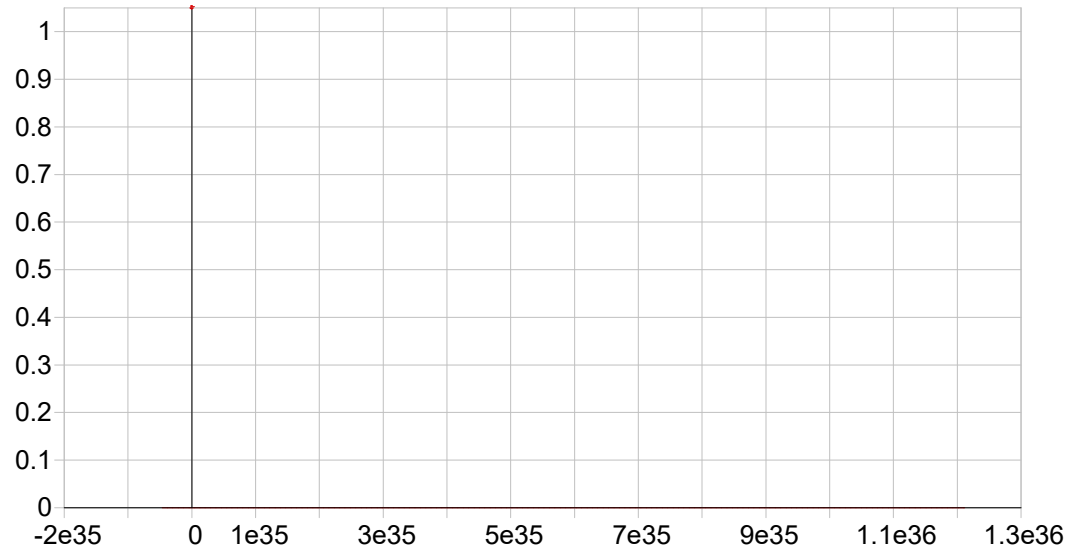
Y 360.073 { 94}*

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	

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

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

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



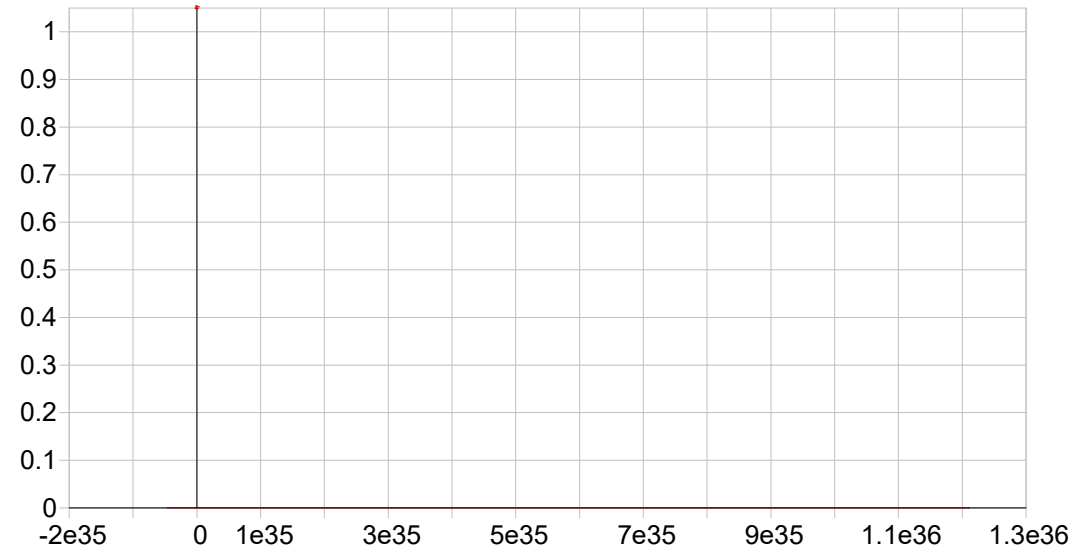
Y 371.030 { 91}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

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

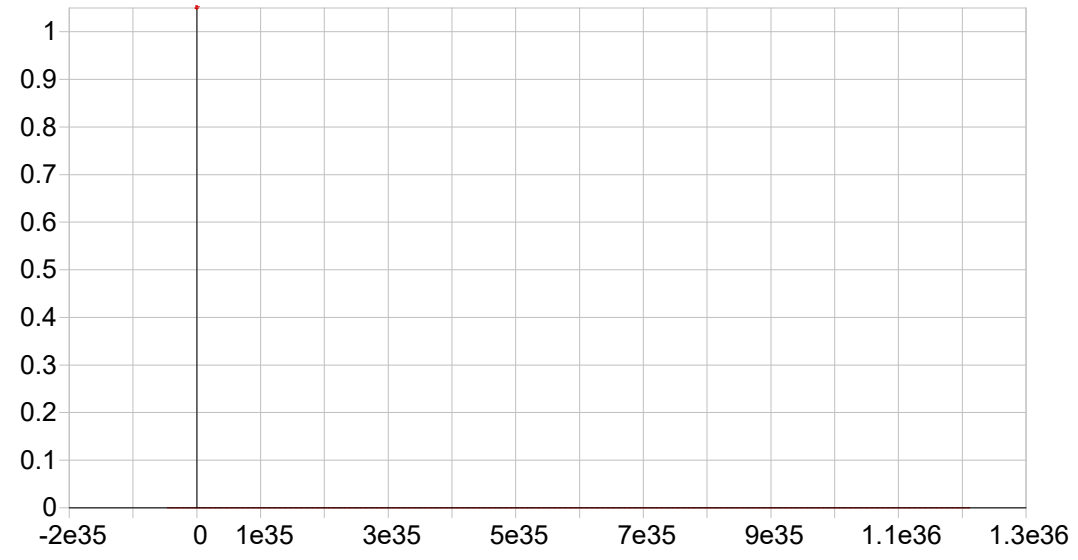
Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4



Y 224.306 {150}*

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

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



In 230.606 {446}*

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

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

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

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S0 Acquired: 3/7/2025 12:18:15 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00015**	**.00006**	**-.00028**	**.00017**	**.00034**	**.00006**	**.00624**	**.00005**
Stddev	.00007	.00007	.00024	.00007	.00008	.00003	.00021	.00014
%RSD	43.609	105.62	87.732	41.845	25.156	59.461	3.3707	259.83
#1	-.00018	-.00001	-.00018	.00016	.00028	.00002	.00613	-.00007
#2	-.00020	.00008	-.00055	.00011	.00029	.00009	.00610	.00020
#3	-.00008	.00012	-.00010	.00025	.00043	.00006	.00648	.00003

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00018**	**.00014**	**.00005**	**.00266**	**.00006**	**.00002**	**-.00001**
Stddev	.00010	.00006	.00002	.00025	.00013	.00001	.00000	.00002
%RSD	1581.2	35.393	12.013	447.39	5.0242	16.758	13.706	391.20
#1	.00010	.00019	.00014	-.00012	.00271	.00004	.00002	.00002
#2	-.00010	.00012	.00016	.00034	.00251	.00006	.00002	-.00002
#3	.00002	.00024	.00012	-.00005	.00276	.00006	.00002	-.00001

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00033**	**-.00034**	**-.00157**	**-.00006**	**.00074**	**.00685**	**-.00093**	**.00238**
Stddev	.00011	.00013	.00065	.00007	.00012	.00016	.00003	.00020
%RSD	32.941	38.103	41.555	114.12	16.562	2.2822	3.4511	8.5143
#1	-.00022	-.00030	-.00110	-.00005	.00086	.00667	-.00097	.00215
#2	-.00044	-.00048	-.00232	.00000	.00061	.00693	-.00092	.00254
#3	-.00034	-.00023	-.00130	-.00013	.00075	.00695	-.00091	.00246

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00031**	**.00007**	**.00049**	**.00022**	**.00210**	**.00180**	**.00006**
Stddev	.00018	.00006	.00009	.00009	.00012	.00004	.00009
%RSD	56.817	84.181	17.830	42.820	5.8200	2.0379	159.00
#1	.00022	.00008	.00053	.00014	.00201	.00183	-.00002
#2	.00019	.00013	.00054	.00032	.00224	.00181	.00015
#3	.00051	.00001	.00039	.00020	.00205	.00176	.00004

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S0 Acquired: 3/7/2025 12:18:15 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 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	**3310.8**	**75908.**	**15441.**	**2219.5**	**4877.7**
Stddev	11.8	68.	21.	16.7	15.7
%RSD	.35527	.08997	.13487	.75026	.32233
#1	3309.0	75957.	15454.	2214.2	4868.3
#2	3323.4	75938.	15451.	2206.1	4895.8
#3	3300.0	75830.	15417.	2238.1	4868.9

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S1 Acquired: 3/7/2025 12:22:29 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	**.00042**	**.00106**	**.00168**	**.00198**	**.00759**	**.00249**	**.09123**	**.01378**
Stddev	.00007	.00006	.00005	.00004	.00024	.00004	.00106	.00012
%RSD	15.539	5.6926	2.8778	2.2273	3.1654	1.7864	1.1584	.87711
#1	.00039	.00108	.00170	.00202	.00787	.00244	.09245	.01391
#2	.00038	.00099	.00171	.00198	.00743	.00251	.09063	.01374
#3	.00050	.00111	.00162	.00193	.00747	.00251	.09060	.01368

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01073**	**.04201**	**.00168**	**.04387**	**.00563**	**.00055**	**.00186**	**.01261**
Stddev	.00029	.00029	.00006	.00017	.00013	.00001	.00002	.00003
%RSD	2.7117	.68296	3.5284	.38801	2.3277	1.1950	1.0233	.26663
#1	.01103	.04234	.00163	.04406	.00574	.00056	.00188	.01265
#2	.01045	.04192	.00174	.04382	.00566	.00055	.00184	.01258
#3	.01070	.04179	.00166	.04373	.00548	.00054	.00186	.01260

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02000**	**.00210**	**.00747**	**.00623**	**.01860**	**.02510**	**-.00056**	**.00170**
Stddev	.00033	.00014	.00017	.00029	.00058	.00025	.00004	.00006
%RSD	1.6429	6.5059	2.2387	4.6220	3.1107	.97974	7.3193	3.7590
#1	.02029	.00194	.00766	.00656	.01910	.02537	-.00057	.00164
#2	.01964	.00216	.00735	.00614	.01873	.02505	-.00060	.00177
#3	.02006	.00218	.00739	.00600	.01797	.02489	-.00052	.00168

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00737**	**.00206**	**.01300**	**.00090**	**.03815**	**.00361**	**.01506**
Stddev	.00015	.00005	.00037	.00007	.00109	.00009	.00020
%RSD	2.0660	2.3097	2.8127	8.1150	2.8570	2.5335	1.3319
#1	.00743	.00210	.01342	.00094	.03930	.00369	.01529
#2	.00748	.00201	.01283	.00093	.03802	.00351	.01495
#3	.00719	.00208	.01276	.00081	.03713	.00363	.01494

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S1 Acquired: 3/7/2025 12:22:29 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	3245.7	75673.	15318.	2197.3	4692.5
Stddev	17.3	278.	312.	9.6	29.9
%RSD	.53421	.36764	2.0384	.43811	.63729
#1	3228.4	75407.	14960.	2188.2	4661.3
#2	3263.1	75650.	15459.	2196.4	4720.9
#3	3245.4	75962.	15534.	2207.4	4695.4

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S2 Acquired: 3/7/2025 12:26:40 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	.06599	.05266	1.2442	.06547	.16076	.50992	1.1659	.34023
Stddev	.00026	.00051	.0029	.00037	.00031	.00282	.0047	.00120
%RSD	.38676	.97037	.23681	.55849	.19208	.55363	.40457	.35300
#1	.06607	.05287	1.2476	.06568	.16100	.51024	1.1674	.34072
#2	.06620	.05208	1.2423	.06505	.16088	.50695	1.1606	.34111
#3	.06570	.05303	1.2426	.06569	.16041	.51257	1.1697	.33886

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.3791	.55638	.63725	.56686	.41429	.20729	.47763	.17716
Stddev	.0037	.00251	.00269	.00116	.00245	.00129	.00145	.00131
%RSD	.26646	.45043	.42143	.20501	.59075	.62437	.30452	.74069
#1	1.3827	.55656	.63749	.56810	.41585	.20741	.47763	.17699
#2	1.3753	.55379	.63445	.56670	.41556	.20594	.47617	.17593
#3	1.3792	.55879	.63980	.56579	.41147	.20852	.47908	.17854

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.32775	.08078	.06974	.07158	1.1954	.15964	.04757	.28603
Stddev	.00051	.00017	.00044	.00037	.0049	.00126	.00017	.00241
%RSD	.15666	.21318	.62390	.51790	.41298	.79046	.35760	.84343
#1	.32824	.08088	.07019	.07198	1.1983	.15955	.04774	.28810
#2	.32780	.08058	.06970	.07151	1.1897	.15843	.04755	.28661
#3	.32721	.08087	.06932	.07125	1.1981	.16094	.04740	.28338

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.87886	.02671	.03624	.15622	.44910	.20298	2.0243
Stddev	.00243	.00015	.00069	.00046	.00213	.00074	.0124
%RSD	.27599	.57831	1.9124	.29389	.47519	.36589	.61128
#1	.88142	.02673	.03650	.15674	.45100	.20308	2.0382
#2	.87660	.02685	.03676	.15586	.44950	.20219	2.0202
#3	.87854	.02655	.03545	.15608	.44679	.20367	2.0145

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S2 Acquired: 3/7/2025 12:26:40 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	3082.6	69261.	15284.	2002.1	4151.8
Stddev	12.9	324.	86.	11.8	15.7
%RSD	.41898	.46788	.56336	.59034	.37788
#1	3068.1	69093.	15227.	1993.8	4134.4
#2	3087.0	69635.	15241.	2015.7	4156.4
#3	3092.8	69056.	15383.	1996.9	4164.7

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S3 Acquired: 3/7/2025 12:30:42 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	.13559	.10188	2.5135	.13197	.32818	1.0488	2.3360	.67022
Stddev	.00061	.00088	.0064	.00036	.00077	.0013	.0148	.00185
%RSD	.44830	.86029	.25538	.26933	.23549	.12607	.63287	.27669
#1	.13536	.10102	2.5068	.13173	.32789	1.0496	2.3522	.67215
#2	.13513	.10183	2.5140	.13181	.32758	1.0495	2.3328	.66845
#3	.13628	.10277	2.5196	.13238	.32905	1.0473	2.3231	.67006

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.7994	1.1215	1.2588	1.1482	.82341	.41475	.96340	.36288
Stddev	.0094	.0027	.0033	.0026	.00369	.00066	.00331	.00074
%RSD	.33640	.23592	.25968	.22227	.44766	.15845	.34327	.20354
#1	2.7901	1.1235	1.2624	1.1456	.82554	.41499	.96622	.36326
#2	2.7990	1.1225	1.2560	1.1485	.82554	.41524	.96422	.36336
#3	2.8090	1.1185	1.2579	1.1506	.81916	.41400	.95976	.36203

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.66443	.16354	.14127	.14305	2.4364	.32584	.10008	.55603
Stddev	.00111	.00073	.00032	.00055	.0153	.00047	.00057	.00436
%RSD	.16758	.44778	.22586	.38530	.62896	.14358	.57000	.78407
#1	.66316	.16432	.14159	.14339	2.4341	.32621	.09951	.56101
#2	.66486	.16345	.14095	.14336	2.4528	.32600	.10008	.55422
#3	.66526	.16286	.14126	.14242	2.4224	.32531	.10065	.55287

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.7554	.05563	.07190	.31631	.88765	.42124	4.1256
Stddev	.0070	.00043	.00007	.00065	.00374	.00100	.0454
%RSD	.39782	.76473	.09243	.20588	.42189	.23830	1.1000
#1	1.7549	.05517	.07182	.31584	.89066	.42240	4.1273
#2	1.7486	.05570	.07193	.31604	.88884	.42072	4.1701
#3	1.7625	.05601	.07195	.31706	.88346	.42061	4.0794

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S3 Acquired: 3/7/2025 12:30:42 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	2927.3	67299.	15102.	1932.4	3854.1
Stddev	12.4	108.	19.	7.9	7.2
%RSD	.42309	.16044	.12560	.40625	.18635
#1	2922.0	67193.	15086.	1935.8	3856.1
#2	2941.4	67295.	15097.	1923.4	3860.0
#3	2918.4	67408.	15123.	1937.9	3846.1

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S4 Acquired: 3/7/2025 12:34:44 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	.26549	.19089	4.8805	.25661	.64469	2.0694	4.6391	1.3216
Stddev	.00086	.00120	.0162	.00102	.00227	.0388	.1303	.0105
%RSD	.32392	.62691	.33097	.39885	.35199	1.8744	2.8081	.79177
#1	.26455	.18955	4.8622	.25586	.64257	2.0888	4.7471	1.3265
#2	.26569	.19185	4.8864	.25620	.64441	2.0248	4.4944	1.3096
#3	.26623	.19128	4.8928	.25778	.64708	2.0948	4.6759	1.3287

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.4427	2.1733	2.3702	2.2375	1.6452	.79119	1.8670	.71656
Stddev	.0188	.0443	.0607	.0048	.0015	.01567	.0382	.01398
%RSD	.34621	2.0375	2.5589	.21266	.09061	1.9803	2.0485	1.9515
#1	5.4210	2.1963	2.3993	2.2321	1.6468	.79909	1.8855	.72390
#2	5.4553	2.1223	2.3005	2.2395	1.6450	.77314	1.8231	.70044
#3	5.4518	2.2014	2.4108	2.2410	1.6438	.80133	1.8925	.72535

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.2808	.32441	.28587	.27893	4.7510	.63816	.20227	1.0740
Stddev	.0038	.00778	.00048	.00116	.0981	.01168	.00080	.0049
%RSD	.29508	2.3967	.16670	.41413	2.0644	1.8295	.39598	.45696
#1	1.2769	.32864	.28611	.28023	4.8010	.64386	.20163	1.0769
#2	1.2810	.31543	.28532	.27855	4.6380	.62473	.20201	1.0684
#3	1.2845	.32915	.28617	.27802	4.8140	.64589	.20317	1.0768

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.3725	.11289	.14356	.61179	1.7369	.84111	7.9838
Stddev	.0114	.00047	.00032	.00216	.0011	.01591	.1436
%RSD	.33858	.41748	.22200	.35378	.06503	1.8915	1.7989
#1	3.3607	.11241	.14366	.60955	1.7381	.84814	8.0533
#2	3.3732	.11290	.14321	.61196	1.7367	.82289	7.8187
#3	3.3835	.11335	.14382	.61387	1.7359	.85229	8.0795

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S4 Acquired: 3/7/2025 12:34:44 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	**2814.3**	**65938.**	**14613.**	**1884.6**	**3616.2**
Stddev	7.7	1399.	19.	41.4	8.5
%RSD	.27210	2.1209	.12799	2.1950	.23589
#1	2821.3	65274.	14596.	1863.3	3625.8
#2	2815.5	67545.	14633.	1932.3	3613.3
#3	2806.1	64995.	14609.	1858.2	3609.4

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S5 Acquired: 3/7/2025 12:38:45 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	**.54574**	**.35632**	**9.6280**	**.51750**	**1.3223**	**4.2821**	**9.2322**	**2.6556**
Stddev	.00498	.00456	.0688	.00609	.0118	.0123	.0606	.0128
%RSD	.91241	1.2801	.71447	1.1770	.89040	.28634	.65683	.48181
#1	.54921	.36050	9.6895	.52140	1.3276	4.2680	9.2236	2.6410
#2	.54003	.35145	9.5537	.51048	1.3088	4.2903	9.1764	2.6612
#3	.54796	.35701	9.6409	.52062	1.3305	4.2880	9.2967	2.6647

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**10.589**	**4.3208**	**4.5639**	**4.4292**	**3.3076**	**1.5685**	**3.7317**	**1.4631**
Stddev	.084	.0469	.0134	.0361	.0209	.0033	.0216	.0023
%RSD	.79211	1.0858	.29412	.81416	.63119	.21010	.57743	.15730
#1	10.673	4.2682	4.5515	4.4632	3.2853	1.5651	3.7084	1.4611
#2	10.506	4.3360	4.5781	4.3914	3.3106	1.5688	3.7359	1.4625
#3	10.587	4.3583	4.5620	4.4329	3.3268	1.5716	3.7509	1.4656

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.5191**	**.68338**	**.58572**	**.54058**	**9.6775**	**1.3448**	**.42044**	**2.0817**
Stddev	.0198	.00149	.00486	.00259	.0636	.0041	.00236	.0082
%RSD	.78560	.21811	.82941	.47893	.65729	.30172	.56139	.39340
#1	2.5373	.68182	.58052	.53768	9.6041	1.3410	.42274	2.0723
#2	2.4980	.68478	.58650	.54141	9.7150	1.3444	.41802	2.0860
#3	2.5221	.68354	.59014	.54265	9.7135	1.3491	.42055	2.0869

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6.6609**	**.23240**	**.28523**	**1.1943**	**3.3886**	**1.7796**	**15.964**
Stddev	.0647	.00177	.00187	.0098	.0181	.0089	.097
%RSD	.97094	.76211	.65643	.81789	.53419	.49998	.61031
#1	6.7125	.23396	.28313	1.2044	3.3681	1.7709	15.895
#2	6.5883	.23048	.28586	1.1849	3.3951	1.7794	15.921
#3	6.6818	.23278	.28671	1.1936	3.4026	1.7887	16.075

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S5 Acquired: 3/7/2025 12:38:45 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	2568.4	61082.	14043.	1740.3	3267.8
Stddev	22.2	151.	60.	9.0	25.0
%RSD	.86466	.24641	.42693	.51455	.76485
#1	2553.2	61250.	14111.	1749.2	3247.1
#2	2593.9	60960.	13997.	1731.3	3295.5
#3	2558.1	61036.	14021.	1740.3	3260.8

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: S6 Acquired: 3/7/2025 12:43:15 Type: Cal
Method: EPA SFAM01.0(v69) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S06 Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Ca3736	Fe2598	Mg2790	Na8183
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**12.404**	**7.6675**	**4.4649**	**2.5857**	**1.7043**
Stddev	.121	.0148	.0220	.0061	.0083
%RSD	.97505	.19340	.49204	.23453	.48398
#1	12.385	7.6504	4.4421	2.5796	1.7054
#2	12.293	7.6772	4.4859	2.5859	1.6955
#3	12.533	7.6748	4.4667	2.5917	1.7119

Int. Std.	Y_3600	Y_3710
Units	Cts/S	Cts/S
Avg	**56480.**	**14019.**
Stddev	155.	55.
%RSD	.27436	.39189
#1	56651.	14046.
#2	56441.	14056.
#3	56348.	13956.

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICV003 Acquired: 3/7/2025 12:52:54 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV003 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9369418**	F **1.100339**	**1.010341**	**.9979866**	**.9564763**	**2.419426**
Stddev	.0070506	.008555	.004224	.0021554	.0012325	.000590
%RSD	.7525103	.7774832	.4180648	.2159776	.1288542	.0243908
#1	.9345819	1.092265	1.007613	.9954988	.9562877	2.420063
#2	.9313738	1.099449	1.008204	.9992960	.9553490	2.419315
#3	.9448696	1.109305	1.015206	.9991649	.9577922	2.418899

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4874844**	**.5163575**	**.5016708**	**9.321498**	**.5678498**	**.5037786**
Stddev	.0004144	.0004816	.0018797	.009494	.0028951	.0016948
%RSD	.0850054	.0932680	.3746807	.1018478	.5098318	.3364244
#1	.4874408	.5167186	.5005638	9.310834	.5645910	.5025327
#2	.4879189	.5165431	.5006075	9.324631	.5688341	.5030947
#3	.4870936	.5158107	.5038411	9.329030	.5701245	.5057086

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5082330**	**9.773139**	**.5074630**	F **4.989879**	**.5141073**	**.2361474**
Stddev	.0048916	.029183	.0003817	.011465	.0014036	.0005352
%RSD	.9624637	.2986011	.0752188	.2297617	.2730159	.2266266
#1	.5115757	9.779617	.5079032	4.991038	.5130818	.2357953
#2	.5105047	9.741261	.5072615	4.977879	.5135331	.2358836
#3	.5026187	9.798538	.5072243	5.000720	.5157070	.2367632

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.025651**	**.5255778**	**.9318514**	F **8.287854**	F **2.069279**	F **2.443974**
Stddev	.068491	.0024578	.0015981	.021935	.010497	.009978
%RSD	.7588443	.4676334	.1715018	.2646614	.5072586	.4082802
#1	9.027784	.5272173	.9304660	8.269753	2.057566	2.454666
#2	9.093049	.5227519	.9335998	8.281562	2.077834	2.442346
#3	8.956118	.5267642	.9314885	8.312247	2.072437	2.434910

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICV003 Acquired: 3/7/2025 12:52:54 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV003 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 2.476643	F 2.001588	F 2.018088	F 2.367093	F 2.502938	F 2.055124
Stddev	.007814	.008247	.013741	.009867	.016928	.001867
%RSD	.3155071	.4120458	.6808737	.4168535	.6763246	.0908571
#1	2.474117	1.992472	2.029460	2.360925	2.522396	2.055101
#2	2.470404	2.003761	2.021984	2.361880	2.494819	2.057002
#3	2.485407	2.008532	2.002820	2.378473	2.491600	2.053268

Elem	Sr4077
Units	ppm
Avg	F 2.354743
Stddev	.017421
%RSD	.7398261
#1	2.364873
#2	2.334627
#3	2.364728

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3274.338	73338.38	15551.96	2144.453	4624.049
Stddev	9.088	216.29	41.29	7.644	9.354
%RSD	.2775407	.2949144	.2655001	.3564379	.2022864
#1	3270.621	73541.00	15513.14	2151.343	4623.651
#2	3284.694	73363.51	15595.34	2145.785	4633.595
#3	3267.697	73110.62	15547.39	2136.231	4614.900

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICB003 Acquired: 3/7/2025 12:56:55 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB003 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021300	-.000327	-.000036	.0007631	-.001099	-.001713	-.001232
Stddev	.0007978	.000936	.000507	.0032270	.002281	.002338	.000514
%RSD	37.45567	286.0941	1421.434	422.8524	207.5801	136.4880	41.69507
#1	.0029397	-.000093	.000511	-.000360	-.001590	-.003906	-.000788
#2	.0021056	-.001358	-.000126	-.001752	-.003094	-.001980	-.001113
#3	.0013447	.000469	-.000492	.004402	.001388	.000747	-.001795

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000048	-.000010	-.006988	-.000648	.0000299	-.000211	-.001108
Stddev	.000059	.000031	.005640	.000313	.0000864	.001921	.002161
%RSD	122.2893	295.5071	80.70560	48.22781	289.4566	908.3347	195.1072
#1	-.000018	.000005	-.009271	-.000290	-.000018	-.001004	.000466
#2	-.000116	-.000046	-.011128	-.000792	.000130	.001979	-.003572
#3	-.000011	.000010	-.000565	-.000863	-.000022	-.001609	-.000217

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000010	-.016513	.0001330	-.000134	-.200225	.0017580	-.000923
Stddev	.0001988	.002736	.0002394	.000140	.219702	.0024313	.000598
%RSD	19941.70	16.57005	180.0468	104.6670	109.7276	138.2983	64.79723
#1	-.000172	-.015293	-.000117	-.000227	-.039691	-.000495	-.000592
#2	.000218	-.014598	.000155	-.000201	-.450611	.001434	-.000563
#3	-.000044	-.019647	.000361	.000027	-.110373	.004335	-.001613

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.130017	-.000803	.0050850	-.000067	.0014111	-.001749	-.000485
Stddev	.038136	.001462	.0001294	.000085	.0012934	.002916	.000476
%RSD	29.33126	182.0029	2.545301	126.2460	91.65734	166.7415	98.29576
#1	-.153132	-.002415	.0052283	-.000150	.0023491	-.000758	-.000004
#2	-.086001	.000439	.0049767	-.000070	-.000064	-.005032	-.000492
#3	-.150920	-.000434	.0050499	.000019	.001949	.000543	-.000957

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICB003 Acquired: 3/7/2025 12:56:55 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB003 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000566	-.003154	.0000458
Stddev	.000579	.000695	.0000122
%RSD	102.3585	22.02539	26.69045
#1	-.001024	-.002627	.0000328
#2	-.000760	-.003941	.0000571
#3	.000085	-.002893	.0000476

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3343.842	77048.18	15554.62	2241.069	4937.908
Stddev	4.319	861.54	249.97	25.916	7.846
%RSD	.1291505	1.118185	1.607032	1.156408	.1588864
#1	3338.859	76612.80	15719.94	2232.707	4930.102
#2	3346.492	76491.23	15267.05	2220.367	4937.831
#3	3346.176	78040.53	15676.86	2270.134	4945.792

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICSA003 Acquired: 3/7/2025 13:01:03 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA003 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065521	-.004426	.0018189	.0177044	.0054522	220.8499
Stddev	.0042684	.001838	.0028235	.0017139	.0037397	1.6669
%RSD	65.14542	41.53043	155.2286	9.680780	68.59001	.7547707
#1	.0068659	-.002838	.0019615	.0194083	.0021752	219.1906
#2	.0021355	-.004001	.0045684	.0177243	.0046554	220.8348
#3	.0106550	-.006440	-.001073	.0159806	.0095262	222.5244

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0049853	-.000628	.0005204	237.5130	.0522730	.0019848
Stddev	.0001875	.000037	.0001544	2.1267	.0010367	.0002978
%RSD	3.761755	5.840594	29.66341	.8954069	1.983244	15.00440
#1	.0048175	-.000643	.0006228	236.1800	.0513214	.0017188
#2	.0049506	-.000587	.0003428	239.9656	.0521199	.0019292
#3	.0051877	-.000656	.0005954	236.3933	.0533778	.0023066

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002789	98.53715	.0209457	233.8229	.0031237	-.003131
Stddev	.001334	.80856	.0001257	2.0218	.0003669	.000186
%RSD	47.84183	.8205672	.6002882	.8646705	11.74484	5.944795
#1	-.001334	97.94689	.0210775	232.5755	.0027104	-.003338
#2	-.003955	99.45875	.0209324	236.1556	.0034107	-.003078
#3	-.003079	98.20579	.0208271	232.7375	.0032501	-.002978

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.797179	-.004524	-.006798	-.166901	.0034089	F .1428325
Stddev	.344695	.001019	.002502	.035032	.0013473	.0064289
%RSD	43.23935	22.51846	36.80422	20.98941	39.52396	4.500994
#1	-.959566	-.005632	-.008787	-.206270	.0023388	.1392087
#2	-1.03069	-.004311	-.003989	-.139170	.0029660	.1502553
#3	-.40128	-.003628	-.007617	-.155263	.0049220	.1390336

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICSA003 Acquired: 3/7/2025 13:01:03 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA003 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000395	.0232136	.0049702	-.005520	-.002443	.0035747
Stddev	.000413	.0052993	.0045276	.001019	.000646	.0010428
%RSD	104.6468	22.82853	91.09503	18.46436	26.44086	29.17235
#1	-.000505	.0241960	-.000013	-.004744	-.002414	.0042347
#2	.000062	.0279530	.006092	-.006674	-.003103	.0041169
#3	-.000742	.0174918	.008832	-.005141	-.001812	.0023725

Elem	Sr4077
Units	ppm
Avg	F .1019570
Stddev	.0010560
%RSD	1.035708
#1	.1012437
#2	.1031701
#3	.1014573

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2922.329	66614.15	14989.60	1954.659	3833.526
Stddev	10.564	335.54	92.90	8.860	9.109
%RSD	.3615045	.5037062	.6197839	.4532662	.2376249
#1	2922.075	66974.67	15023.87	1954.796	3833.623
#2	2933.018	66310.99	15060.50	1963.450	3842.586
#3	2911.894	66556.78	14884.43	1945.732	3824.368

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICSAB003 Acquired: 3/7/2025 13:05:18 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB003 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0994165	.0997696	.0529478	.0652814	.5939212	226.7037
Stddev	.0030582	.0021634	.0007485	.0022206	.0023218	3.5581
%RSD	3.076160	2.168413	1.413724	3.401504	.3909286	1.569490
#1	.0962303	.1000003	.0536475	.0627174	.5960672	230.1967
#2	.0996911	.1018085	.0521585	.0665386	.5914565	223.0839
#3	.1023282	.0975001	.0530375	.0665880	.5942400	226.8306

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5323959	.4906504	1.000285	243.1473	.6019117	.5069058
Stddev	.0052683	.0011655	.002320	2.0172	.0061922	.0015479
%RSD	.9895394	.2375370	.2319329	.8296111	1.028749	.3053669
#1	.5381218	.4914860	1.001038	244.7979	.6085917	.5066873
#2	.5277539	.4911463	.997682	240.8988	.5963635	.5054787
#3	.5313120	.4893190	1.002134	243.7453	.6007798	.5085513

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4917567	101.0425	.5410145	238.4814	1.016415	.2022084
Stddev	.0011319	.8273	.0042247	1.6991	.003165	.0011967
%RSD	.2301820	.8187243	.7808886	.7124698	.3113841	.5918357
#1	.4927787	101.5523	.5441101	239.6002	1.016774	.2033838
#2	.4919515	100.0880	.5362015	236.5263	1.013086	.2009914
#3	.4905401	101.4871	.5427318	239.3179	1.019385	.2022499

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.583616	.4929692	1.013982	-.361702	.0066225	F .7609290
Stddev	.445759	.0031432	.015388	.069091	.0066056	.0026204
%RSD	76.37879	.6376109	1.517605	19.10161	99.74467	.3443673
#1	-.826288	.4913212	1.026410	-.406051	.0141448	.7633084
#2	-.069172	.4909926	.996770	-.282096	.0017684	.7581206
#3	-.855388	.4965937	1.018767	-.396960	.0039543	.7613580

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: ICSAB003 Acquired: 3/7/2025 13:05:18 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB003 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .6562540	.0325381	F .5095260	F .6438075	F .6477586	.0014629
Stddev	.0010411	.0082035	.0005717	.0025137	.0016977	.0007193
%RSD	.1586451	25.21197	.1121947	.3904474	.2620842	49.16660
#1	.6562144	.0291842	.5099080	.6452809	.6460773	.0006767
#2	.6552332	.0265430	.5098013	.6409050	.6494722	.0016244
#3	.6573143	.0418872	.5088688	.6452366	.6477264	.0020878

Elem	Sr4077
Units	ppm
Avg	F .1050698
Stddev	.0008760
%RSD	.8337020
#1	.1058808
#2	.1041408
#3	.1051879

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2901.267	65789.94	15407.21	1893.655	3820.580
Stddev	2.738	450.66	42.47	17.829	5.844
%RSD	.0943573	.6849974	.2756609	.9415306	.1529541
#1	2903.048	65345.55	15438.23	1882.999	3823.344
#2	2902.637	66246.62	15358.80	1914.238	3824.529
#3	2898.114	65777.65	15424.61	1883.727	3813.867

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCV006 Acquired: 3/7/2025 13:09:22 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV006 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.953841**	**4.887767**	**23.95661**	**4.987409**	**4.961596**	**383.6982**	**10.42119**
Stddev	.044300	.033528	.22941	.048538	.049471	1.4261	.02229
%RSD	.8942559	.6859619	.9575890	.9732034	.9970880	.3716786	.2139311
#1	4.971580	4.907195	24.06046	5.001689	4.978985	382.1030	10.40268
#2	4.903421	4.849052	23.69365	4.933333	4.905778	384.8496	10.41495
#3	4.986523	4.907054	24.11573	5.027204	5.000025	384.1422	10.44594

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4760127**	**2.435919**	**394.4219**	**15.34492**	**2.431560**	**14.74325**	**397.4526**
Stddev	.0022224	.025229	1.6367	.04226	.024879	.02693	2.3276
%RSD	.4668834	1.035709	.4149619	.2754323	1.023152	.1826283	.5856338
#1	.4785682	2.448020	392.6245	15.29887	2.442693	14.74883	394.8709
#2	.4745326	2.406919	394.8149	15.35396	2.403059	14.71398	398.0961
#3	.4749372	2.452819	395.8263	15.38194	2.448928	14.76696	399.3907

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.32442**	**392.8769**	**2.426978**	**1.267983**	**379.1707**	**2.431405**	**15.48318**
Stddev	.09837	1.7408	.024730	.003743	.7403	.006997	.12627
%RSD	.6419220	.4430899	1.018965	.2952086	.1952377	.2877559	.8155503
#1	15.22879	390.9735	2.439719	1.263932	379.2027	2.433954	15.36482
#2	15.31916	393.2688	2.398476	1.271313	378.4149	2.423492	15.46861
#3	15.42532	394.3883	2.442740	1.268704	379.8944	2.436770	15.61610

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**158.7255**	**4.870253**	**5.097852**	**4.875888**	**4.921269**	**4.831560**	**4.859841**
Stddev	.9620	.036792	.007420	.046128	.033523	.006660	.044923
%RSD	.6060889	.7554458	.1455564	.9460417	.6811961	.1378512	.9243794
#1	157.6161	4.880441	5.104547	4.891415	4.941906	4.839227	4.866918
#2	159.2300	4.829441	5.099137	4.824000	4.882589	4.828240	4.811799
#3	159.3303	4.900878	5.089874	4.912249	4.939313	4.827212	4.900805

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCV006 Acquired: 3/7/2025 13:09:22 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV006 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.884700**	**5.248657**	**5.250571**
Stddev	.004003	.037371	.025370
%RSD	.0819442	.7120162	.4831846
#1	4.886559	5.207089	5.274692
#2	4.880106	5.259407	5.224113
#3	4.887435	5.279475	5.252908

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2666.248**	**61724.00**	**14644.88**	**1737.569**	**3391.019**
Stddev	22.022	116.41	80.06	4.713	28.260
%RSD	.8259494	.1885913	.5466471	.2712213	.8333801
#1	2654.892	61846.59	14552.97	1742.863	3375.877
#2	2691.629	61710.44	14682.24	1736.015	3423.624
#3	2652.221	61614.97	14699.42	1733.831	3373.557

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCB006 Acquired: 3/7/2025 13:13:40 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB006 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000163**	**.0006559**	**.0000341**	**.0001075**	**-.001013**	**.0043060**	**-.002878**
Stddev	.000662	.0015612	.0009180	.0027314	.000277	.0018607	.000607
%RSD	407.2472	238.0296	2695.414	2540.521	27.37811	43.21158	21.08890
#1	-.000923	.0003229	.0010721	-.001923	-.001256	.0049982	-.003565
#2	.000146	.0023568	-.000671	.003213	-.000711	.0021984	-.002657
#3	.000289	-.000712	-.000299	-.000968	-.001071	.0057214	-.002413

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000078**	**-.000001**	**.0003028**	**-.000179**	**-.000128**	**.0013671**	**-.002522**
Stddev	.000040	.000017	.0040117	.000068	.000040	.0027511	.005659
%RSD	51.81354	1238.867	1324.679	38.13334	31.53602	201.2349	224.3816
#1	-.000047	-.000021	.0047447	-.000108	-.000129	-.001489	.002303
#2	-.000124	.000013	-.000779	-.000245	-.000168	.003999	-.008750
#3	-.000063	.000004	-.003057	-.000185	-.000087	.001591	-.001119

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002471**	**-.006878**	**-.000344**	**-.000173**	**-.286025**	**.0010131**	**.0009558**
Stddev	.0002612	.006630	.000152	.000130	.236828	.0004159	.0014598
%RSD	105.6854	96.38231	44.29044	75.10333	82.79966	41.05515	152.7356
#1	-.000040	-.014308	-.000179	-.000236	-.537690	.0009756	.0017383
#2	.000310	-.001566	-.000371	-.000260	-.252854	.0006172	.0018575
#3	.000471	-.004761	-.000480	-.000024	-.067532	.0014465	-.000728

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.173834**	**.0010518**	**.0047129**	**.0000500**	**-.000006**	**-.000287**	**-.000404**
Stddev	.008702	.0017680	.0003229	.0002949	.002520	.002329	.000853
%RSD	5.006014	168.0918	6.851757	590.4744	42764.03	810.7256	211.0356
#1	-.163793	.0029553	.0050843	.0000574	-.002437	.002245	.000149
#2	-.179175	.0007392	.0045562	.0003411	-.000174	-.000770	-.001386
#3	-.178535	-.000539	.0044983	-.000249	.002594	-.002337	.000025

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCB006 Acquired: 3/7/2025 13:13:40 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB006 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0002329	-.002622	.0000636
Stddev	.0002812	.001369	.0000251
%RSD	120.7381	52.22882	39.44900
#1	.0005467	-.003999	.0000846
#2	.0000038	-.001260	.0000703
#3	.0001482	-.002608	.0000358

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3350.169	78027.52	15601.26	2218.387	4960.653
Stddev	13.330	1035.15	25.78	27.496	18.373
%RSD	.3978950	1.326646	.1652723	1.239471	.3703691
#1	3343.835	78961.09	15611.04	2248.990	4956.172
#2	3365.485	76914.31	15572.02	2195.761	4980.851
#3	3341.187	78207.17	15620.72	2210.410	4944.935

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: Q1106-03A Acquired: 3/7/2025 13:17:49 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6A Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0034734**	**.0004384**	**.0012751**	**-.002632**	**.0002235**	**1.426766**
Stddev	.0012441	.0022932	.0017449	.005378	.0002684	.022821
%RSD	35.81786	523.1408	136.8380	204.3122	120.0724	1.599521
#1	.0022433	.0019202	.0023209	-.002435	-.000072	1.407983
#2	.0047310	-.002203	.0022437	-.008105	.000292	1.452164
#3	.0034459	.001598	-.000739	.002644	.000451	1.420152

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2168877**	**-.000080**	**-.000060**	**114.4056**	**.0228705**	**-.000408**
Stddev	.0039624	.000045	.000069	1.5160	.0006369	.000086
%RSD	1.826918	56.13971	114.4930	1.325122	2.784931	21.01080
#1	.2123676	-.000104	-.000138	112.7663	.0221350	-.000494
#2	.2197616	-.000107	-.000013	115.7571	.0232317	-.000322
#3	.2185340	-.000028	-.000028	114.6935	.0232446	-.000409

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009431**	**.0026663**	**.0349520**	**.0206076**	**.0000238**	**-.000554**
Stddev	.0012343	.0008242	.0001110	.0080209	.0003140	.000222
%RSD	130.8842	30.91073	.3174615	38.92217	1318.517	39.99333
#1	.0023477	.0029400	.0349759	.0273440	.0003248	-.000339
#2	.0004502	.0033188	.0350490	.0117348	-.000302	-.000543
#3	.0000313	.0017401	.0348310	.0227440	.000048	-.000782

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.215332**	**.0035839**	**.0238469**	**-.107895**	**.0009828**	**.0363581**
Stddev	.265149	.0015650	.0020365	.063766	.0017888	.0008056
%RSD	8.246396	43.66856	8.539866	59.09958	182.0069	2.215822
#1	3.218277	.0041325	.0216605	-.175896	-.000881	.0368158
#2	3.478997	.0018184	.0241907	-.049441	.002685	.0354279
#3	2.948724	.0048007	.0256897	-.098349	.001144	.0368308

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: Q1106-03A Acquired: 3/7/2025 13:17:49 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6A Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0524616	F 11.61542	3.305734	-.003854	-.003496	-.001834
Stddev	.0001576	.00805	.015822	.000373	.000355	.001060
%RSD	.3004585	.0692924	.4786085	9.670954	10.16162	57.78062
#1	.0523071	11.60734	3.313210	-.003708	-.003130	-.001012
#2	.0524556	11.61548	3.316434	-.004278	-.003518	-.003030
#3	.0526222	11.62343	3.287561	-.003577	-.003839	-.001461

Elem	Sr4077
Units	ppm
Avg	.2698425
Stddev	.0038471
%RSD	1.425669
#1	.2657755
#2	.2734234
#3	.2703287

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3276.966	75206.83	15739.74	2198.203	4665.361
Stddev	15.777	1010.85	45.39	27.381	18.683
%RSD	.4814512	1.344097	.2883746	1.245624	.4004638
#1	3291.714	76363.56	15707.74	2229.102	4683.752
#2	3278.853	74493.20	15791.69	2188.553	4665.934
#3	3260.330	74763.73	15719.79	2176.952	4646.399

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: Q1160-01A Acquired: 3/7/2025 13:21:53 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9A Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0099933**	**.0000645**	**.0028489**	**.0004255**	**.0000730**	**4.500371**
Stddev	.0018566	.0016238	.0011129	.0016569	.0004684	.009966
%RSD	18.57804	2518.556	39.06401	389.4045	641.2807	.2214586
#1	.0120810	.0015073	.0016369	.0023153	.0002293	4.492474
#2	.0093713	.0003800	.0038247	-.000778	.0004433	4.511569
#3	.0085276	-.001694	.0030850	-.000261	-.000454	4.497070

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2313852**	**.0000241**	**-.000011**	**7.113682**	**.0033090**	**.0030116**
Stddev	.0007982	.0000890	.000075	.016853	.0001724	.0000962
%RSD	.3449628	370.0466	695.5892	.2369028	5.210656	3.193024
#1	.2305479	-.000031	-.000092	7.097751	.0031136	.0029033
#2	.2321375	.000127	.000005	7.131325	.0033733	.0030444
#3	.2314703	-.000024	.000055	7.111968	.0034400	.0030870

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0127850**	**4.073370**	**.0830367**	**5.597263**	**.0082741**	**-.000345**
Stddev	.0025145	.012236	.0003288	.017687	.0000738	.000227
%RSD	19.66721	.3003835	.3960198	.3159865	.8918689	65.75632
#1	.0107832	4.059248	.0831757	5.577233	.0083489	-.000194
#2	.0119647	4.080793	.0832731	5.610730	.0082720	-.000235
#3	.0156072	4.080070	.0826611	5.603827	.0082014	-.000606

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.301646**	**.0063937**	**.1930173**	**-.843599**	**.1796017**	**.3423544**
Stddev	.251790	.0007080	.0043835	.027634	.0008662	.0021695
%RSD	3.995627	11.07392	2.271037	3.275713	.4823120	.6336871
#1	6.299398	.0063860	.1924209	-.862558	.1786051	.3448551
#2	6.050987	.0056895	.1976684	-.856347	.1800255	.3409758
#3	6.554553	.0071056	.1889625	-.811893	.1801745	.3412323

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: Q1160-01A Acquired: 3/7/2025 13:21:53 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C9A Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011184	F 10.63340	6.282295	-.001322	.0391364	-.003231
Stddev	.0001255	.03103	.027252	.000569	.0010666	.000880
%RSD	11.22309	.2918226	.4337927	43.02064	2.725268	27.23880
#1	.0011407	10.62128	6.312935	-.000972	.0401277	-.003768
#2	.0009832	10.61027	6.260765	-.001978	.0392738	-.002215
#3	.0012312	10.66866	6.273186	-.001016	.0380078	-.003710

Elem	Sr4077
Units	ppm
Avg	.0611530
Stddev	.0003042
%RSD	.4974415
#1	.0608367
#2	.0611790
#3	.0614434

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3362.503	77698.82	16365.61	2262.093	4941.486
Stddev	15.990	142.86	71.79	7.989	10.989
%RSD	.4755391	.1838624	.4386934	.3531650	.2223816
#1	3376.632	77862.65	16284.52	2253.669	4952.519
#2	3365.733	77600.24	16421.07	2263.047	4941.399
#3	3345.145	77633.56	16391.25	2269.561	4930.541

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCV007 Acquired: 3/7/2025 13:28:02 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV007 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.983604**	**4.788001**	**23.87926**	**5.019909**	**5.005691**	**385.2917**	**10.35541**
Stddev	.017814	.048652	.07178	.035522	.014851	2.4223	.06822
%RSD	.3574563	1.016118	.3005847	.7076237	.2966883	.6286867	.6588345
#1	4.975716	4.809526	23.89135	5.003806	4.997358	388.0432	10.36660
#2	4.971096	4.732299	23.80221	4.995291	4.996876	384.3514	10.41735
#3	5.004000	4.822177	23.94423	5.060631	5.022837	383.4806	10.28228

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4843430**	**2.419025**	**391.7055**	**15.39583**	**2.431316**	**14.83675**	**396.7246**
Stddev	.0015774	.010541	.7797	.03203	.008962	.01942	.1038
%RSD	.3256817	.4357374	.1990425	.2080702	.3686221	.1309083	.0261676
#1	.4856633	2.421242	392.2241	15.43043	2.430342	14.83969	396.8416
#2	.4825962	2.407552	392.0836	15.38985	2.422880	14.81602	396.6887
#3	.4847694	2.428281	390.8089	15.36721	2.440725	14.85452	396.6435

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.24452**	**391.1934**	**2.422102**	**1.273396**	**380.3142**	**2.440877**	**15.48635**
Stddev	.02598	.2138	.010123	.004916	1.2370	.006426	.05582
%RSD	.1704224	.0546427	.4179594	.3860639	.3252646	.2632528	.3604204
#1	15.27205	391.2688	2.422665	1.278731	381.5436	2.438242	15.54539
#2	15.24106	390.9522	2.411710	1.272410	379.0696	2.436188	15.43445
#3	15.22044	391.3593	2.431933	1.269048	380.3292	2.448202	15.47919

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**160.1114**	**4.862230**	**5.166982**	**4.898193**	**4.902369**	**4.866134**	**4.830931**
Stddev	.4271	.011668	.017227	.021024	.032571	.011478	.019831
%RSD	.2667445	.2399667	.3334057	.4292215	.6643869	.2358787	.4105040
#1	160.1327	4.868753	5.173272	4.896728	4.874111	4.869526	4.827083
#2	160.5275	4.848760	5.147494	4.877940	4.895005	4.853343	4.813305
#3	159.6741	4.869178	5.180180	4.919911	4.937991	4.875535	4.852404

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCV007 Acquired: 3/7/2025 13:28:02 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV007 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.910087**	**5.265801**	**5.203922**
Stddev	.010953	.017276	.036166
%RSD	.2230721	.3280708	.6949689
#1	4.912763	5.273982	5.245121
#2	4.898044	5.277466	5.189235
#3	4.919454	5.245955	5.177410

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2632.484**	**61015.89**	**14374.61**	**1720.272**	**3366.368**
Stddev	8.197	94.57	42.84	6.080	10.480
%RSD	.3113977	.1549913	.2980503	.3534254	.3113066
#1	2630.881	60911.63	14363.00	1713.290	3363.546
#2	2641.365	61039.91	14422.06	1724.395	3377.970
#3	2625.207	61096.14	14338.77	1723.131	3357.588

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCB007 Acquired: 3/7/2025 13:32:20 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB007 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0011961**	**-.001107**	**.0001343**	**-.000047**	**-.001368**	**-.003806**	**-.001644**
Stddev	.0021913	.001023	.0002037	.001798	.000170	.001838	.000507
%RSD	183.2090	92.40652	151.7063	3835.983	12.45664	48.28430	30.86746
#1	-.000599	-.002272	.0000220	.000350	-.001529	-.003246	-.001562
#2	.003638	-.000694	.0000114	-.002010	-.001189	-.002314	-.001182
#3	.000549	-.000355	.0003694	.001520	-.001387	-.005859	-.002187

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000048**	**.0000496**	**-.005252**	**-.000372**	**-.000150**	**-.002168**	**-.004614**
Stddev	.000085	.0000735	.002040	.000090	.000095	.000397	.006859
%RSD	177.1390	148.2587	38.84160	24.23976	63.32143	18.29752	148.6479
#1	.000027	.0000960	-.006619	-.000474	-.000081	-.002373	-.011451
#2	-.000141	-.000035	-.006231	-.000301	-.000111	-.002421	.002267
#3	-.000031	.000088	-.002907	-.000342	-.000258	-.001711	-.004660

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002740**	**-.010176**	**-.000108**	**-.000340**	**-.494822**	**.0001500**	**-.001237**
Stddev	.0001535	.009367	.000086	.000183	.057951	.0006535	.001879
%RSD	56.02757	92.04844	79.46640	53.68487	11.71142	435.7794	151.8976
#1	.0003432	.000308	-.000206	-.000550	-.496119	-.000405	-.002754
#2	.0003808	-.017719	-.000042	-.000217	-.552112	.000870	-.001821
#3	.0000981	-.013116	-.000078	-.000254	-.436233	-.000016	.000864

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.192715**	**.0005957**	**.0029838**	**.0001963**	**.0043626**	**-.000673**	**-.000429**
Stddev	.075379	.0006170	.0004319	.0002753	.0011520	.002453	.000246
%RSD	39.11438	103.5776	14.47497	140.2320	26.40745	364.3325	57.29111
#1	-.269342	.0004294	.0031827	.0002481	.0055556	-.000053	-.000160
#2	-.190156	.0012789	.0024883	.0004420	.0042758	-.003377	-.000642
#3	-.118648	.0000789	.0032805	-.000101	.0032564	.001410	-.000484

Reviewed By:kareem
On:3/8/2025 7:59:43 AM
Inst Id :P4

Sample Name: CCB007 Acquired: 3/7/2025 13:32:20 Type: Unk
Method: EPA SFAM01.0(v69) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB007 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0001463	-.003338	.0000843
Stddev	.0004000	.000816	.0000400
%RSD	273.4870	24.44603	47.42607
#1	.0001319	-.002745	.0000381
#2	.0005532	-.003001	.0001075
#3	-.000246	-.004269	.0001074

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3382.915	77412.85	15965.17	2206.188	5057.890
Stddev	10.252	1423.48	54.91	38.579	14.623
%RSD	.3030644	1.838821	.3439061	1.748658	.2891097
#1	3373.864	78168.19	15958.82	2230.478	5046.860
#2	3394.049	75770.90	15913.72	2161.704	5074.476
#3	3380.833	78299.46	16022.98	2226.382	5052.333

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Prep Standard - Chemical Standard Summary

Order ID : Q1160

Test : SPLP MetalGroup3

Prepbatch ID : PB166912,

Sequence ID/Qc Batch ID: LB134905,LB134916,LB134953,

Standard ID :
MP84041,MP84297,MP84636,MP84649,MP84650,MP84651,MP84652,MP84653,MP84654,MP84655,MP84656,MP84657,MP84658,MP84659,MP84661,MP84663,MP84721,

Chemical ID :
M4884,M5019,M5020,M5218,M5289,M5296,M5393,M5429,M5467,M5472,M5473,M5476,M5496,M5497,M5498,M5513,M5519,M5565,M5658,M5697,M5768,M5789,M5792,M5798,M5799,M5800,M5801,M5802,M5806,M5808,M5811,M5815,M5817,M5875,M5942,M5959,M5961,M5962,M5970,M5977,M5985,M5990,M6021,M6023,M6025,M6028,M6030,M6032,M6077,M6121,M6126,M6127,M6128,M6144,M6145,M6150,M6152,M6155,W3112,

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Metals STANDARD PREPARATION LOG

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

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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
170	1:1HCL	MP84297	01/31/2025	02/28/2025	Eman Mughal	None	None	Sarabjit Jaswal 01/31/2025

FROM 1250.00000ml of M6121 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

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Metals STANDARD PREPARATION LOG

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

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

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

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

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Metals STANDARD PREPARATION LOG

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

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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2480	ICP AES STD 6 ISM01.3	MP84651	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 4.00000ml of M5289 + 4.00000ml of M5498 + 4.00000ml of M5768 + 4.00000ml of M5806 + 4.00000ml of M5811 + 4.00000ml of M6144 + 30.00000ml of MP84636 = Final Quantity: 50.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1004	ICPAES ISM01.2 (S5)	MP84652	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 0.25000ml of M5798 + 0.50000ml of M5429 + 0.50000ml of M5476 + 0.50000ml of M5815 + 0.50000ml of M5817 + 12.50000ml of M5519 + 12.50000ml of M6128 + 12.50000ml of M6144 + 12.50000ml of M6145 + 13.75000ml of M5697 + 14.50000ml of M5496 + 14.50000ml of M5658 + 14.50000ml of M5811 + 2.00000ml of M5513 + 22.50000ml of M5498 + 22.50000ml of M5768 + 5.00000ml of M4884 + 5.00000ml of M5393 + 5.00000ml of M5802 + 5.00000ml of M5875 + 5.00000ml of M6077 + 303.50000ml of MP84636 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1005	ICPAES ISM01.2(S4)	MP84653	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 250.00000ml of MP84636 + 250.00000ml of MP84652 = Final Quantity: 500.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1007	ICPAES ISM01.2(S3)	MP84654	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 25.00000ml of MP84652 + 75.00000ml of MP84636 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1008	ICPAES ISM01.2(S2)	MP84655	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 12.50000ml of MP84652 + 87.50000ml of MP84636 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
994	ICPAES ISM01.2 S1 (CONC.)	MP84656	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 0.02000ml of M5020 + 0.03000ml of M5429 + 0.10000ml of M5798 + 0.10000ml of M6028 + 0.14000ml of M5799 + 0.20000ml of M5473 + 0.20000ml of M5658 + 0.20000ml of M5801 + 0.20000ml of M5811 + 0.20000ml of M5817 + 0.20000ml of M5977 + 0.20000ml of M6025 + 0.20000ml of M6030 + 0.30000ml of M6128 + 0.40000ml of M5496 + 0.50000ml of M5697 + 0.50000ml of M6023 + 0.70000ml of M5962 + 0.80000ml of M5961 + 1.00000ml of M5800 + 1.00000ml of M6021 + 1.20000ml of M5802 + 1.20000ml of M6145 + 10.00000ml of M4884 + 10.00000ml of M5497 + 10.00000ml of M5519 + 10.00000ml of M5768 + 10.00000ml of M6144 + 2.00000ml of M5942 + 4.00000ml of M6032 + 34.24000ml of MP84636 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1003	ICPAES ISM01.2 S1	MP84657	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 0.50000ml of MP84656 + 99.50000ml of MP84636 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
912	ICP AES ICV SOLN	MP84658	02/25/2025	03/08/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 0.02500ml of M5019 + 0.02500ml of M5020 + 0.02500ml of M5815 + 0.10000ml of M5467 + 0.25000ml of M5218 + 0.25000ml of M5472 + 10.00000ml of M5429 + 10.00000ml of M6150 + 89.77500ml of MP84636 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP84659	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

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

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1119	ICPAES ISM01.2(CCV)	MP84661	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 0.75000ml of M5497 + 0.75000ml of M6127 + 1.22500ml of M5496 + 1.25000ml of M5811 + 1.25000ml of M6144 + 19.77500ml of MP84636 + 25.00000ml of MP84652 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
921	ICPAES SPIKE SOL#6	MP84663	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025

FROM 2.50000ml of M5962 + 50.00000ml of M5565 + 50.00000ml of M5990 + 147.50000ml of MP84636 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

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

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

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57014 / Si, 1000 PPM, 125 ml	030921	03/09/2025	08/06/2021 / jaswal	08/05/2021 / jaswal	M4884

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57116 / S, 10000 PPM, 125 ml	011421	03/04/2025	12/13/2021 / bin	12/09/2021 / bin	M5019

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57115 / P, 10000 PPM, 125 ml	032921	05/17/2025	12/13/2021 / bin	12/09/2021 / bin	M5020

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Aluminum (Al) 10,000PPM	070622	07/06/2025	09/02/2022 / jaswal	07/12/2022 / jaswal	M5289

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

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB714159	01/13/2027	10/12/2022 / bin	09/19/2022 / bin	M5393

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57138 / Sr, 10000 PPM, 125 ml	082922	08/29/2025	03/16/2023 / jaswal	03/16/2023 / jaswal	M5473

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57138 / Sr, 10000 PPM, 125 ml	082922	08/29/2025	07/29/2024 /jaswal	03/16/2023 / jaswal	M5476

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	031523	03/15/2026	03/18/2023 / bin	03/17/2023 / bin	M5497

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	08/15/2023 / jaswal	03/17/2023 / bin	M5498

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57182 / Pb, 10000 PPM, 125 ml	061522	06/15/2025	03/19/2023 / bin	03/17/2023 / bin	M5513

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57119 / Potassium (K) 10,000PPM	120822	12/08/2025	01/08/2024 / bin	03/17/2023 / bin	M5519

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-SPK-1 / SOIL/WATER SPIKE SOLN 1, 125mL	T2-MEB721963	07/27/2027	05/30/2023 / jaswal	05/26/2023 / jaswal	M5565

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	091823	09/18/2026	01/08/2024 / bin	01/03/2024 / bin	M5768

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22D1462006	08/05/2025	02/05/2024 / Al-Terek	02/24/2022 / Al-Terek	M5792

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

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	120523	12/05/2026	08/07/2024 / jaswal	01/03/2024 / jaswal	M5802

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58111 / Na, 10000 PPM, 500 ml	122223	12/22/2026	08/01/2024 / Jaswal	01/03/2024 / jaswal	M5806

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	122926	12/29/2026	12/18/2024 / janvi	01/03/2024 / jaswal	M5808

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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.	57115 / P, 10000 PPM, 125 ml	041723	04/17/2026	05/21/2024 / Jaswal	02/09/2024 / jaswal	M5815

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

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

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

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

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57028 / Ni, 1000 PPM, 125 ml	041124	04/11/2027	07/02/2024 / Jaswal	06/11/2024 / Jaswal	M5961

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGMO1-1 / MOLYBDENUM 125mL 1000ug/mL	T2-MO720876	07/17/2027	01/16/2025 / JANVI	02/22/2024 / Jaswal	M5977

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-SPK-5 / CLP Spike Standard 5	V2-MEB742037	03/12/2029	10/04/2024 / Jaswal	02/22/2024 / Jaswal	M5990

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57082 / Pb, 1000 PPM, 125 ml	061224	11/09/2026	08/05/2024 / Jaswal	08/05/2024 / Jaswal	M6025

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

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

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

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

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

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

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

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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 #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV1-1014	07/07/2025	02/07/2025 / JANVI	04/20/2021 / JANVI	M6150

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

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

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

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Certificate of Analysis

R: 02/22/24 M5986 M5987, M5988, M5989-M5990

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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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-SPK-5
Lot Number:	V2-MEB742037
Matrix:	5% (v/v) HNO_3
Value / Analyte(s):	100 µg/mL ea: Antimony,
	50 µg/mL ea: Selenium, Cadmium, Thallium,
	40 µg/mL ea: Arsenic,
	20 µg/mL ea: Lead

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.7 µg/mL	Arsenic, As	40.00 ± 0.26 µg/mL
Cadmium, Cd	49.99 ± 0.22 µg/mL	Lead, Pb	19.99 ± 0.09 µg/mL
Selenium, Se	50.00 ± 0.23 µg/mL	Thallium, Tl	50.00 ± 0.22 µg/mL

Density: 1.025 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
Cd	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

March 12, 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

- March 12, 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

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

Certified Reference Material CRM

R: 01/03/24 M5808, M5809

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

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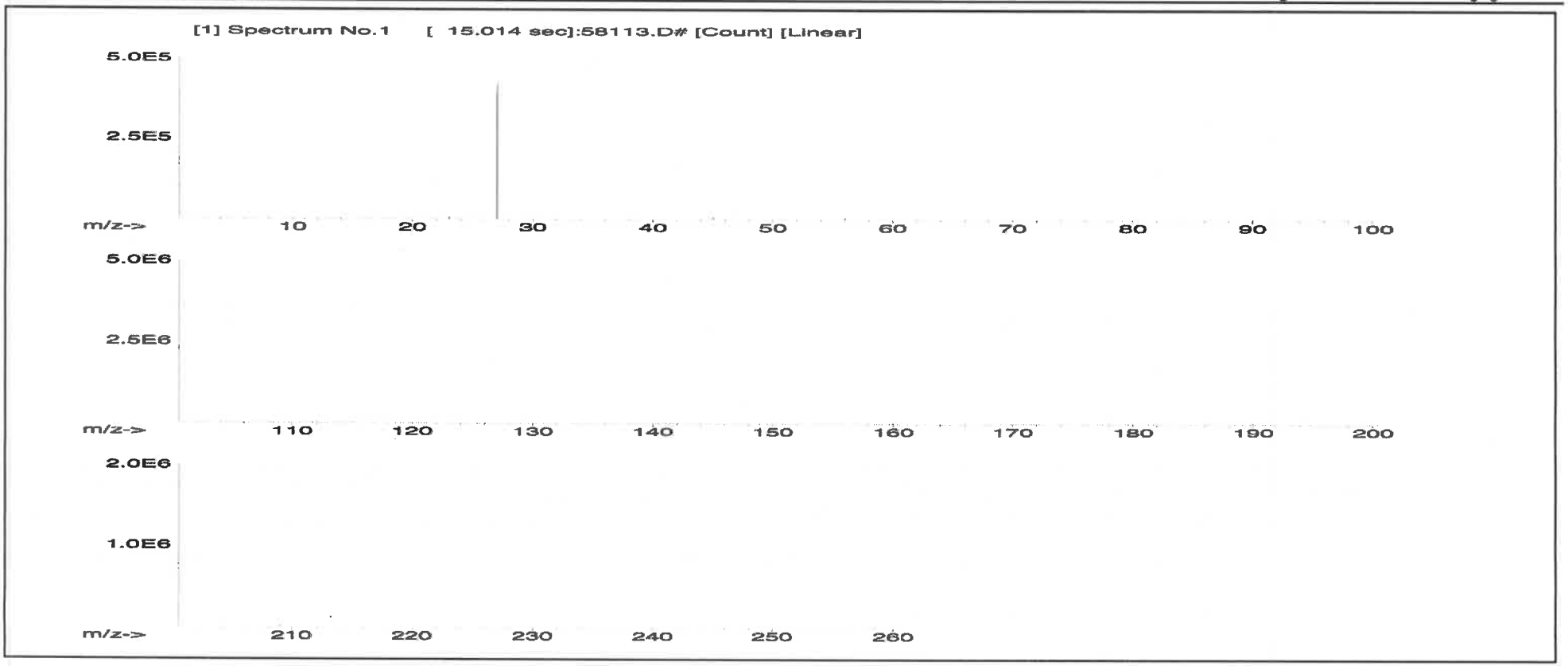
CERTIFIED WEIGHT REPORT:

			Lot #	
Part Number:	**58113**	**Solvent:**	24002546	Nitric Acid
Lot Number:	**122923**			
Description:	**Aluminum (Al)**	2%	40.0 (mL)	Nitric Acid
Expiration Date:	122926			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**10000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Giovanni Esposito		
Formulated By:	Giovanni Esposito	122923
Pedro Rentas		
Reviewed By:	Pedro L. Rentas	122923

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Aluminum nitrate nonahydrate (Al)	IN022	ALM092022A1	10000	99.999	0.10	7.30	273.9779	273.9813	**10000.1**	**20.0**	7784-27-2	2 mg/m3	orl-rat 3671 mg/kg	3101a



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

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

Al	T	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	17	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	0.03
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	4.5	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	0.56	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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Certified Reference Material CRM

M6032

R: 8/5/24

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

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CERTIFIED WEIGHT REPORT:

Part Number:	**57056**		**Lot #**		
Lot Number:	**010924**	**Solvent:**	24002546	Nitric Acid	
Description:	**Barium (Ba)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	010927				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

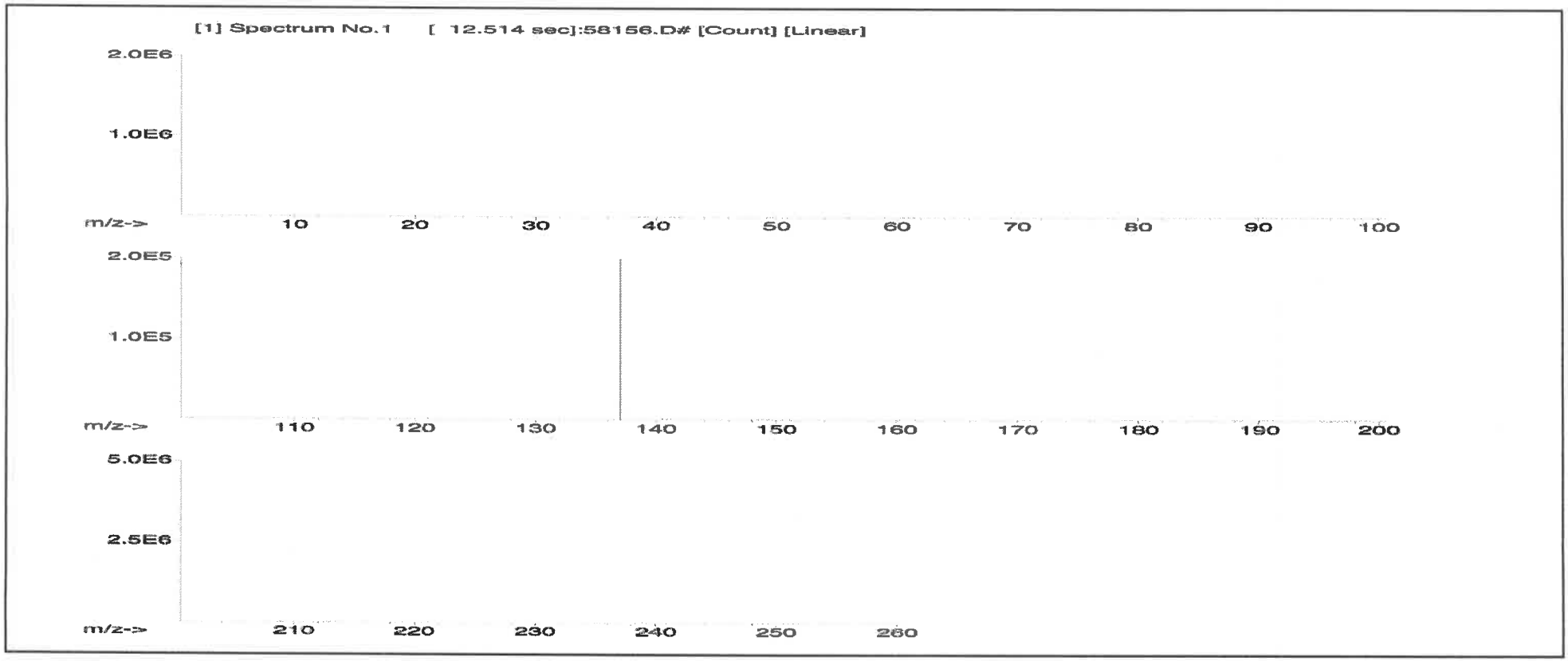
Giovanni Esposito

Formulated By:	Giovanni Esposito	010924

Pedro Rentas

Reviewed By:	Pedro L. Rentas	010924

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Barium nitrate (Ba)	IN023	BAD022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	**1000.1**	**2.0**	10022-31-8	0.5 mg/m3	orl-rat 355 mg/kg	3104a



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	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 certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

M6028

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
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R 8/5/24

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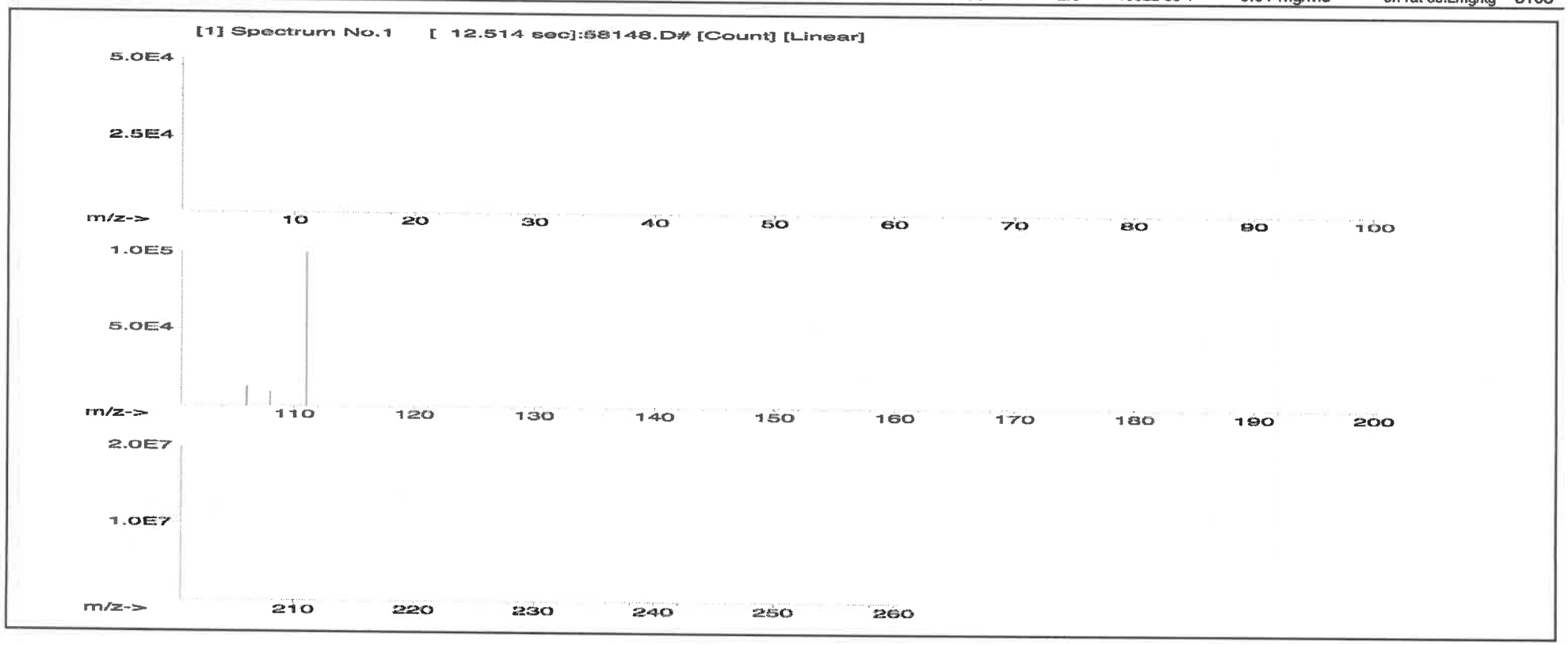
CERTIFIED WEIGHT REPORT:

Part Number:	**57048**		**Lot #**		
Lot Number:	**070124**	**Solvent:**	24002546	Nitric Acid	
Description:	**Cadmium (Cd)**	2%	40.0 (mL)	Nitric Acid	
Expiration Date:	070127				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	070124
Reviewed By:	Pedro L. Rentas	070124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cadmium nitrate tetrahydrate (Cd)	IN024	CDM092021A1	1000	99.999	0.10	36.5	5.4797	5.4804	**1000.1**	**2.0**	10022-68-1	0.01 mg/m3	orl-rat 60.2mg/kg	3108



306

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

M5296 OP: 09/19/2022 BH

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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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	S2-MEB711673
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

Density: 1.030 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

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

11.2 Lot Expiration Date

- **November 02, 2026**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

300 Technology Drive
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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-1
Lot Number:	T2-MEB714417
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	5 000 µg/mL ea: Calcium, Potassium, Magnesium, Sodium, 2 000 µg/mL ea: Aluminum, Barium, 1 000 µg/mL ea: Iron, 500 µg/mL ea: Nickel, Vanadium, Zinc, Cobalt, Manganese, 250 µg/mL ea: Silver, Copper, 200 µg/mL ea: Chromium, 50 µg/mL ea: Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

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

Assay Information:

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

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u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 27, 2022

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

11.2 Lot Expiration Date

- **January 27, 2027**

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

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

11.3 Period of Validity

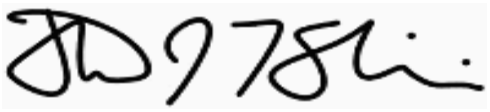
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES™
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Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-3
Lot Number:	T2-MEB714159
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Arsenic, Lead, Selenium, Thallium, 500 µg/mL ea: Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	**1 000 ± 8 µg/mL**	**Cadmium, Cd**	**500.0 ± 2.1 µg/mL**
Lead, Pb	**1 000 ± 5 µg/mL**	**Selenium, Se**	**1 000 ± 8 µg/mL**
Thallium, Tl	**1 000 ± 7 µg/mL**		

Density: 1.043 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	151215

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 13, 2022

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

11.2 Lot Expiration Date

- **January 13, 2027**

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

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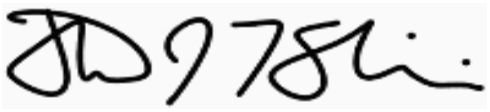
12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certified Reference Material CRM

R : 01/03/24. M5810, M5811

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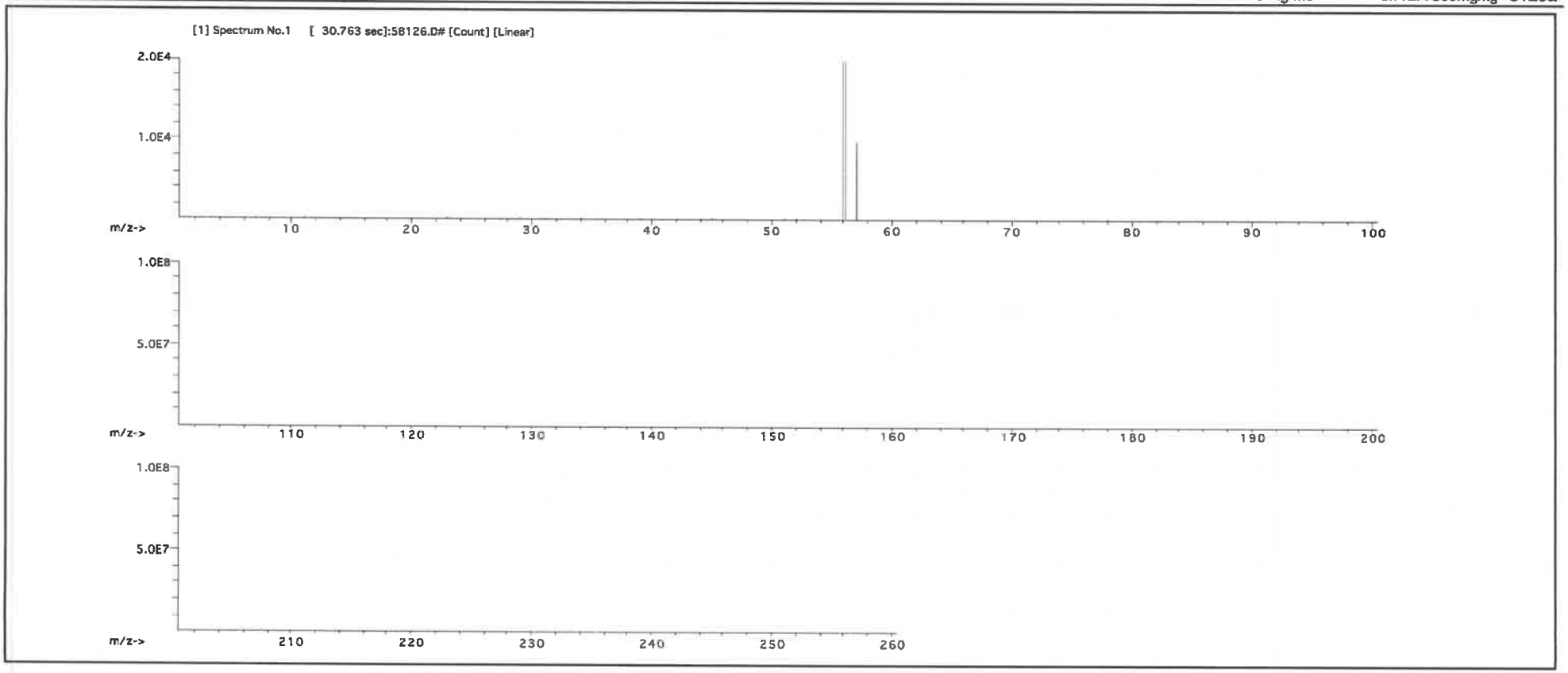
CERTIFIED WEIGHT REPORT:

		Lot #		
Part Number:	**58126**	**Solvent:**	21110221	Nitric Acid
Lot Number:	**051523**			
Description:	**Iron (Fe)**	5.0%	250.0 (mL)	Nitric Acid
Expiration Date:	051526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**10000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	5000.1	0.12	Flask Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	051523
Reviewed By:	Pedro L. Rentas	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)	SDS Information (Solvent Safety Info. On Attached pg.) 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	orl-rat 7500mg/kg	3126a



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.10	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.10	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.05	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	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).
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* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

R: 8/5/24 M6025

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CERTIFIED WEIGHT REPORT:

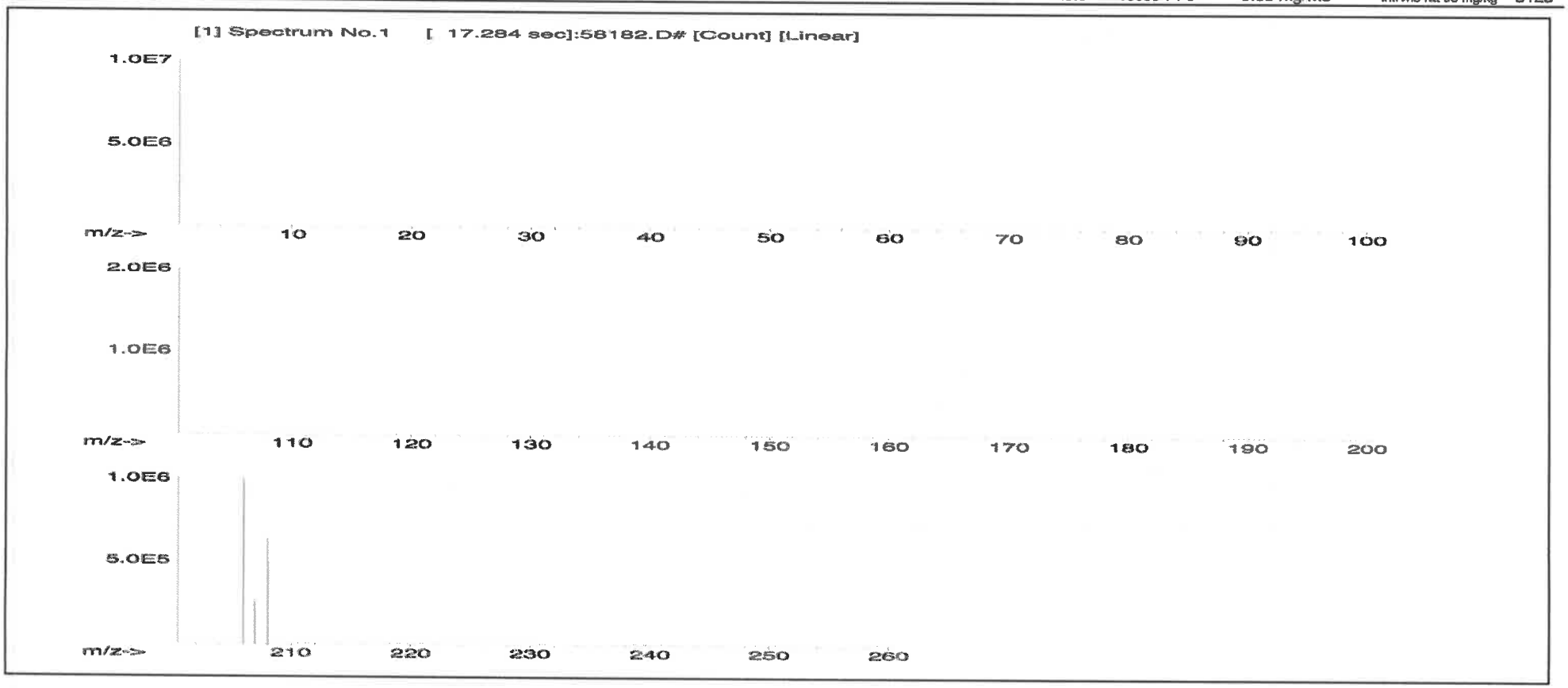
Part Number: 57182
Lot Number: 110923
Description: Lead (Pb)

Expiration Date: 110926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

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

Formulated By:	Lawence Barry	110923
Reviewed By:	Pedro L. Rentas	110923

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lead(II) nitrate (Pb)	IN029	PBD122016A1	10000	99.999	0.10	62.5	32.0006	32.0040	**10001.1**	**20.0**	10099-74-8	0.05 mg/m3	intrvns-rat 93 mg/kg	3128



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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Certified Reference Material CRM

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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57014**	19410105	Nitric Acid	
Lot Number:	**030921**			
Description:	**Silicon (Si)**			
		2.0%	60.0	Nitric Acid
Expiration Date:	030924		(mL)	
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	3000.41	0.058	Flask Uncertainty	

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

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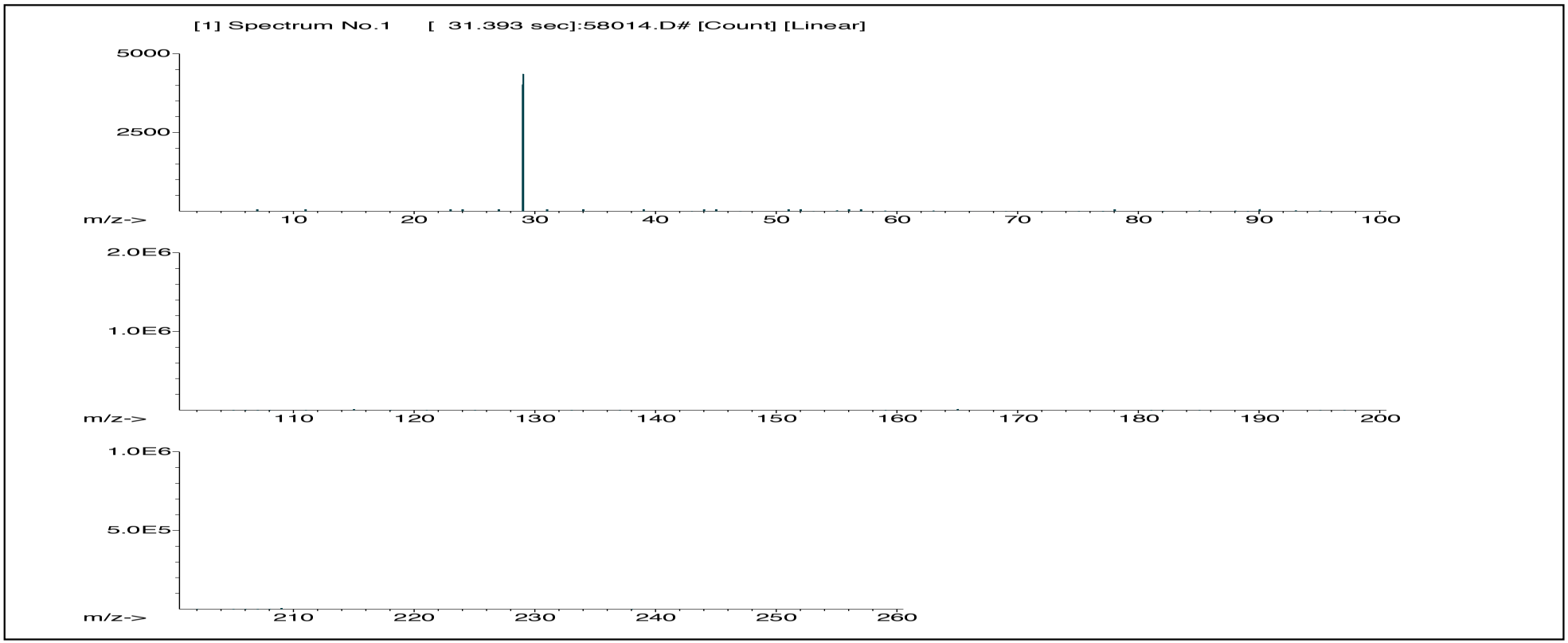
	Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	**Final Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1.	Ammonium hexafluorosilicate (Si)	58114	070120	0.1000	300.0	0.084	1000	10000.0	**1000.0**	**2.1**	16919-19-0	2.50 mg/m3	orl-rat 70 mg/kg	NA



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

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

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

(T)= Target analyte

Physical Characterization:

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

Certified by:

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Certified Reference Material CRM

IN 5019 R: 12/09/21 (BH)

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
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CERTIFIED WEIGHT REPORT:

Part Number: 57116
Lot Number: 011421
Description: Sulfur (S)

Expiration Date: 011424
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 23060

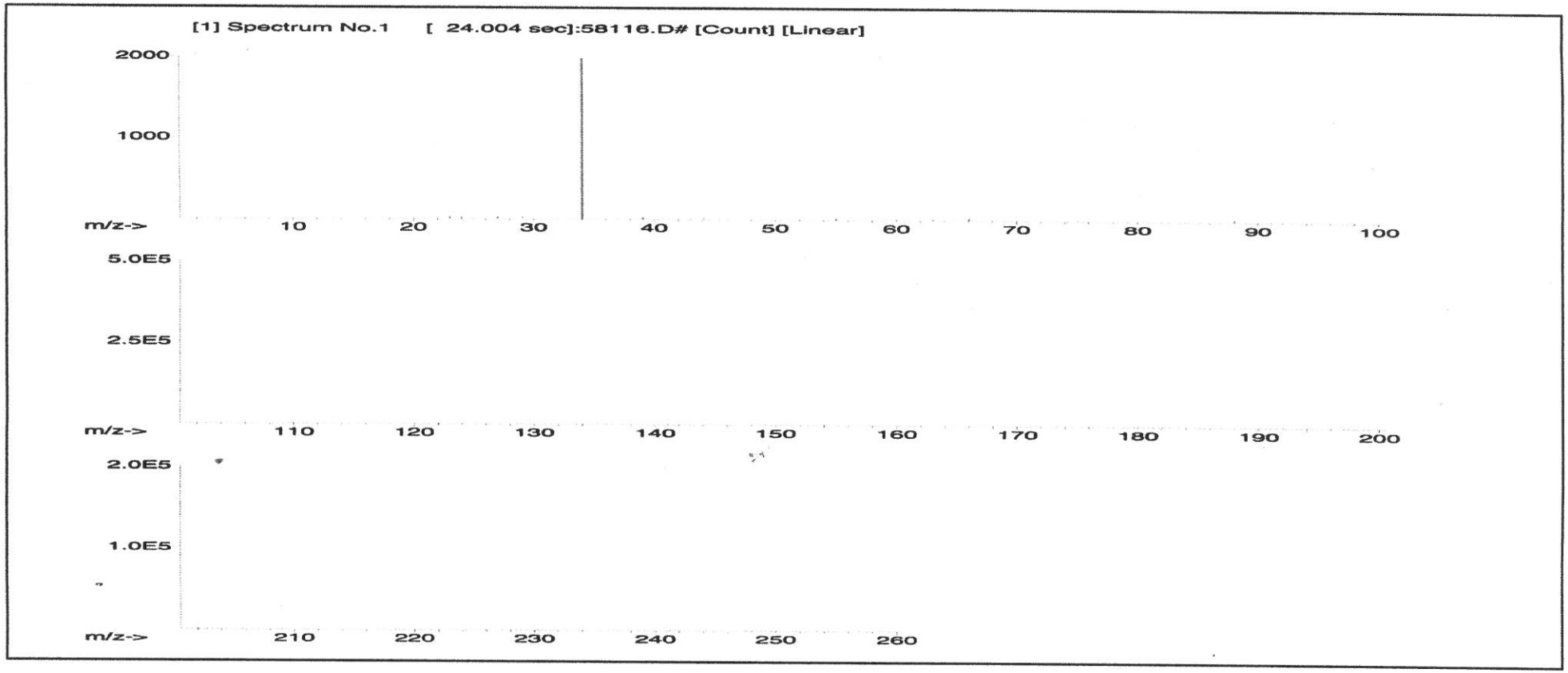
Weight shown below was diluted to (mL): 1999.53 0.100 Flask Uncertainty

Lot #
Solvent: 011421 ASTM Type 1 Water

Formulated By:	Lawrence Barry	011421
Reviewed By:	Pedro L. Rentas	011421

5E-05 Balance 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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBF9912V	10000.0	99.0	0.10	24.3	83.2191	83.2206	**10000.2**	**20.2**	7783-20-2	NA	NA	3181



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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BA NM5020 R: 12/09/21

325

CERTIFIED WEIGHT REPORT:

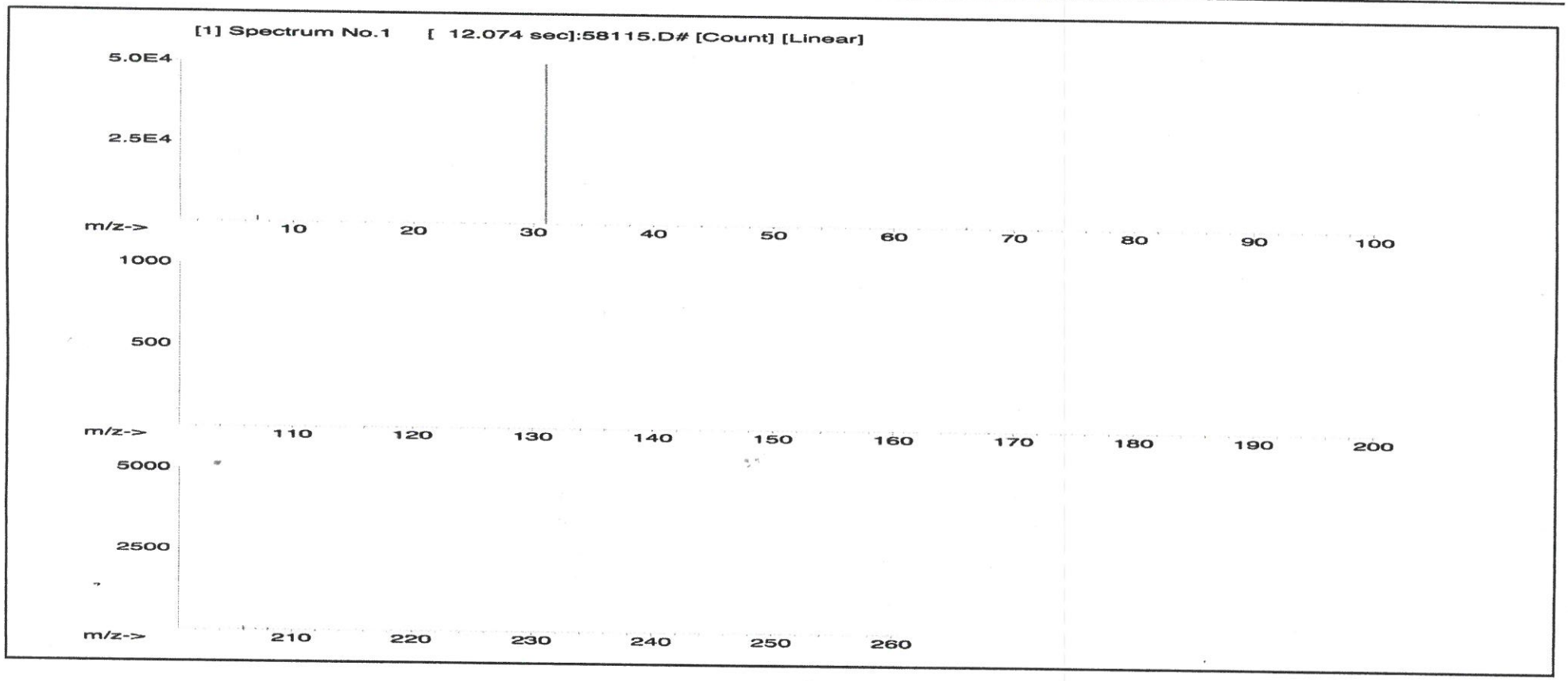
Part Number: 57115
Lot Number: 032921
Description: Phosphorous (P)

Expiration Date: 032924
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41

	Lot #		
Solvent:	20370011	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	032921
Reviewed By:	Pedro L. Rentas	032921

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium dihydrogen phosphate (P)	IN008	PV052018A1	10000	99.999	0.10	27.3	109.9063	109.9093	**10000.3**	**20.0**	7722-76-1	5 mg/m3	NA	3186



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

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

(T)= Target analyte

Physical Characterization:

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

Certified by:

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

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

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

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

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

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

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

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

11.2 Lot Expiration Date

- **November 02, 2026**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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M5289 R: 07/12/22 (BH)

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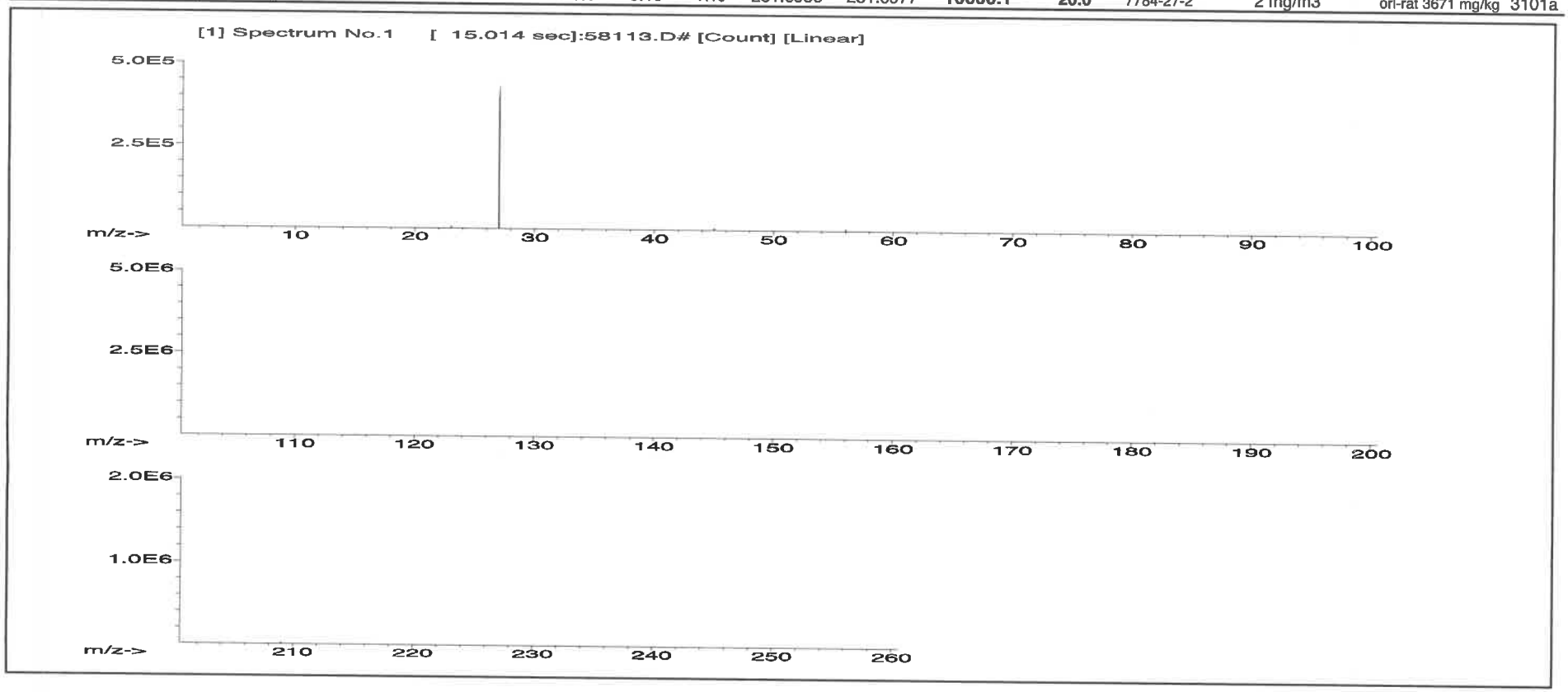
CERTIFIED WEIGHT REPORT:

Part Number:	**58113**			**Lot #**	
Lot Number:	**070622**		**Solvent:**	20370011	Nitric Acid
Description:	**Aluminum (Al)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	070625				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05 Balance Uncertainty			
Weight shown below was diluted to (mL):	2000.02	0.058 Flask Uncertainty			

Formulated By:	Lawrence Barry	070622
Reviewed By:	Pedro L. Rentas	070622

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Aluminum nitrate nonahydrate (Al)	IN022	ALD012021A1	10000	99.999	0.10	7.10	281.6956	281.6977	**10000.1**	**20.0**	7784-27-2	2 mg/m3	orl-rat 3671 mg/kg	3101a



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* 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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M5429 R1 01/26/23 BH

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CERTIFIED WEIGHT REPORT:

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

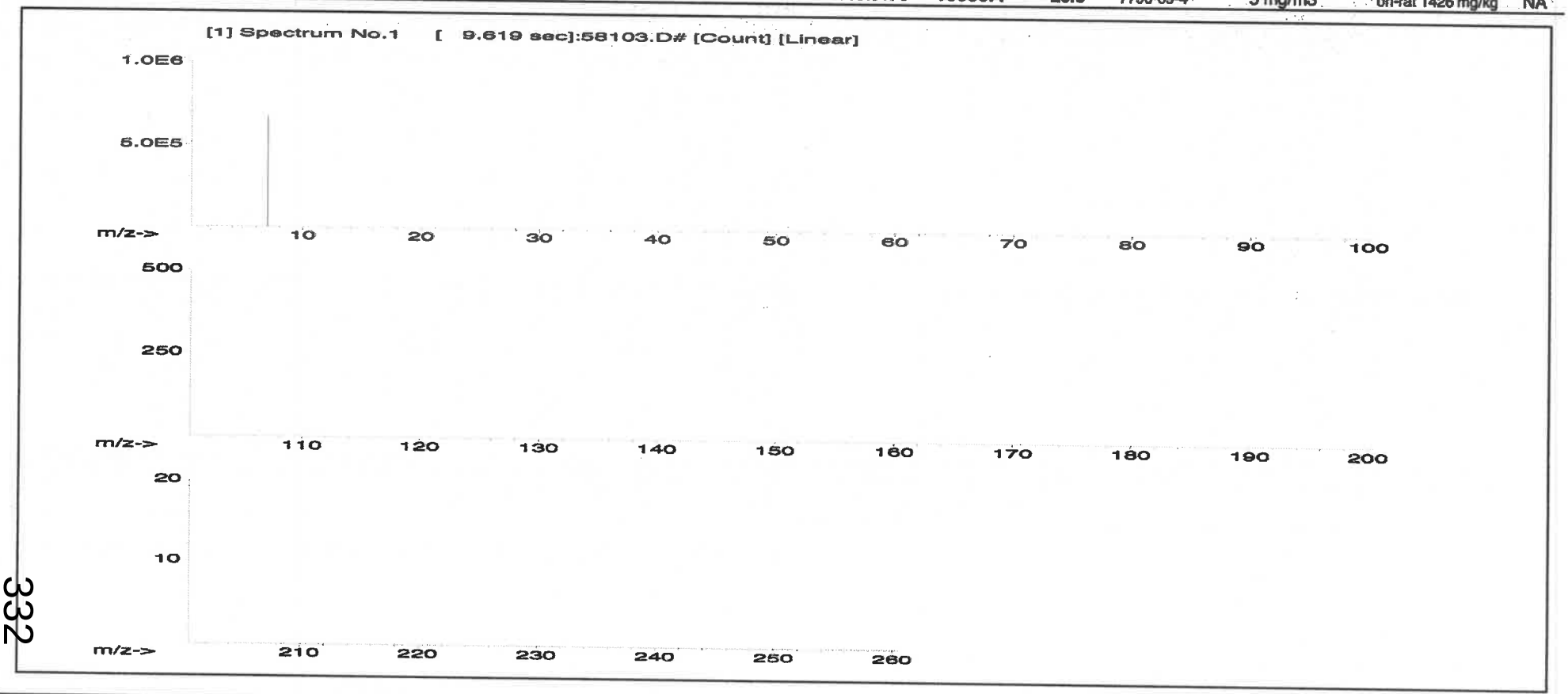
Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1000.12

	Lot #			
Solvent:	20510011	Nitric Acid		
2%	20.0 (mL)	Nitric Acid		

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	070622
Reviewed By:	Pedro L. Rentas	070622

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	IN019	LIZ042018A1	10000	99.999	0.10	10.0	100.0134	100.0173	**10000.4**	**20.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



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

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

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

(T)= Target analyte

Physical Characterization:

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

Certified by:

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

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Certified Reference Material CRM

M5467 R: 03/01/23 (LA)

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CERTIFIED WEIGHT REPORT:

Part Number: 57058
Lot Number: 020623
Description: Cerium (Ce)

Expiration Date: 020626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

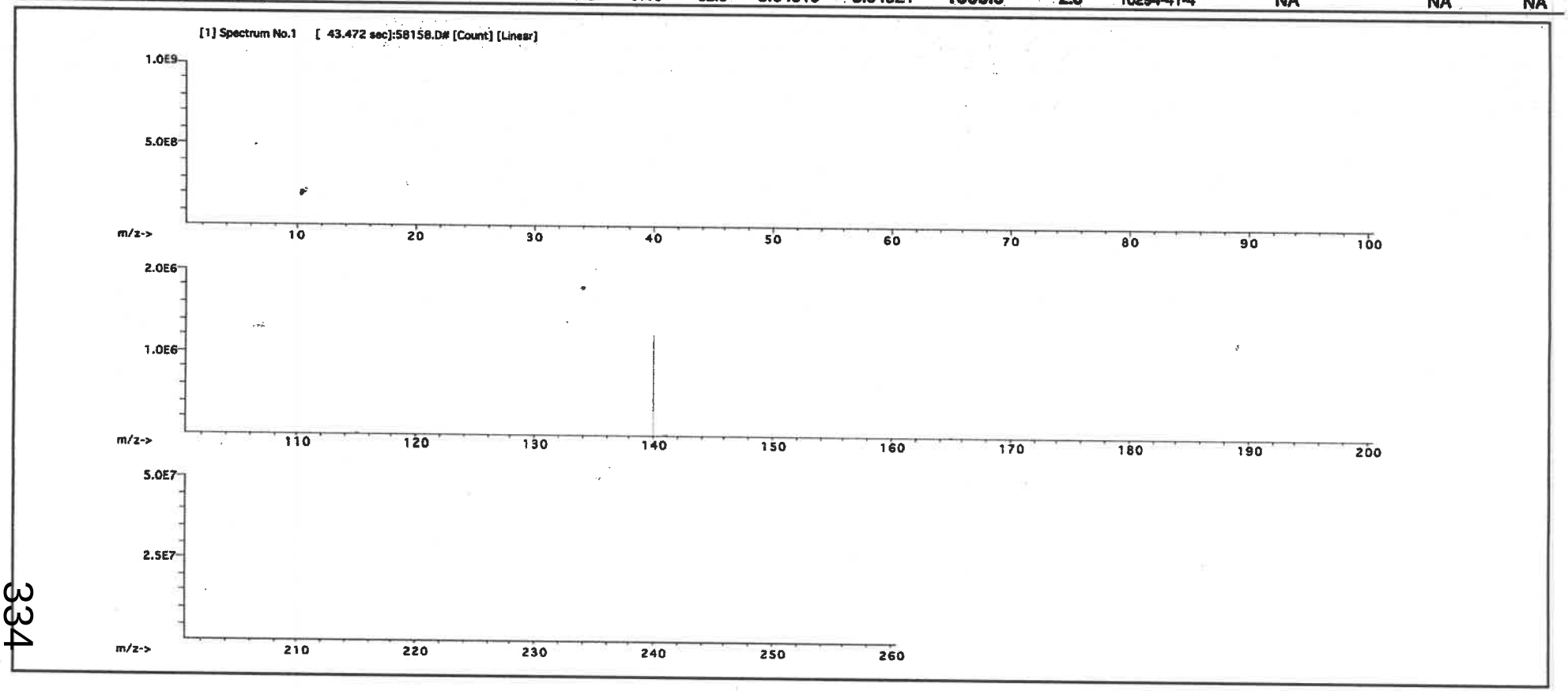
Weight shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

		Lot #	
Solvent:	21110221	Nitric Acid	
2%	20.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Formulated By:	Lawrence Barry	020623
Reviewed By:	Pedro L. Rentas	020623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	3.04921	**1000.0**	**2.0**	10294-41-4	NA	NA	NA



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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M5496 R 7/20/23

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CERTIFIED WEIGHT REPORT:

Part Number:	**58113**		**Lot #**		
Lot Number:	**011623**	**Solvent:**	20510011	Nitric Acid	
Description:	**Aluminum (Al)**	2%	40.0 (mL)	Nitric Acid	
Expiration Date:	011626				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

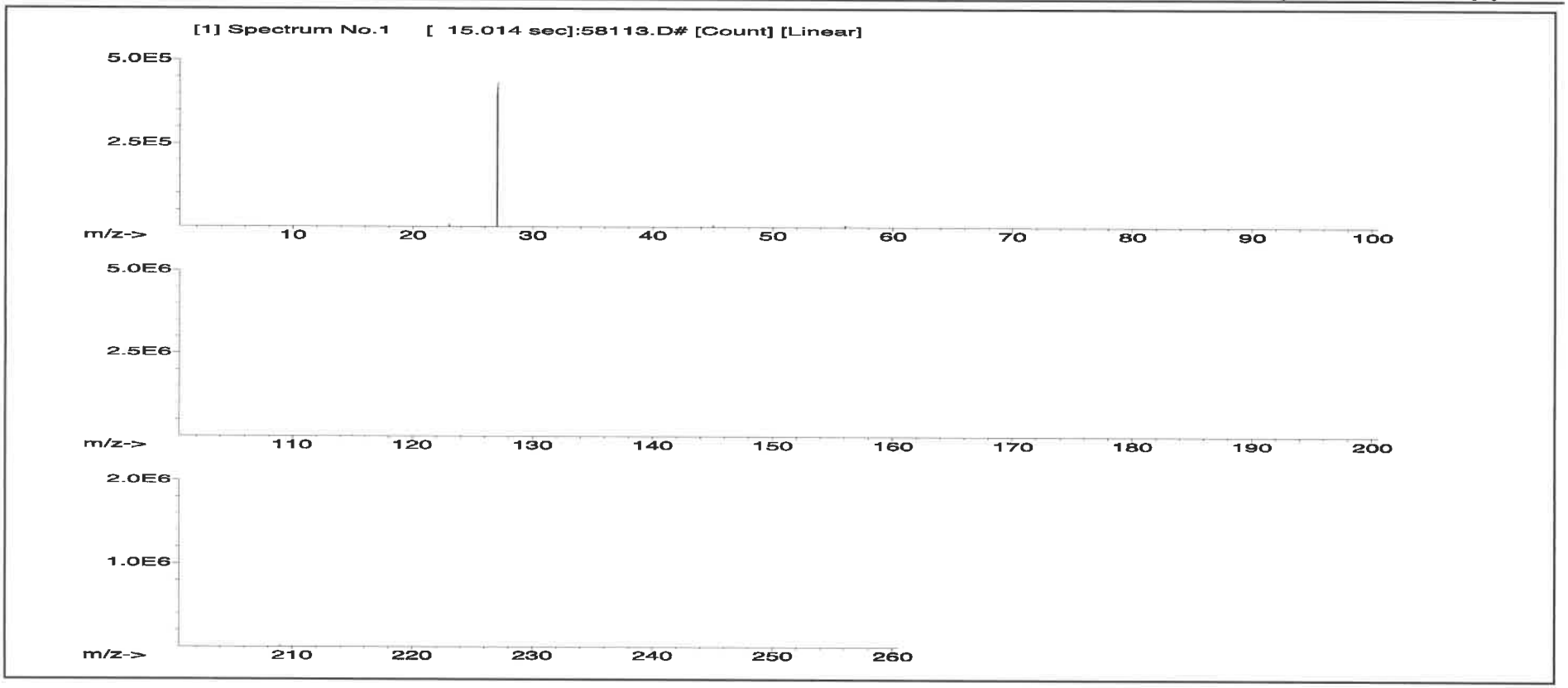
Giovanni Esposito

Formulated By:	Giovanni Esposito	011623

Pedro Rentas

Reviewed By:	Pedro L. Rentas	011623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Aluminum nitrate nonahydrate (Al)	IN022	ALM112021A1	10000	99.999	0.10	7.30	273.9779	274.0078	**10001.1**	**20.0**	7784-27-2	2 mg/m3	orl-rat 3671 mg/kg	3101a



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IN5497 - IN5498 R: 03/17/23 BH

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CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 031523
Description: Calcium (Ca)

Expiration Date: 031526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 ± 0.058 Flask Uncertainty

	Lot #		
Solvent:	21110221	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	

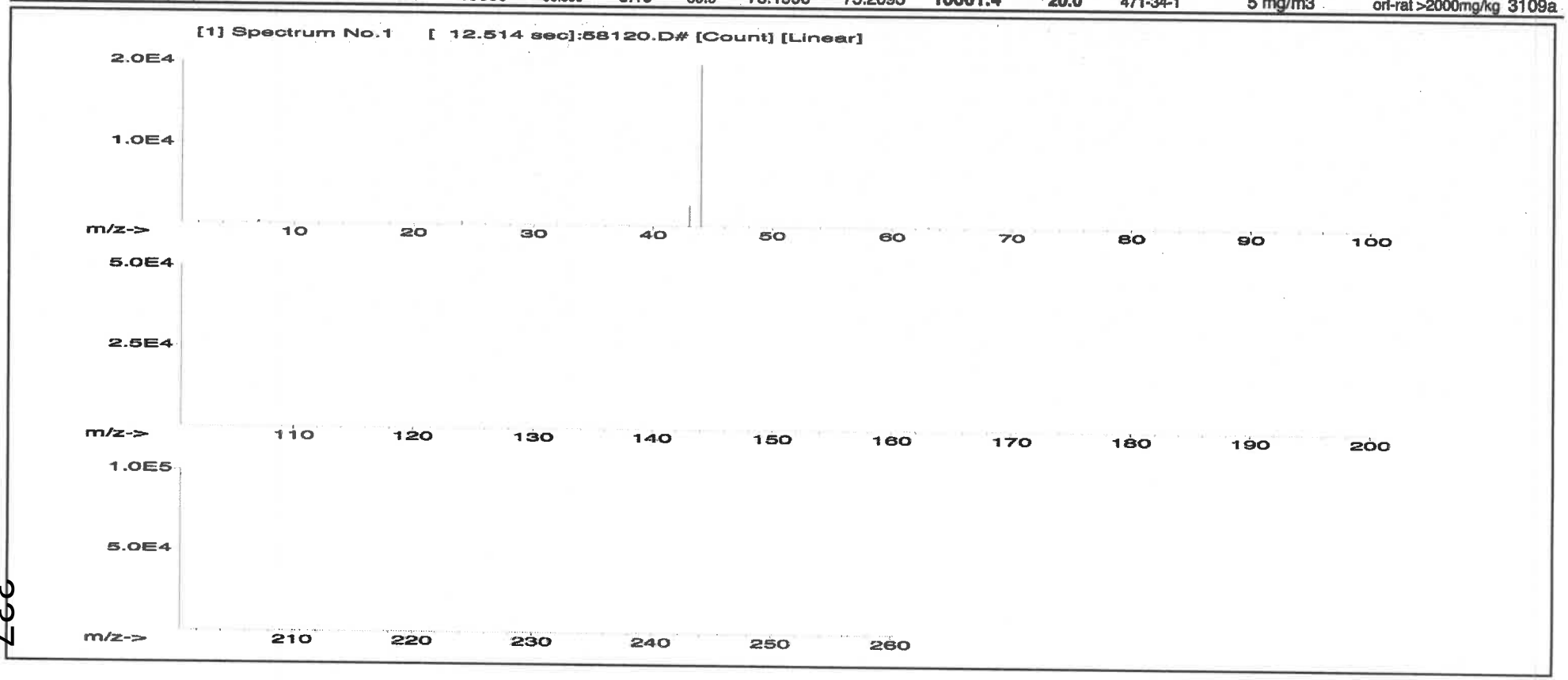
5E-05 Balance Uncertainty

Giovanni Esposito

Formulated By: Giovanni Esposito 031523

Reviewed By: Pedro L. Rentas 031523

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD072022A1	10000	99.999	0.10	39.9	75.1990	75.2093	**10001.4**	**20.0**	471-34-1	5 mg/m3	orl-rat >2000mg/kg	3109a



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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

IN5497 - IN5498 R: 03/17/23 BH

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CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 031523
Description: Calcium (Ca)

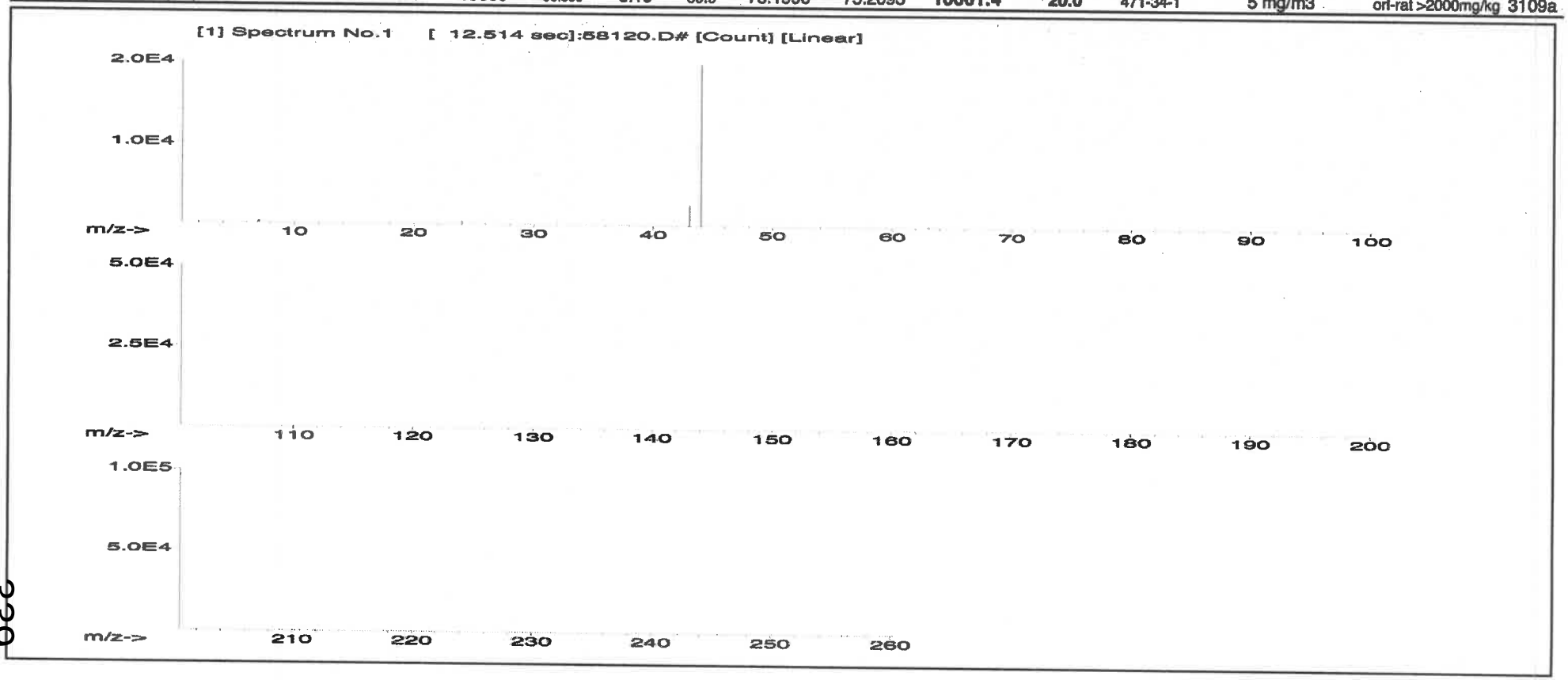
Expiration Date: 031526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 ± 0.058 Flask Uncertainty

		Lot #	
Solvent:	21110221	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	

Giovanni Esposito
Formulated By: Giovanni Esposito 031523

Pedro Rentas
Reviewed By: Pedro L. Rentas 031523

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD072022A1	10000	99.999	0.10	39.9	75.1990	75.2093	**10001.4**	**20.0**	471-34-1	5 mg/m3	orl-rat >2000mg/kg	3109a



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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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MS513 R:03/17/23

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CERTIFIED WEIGHT REPORT:

Part Number: 57182
Lot Number: 061522
Description: Lead (Pb)

Expiration Date: 061525
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

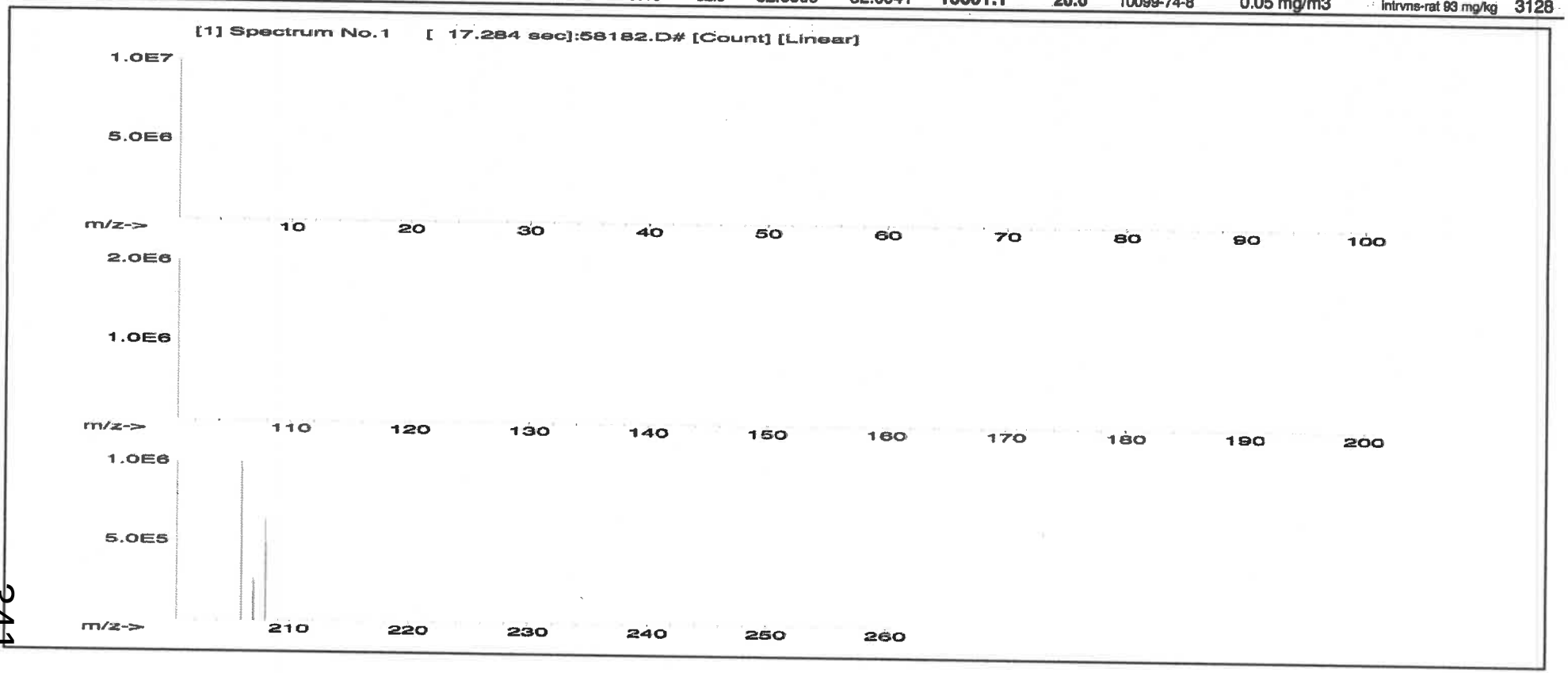
	Lot #		
Solvent:	20510011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	061522
Reviewed By:	Pedro L. Rentas	061522

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lead(II) nitrate (Pb)	IN029	PBD122016A1	10000	99.999	0.10	62.5	32.0006	32.0041	**10001.1**	**20.0**	10099-74-8	0.05 mg/m3	Intrvns-rat 93 mg/kg	3128



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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M5519. M5520 (BH) R:03/17/23

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CERTIFIED WEIGHT REPORT:

Part Number: 58119
Lot Number: 120822
Description: Potassium (K)

Expiration Date: 120825
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.4

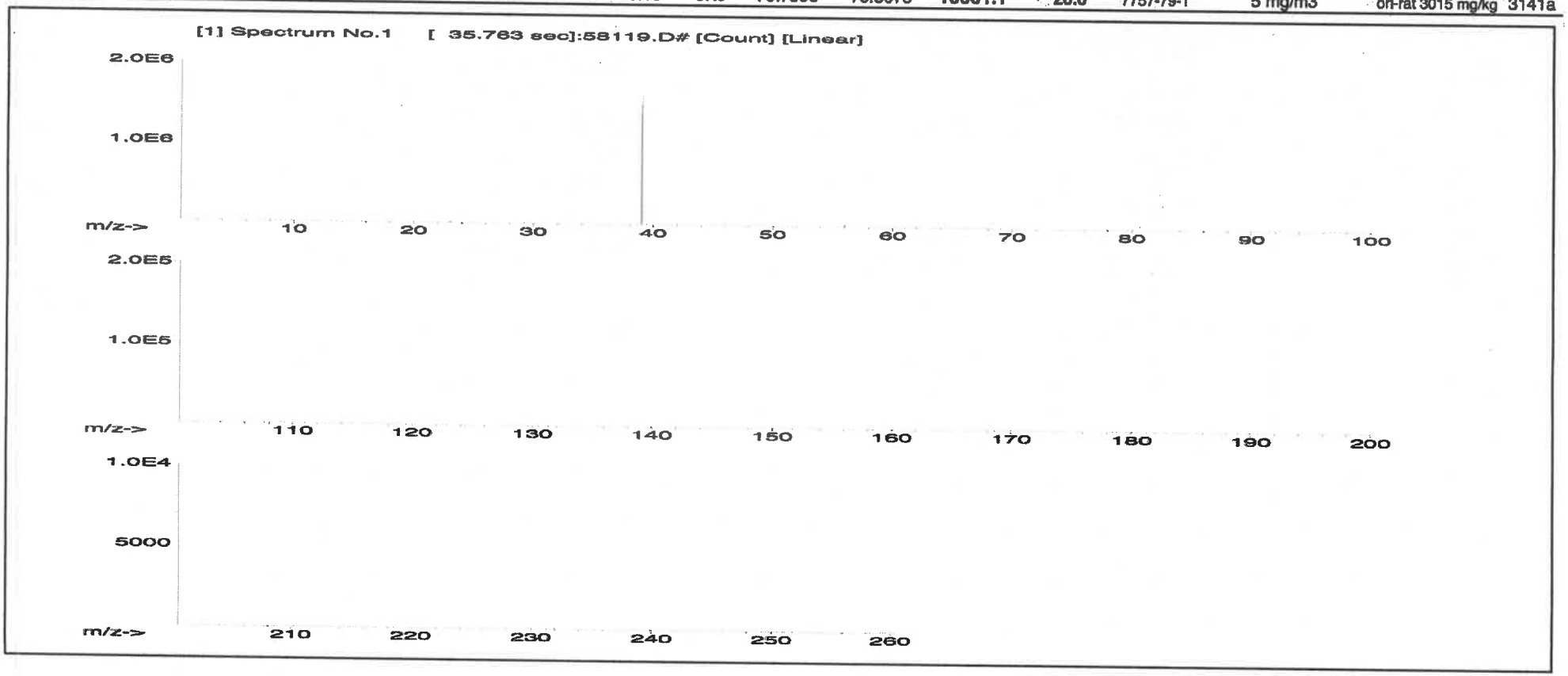
	Lot #		
Solvent:	20510011	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.06 Flask Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	120822
Reviewed By:	Pedro L. Rentas	120822

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Potassium nitrate (K)	IN034	KD022021A1	10000	99.999	0.10	37.6	79.7990	79.8075	**10001.1**	**20.0**	7757-79-1	5 mg/m3	orl-rat 3015 mg/kg	3141a



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<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.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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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-SPK-1
Lot Number:	T2-MEB721963
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	2 000 µg/mL ea: Aluminum, Barium,
	1 000 µg/mL ea: Iron,
	500 µg/mL ea: Manganese, Nickel, Vanadium, Zinc, Cobalt,
	250 µg/mL ea: Copper,
	200 µg/mL ea: Chromium,
	50 µg/mL ea: Beryllium, Silver

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	Chromium, Cr	200.0 ± 1.1 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	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Silver, Ag	50.00 ± 0.22 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.070 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
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
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
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 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

- July 27, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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M5658 R ! 8/25/23

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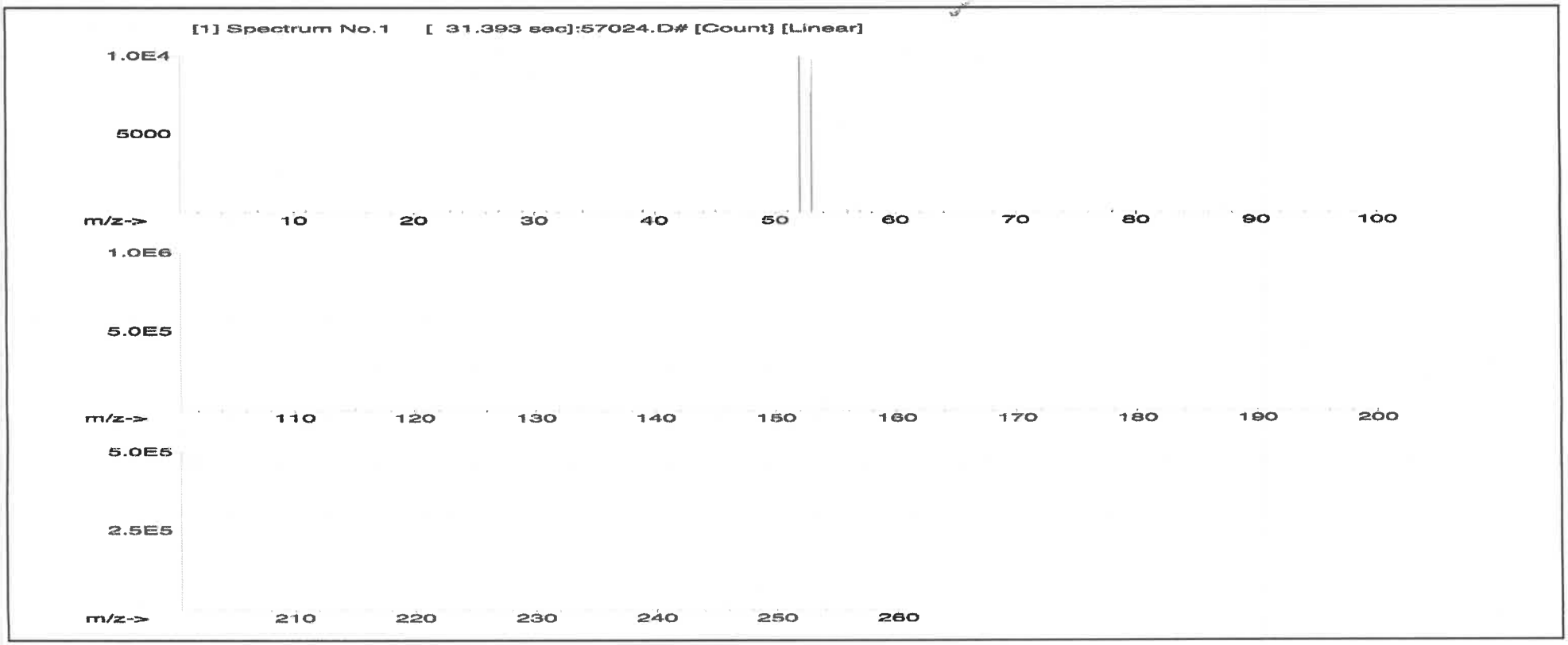
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58024**	21110221	Nitric Acid	
Lot Number:	**060523**			
Description:	**Chromium (Cr)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	060523
Reviewed By:	Pedro L. Rentas	060523

	Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1.	Chromium(III) nitrate nonahydrate (Cr)	58124	071122	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	7789-02-8	0.5 mg(Cr)/m3	orl-rat 3250 mg/kg	3112a



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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M5697 R: 10/27/23

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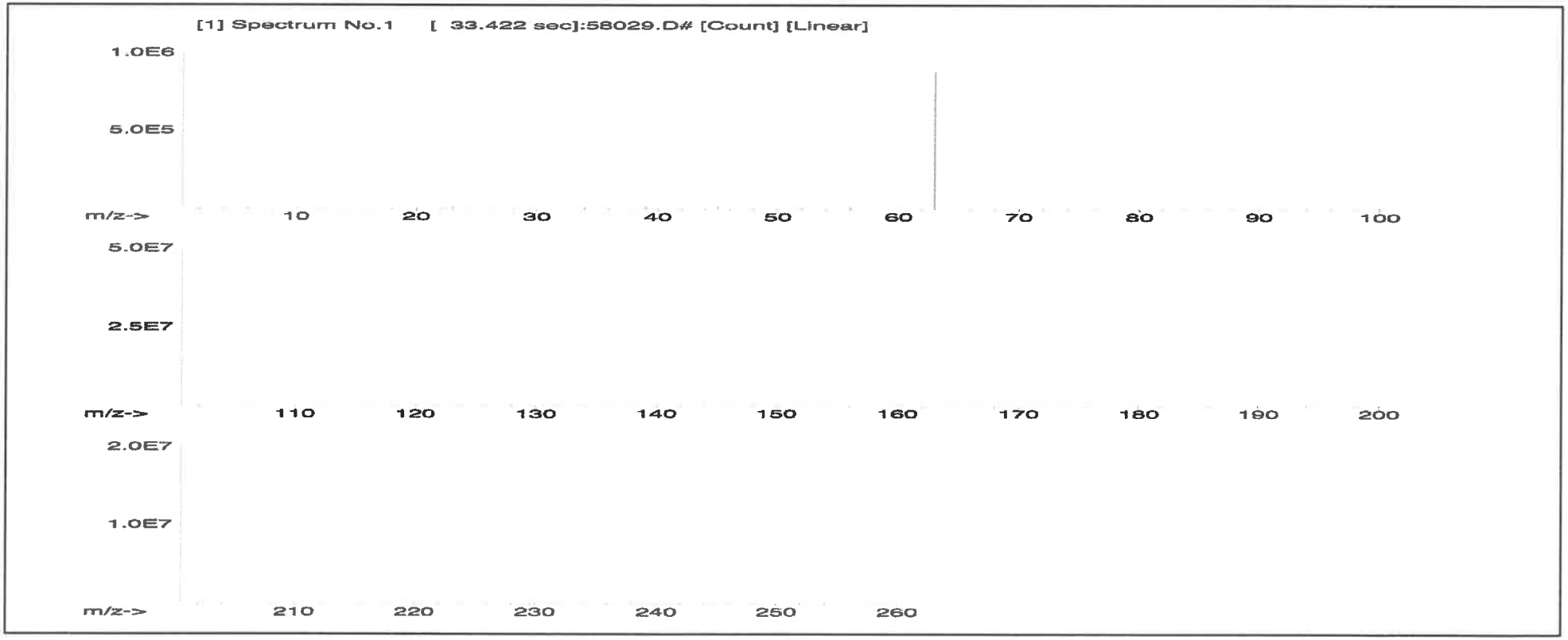
351

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58029**	24002546	Nitric Acid	
Lot Number:	**102523**			
Description:	**Copper (Cu)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	102526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Copper(II) nitrate trihydrate (Cu)	58129	100223	0.1000	200.0	0.084	1000	10000.1	**1000.0**	**2.2**	10031-43-3	1 mg/m3	orl-rat 794 mg/kg	3114



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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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M5768 M5769 (BP) R:1/3/24

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CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 091823
Description: Magnesium (Mg)

Expiration Date: 091826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

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

		Lot #		
Solvent:	24002546	Nitric Acid		
2%	40.0 (mL)	Nitric Acid		

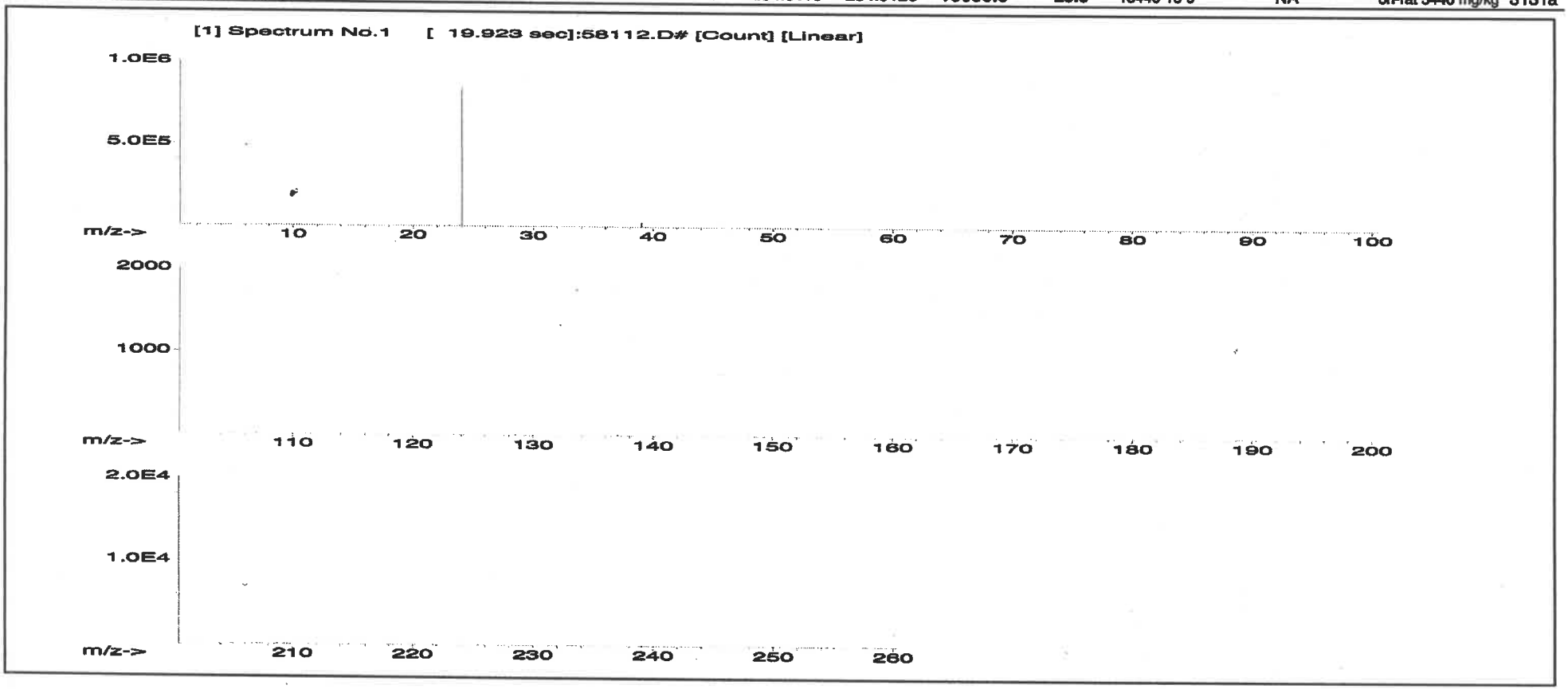
5E-05 Balance Uncertainty

M5768, M5769 (BP) R: 1/3/24

Formulated By: Lawrence Barry 091823

Reviewed By: Pedro L. Rentas 091823

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGD052023A1	10000	99.999	0.10	8.51	234.9118	234.9126	**10000.0**	**20.0**	13446-18-9	NA	ori-rat 5440 mg/kg	3131a



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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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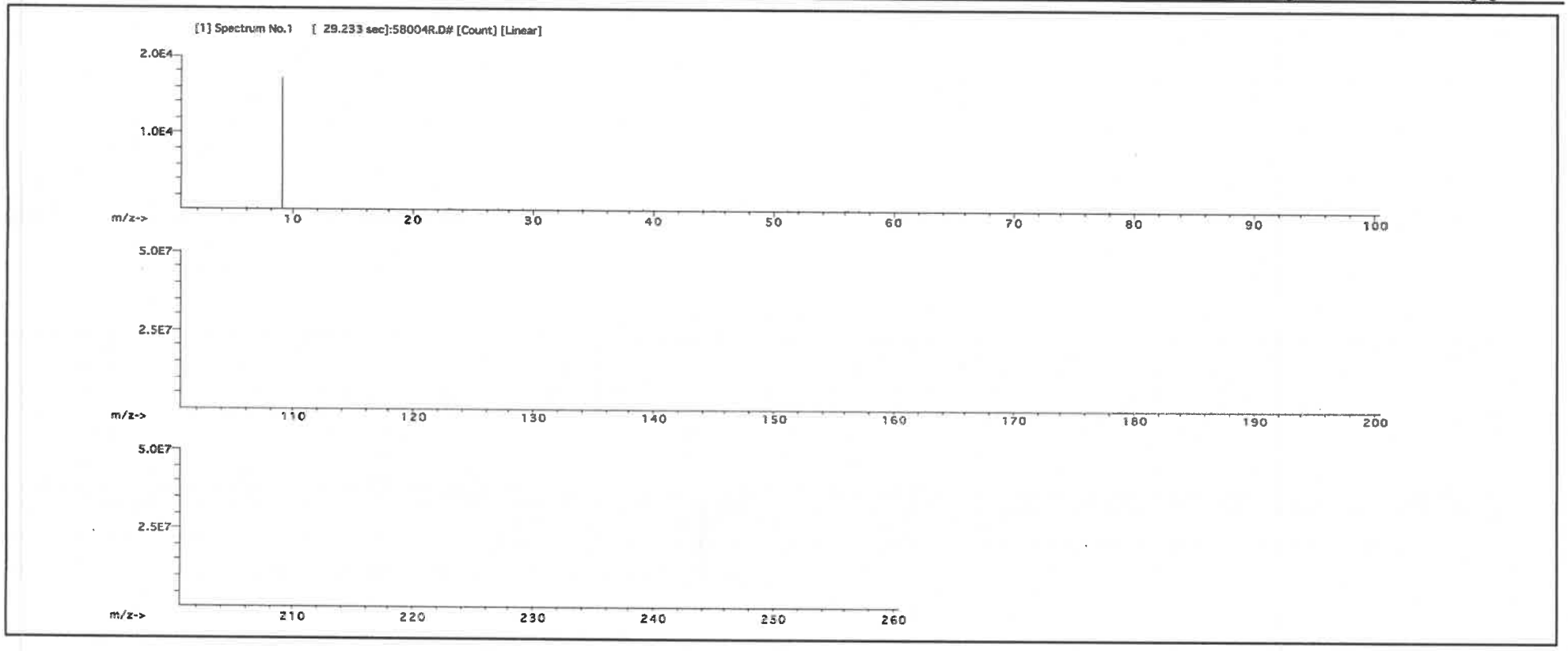
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57004**	24002546	Nitric Acid	
Lot Number:	**102523**			
Description:	**Beryllium (Be)**	2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	102526			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Benson Chan 102523
Reviewed By:	Pedro L. Rentas 102523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	**1000.0**	**2.2**	13597-99-4	0.2ug/m3	intrvns-rat 3.16mg/kg	NA



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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

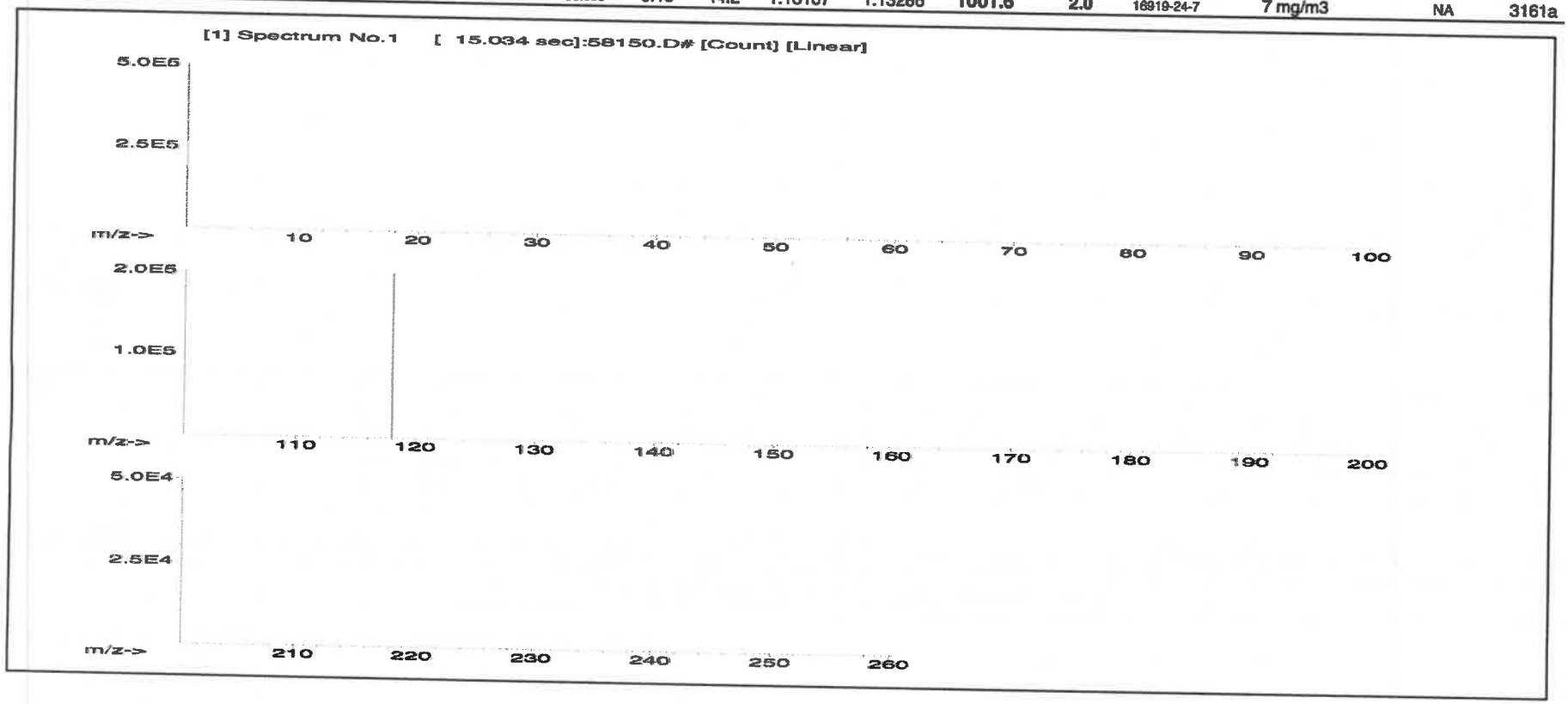
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	Lot #	
Solvents:	21110221	Nitric Acid
	22D0562008	Hydrochloric acid
2%	10.0	Nitric Acid
6%	30.0	Hydrochloric acid
	(mL)	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rentas	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium hexafluorostannate(IV) (Sn)	IN010	SND042023A1	1000	99.999	0.10	44.2	1.13107	1.13286	**1001.6**	**2.0**	16919-24-7	7 mg/m3	NA	3161a



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	T	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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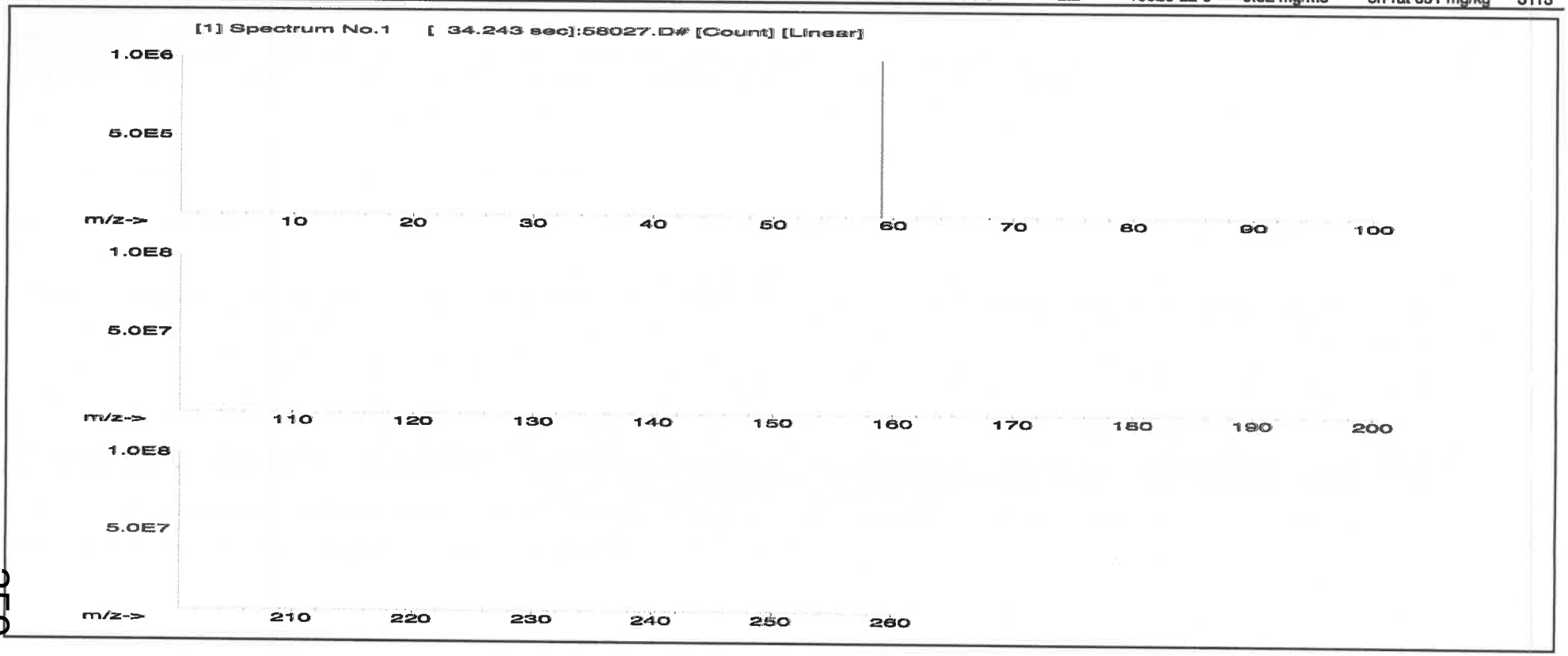
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57027**	24002546	Nitric Acid		
Lot Number:	**091923**				
Description:	**Cobalt (Co)**				
		2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	091926				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Formulated By:	Lawrence Barry	091923
Reviewed By:	Pedro L. Rentas	091923

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cobalt(II) nitrate hexahydrate (Co)	58127	050923	0.1000	200.0	0.084	1000	10000.0	**1000.0**	**2.2**	10026-22-9	0.02 mg/m3	orl-rat 691 mg/kg	3113



359

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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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Certified Reference Material CRM

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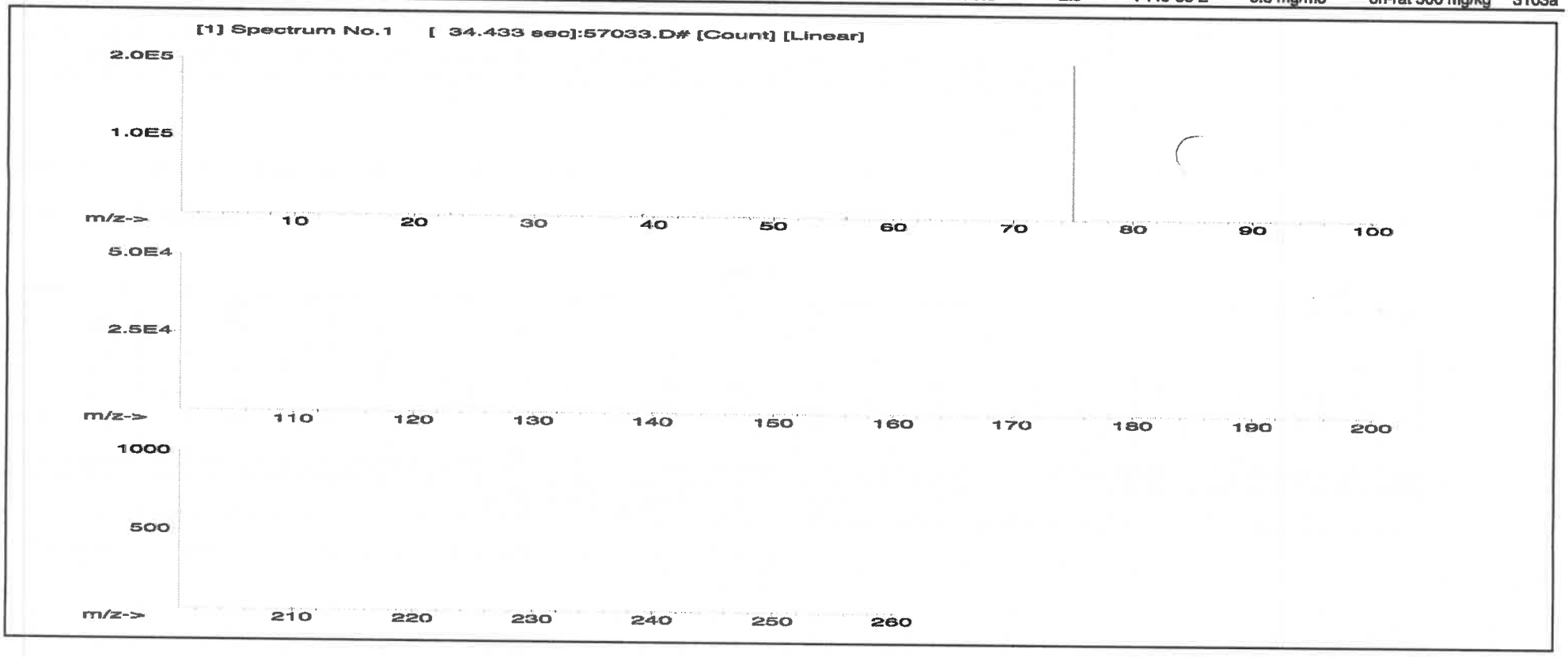
CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**				
Lot Number:	**111323**	24002546	Nitric Acid		
Description:	**Arsenic (As)**				
		2.0%	80.0 (mL)	Nitric Acid	
Expiration Date:	111326				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	4000.0	0.06	Flask Uncertainty		

Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rentas	111323

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	**1000.0**	**2.0**	7440-38-2	0.5 mg/m3	orl-rat 500 mg/kg	3103a



362

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

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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R1 02/09/24. M58165

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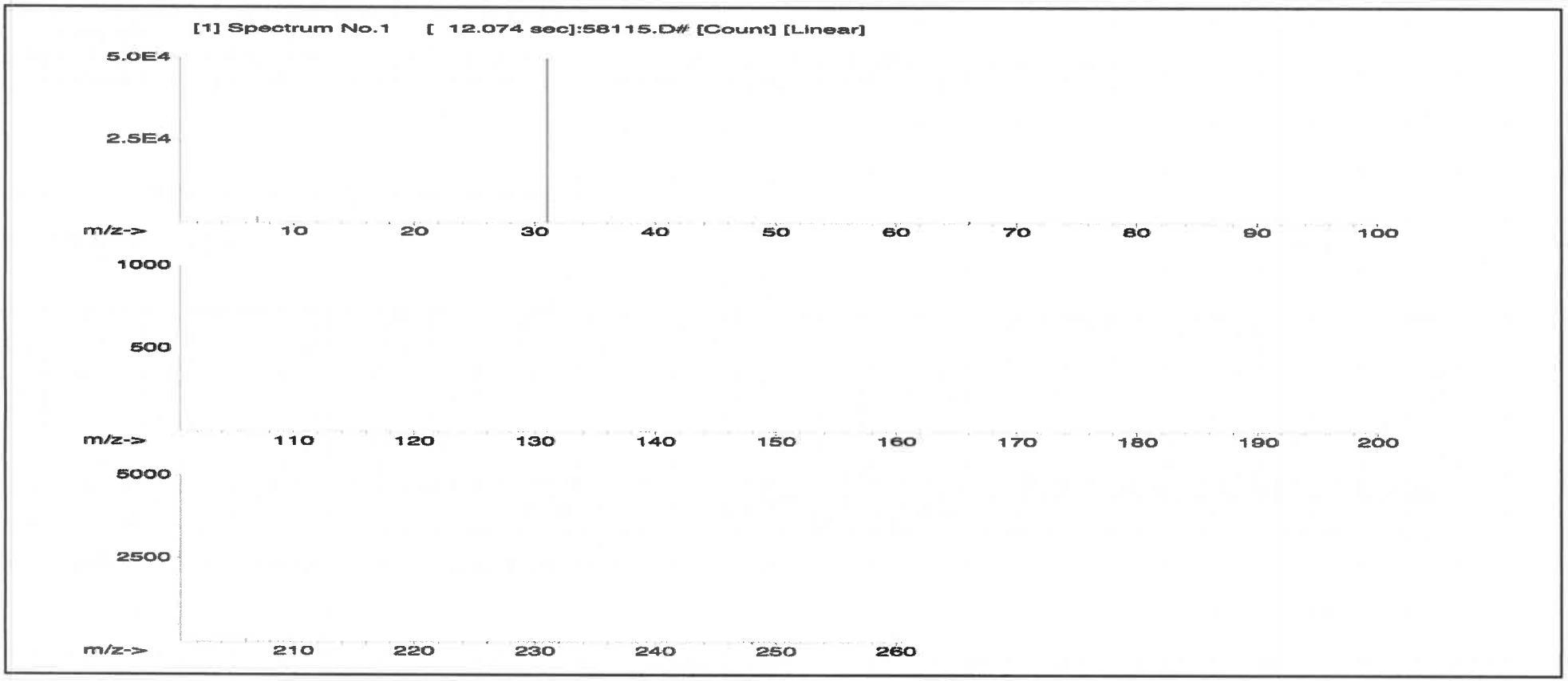
CERTIFIED WEIGHT REPORT:

			Lot #	
Part Number:	**57115**	**Solvent:**	21110221	Nitric Acid
Lot Number:	**041723**			
Description:	**Phosphorous (P)**	2%	40.0 (mL)	Nitric Acid
Expiration Date:	041726			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**10000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	041723
Reviewed By:	Pedro L. Rentas	041723

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium dihydrogen phosphate (P)	IN008	PV082019A1	10000	99.999	0.10	27.5	72.7287	72.7289	**10000.0**	**20.0**	7722-76-1	5 mg/m3	orl-rat >2000mg/kg	3186



364

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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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CERTIFIED WEIGHT REPORT:

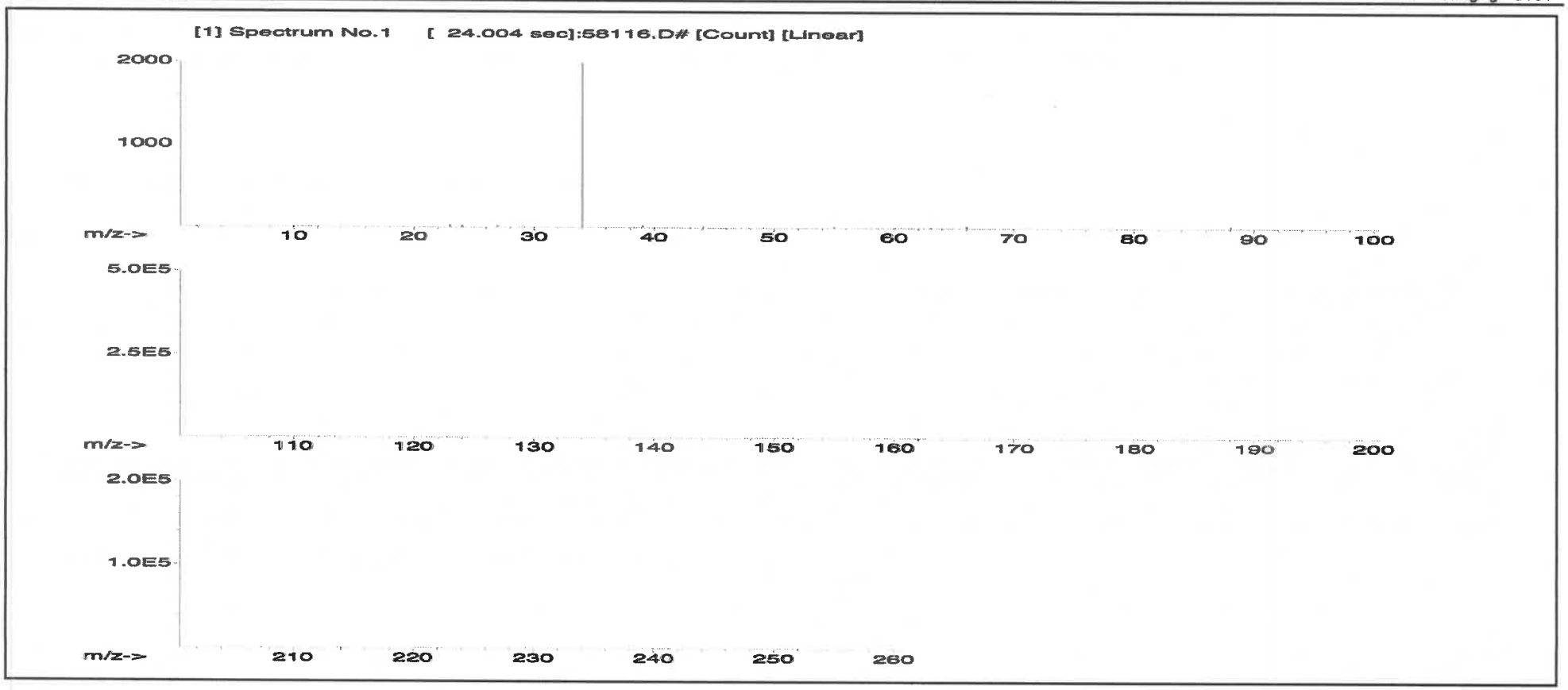
Part Number: 57116
Lot Number: 071123
Description: Sulfur (S)

Lot #
Solvent: 071123 ASTM Type 1 Water

Expiration Date: 071126
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): 1999.48 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	071123
Reviewed By:	Pedro L. Rentas	071123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	10000	99.9	0.10	24.3	82.4675	82.4682	**10000.1**	**20.0**	7783-20-2	NA	orl-rat 4250mg/kg	3181



366

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

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

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

(T)= Target analyte

Physical Characterization:

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Certified by:

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTI1
Lot Number:	T2-TI719972
Matrix:	2% (v/v) HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Titanium
Starting Material:	Ti Metal
Starting Material Lot#:	2094
Starting Material Purity:	99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **1002 ± 4 µg/mL**
ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 chemically stable for years in 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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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

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Certificate of Analysis

M5959 R: 6/14/24.

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Christiansburg, VA 24073 USA
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F: 540-585-3012
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1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGY10
Lot Number:	V2-Y740548
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Yttrium
Starting Material:	Yttrium Oxide
Starting Material Lot#:	2661 and 06230520YL
Starting Material Purity:	99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10000 ± 30 µg/mL

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

Assay Information:

Assay Method #1	**10011 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**9997 ± 50 µg/mL** ICP Assay NIST SRM 3167a Lot Number: 190730
Assay Method #3	**9984 ± 31 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004600	M	Eu		0.009037	M	Na		0.086360	M	Se	<	0.005200	M	Zn		0.030125
M	Al		0.014862	O	Fe		0.002410	M	Nb	<	0.000570	O	Si		0.024100	O	Zr	<	0.002600
M	As	<	0.003500	M	Ga	<	0.000570	M	Nd		0.000923	M	Sm		0.000461				
M	Au	<	0.001700	M	Gd	<	0.003500	M	Ni	<	0.005700	M	Sn	<	0.002300				
O	B		0.002209	M	Ge	<	0.005200	M	Os	<	0.001200	M	Sr	<	0.004600				
O	Ba	<	0.002500	M	Hf	<	0.000570	n	P	<		M	Ta	<	0.000570				
O	Be	<	0.001400	M	Hg	<	0.000570	M	Pb		0.005020	M	Tb		0.001044				
M	Bi	<	0.003500	M	Ho		0.009037	M	Pd	<	0.005100	M	Te	<	0.002300				
O	Ca		0.009841	M	In	<	0.002300	M	Pr	<	0.002300	M	Th	<	0.000570				
M	Cd	<	0.000570	M	Ir	<	0.000570	M	Pt	<	0.000570	M	Ti	<	0.003500				
M	Ce	<	0.002300	O	K		0.018677	M	Rb	<	0.000570	M	Tl	<	0.000570				
M	Co	<	0.000570	M	La		0.000461	M	Re	<	0.000570	M	Tm	<	0.003500				
M	Cr	<	0.004000	O	Li	<	0.009300	M	Rh	<	0.008000	M	U	<	0.000570				
M	Cs	<	0.000570	M	Lu		0.000582	M	Ru	<	0.000570	M	V		0.001265				
M	Cu		0.002610	O	Mg		0.001486	n	S	<		M	W	<	0.002300				
M	Dy		0.003815	M	Mn		0.000582	M	Sb		0.005422	s	Y	<					
M	Er		0.003615	M	Mo	<	0.005700	M	Sc	<	0.001200	M	Yb		0.001827				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 88.91 +3 6 Y(OH)(H2O)x+2

Chemical Compatibility -Soluble in HCl, H2SO4 and HNO3. Avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H2O/ HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H2O / HCl or HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	73Ge16O, 178Hf+2
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

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

11.2 Lot Expiration Date

- February 20, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor

Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certified Reference Material CRM

M5961 R: 6/11/24

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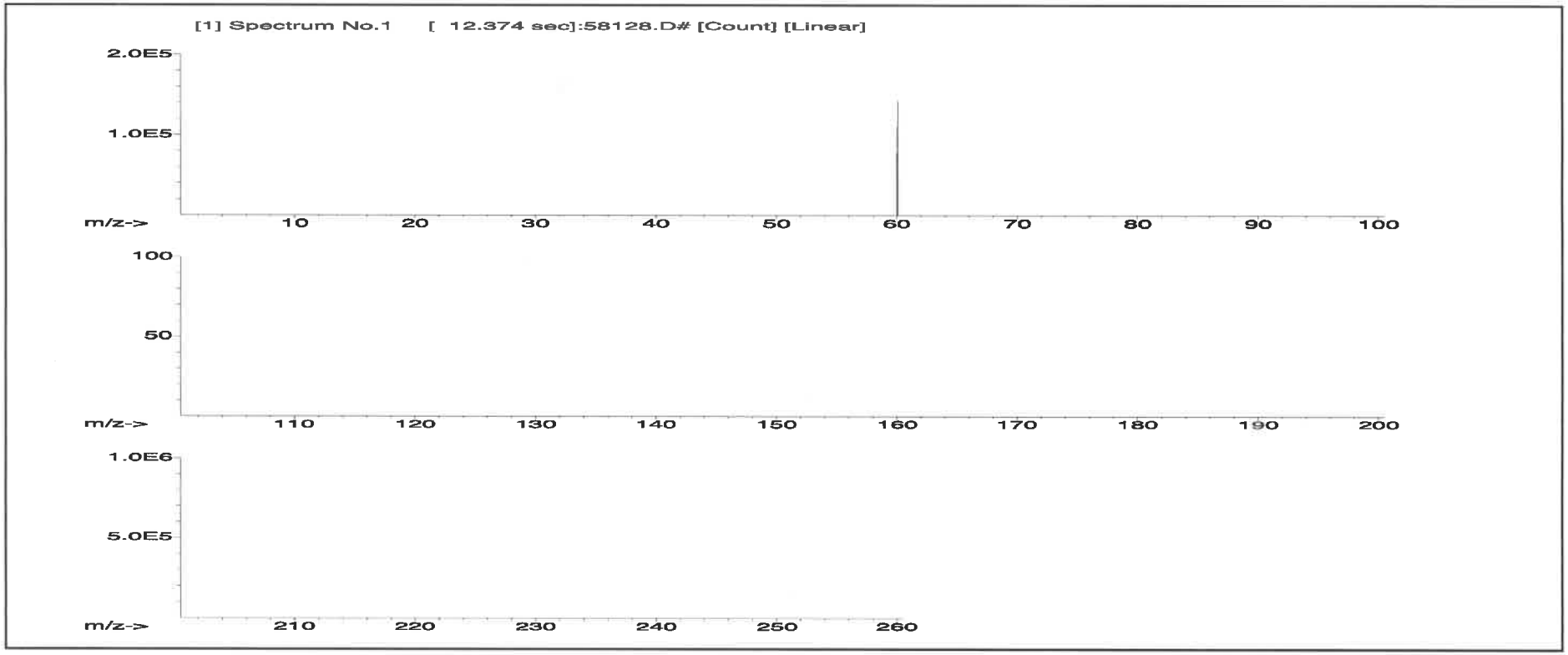
CERTIFIED WEIGHT REPORT:

			Lot #	
Part Number:	**57028**	**Solvent:**	24002546	Nitric Acid
Lot Number:	**041124**			
Description:	**Nickel (Ni)**			
		2%	5.0 (mL)	Nitric Acid
Expiration Date:	041127			
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):	249.85	0.002	Flask Uncertainty	

Formulated By:	Brian Geddes	041124
Reviewed By:	Pedro L. Rentas	041124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Nickel(II) nitrate hexahydrate (Ni)	IN033	NIM052023A1	1000	99.999	0.10	20.2	1.2369	1.2369	**1000.0**	**2.0**	13478-00-7	1 mg/m3	orl-rat 1620 mg/kg	3136



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

(T) = Target analyte

Physical Characterization:

Certified by:

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

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

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Certified Reference Material CRM

M5962 R! 06/14/24.

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AR-1539 Certificate Number
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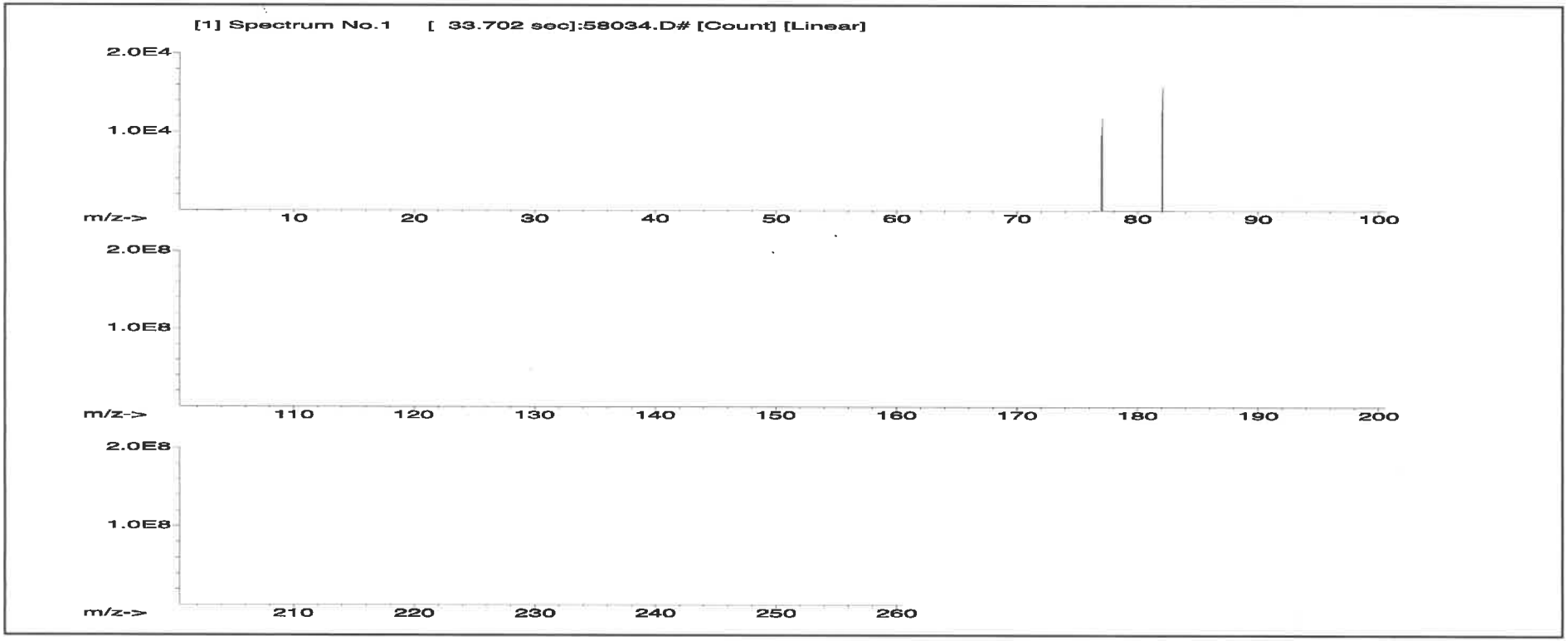
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57034**	24002546	Nitric Acid	
Lot Number:	**060624**			
Description:	**Selenium (Se)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060627			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty	

Formulated By:	Benson Chan	060624
Reviewed By:	Pedro L. Rentas	060624

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	**1000.0**	**2.2**	7782-49-2	0.2 mg/m3	orl-rat 6700 mg/kg	3149



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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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Certified Reference Material CRM

M5970, M5971 R: 7/01/24

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AR-1539 Certificate Number
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CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:
Part Number:	**57003**	24002546	Nitric Acid
Lot Number:	**062124**		
Description:	**Lithium (Li)**		
		2.0%	5.0 (mL) Nitric Acid
Expiration Date:	062127		
Recommended Storage:	Ambient (20 °C)		
Nominal Concentration (µg/mL):	**1000**		
NIST Test Number:	6UTB	5E-05 Balance Uncertainty	
Volume shown below was diluted to (mL):	250.11	0.016 Flask Uncertainty	

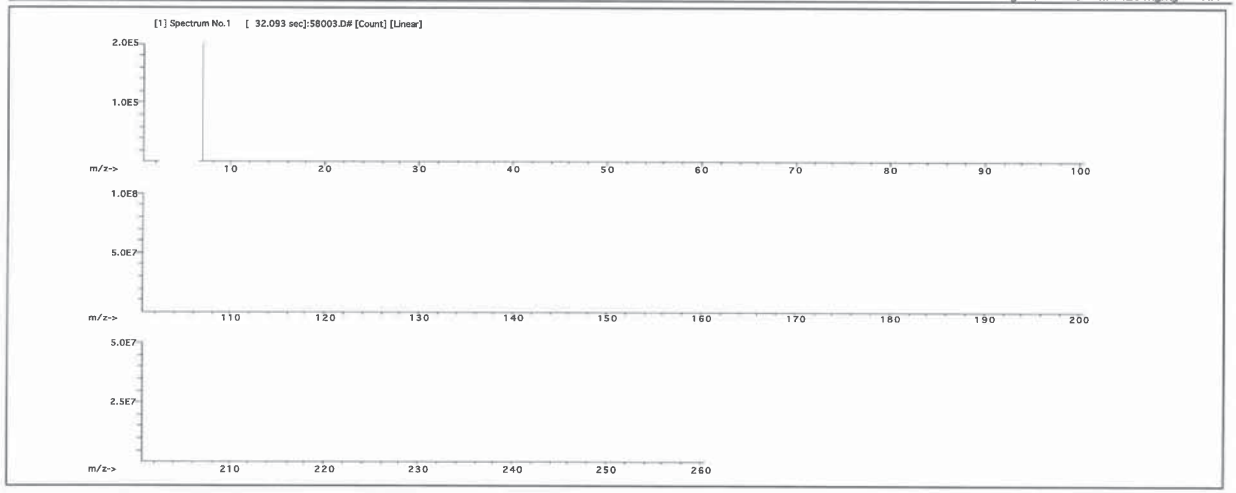
Giovanni Esposito

Formulated By: Giovanni Esposito 062124

Pedro Rentas

Reviewed By: Pedro L. Rentas 062124

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	**1000.0**	**2.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



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Certified Reference Material CRM

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

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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

INORGANIC VENTURES
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Certificate of Analysis

M5976, M5977
R: 02/22/24

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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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO1
Lot Number:	T2-MO720876
Matrix:	H2O tr. NH4OH
Value / Analyte(s):	1 000 µg/mL ea: Molybdenum
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	2361
Starting Material Purity:	99.9893%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 7 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 3134 Lot Number: 130418

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000590	M	Eu	<	0.000300	M	Na		0.000879	M	Se	<	0.008000	M	Zn		0.000598
M	Al		0.000563	M	Fe	<	0.006500	M	Nb	<	0.029000	i	Si	<		M	Zr	<	0.001800
M	As	<	0.002100	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.000300	M	Gd	<	0.000300	M	Ni	<	0.008000	M	Sn	<	0.008900				
M	B	<	0.003300	M	Ge	<	0.000300	M	Os	<	0.000590	M	Sr		0.000175				
M	Ba		0.001689	M	Hf	<	0.001800	i	P	<		M	Ta	<	0.004200				
M	Be	<	0.000890	M	Hg	<	0.003300	M	Pb	<	0.000300	M	Tb	<	0.000300				
M	Bi	<	0.000890	M	Ho	<	0.000300	M	Pd	<	0.001800	M	Te	<	0.021000				
O	Ca		0.006334	M	In	<	0.032000	M	Pr	<	0.013000	M	Th	<	0.000300				
O	Cd	<	0.026000	M	Ir	<	0.000300	M	Pt	<	0.000300	O	Tl	<	0.032000				
M	Ce	<	0.008300	M	K		0.130213	M	Rb		0.004575	M	Tl		0.001266				
M	Co		0.000598	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.000527	O	Li		0.000059	M	Rh	<	0.000300	M	U	<	0.005300				
M	Cs		0.000527	M	Lu	<	0.000300	M	Ru	<	0.079000	M	V	<	0.000890				
M	Cu		0.002252	M	Mg		0.000563	i	S	<		M	W		0.087982				
M	Dy	<	0.000300	M	Mn	<	0.005900	M	Sb		0.001513	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.001200	M	Yb	<	0.000300				

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 - 95.94 +6 6,7,8,9 [MoO4]-2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or 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 95 amu	3 ppt	n/a	40Ar39K16O,79Br1 6O,190Os2+,190Pt 2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

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

July 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

- July 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 Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN10
Lot Number:	U2-IN729349
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Indium
Starting Material:	Indium Metal
Starting Material Lot#:	2511
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL

Density: 1.044 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**10021 ± 56 µg/mL** ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	**10035 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	**10001 ± 33 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000760	M	Eu	<	0.000760	O	Na		0.012771	M	Se	<	0.023000	M	Zn	<	0.006100
M	Al		0.003385	O	Fe		0.004462	M	Nb	<	0.000760	O	Si		0.024619	M	Zr	<	0.000760
M	As	<	0.004600	M	Ga	<	0.000760	M	Nd	<	0.000760	M	Sm	<	0.000760				
M	Au	<	0.002300	M	Gd	<	0.000760	O	Ni	<	0.005100	M	Sn	<	0.000760				
O	B		0.003692	M	Ge	<	0.001600	M	Os	<	0.000760	O	Sr	<	0.000610				
M	Ba	<	0.001600	M	Hf	<	0.000760	n	P	<		M	Ta	<	0.000760				
O	Be	<	0.000130	M	Hg	<	0.003100	M	Pb		0.001400	M	Tb	<	0.000760				
M	Bi	<	0.000760	M	Ho	<	0.000760	M	Pd	<	0.001600	M	Te	<	0.000760				
O	Ca		0.004616	s	In	<		M	Pr	<	0.000760	M	Th	<	0.000760				
M	Cd	<	0.000760	M	Ir	<	0.000760	M	Pt	<	0.000760	O	Ti	<	0.001100				
M	Ce	<	0.000760	O	K		0.007078	M	Rb	<	0.000760	M	Tl	<	0.000760				
M	Co	<	0.000760	M	La	<	0.000760	M	Re	<	0.000760	M	Tm	<	0.000760				
O	Cr	<	0.001300	O	Li	<	0.000130	M	Rh	<	0.000760	M	U	<	0.000760				
M	Cs	<	0.000760	M	Lu	<	0.000760	M	Ru	<	0.000760	M	V	<	0.001600				
M	Cu	<	0.003800	O	Mg		0.000707	n	S	<		M	W	<	0.001600				
M	Dy	<	0.000760	O	Mn		0.000149	M	Sb	<	0.000760	M	Y	<	0.000760				
M	Er	<	0.000760	M	Mo	<	0.002300	M	Sc	<	0.000760	M	Yb	<	0.000760				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3

Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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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

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Certificate of Analysis

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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).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

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

11.2 Lot Expiration Date

- September 06, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

R → 10/13/24
Met dig

M 6121

Material No.: 9530-33
Batch No.: 0000275677
Manufactured Date: 2020/12/16
Retest Date: 2025/12/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.6
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.190
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	1
ACS - Free Chlorine (as Cl_2)	<= 0.5 ppm	< 0.5
Phosphate (PO_4)	<= 0.05 ppm	< 0.03
Sulfate (SO_4)	<= 0.5 ppm	< 0.3
Sulfite (SO_3)	<= 0.8 ppm	0.3
Ammonium (NH_4)	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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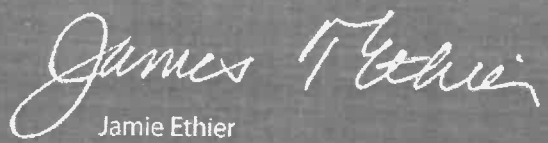
Material No.: 9530-33
Batch No.: 0000275677

Test	Specification	Result
Trace Impurities - Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 15.0 ppb	<1
Trace Impurities - Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 1.0 ppb	0.2
Trace Impurities - Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities - Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities - Selenium (Se), For Information Only	ppb	1.0
Trace Impurities - Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Titanium (Ti)	<= 1.0 ppb	0.2
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R -> 11/12/24

M6126

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

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CERTIFIED WEIGHT REPORT:

R→ 1/13/25

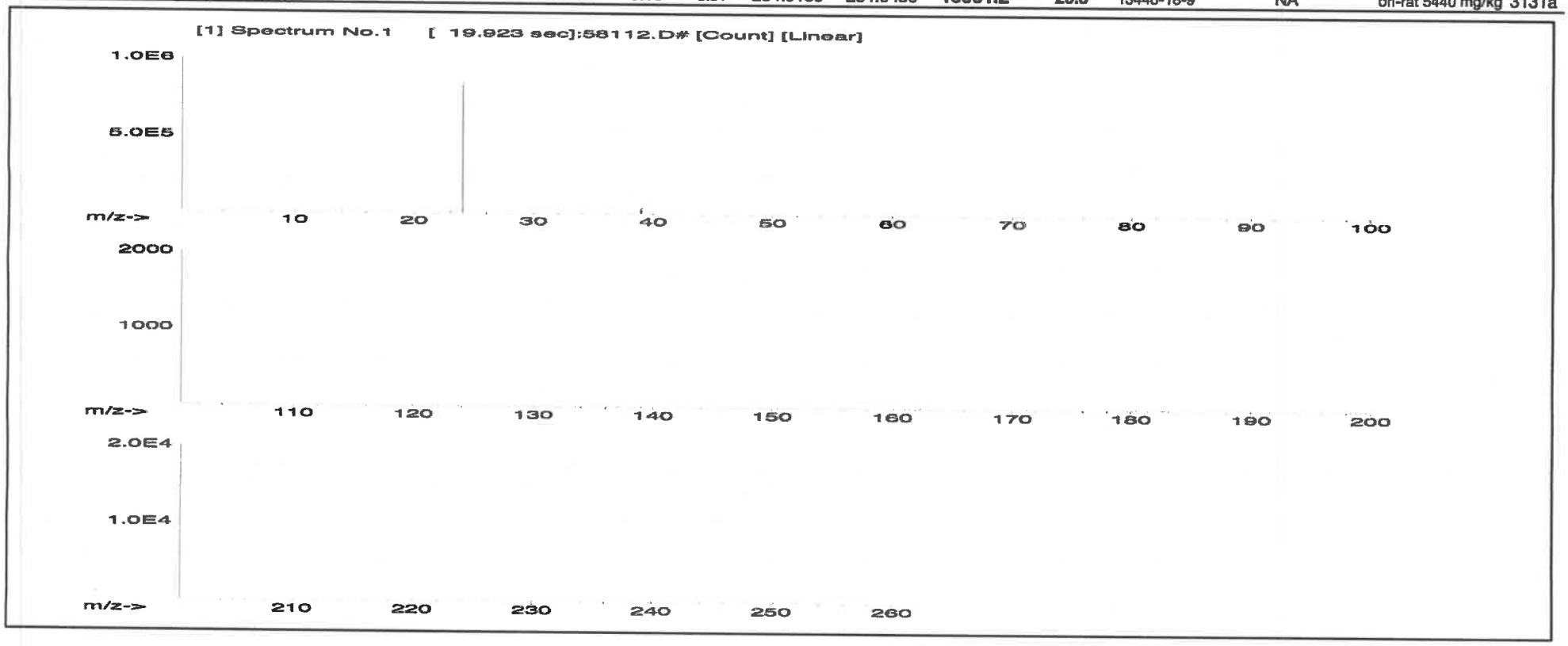
M 6127

			Lot #	
Part Number:	**58112**	**Solvent:**	24012496	Nitric Acid
Lot Number:	**112124**			
Description:	**Magnesium (Mg)**	2%	40.0 (mL)	Nitric Acid
Expiration Date:	112127			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**10000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	112124
Reviewed By:	Pedro L. Rentas	112124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGD052023A1	10000	99.999	0.10	8.51	234.9183	234.9459	**10001.2**	**20.0**	13446-18-9	NA	orl-rat 5440 mg/kg	3131a



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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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CERTIFIED WEIGHT REPORT:

R->1/13/28

M6128

Part Number:	**58025**	**Solvent:**	**Lot #** 24002546	Nitric Acid
Lot Number:	**101124**			
Description:	**Manganese (Mn)**	2%	80.0 (mL)	Nitric Acid
Expiration Date:	101127			
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):	4000.2	0.10	Flask Uncertainty	

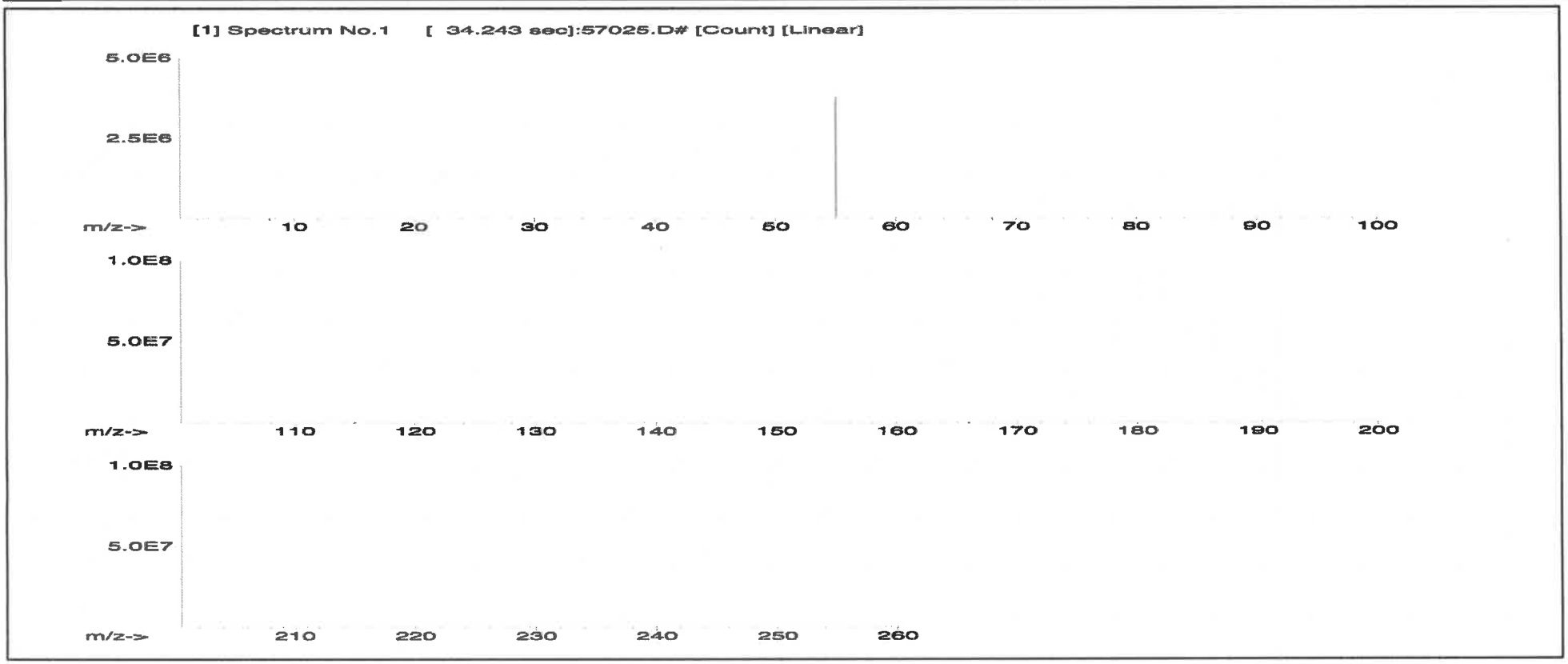
Giovanni Esposito

Formulated By:	Giovanni Esposito	101124

Pedro Rentas

Reviewed By:	Pedro L. Rentas	101124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	**Actual Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	**SDS Information** (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Manganese(II) nitrate hydrate (Mn)	IN031	MNM092020A1	1000	99.999	0.10	20.8	19.2322	19.2344	**1000.1**	**2.0**	15710-66-4	5 mg/m3	orl-rat >300mg/kg	3132



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	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 certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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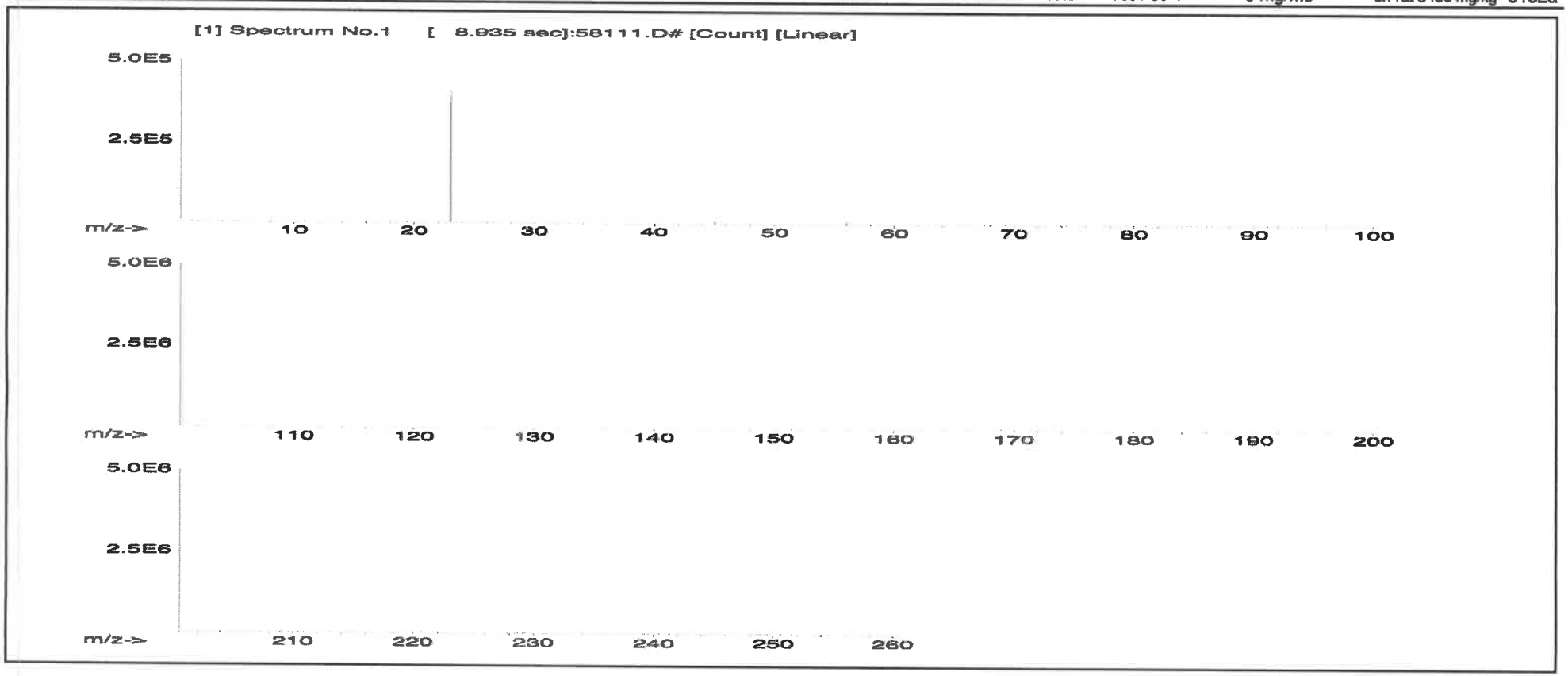
CERTIFIED WEIGHT REPORT:

R->1/13/25

Part Number:	**58111**			**Lot #**	
Lot Number:	**072424**	**Solvent:**	24002546	Nitric Acid	
Description:	**Sodium (Na)**				
		MG144 2%	80.0 (mL)	Nitric Acid	
Expiration Date:	072427				
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. Rentas 072424

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV012015I1	10000	99.999	0.10	26.9	148.7096	######	**10000.0**	**20.0**	7631-99-4	5 mg/m3	orl-rat 3430 mg/kg	3152a



402

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

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

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403

CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)

R → 1/13/25

M6145

Expiration Date: 121727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.1

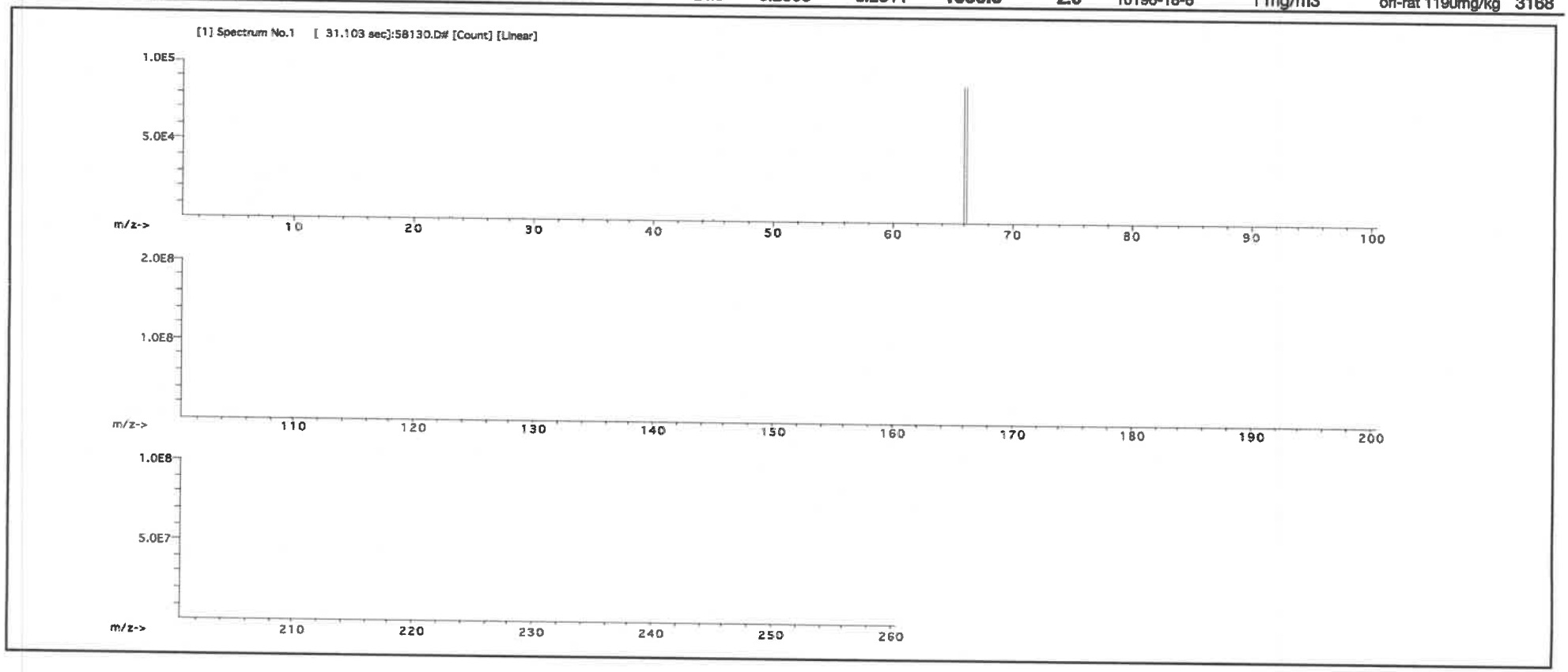
		Lot #	
Solvent:	24012496	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.10 Flask Uncertainty

Aleah O'Brady
Formulated By: Aleah O'Brady 121724

Pedro Rentas
Reviewed By: Pedro L. Rentas 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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Zinc nitrate hexahydrate (Zn)	IN016	ZNE032021A1	1000	99.999	0.10	24.3	8.2308	8.2311	**1000.0**	**2.0**	10196-18-6	1 mg/m3	ori-rat 1190mg/kg	3168



404

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

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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

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

R : 4/20/21

QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

M6150

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Metals in Dilute Acidic or Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.

ICV1-1014 For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415 For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

ICV6-0400 For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) ***CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS***

ICV1-1014		
Element	**Concentration (µg/L) (after 10-fold dilution)**	**Concentration (µg/L) (after 50-fold dilution)**
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	**Concentration (µg/L) (after 100-fold dilution)**	**Analyte**	**Concentration (µg/L) (after 100-fold dilution)**
Hg	4.0	**CN^-**	99

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R: 01/03/24 M5806, M5807

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407

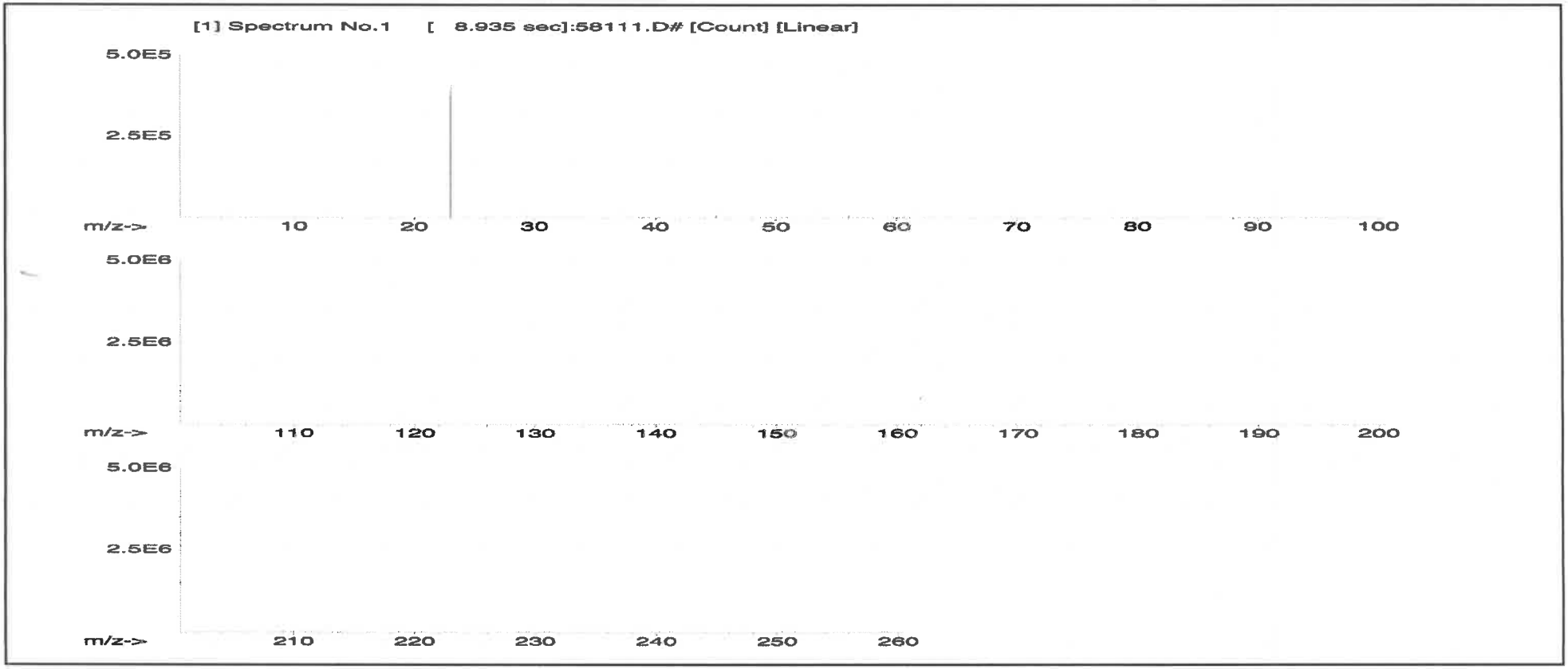
CERTIFIED WEIGHT REPORT:

Part Number:	**58111**		**Lot #**		
Lot Number:	**122223**	**Solvent:**	24002546	Nitric Acid	
Description:	**Sodium (Na)**				
		2%	60.0 (mL)	Nitric Acid	
Expiration Date:	122226				
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):	3000.4	0.06	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	122223
Reviewed By:	Pedro L. Rentas	122223

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV012015I1	10000	99.999	0.10	26.9	111.5406	111.5479	**10000.7**	**20.0**	7631-99-4	5 mg/m3	orl-rat 3430 mg/kg	3152a



408

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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R: 01/03/24 M5802, M5803

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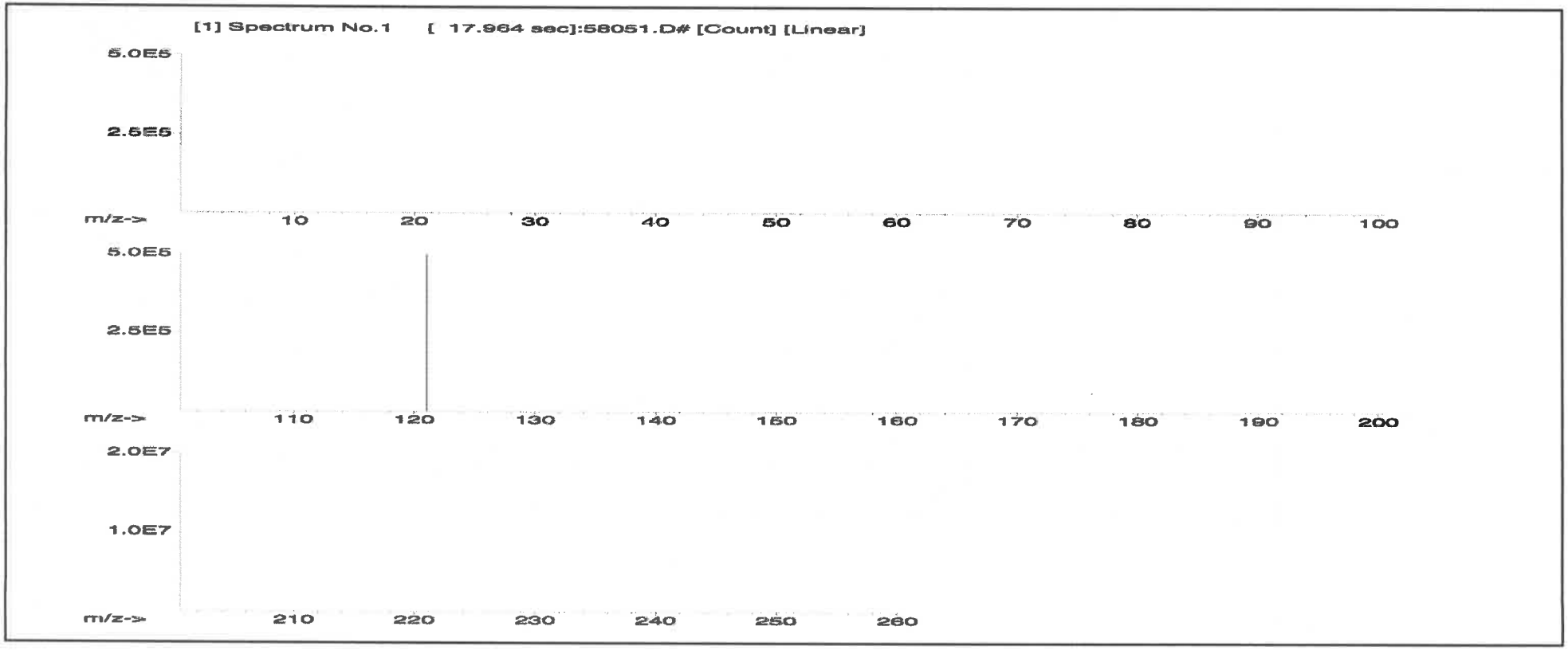
409

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57051**	24002546	Nitric Acid		
Lot Number:	**120523**				
Description:	**Antimony (Sb)**				
		2.0%	60.0 (mL)	Nitric Acid	
Expiration Date:	120526				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	3000.41	0.058	Flask Uncertainty		

Formulated By:	Lawrence Barry	120523
Reviewed By:	Pedro L. Rentas	120523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Antimony (Sb)	58151	100923	0.1000	300.0	0.084	1000	10001.4	**1000.0**	2.1	7440-36-0	0.5 mg/m3	orl-rat 7000 mg/kg	3102a



410

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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M6030

R: 8/5/24

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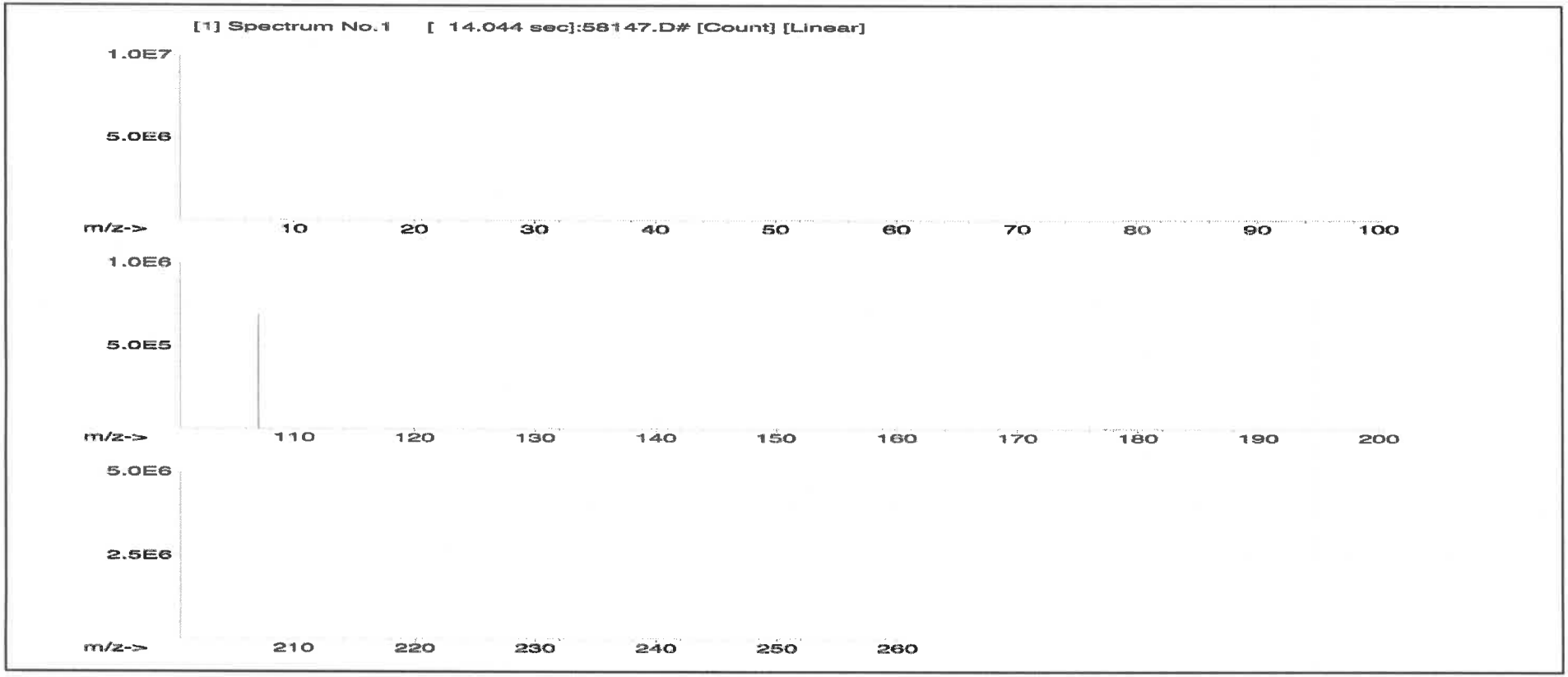
411

CERTIFIED WEIGHT REPORT:

Part Number:	**57047**		**Lot #**		
Lot Number:	**122823**	**Solvent:**	24002546	Nitric Acid	
Description:	**Silver (Ag)**	2%	80.0 (mL)	Nitric Acid	
Expiration Date:	122826				
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):	4000.30	0.058	Flask Uncertainty		

Formulated By:	Benson Chan	122823
Reviewed By:	Pedro L. Rentas	122823

	Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1.	Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9999	0.10	63.7	6.27992	6.27998	**1000.0**	**2.0**	7761-88-8	10 ug/m3	NA	3151



412

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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

R : 04/20/21

APTIM

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

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

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

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"

APTIM

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

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

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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
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(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,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
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Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
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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.

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

R: 8/5/24 M6019

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSR1
Lot Number:	U2-SR730227
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Strontium
Starting Material:	SrCO3
Starting Material Lot#:	M2-2192
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL

Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**998 ± 4 µg/mL** ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	**1001 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	**1001 ± 2 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001980	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 $Sr(H_2O)_6^{+2}$

Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, 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% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO_3 / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 03, 2023

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

11.2 Lot Expiration Date

- **March 03, 2028**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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

Certified Reference Material CRM

R: 03/16/23 M5473, M5474, M5475, M5476

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

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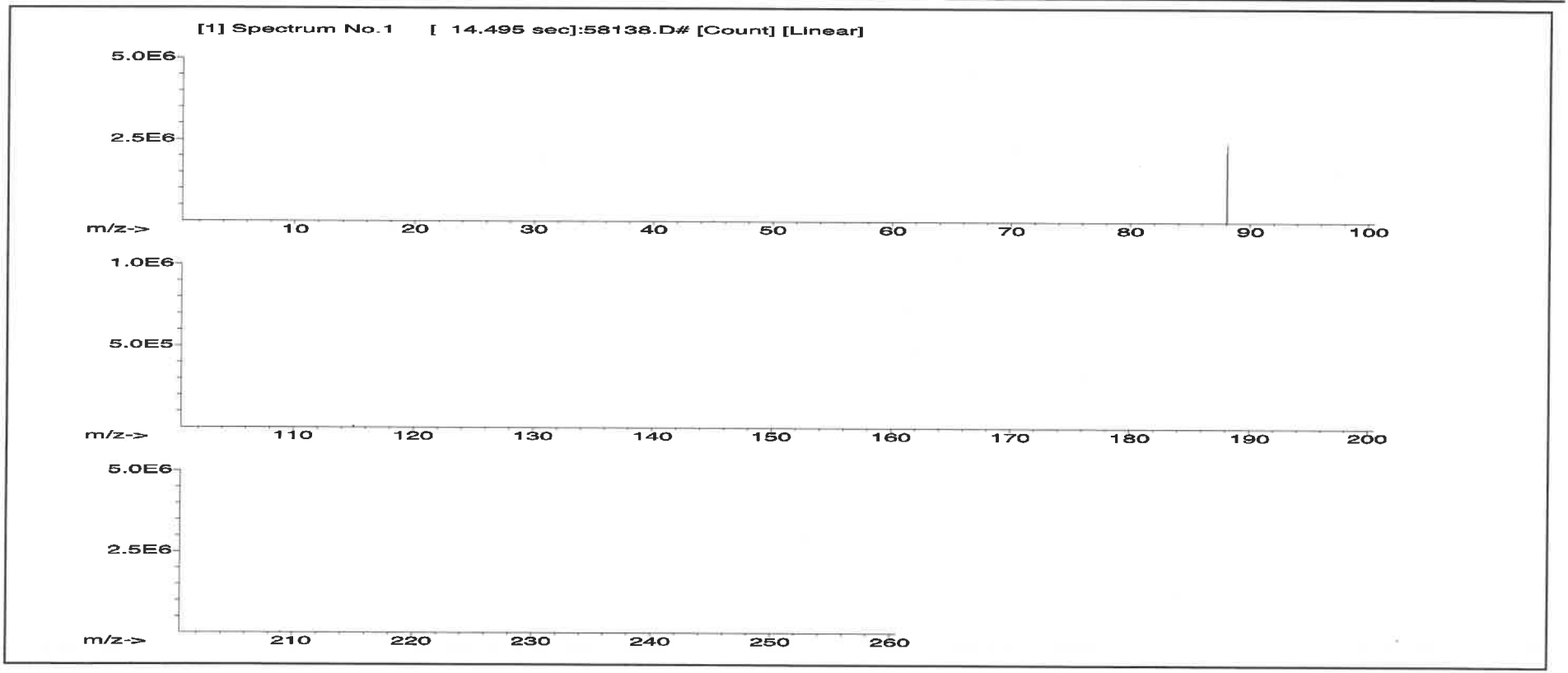
CERTIFIED WEIGHT REPORT:

Part Number:	**56138**		**Lot #**		
Lot Number:	**082922**	**Solvent:**	20510011	Nitric Acid	
Description:	**Strontium (Sr)**	2%	20.0 (mL)	Nitric Acid	
Expiration Date:	082925				
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):	1000.12	0.058	Flask Uncertainty		

Formulated By:	Lawrence Barry	082922
Reviewed By:	Pedro L. Rentas	082922

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	**Actual Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Strontium nitrate (Sr)	IN017	SRZ022018A1	10000	99.997	0.10	41.2	24.2756	24.2758	**10000.1**	**20.0**	10042-76-9	NA	orl-rat >2000mg/kg	3153a



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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

Certified Reference Material CRM

R: 03/16/23 M5473, M5474, M5475, M5476

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AR-1539 Certificate Number
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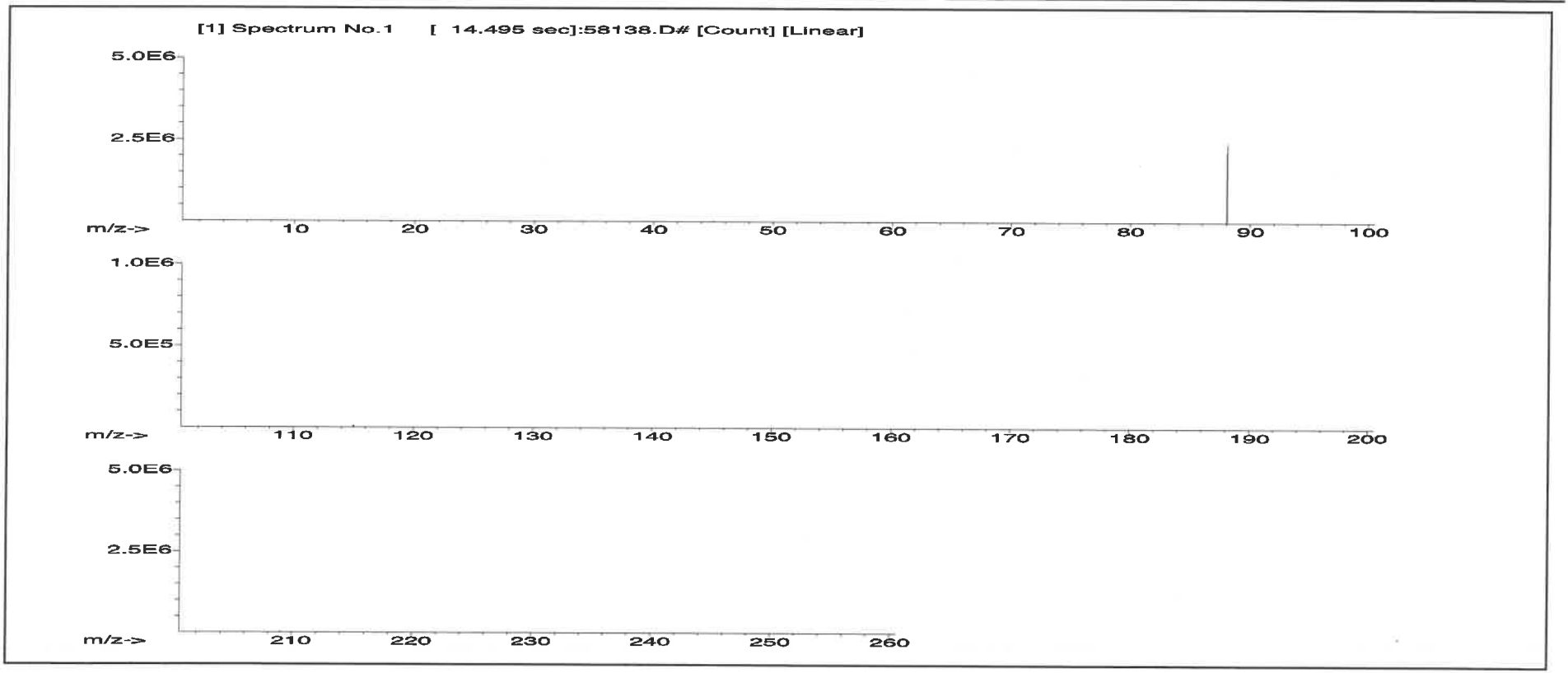
423

CERTIFIED WEIGHT REPORT:

Part Number:	**56138**		**Lot #**		
Lot Number:	**082922**	**Solvent:**	20510011	Nitric Acid	
Description:	**Strontium (Sr)**				
		2%	20.0 (mL)	Nitric Acid	
Expiration Date:	082925				
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):	1000.12	0.058	Flask Uncertainty		

Formulated By:	Lawrence Barry	082922
Reviewed By:	Pedro L. Rentas	082922

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	**Actual Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Strontium nitrate (Sr)	IN017	SRZ022018A1	10000	99.997	0.10	41.2	24.2756	24.2758	**10000.1**	**20.0**	10042-76-9	NA	orl-rat >2000mg/kg	3153a



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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M6023

R ! 8/5/24

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425

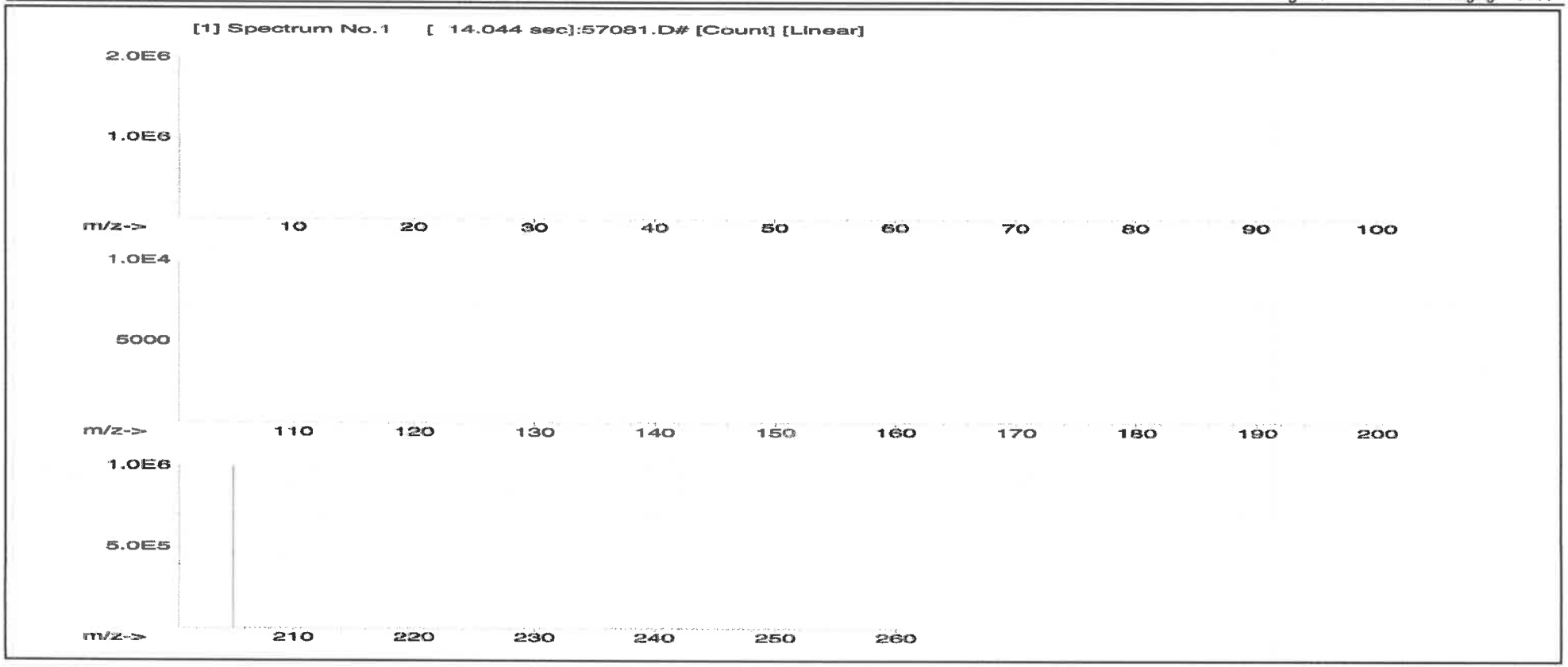
CERTIFIED WEIGHT REPORT:

Part Number:	**57081**		**Lot #**		
Lot Number:	**062724**	**Solvent:**	24002546	Nitric Acid	
Description:	**Thallium (Tl)**	2%	40.0 (mL)	Nitric Acid	
Expiration Date:	062727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.1	0.10	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	062724
Reviewed By:	Pedro L. Rentas	062724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Thallium nitrate (Tl)	IN037	BCCF4399	1000	99.999	0.10	77.0	2.5975	2.5977	**1000.1**	**2.0**	10102-45-1	0.1 mg/m3	orl-mus 15mg/kg	3158



426

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Rc. 8/5/24

427

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57023**	24002546	Nitric Acid	
Lot Number:	**062424**			
Description:	**Vanadium (V)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062427			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.3	0.06	Flask Uncertainty	

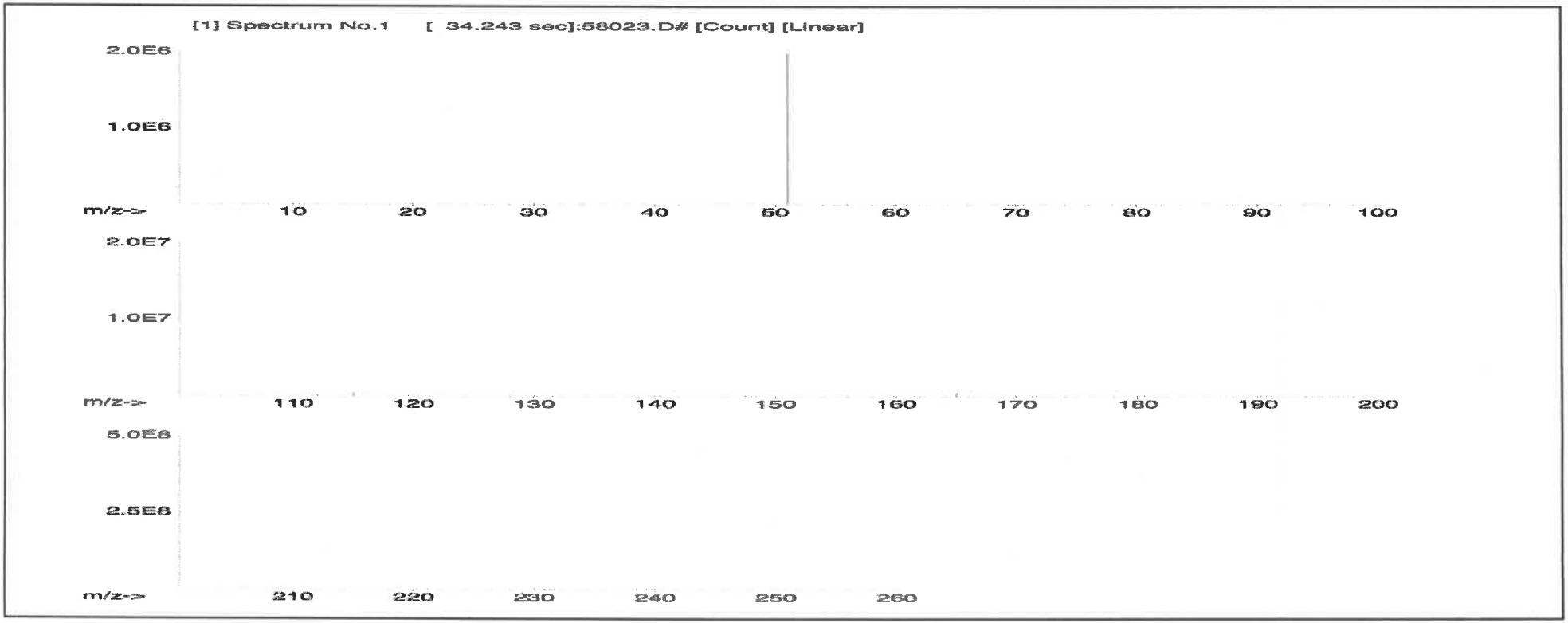
Aleah O'Brady

Formulated By:	Aleah O'Brady	062424

Pedro Rentas

Reviewed By:	Pedro L. Rentas	062424

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium metavanadate (V)	58123	021224	0.1000	200.0	0.084	1000	10000.3	**1000.0**	**2.2**	7803-55-6	0.05 mg/m3	orl-rat 58.1mg/kg	3165



428

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

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

(T) = Target analyte

Physical Characterization:

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Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB166912

SOP ID : M200.7-Trace Elements-22, MSFAM01.1-Trace Metals-2

SDG No : YE8D0

Matrix : WATER

Pippete ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

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

Start Digest Date: 02/27/2025 **Time :** 12:15 **Temp :** 96 °C

End Digest Date: 02/27/2025 **Time :** 14:20 **Temp :** 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: SKD.

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LCSW	0.50	MP84656
Spike Sol 6	0.25	MP84663
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
1:1 HNO3	1.00	MP84041
1:1 HCL	0.50	MP84297
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 #55 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/27/25 15:20	3123. met. dig.	[illegible] (Data Ent Cab)
	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
PB166912BL	PBW912	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	41
PB166912BS	LCS912	<2	50	50	Colorless	Colorless	Clear	Clear	MP84656	42
PB166912TB	LEB912	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	48
Q1160-01	YE8C9	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	43
Q1160-02	YE8C9D	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	44
Q1160-03	YE8C9S	<2	50	50	Colorless	Colorless	Clear	Clear	MP84663	45
Q1160-04	YE8D0	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	46
Q1160-05	YE8D3	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	47

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134905

Review By	Sarabjit Jaswal	Review On	3/7/2025 9:05:23 AM
Supervise By	Kareem Khairalla	Supervise On	3/7/2025 12:25:37 PM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84657,MP84655,MP84654,MP84653,MP84652,MP84651
ICV Standard	MP84658
CCV Standard	MP84661
ICSA Standard	MP84659,MP84721
CRI Standard	
LCS Standard	MP84656
Chk Standard	MP84649,MP84650

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	03/04/25 15:34		Kareem	OK
2	S1	S01	CAL2	03/04/25 15:38		Kareem	OK
3	S2	S02	CAL3	03/04/25 15:43		Kareem	OK
4	S3	S03	CAL4	03/04/25 15:47		Kareem	OK
5	S4	S04	CAL5	03/04/25 15:51		Kareem	OK
6	S5	S05	CAL6	03/04/25 15:55		Kareem	OK
7	S6	S06	CAL7	03/04/25 16:00		Kareem	OK
8	ICV001	ICV001	ICV	03/04/25 17:17	Instrument paused for calibration review	Kareem	OK
9	ICB001	ICB001	ICB	03/04/25 17:23		Kareem	OK
10	ICSA001	ICSA001	ICSA	03/04/25 17:27		Kareem	OK
11	ICSAB001	ICSAB001	ICSAB	03/04/25 17:31		Kareem	OK
12	CCV001	CCV001	CCV	03/04/25 17:35		Kareem	OK
13	CCB001	CCB001	CCB	03/04/25 17:39		Kareem	OK
14	PB166911BL	PBW911	MB	03/04/25 17:43		Kareem	OK
15	PB166911BS	LCS911	LCS	03/04/25 17:48		Kareem	OK
16	PB166913BL	PBW913	MB	03/04/25 17:52		Kareem	OK
17	PB166913BS	LCS913	LCS	03/04/25 17:56		Kareem	OK
18	PB166912BL	PBW912	MB	03/04/25 18:00		Kareem	OK

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Fax : 908 789 8922

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134905

Review By	Sarabjit Jaswal	Review On	3/7/2025 9:05:23 AM
Supervise By	Kareem Khairalla	Supervise On	3/7/2025 12:25:37 PM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84657,MP84655,MP84654,MP84653,MP84652,MP84651
ICV Standard	MP84658
CCV Standard	MP84661
ICSA Standard	MP84659,MP84721
CRI Standard	
LCS Standard	MP84656
Chk Standard	MP84649,MP84650

19	PB166912BS	LCS912	LCS	03/04/25 18:04		Kareem	OK
20	Q1136-01	YE8F5	SAM	03/04/25 18:21		Kareem	OK
21	Q1136-02	YE8F7	SAM	03/04/25 18:25		Kareem	OK
22	Q1136-03	YE8F7D	DUP	03/04/25 18:29		Kareem	OK
23	Q1136-02L	YE8F7L	SD	03/04/25 18:33		Kareem	OK
24	Q1136-04	YE8F7S	MS	03/04/25 18:37		Kareem	OK
25	Q1136-05	YE8F8	SAM	03/04/25 18:41		Kareem	OK
26	Q1136-06	YE8E3	SAM	03/04/25 18:45		Kareem	OK
27	Q1136-07	YE8E4	SAM	03/04/25 18:49		Kareem	OK
28	Q1136-08	YE8E5	SAM	03/04/25 18:53		Kareem	OK
29	Q1136-09	YE8E6	SAM	03/04/25 18:57		Kareem	OK
30	Q1136-10	YE8E7	SAM	03/04/25 19:01		Kareem	OK
31	CCV002	CCV002	CCV	03/04/25 19:10		Kareem	OK
32	CCB002	CCB002	CCB	03/04/25 19:14		Kareem	OK
33	Q1136-11	YE8E8	SAM	03/04/25 19:18		Kareem	OK
34	Q1136-12	YE8D1	SAM	03/04/25 19:22		Kareem	OK
35	Q1136-13	YE8D2	SAM	03/04/25 19:26		Kareem	OK
36	Q1136-14	YE8D4	SAM	03/04/25 19:30		Kareem	OK
37	Q1136-15	YE8C3	SAM	03/04/25 19:34		Kareem	OK
38	Q1136-17	YE8D5	SAM	03/04/25 19:39		Kareem	OK

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134905

Review By	Sarabjit Jaswal	Review On	3/7/2025 9:05:23 AM
Supervise By	Kareem Khairalla	Supervise On	3/7/2025 12:25:37 PM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84657,MP84655,MP84654,MP84653,MP84652,MP84651
ICV Standard	MP84658
CCV Standard	MP84661
ICSA Standard	MP84659,MP84721
CRI Standard	
LCS Standard	MP84656
Chk Standard	MP84649,MP84650

39	Q1106-01	YE8G3	SAM	03/04/25 19:43		Kareem	OK
40	Q1106-02	YE8G5	SAM	03/04/25 19:47		Kareem	OK
41	Q1106-03	YE8G6	SAM	03/04/25 19:51		Kareem	OK
42	Q1106-04	YE8G6D	DUP	03/04/25 19:55		Kareem	OK
43	Q1106-03L	YE8G6L	SD	03/04/25 19:59		Kareem	OK
44	Q1106-05	YE8G6S	MS	03/04/25 20:03	Fail for Al(568.7ppb), Mn(Below RL)	Kareem	OK
45	Q1106-06	YE8H0	SAM	03/04/25 20:07		Kareem	OK
46	Q1106-07	YE8H1	SAM	03/04/25 20:11		Kareem	OK
47	Q1106-08	YE8H2	SAM	03/04/25 20:15		Kareem	OK
48	Q1106-09	YE8H3	SAM	03/04/25 20:20		Kareem	OK
49	Q1106-10	YE8H4	SAM	03/04/25 20:24		Kareem	OK
50	Q1106-11	YE8H5	SAM	03/04/25 20:28		Kareem	OK
51	Q1106-12	YE8H6	SAM	03/04/25 20:32		Kareem	OK
52	Q1106-13	YE8F6	SAM	03/04/25 20:36		Kareem	OK
53	CCV003	CCV003	CCV	03/04/25 20:40		Kareem	OK
54	CCB003	CCB003	CCB	03/04/25 20:48	Instrument paused for review	Kareem	OK

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134916

Review By	Sarabjit Jaswal	Review On	3/7/2025 9:07:23 AM
Supervise By	Kareem Khairalla	Supervise On	3/7/2025 12:26:46 PM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84657,MP84655,MP84654,MP84653,MP84652,MP84651
ICV Standard	MP84658
CCV Standard	MP84661
ICSA Standard	MP84659,MP84721
CRI Standard	
LCS Standard	
Chk Standard	MP84649,MP84650

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	03/05/25 14:34		Kareem	OK
2	S1	S01	CAL2	03/05/25 14:38		Kareem	OK
3	S2	S02	CAL3	03/05/25 14:42		Kareem	OK
4	S3	S03	CAL4	03/05/25 14:46		Kareem	OK
5	S4	S04	CAL5	03/05/25 14:50		Kareem	OK
6	S5	S05	CAL6	03/05/25 14:54		Kareem	OK
7	S6	S06	CAL7	03/05/25 14:59		Kareem	OK
8	ICV002	ICV002	ICV	03/05/25 15:23	Instrument paused for calibration review	Kareem	OK
9	ICB002	ICB002	ICB	03/05/25 15:27		Kareem	OK
10	ICSA002	ICSA002	ICSA	03/05/25 15:31		Kareem	OK
11	ICSAB002	ICSAB002	ICSAB	03/05/25 15:36		Kareem	OK
12	CCV004	CCV004	CCV	03/05/25 15:40		Kareem	OK
13	CCB004	CCB004	CCB	03/05/25 15:44		Kareem	OK
14	PB166911TB	LEB911	MB	03/05/25 15:48		Kareem	OK
15	PB166912TB	LEB912	MB	03/05/25 15:52		Kareem	OK
16	PB166913TB	LEB913	MB	03/05/25 15:56		Kareem	OK
17	Q1106-14	YE8F9	SAM	03/05/25 16:01		Kareem	OK
18	Q1106-15	YE8G0	SAM	03/05/25 16:05		Kareem	OK

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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134916

Review By	Sarabjit Jaswal	Review On	3/7/2025 9:07:23 AM
Supervise By	Kareem Khairalla	Supervise On	3/7/2025 12:26:46 PM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84657,MP84655,MP84654,MP84653,MP84652,MP84651
ICV Standard	MP84658
CCV Standard	MP84661
ICSA Standard	MP84659,MP84721
CRI Standard	
LCS Standard	
Chk Standard	MP84649,MP84650

19	Q1106-16	YE8G1	SAM	03/05/25 16:09		Kareem	OK
20	Q1106-17	YE8G2	SAM	03/05/25 16:13		Kareem	OK
21	Q1106-18	YE8H9	SAM	03/05/25 16:17		Kareem	OK
22	Q1106-19	YE8J0	SAM	03/05/25 16:21		Kareem	OK
23	Q1106-20	YE8J1	SAM	03/05/25 16:25		Kareem	OK
24	Q1160-01	YE8C9	SAM	03/05/25 16:29		Kareem	OK
25	Q1160-02	YE8C9D	DUP	03/05/25 16:33		Kareem	OK
26	Q1160-01L	YE8C9L	SD	03/05/25 16:37		Kareem	OK
27	Q1160-03	YE8C9S	MS	03/05/25 16:41	Fail for Al(1717.13ppb)	Kareem	OK
28	Q1160-04	YE8D0	SAM	03/05/25 16:45		Kareem	OK
29	Q1160-05	YE8D3	SAM	03/05/25 16:49		Kareem	OK
30	CCV005	CCV005	CCV	03/05/25 16:53		Kareem	OK
31	CCB005	CCB005	CCB	03/05/25 16:58		Kareem	OK

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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134953

Review By	Sarabjit Jaswal	Review On	3/8/2025 7:35:47 AM
Supervise By	Kareem Khairalla	Supervise On	3/8/2025 7:59:43 AM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84657,MP84655,MP84654,MP84653,MP84652,MP84651
ICV Standard	MP84658
CCV Standard	MP84661
ICSA Standard	MP84659,MP84721
CRI Standard	MP84810,MP84811
LCS Standard	
Chk Standard	MP84649,MP84650

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	03/07/25 12:18		Kareem	OK
2	S1	S01	CAL2	03/07/25 12:22		Kareem	OK
3	S2	S02	CAL3	03/07/25 12:26		Kareem	OK
4	S3	S03	CAL4	03/07/25 12:30		Kareem	OK
5	S4	S04	CAL5	03/07/25 12:34		Kareem	OK
6	S5	S05	CAL6	03/07/25 12:38		Kareem	OK
7	S6	S06	CAL7	03/07/25 12:43		Kareem	OK
8	ICV003	ICV003	ICV	03/07/25 12:52	ICV fail Mg,K - Inst. paused for calibration review	Kareem	OK
9	ICB003	ICB003	ICB	03/07/25 12:56		Kareem	OK
10	ICSA003	ICSA003	ICSA	03/07/25 13:01		Kareem	OK
11	ICSAB003	ICSAB003	ICSAB	03/07/25 13:05		Kareem	OK
12	CCV006	CCV006	CCV	03/07/25 13:09		Kareem	OK
13	CCB006	CCB006	CCB	03/07/25 13:13		Kareem	OK
14	Q1106-03A	YE8G6A	PS	03/07/25 13:17	PS for Al - 0.0295ml (mp84810), Mn - 0.006 ml (mp84811) - 10 ml sample	Kareem	OK
15	Q1160-01A	YE8C9A	PS	03/07/25 13:21	PS for Al - 0.034ml (m5808) - 10 ml sample	Kareem	OK
16	CCV007	CCV007	CCV	03/07/25 13:28		Kareem	OK
17	CCB007	CCB007	CCB	03/07/25 13:32		Kareem	OK

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

pb166882

SOP ID : M1312-SPLP-10

SDG No : YE8D0

Weigh By : JP

Balance ID : WC SC-7

pH Meter ID : WC PH METER-1

Extraction By : JP

Filter By : JP

Pippete ID : WC

Tumbler ID : T-2

TCLP Filter ID : 115525

Start Prep Date : 02/26/2025 **Time :** 14:00

End Prep Date : 02/27/2025 **Time :** 07:15

Combination Ratio : 20

ZHE Cleaning Batch : N/A

Initial Room Temperature: 23 °C

Final Room Temperature: 22 °C

TCLP Technician Signature : JP

Supervisor By : 12

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

Chemical Used	ML/SAMPLE U	Lot Number
SPLP FLUID#2	N/A	WP112058
N/A	N/A	N/A
HNO3-TCLP,1N	N/A	WP110804
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
120ml Plastic bottle	N/A	405130101
1:1 HNO3	N/A	MP84041

Extraction Conformance/Non-Conformance Comments:

Matrix spikes are added after fiftration and before preservation. TUMBLER T-2 checked,30 rpm.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/27/25 11:00	JP TCLP Room	SKD. Inst Dig.
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

pb166882

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
pb166882TB	LEB882	14	N/A	2000	N/A	N/A	N/A	5.01	1.06	T-2
Q1160-01	YE8C9	11	100.02	2000	N/A	N/A	N/A	4.79	1.26	T-2
Q1160-02	YE8C9D	11	100.02	2000	N/A	N/A	N/A	4.79	1.26	T-2
Q1160-03	YE8C9S	11	100.02	2000	N/A	N/A	N/A	4.79	1.26	T-2
Q1160-04	YE8D0	12	100.03	2000	N/A	N/A	N/A	5.62	1.39	T-2
Q1160-05	YE8D3	13	100.04	2000	N/A	N/A	N/A	6.87	1.47	T-2

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
pb166882TB	LEB882	N/A	N/A	N/A	N/A	N/A	N/A
Q1160-01	YE8C9	N/A	N/A	N/A	N/A	100	N/A
Q1160-02	YE8C9D	N/A	N/A	N/A	N/A	100	N/A
Q1160-03	YE8C9S	N/A	N/A	N/A	N/A	100	N/A
Q1160-04	YE8D0	N/A	N/A	N/A	N/A	100	N/A
Q1160-05	YE8D3	N/A	N/A	N/A	N/A	100	N/A

Alliance TECHNICAL GROUP

SPLP Fluid Determination

pb166882

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

Thermometer ID : FLASHPOINT

SampleID	ClientID	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or 2	pH Extraction Fluid
pb166882TB	LEB882	N/A	N/A	N/A	N/A	#2	5.01
Q1160-01	YE8C9	N/A	N/A	N/A	N/A	#2	5.01
Q1160-02	YE8C9D	N/A	N/A	N/A	N/A	#2	5.01
Q1160-03	YE8C9S	N/A	N/A	N/A	N/A	#2	5.01
Q1160-04	YE8D0	N/A	N/A	N/A	N/A	#2	5.01
Q1160-05	YE8D3	N/A	N/A	N/A	N/A	#2	5.01

EPA SAMPLE NO.

YE8C9

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8D0

Matrix: Water Lab Sample ID: Q1160-01

% Solids: Date Received: 01/22/2025

Analytical Method: Hg

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): ug/L

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-97-6	Mercury	0.20	U	02/28/2025	1501

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

YE8D0

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8D0

Matrix: Water Lab Sample ID: Q1160-04

% Solids: Date Received: 01/23/2025

Analytical Method: Hg

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): ug/L

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-97-6	Mercury	0.024	J	02/28/2025	1507

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

YE8D3

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8D0

Matrix: Water Lab Sample ID: Q1160-05

% Solids: Date Received: 01/23/2025

Analytical Method: Hg

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): ug/L

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-97-6	Mercury	0.20	U	02/28/2025	1510

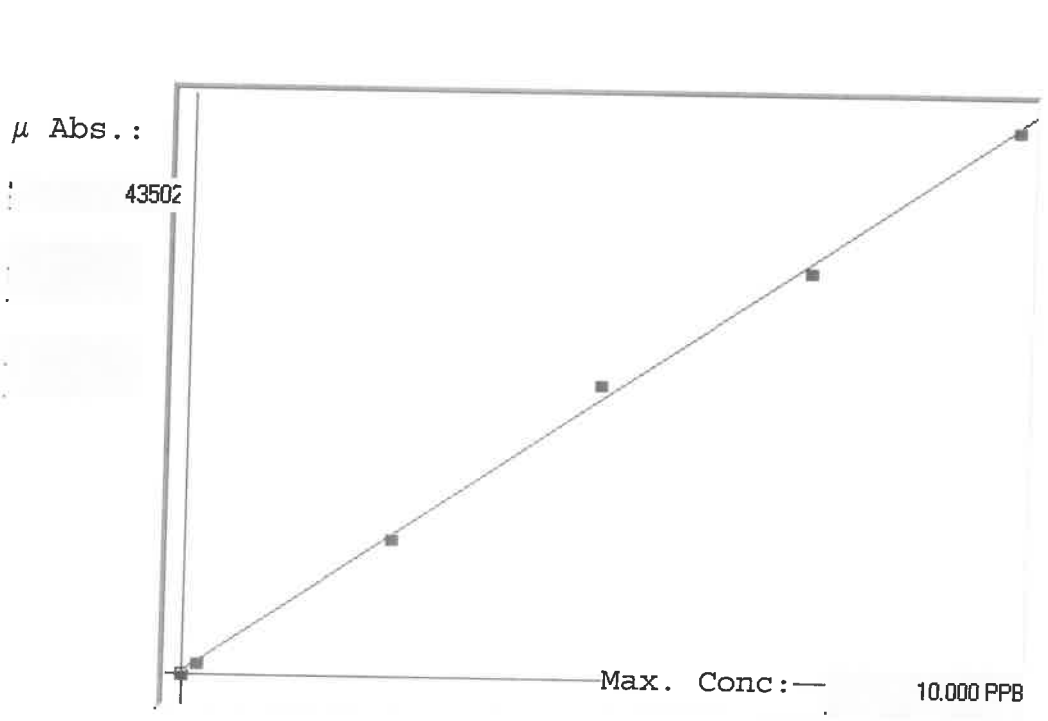
NOTE: Hardness (total) is reported in mg/L

Comments:

Reviewed By:Jaswal
On:3/7/2025 12:17:44 PM
Inst Id :CV1

L3134860

SFAM01.1 INSTRUMENT ID: CV1



A= 0.0000e+000

B= 2.3011e-004 slope

C= -5.3637e-002 y-intercept

Rho= 0.9993159

Accept=Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	%D
0.00	0.000	-0.042	-0.042	50	0.000	50					—
0.05	0.050										—
0.20	0.200	0.164	-0.036	946	0.0 %	946					-18
2.50	2.500	2.470	-0.030	10966	0.0 %	10966					-1
5.00	5.000	5.293	0.293	23236	0.0 %	23236					6
7.50	7.500	7.359	-0.141	32213	0.0 %	32213					-2
10.0	10.000	9.956	-0.044	43502	0.0 %	43502					0

Reviewed By:Jaswal
On:3/7/2025 12:17:44 PM
Inst Id :CV1

LB134860
INSTRUMENT ID: CV1

Sample ID	Extended ID	µ Abs.	Conc.		Stnd Conc	Method	Units	Date	Type
0	S0	50	-		0	SFAM01.1	PPB	02/28/2025 13:43	Std
0.2	S01	946	-		0.2	SFAM01.1	PPB	02/28/2025 13:45	Std
2.5	S02	10966	-		2.5	SFAM01.1	PPB	02/28/2025 13:47	Std
5	S03	23236	-		5	SFAM01.1	PPB	02/28/2025 13:50	Std
7.5	S04	32213	-		7.5	SFAM01.1	PPB	02/28/2025 13:52	Std
10	S05	43502	-		10	SFAM01.1	PPB	02/28/2025 13:54	Std
ICV024	ICV024	17588	3.9935	-		SFAM01.1	PPB	02/28/2025 13:57	SMPL
ICB024	ICB024	-251	-0.1114	-		SFAM01.1	PPB	02/28/2025 13:59	SMPL
CCV045	CCV045	23261	5.2989	-		SFAM01.1	PPB	02/28/2025 14:02	SMPL
CCB045	CCB045	-246	-0.1102	-		SFAM01.1	PPB	02/28/2025 14:04	SMPL
PB166941BL	PBW941	55	-0.041	-		SFAM01.1	PPB	02/28/2025 14:06	SMPL
Q1106-01	YE8G3	70	-0.0375	-		SFAM01.1	PPB	02/28/2025 14:08	SMPL
Q1106-02	YE8G5	169	-0.0147	-		SFAM01.1	PPB	02/28/2025 14:11	SMPL
Q1106-03	YE8G6	304	0.0163	-		SFAM01.1	PPB	02/28/2025 14:13	SMPL
Q1106-04	YE8G6D	363	0.0299	-		SFAM01.1	PPB	02/28/2025 14:15	SMPL
Q1106-05	YE8G6S	5135	1.128	-		SFAM01.1	PPB	02/28/2025 14:17	SMPL
Q1106-06	YE8H0	416	0.0421	-		SFAM01.1	PPB	02/28/2025 14:20	SMPL
Q1106-07	YE8H1	554	0.0738	-		SFAM01.1	PPB	02/28/2025 14:22	SMPL
Q1106-08	YE8H2	922	0.1585	-		SFAM01.1	PPB	02/28/2025 14:24	SMPL
Q1106-09	YE8H3	353	0.0276	-		SFAM01.1	PPB	02/28/2025 14:27	SMPL
Q1106-10	YE8H4	694	0.1061	-		SFAM01.1	PPB	02/28/2025 14:29	SMPL
Q1106-11	YE8H5	463	0.0529	-		SFAM01.1	PPB	02/28/2025 14:31	SMPL
Q1106-12	YE8H6	274	0.0094	-		SFAM01.1	PPB	02/28/2025 14:33	SMPL
Q1106-13	YE8F6	353	0.0276	-		SFAM01.1	PPB	02/28/2025 14:36	SMPL
Q1106-14	YE8F9	299	0.0152	-		SFAM01.1	PPB	02/28/2025 14:38	SMPL
Q1106-15	YE8G0	357	0.0285	-		SFAM01.1	PPB	02/28/2025 14:40	SMPL
Q1106-16	YE8G1	339	0.0244	-		SFAM01.1	PPB	02/28/2025 14:42	SMPL
Q1106-17	YE8G2	272	0.009	-		SFAM01.1	PPB	02/28/2025 14:45	SMPL
Q1106-18	YE8H9	271	0.0087	-		SFAM01.1	PPB	02/28/2025 14:47	SMPL
Q1106-19	YE8J0	454	0.0508	-		SFAM01.1	PPB	02/28/2025 14:49	SMPL
CCV046	CCV046	23580	5.3723	-		SFAM01.1	PPB	02/28/2025 14:51	SMPL
CCB046	CCB046	-258	-0.113	-		SFAM01.1	PPB	02/28/2025 14:54	SMPL
Q1106-20	YE8J1	206	-0.0062	-		SFAM01.1	PPB	02/28/2025 14:56	SMPL
PB166943BL	PBW943	70	-0.0375	-		SFAM01.1	PPB	02/28/2025 14:58	SMPL
Q1160-01	YE8C9	239	0.0014	-		SFAM01.1	PPB	02/28/2025 15:01	SMPL
Q1160-02	YE8C9D	201	-0.0074	-		SFAM01.1	PPB	02/28/2025 15:03	SMPL
Q1160-03	YE8C9S	5373	1.1827	-		SFAM01.1	PPB	02/28/2025 15:05	SMPL
Q1160-04	YE8D0	338	0.0241	-		SFAM01.1	PPB	02/28/2025 15:07	SMPL
Q1160-05	YE8D3	304	0.0163	-		SFAM01.1	PPB	02/28/2025 15:10	SMPL
PB166945BL	PBW945	97	-0.0313	-		SFAM01.1	PPB	02/28/2025 15:12	SMPL
Q1136-01	YE8F5	82	-0.0348	-		SFAM01.1	PPB	02/28/2025 15:14	SMPL
Q1136-02	YE8F7	125	-0.0249	-		SFAM01.1	PPB	02/28/2025 15:16	SMPL
Q1136-03	YE8F7D	88	-0.0334	-		SFAM01.1	PPB	02/28/2025 15:19	SMPL
Q1136-04	YE8F7S	5497	1.2113	-		SFAM01.1	PPB	02/28/2025 15:21	SMPL
Q1136-05	YE8F8	-20	-0.0582	-		SFAM01.1	PPB	02/28/2025 15:23	SMPL
Q1136-06	YE8E3	41	-0.0442	-		SFAM01.1	PPB	02/28/2025 15:26	SMPL

Reviewed By:Jaswal
On:3/7/2025 12:17:44 PM
Inst Id :CV1

LB134860
INSTRUMENT ID: CV1

Q1136-07	YE8E4	112	-0.0279	-	SFAM01.1	PPB	02/28/2025 15:28	SMPL
Q1136-08	YE8E5	423	0.0437	-	SFAM01.1	PPB	02/28/2025 15:30	SMPL
Q1136-09	YE8E6	4	-0.0527	-	SFAM01.1	PPB	02/28/2025 15:32	SMPL
Q1136-10	YE8E7	63	-0.0391	-	SFAM01.1	PPB	02/28/2025 15:35	SMPL
Q1136-11	YE8E8	92	-0.0325	-	SFAM01.1	PPB	02/28/2025 15:37	SMPL
Q1136-12	YE8D1	116	-0.0269	-	SFAM01.1	PPB	02/28/2025 15:39	SMPL
CCV047	CCV047	23048	5.2499	-	SFAM01.1	PPB	02/28/2025 15:41	SMPL
CCB047	CCB047	-259	-0.1132	-	SFAM01.1	PPB	02/28/2025 15:44	SMPL
Q1136-13	YE8D2	-5	-0.0548	-	SFAM01.1	PPB	02/28/2025 15:46	SMPL
Q1136-14	YE8D4	137	-0.0221	-	SFAM01.1	PPB	02/28/2025 15:48	SMPL
Q1136-15	YE8C3	64	-0.0389	-	SFAM01.1	PPB	02/28/2025 15:51	SMPL
Q1136-17	YE8D5	79	-0.0355	-	SFAM01.1	PPB	02/28/2025 15:53	SMPL
PB166941TB	LEB941	107	-0.029	-	SFAM01.1	PPB	02/28/2025 15:55	SMPL
PB166943TB	LEB943	135	-0.0226	-	SFAM01.1	PPB	02/28/2025 15:57	SMPL
PB166945TB	LEB945	109	-0.0286	-	SFAM01.1	PPB	02/28/2025 16:00	SMPL
CCV048	CCV048	22298	5.0773	-	SFAM01.1	PPB	02/28/2025 16:02	SMPL
CCB048	CCB048	-246	-0.1102	-	SFAM01.1	PPB	02/28/2025 16:04	SMPL

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Prep Standard - Chemical Standard Summary

Order ID : Q1160

Test : SPLP Mercury

Prepbatch ID : PB166943,

Sequence ID/Qc Batch ID: LB134860,

Standard ID :
MP84041,MP84563,MP84564,MP84565,MP84566,MP84691,MP84701,MP84702,MP84703,MP84704,MP84705,MP847
07,MP84708,MP84709,MP84710,MP84711,MP84712,WP110804,WP110805,WP112058,

Chemical ID :
M4371,M4465,M4916,M5062,M5173,M5532,M5882,M5884,M6041,M6120,M6126,M6151,W3112,

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Fax : 908 789 8922

Metals STANDARD PREPARATION LOG

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

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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3965	2:1 H2SO4 : HNO3	MP84563	02/18/2025	06/03/2025	Mohan Bera	None	None	Janvi Patel 02/19/2025

FROM 1600.00000ml of M6041 + 800.00000ml of M6126 = Final Quantity: 3200.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP84564	02/18/2025	08/18/2025	Mohan Bera	None	None	Janvi Patel 02/19/2025

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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
66	POTASSIUM PERSULFATE SOLUTION 5 %	MP84565	02/18/2025	08/06/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Janvi Patel 02/19/2025

FROM 100.00000ml of M4465 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
67	SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION	MP84566	02/18/2025	06/25/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Janvi Patel 02/19/2025

FROM 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
68	STANNOUS CHLORIDE SOLUTION	MP84691	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

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

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Fax : 908 789 8922

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP84701	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1340	Hg 0.00 PPB STD	MP84702	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

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

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1341	Hg 0.2 PPB STD	MP84703	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

FROM 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP84701 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1342	Hg 2.5 PPB STD	MP84704	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

FROM 2.50000ml of M6126 + 245.00000ml of W3112 + 2.50000ml of MP84701 = Final Quantity: 250.000 ml

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Fax : 908 789 8922

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1343	Hg 5.0 PPB STD	MP84705	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

FROM 2.50000ml of M6126 + 242.50000ml of W3112 + 5.00000ml of MP84701 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1344	Hg 7.5 PPB STD	MP84707	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

FROM 2.50000ml of M6126 + 240.00000ml of W3112 + 7.50000ml of MP84701 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1345	Hg 10.0 PPB STD	MP84708	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

FROM 2.50000ml of M6126 + 237.50000ml of W3112 + 10.00000ml of MP84701 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1346	Hg ICV SOLUTION	MP84709	02/28/2025	02/28/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

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

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP84710	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1358	CCV (Hg 5.0 PPB SOLUTION)	MP84711	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

FROM 485.00000ml of W3112 + 5.00000ml of M6126 + 10.00000ml of MP84701 = Final Quantity: 500.000 ml

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Fax : 908 789 8922

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP84712	02/28/2025	03/01/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 02/28/2025

FROM 495.00000ml of W3112 + 5.00000ml of M6126 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1788	HNO3 for TCLP, 1N	WP110804	11/21/2024	05/13/2025	Jignesh Parikh	None	None	Iwona Zarych 11/21/2024

FROM 64.00000ml of M6120 + 936.00000ml of W3112 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2700	60-40 wt % Sulfuric acid:nitric acid mixture	WP110805	11/21/2024	05/13/2025	Jignesh Parikh	WETCHEM_SCALE_8 (WCSC-7)	None	Iwona Zarych 11/21/2024

FROM 40.00000gram of M6120 + 60.00000gram of M5173 = Final Quantity: 100.000 gram

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4051	SPLP FLUID#2	WP112058	02/18/2025	05/13/2025	Jignesh Parikh	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 02/26/2025

FROM 20.00000L of W3112 + 0.09000ml of WP110805 = Final Quantity: 20.000 ml

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CHEMICAL RECEIPT LOG BOOK

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

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	0000281827	06/02/2025	06/01/2022 /mohan	04/05/2022 / william	M5173

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV5-0415	03/15/2025	01/02/2025 /mohan	03/30/2023 / mohan	M5532

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CHEMICAL RECEIPT LOG BOOK

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	23D2462010	03/20/2028	08/16/2024 / mohan	08/16/2024 / mohan	M6041

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)	23I0662003	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6120

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

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

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CHEMICAL RECEIPT LOG BOOK

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

Certificate of Analysis

ThermoFisher SCIENTIFIC

M5882 M3

Certificate of Analysis

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

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

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

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

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

Harout Sahagian - Quality Control Supervisor - Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

M4371

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Rec – 06.07.19

J.T.Baker® | avantor™

Material No.: 2196-01
Batch No.: 0000215387
Manufactured Date: 2018/06/27
Retest Date: 2025/06/25
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($NH_2OH \cdot HCl$) (by $KMnO_4$ titrn)	>= 96.0 %	99.1
Clarity of Alcohol Solution	Passes Test	PT
Residue after Ignition	<= 0.050 %	0.017
Titrable Free Acid (meq/g)	<= 0.25	0.19
Ammonium (NH_4)	Passes Test	PT
Sulfur Compounds (as SO_4)	<= 0.005 %	< 0.003
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	4
Trace Impurities - Iron (Fe)	<= 5 ppm	< 3
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	< 0.005

For Laboratory, Research or Manufacturing Use

Country of Origin: CN
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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Certificate of Analysis

ThermoFisher SCIENTIFIC

M4913-16

MB

Certificate of Analysis

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

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

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Catalog Number	P279	Quality Test / Release Date	01/12/2021
Lot Number	210306		
Description	POTASSIUM PERMANGANATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Jan/2026

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Dark purple to purple green crystals
ASSAY	%	>= 99	99.3
CHLORIDE & CHLORATE	%	<= 0.005	<0.005
IDENTIFICATION	PASS/FAIL	= PASS TEST	pass test
INSOLUBLE MATTER	%	<= 0.2	<0.2
MERCURY (Hg)	ppm	<= 0.05	<0.004
SULFATE (SO4)	%	<= 0.02	<0.02

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

M5062
M5063
M3

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSHG-10PPM
Lot Number:	S2-HG709270
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.000011	M	Eu	<	0.000201	O	Na		0.000004	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al		0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000005	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201				
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007				
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201				
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201				
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201				
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216				
O	Ca		0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201				
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402				
M	Ce	<	0.000201	O	K		0.000020	M	Rb	<	0.000201	O	Tl	<	0.016508				
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201				
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058				
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201				
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<	0.000604				
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201				
M	Er	<	0.000201	M	Mo		0.000009	M	Sc	<	0.000201	M	Yb	<	0.000201				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 22, 2021

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

11.2 Lot Expiration Date

- September 22, 2026

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

Material No.: 9530-33
Batch No.: 0000281827
Manufactured Date: 2021/03/30
Retest Date: 2026/03/29
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.6
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.189
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	< 1
ACS - Free Chlorine (as Cl_2)	<= 0.5 ppm	< 0.5
Phosphate (PO_4)	<= 0.05 ppm	< 0.03
Sulfate (SO_4)	<= 0.5 ppm	< 0.3
Sulfite (SO_3)	<= 0.8 ppm	0.3
Ammonium (NH_4)	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	0.5
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	15.0
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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Material No.: 9530-33
Batch No.: 0000281827

Test	Specification	Result
Trace Impurities - Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	3.0
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 15.0 ppb	1.0
Trace Impurities - Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities - Magnesium (Mg)	<= 10.0 ppb	< 0.4
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	0.2
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities - Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities - Selenium (Se), For Information Only	ppb	1.0
Trace Impurities - Silicon (Si)	<= 100.0 ppb	18.0
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Titanium (Ti)	<= 1.0 ppb	< 0.2
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.4
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

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

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QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

MSS28-37
MB

Contains Metals in Dilute Acidic or Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets Available Upon Request

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

ICV1-1014 For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415 For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

ICV6-0400 For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) *CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS*

ICV1-1014		
Element	**Concentration (µg/L) (after 10-fold dilution)**	**Concentration (µg/L) (after 50-fold dilution)**
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	**Concentration (µg/L) (after 100-fold dilution)**	**Analyte**	**Concentration (µg/L) (after 100-fold dilution)**
Hg	4.0	**CN^-**	99

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

MT884
MB

avantor™ | J.T.Baker®

Material No.: 3624-01
Batch No.: 0000281938
Manufactured Date: 2021-06-07
Retest Date: 2026-06-07
Revision No.: 1

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	≥ 99.0 %	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
Insoluble Matter	≤ 0.005 %	0.003 %
Iodide (I)	≤ 0.002 %	< 0.002 %
Bromide (Br)	≤ 0.01 %	< 0.01 %
Chlorate and Nitrate (as NO_3)	≤ 0.003 %	< 0.001 %
ACS - Phosphate (PO_4)	≤ 5 ppm	< 5 ppm
Sulfate (SO_4)	≤ 0.004 %	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 2 ppm	< 1 ppm
Calcium (Ca)	≤ 0.002 %	< 0.001 %
Magnesium (Mg)	≤ 0.001 %	< 0.001 %
Potassium (K)	≤ 0.005 %	0.001 %

For Laboratory,Research,or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC

James T Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Mansford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

M 6041-46
MS

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H_2SO_4)	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO2)	≤ 2 ppm	< 2 ppm
Ammonium (NH_4)	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO_3)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO_4)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855 282 6867 or +1 610 386 1700

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities - Sodium (Na)	≤ 500.0 ppb	5.4 ppb
Trace Impurities - Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities - Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities - Zinc (Zn)	≤ 5.0 ppb	0.4 ppb

For Laboratory,Research,or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R ->10/13/24
Metal g

M 6120

Material No.: 9606-03
Batch No.: 2310662003
Manufactured Date: 2023-08-21
Retest Date: 2028-08-19
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.5 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	10
Residue after Ignition	≤ 2 ppm	< 2 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.08 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.10 ppm
Sulfate (SO_4)	≤ 0.2 ppm	0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 40.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 5.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 20.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 50 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	< 50.0 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	30.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 20 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 20 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 40.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 20.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 20 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 20.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 2310662003

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 50.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 50 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 50 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 20.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 150.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 30.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 20.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 20.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 10.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	60 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	10 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 2310662003

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein
Sr. Manager, Quality Assurance

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R -> 11/12/24

M6126

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

M6151

R→ 1/15/25

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 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855 282 6867 or +1 610 386 1700

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
Trace Impurities - Lead (Pb)	≤ 1.0 ppb	< 0.5 ppb
Trace Impurities - Lithium (Li)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Magnesium (Mg)	≤ 10.0 ppb	2.9 ppb
Trace Impurities - Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities - Mercury (Hg)	≤ 0.5 ppb	0.1 ppb
Trace Impurities - Molybdenum (Mo)	≤ 10.0 ppb	< 3.0 ppb
Trace Impurities - Nickel (Ni)	≤ 4.0 ppb	< 0.3 ppb
Trace Impurities - Niobium (Nb)	≤ 1.0 ppb	0.8 ppb
Trace Impurities - Potassium (K)	≤ 9.0 ppb	< 2.0 ppb
Trace Impurities - Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities - Silver (Ag)	≤ 1.0 ppb	0.5 ppb
Trace Impurities - Sodium (Na)	≤ 100.0 ppb	2.3 ppb
Trace Impurities - Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Tantalum (Ta)	≤ 1.0 ppb	1.6 ppb
Trace Impurities - Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Tin (Sn)	≤ 5.0 ppb	4.0 ppb
Trace Impurities - Titanium (Ti)	≤ 1.0 ppb	1.5 ppb
Trace Impurities - Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities - Zirconium (Zr)	≤ 1.0 ppb	0.3 ppb

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result

For Laboratory,Research,or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB166943

SOP ID : M7470A-Mercury-19, MSFAM01.1-Mercury in Water-2

SDG No : YE8D0

Matrix : WATER

Pippete ID: HG A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #1

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

Start Digest Date: 02/28/2025 **Time :** 07:20 **Temp :** 94 °C

End Digest Date: 02/28/2025 **Time :** 09:20 **Temp :** 94 °C

Digestion tube ID: M6054

Block thermometer ID: HG-DIG#2

Dig Technician Signature: MB

Supervisor Signature: JZ

Temp : 1. 94°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	100mL	MP84709
CCV	100mL	MP84711
Matrix Spike	0.40mL	MP84701
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
HNO3/H2SO4(1:2)	7.5mL	MP84563
KMnO4 (5%)	15.0mL	MP84564
K2S2O8 (5%)	8.0mL	MP84565
Hydroxylamine HCL (12%)	6.0mL	MP84566
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	100mL	MP84702
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	100mL	MP84703
2.5 ppb	S2.5	100mL	MP84704
5.0 ppb	S5.0	100mL	MP84705
7.5 ppb	S7.5	100mL	MP84707
10.0 ppb	S10.0	100mL	MP84708
ICV	ICV	100mL	MP84709
ICB	ICB	100mL	MP84710
CCV	CCV	100mL	MP84711
CCB	CCB	100mL	MP84712
CRI	CRI	N/A	N/A
CHK STD	CHK STD	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
2/28/25 @ 14:15	MB – Dig. Lab	MB – Metals Lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB166943

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Comment	Prep Pos
PB166943BL	PBW943	100	100	<2	N/A	2-1
PB166943TB	LEB943	100	100	<2	N/A	N/A
Q1160-01	YE8C9	100	100	<2	N/A	2
Q1160-02	YE8C9D	100	100	<2	N/A	3
Q1160-03	YE8C9S	100	100	<2	MP84701	4
Q1160-04	YE8D0	100	100	<2	N/A	5
Q1160-05	YE8D3	100	100	<2	N/A	6

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

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB134860

Review By	Kareem Khairalla	Review On	3/6/2025 3:30:07 PM
Supervise By	Sarabjit Jaswal	Supervise On	3/7/2025 12:17:44 PM

STD. NAME	STD REF.#
ICAL Standard	MP84702,MP84703,MP84704,MP84705,MP84707,MP84708
ICV Standard	MP84709
CCV Standard	MP84711
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	MP84710,MP84712,MP84691

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	02/28/25 13:43		Mohan	OK
2	S0.2	S01	CAL2	02/28/25 13:45		Mohan	OK
3	S2.5	S02	CAL3	02/28/25 13:47		Mohan	OK
4	S5	S03	CAL4	02/28/25 13:50		Mohan	OK
5	S7.5	S04	CAL5	02/28/25 13:52		Mohan	OK
6	S10	S05	CAL6	02/28/25 13:54		Mohan	OK
7	ICV024	ICV024	ICV	02/28/25 13:57		Mohan	OK
8	ICB024	ICB024	ICB	02/28/25 13:59		Mohan	OK
9	CCV045	CCV045	CCV	02/28/25 14:02		Mohan	OK
10	CCB045	CCB045	CCB	02/28/25 14:04		Mohan	OK
11	PB166941BL	PBW941	MB	02/28/25 14:06		Mohan	OK
12	Q1106-01	YE8G3	SAM	02/28/25 14:08		Mohan	OK
13	Q1106-02	YE8G5	SAM	02/28/25 14:11		Mohan	OK
14	Q1106-03	YE8G6	SAM	02/28/25 14:13		Mohan	OK
15	Q1106-04	YE8G6D	DUP	02/28/25 14:15		Mohan	OK
16	Q1106-05	YE8G6S	MS	02/28/25 14:17		Mohan	OK
17	Q1106-06	YE8H0	SAM	02/28/25 14:20		Mohan	OK
18	Q1106-07	YE8H1	SAM	02/28/25 14:22		Mohan	OK

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ICV Standard	MP84709
CCV Standard	MP84711
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	MP84710,MP84712,MP84691

19	Q1106-08	YE8H2	SAM	02/28/25 14:24		Mohan	OK
20	Q1106-09	YE8H3	SAM	02/28/25 14:27		Mohan	OK
21	Q1106-10	YE8H4	SAM	02/28/25 14:29		Mohan	OK
22	Q1106-11	YE8H5	SAM	02/28/25 14:31		Mohan	OK
23	Q1106-12	YE8H6	SAM	02/28/25 14:33		Mohan	OK
24	Q1106-13	YE8F6	SAM	02/28/25 14:36		Mohan	OK
25	Q1106-14	YE8F9	SAM	02/28/25 14:38		Mohan	OK
26	Q1106-15	YE8G0	SAM	02/28/25 14:40		Mohan	OK
27	Q1106-16	YE8G1	SAM	02/28/25 14:42		Mohan	OK
28	Q1106-17	YE8G2	SAM	02/28/25 14:45		Mohan	OK
29	Q1106-18	YE8H9	SAM	02/28/25 14:47		Mohan	OK
30	Q1106-19	YE8J0	SAM	02/28/25 14:49		Mohan	OK
31	CCV046	CCV046	CCV	02/28/25 14:51		Mohan	OK
32	CCB046	CCB046	CCB	02/28/25 14:54		Mohan	OK
33	Q1106-20	YE8J1	SAM	02/28/25 14:56		Mohan	OK
34	PB166943BL	PBW943	MB	02/28/25 14:58		Mohan	OK
35	Q1160-01	YE8C9	SAM	02/28/25 15:01		Mohan	OK
36	Q1160-02	YE8C9D	DUP	02/28/25 15:03		Mohan	OK
37	Q1160-03	YE8C9S	MS	02/28/25 15:05		Mohan	OK
38	Q1160-04	YE8D0	SAM	02/28/25 15:07		Mohan	OK

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ICV Standard	MP84709
CCV Standard	MP84711
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	MP84710,MP84712,MP84691

39	Q1160-05	YE8D3	SAM	02/28/25 15:10		Mohan	OK
40	PB166945BL	PBW945	MB	02/28/25 15:12		Mohan	OK
41	Q1136-01	YE8F5	SAM	02/28/25 15:14		Mohan	OK
42	Q1136-02	YE8F7	SAM	02/28/25 15:16		Mohan	OK
43	Q1136-03	YE8F7D	DUP	02/28/25 15:19		Mohan	OK
44	Q1136-04	YE8F7S	MS	02/28/25 15:21		Mohan	OK
45	Q1136-05	YE8F8	SAM	02/28/25 15:23		Mohan	OK
46	Q1136-06	YE8E3	SAM	02/28/25 15:26		Mohan	OK
47	Q1136-07	YE8E4	SAM	02/28/25 15:28		Mohan	OK
48	Q1136-08	YE8E5	SAM	02/28/25 15:30		Mohan	OK
49	Q1136-09	YE8E6	SAM	02/28/25 15:32		Mohan	OK
50	Q1136-10	YE8E7	SAM	02/28/25 15:35		Mohan	OK
51	Q1136-11	YE8E8	SAM	02/28/25 15:37		Mohan	OK
52	Q1136-12	YE8D1	SAM	02/28/25 15:39		Mohan	OK
53	CCV047	CCV047	CCV	02/28/25 15:41		Mohan	OK
54	CCB047	CCB047	CCB	02/28/25 15:44		Mohan	OK
55	Q1136-13	YE8D2	SAM	02/28/25 15:46		Mohan	OK
56	Q1136-14	YE8D4	SAM	02/28/25 15:48		Mohan	OK
57	Q1136-15	YE8C3	SAM	02/28/25 15:51		Mohan	OK
58	Q1136-17	YE8D5	SAM	02/28/25 15:53		Mohan	OK

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STD. NAME	STD REF.#
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ICV Standard	MP84709
CCV Standard	MP84711
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	MP84710,MP84712,MP84691

59	PB166941TB	LEB941	MB	02/28/25 15:55		Mohan	OK
60	PB166943TB	LEB943	MB	02/28/25 15:57		Mohan	OK
61	PB166945TB	LEB945	MB	02/28/25 16:00		Mohan	OK
62	CCV048	CCV048	CCV	02/28/25 16:02		Mohan	OK
63	CCB048	CCB048	CCB	02/28/25 16:04		Mohan	OK

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

pb166882

SOP ID : M1312-SPLP-10

SDG No : YE8D0

Weigh By : JP

Balance ID : WC SC-7

pH Meter ID : WC PH METER-1

Extraction By : JP

Filter By : JP

Pippete ID : WC

Tumbler ID : T-2

TCLP Filter ID : 115525

Start Prep Date : 02/26/2025 **Time :** 14:00

End Prep Date : 02/27/2025 **Time :** 07:15

Combination Ratio : 20

ZHE Cleaning Batch : N/A

Initial Room Temperature: 23 °C

Final Room Temperature: 22 °C

TCLP Technician Signature : JP

Supervisor By : 12

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

Chemical Used	ML/SAMPLE U	Lot Number
SPLP FLUID#2	N/A	WP112058
N/A	N/A	N/A
HNO3-TCLP,1N	N/A	WP110804
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
120ml Plastic bottle	N/A	405130101
1:1 HNO3	N/A	MP84041

Extraction Conformance/Non-Conformance Comments:

Matrix spikes are added after fiftration and before preservation. TUMBLER T-2 checked,30 rpm.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/27/25 11:00	JP TCLP Room	SKD. Metals
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

pb166882

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
pb166882TB	LEB882	14	N/A	2000	N/A	N/A	N/A	5.01	1.06	T-2
Q1160-01	YE8C9	11	100.02	2000	N/A	N/A	N/A	4.79	1.26	T-2
Q1160-02	YE8C9D	11	100.02	2000	N/A	N/A	N/A	4.79	1.26	T-2
Q1160-03	YE8C9S	11	100.02	2000	N/A	N/A	N/A	4.79	1.26	T-2
Q1160-04	YE8D0	12	100.03	2000	N/A	N/A	N/A	5.62	1.39	T-2
Q1160-05	YE8D3	13	100.04	2000	N/A	N/A	N/A	6.87	1.47	T-2

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
pb166882TB	LEB882	N/A	N/A	N/A	N/A	N/A	N/A
Q1160-01	YE8C9	N/A	N/A	N/A	N/A	100	N/A
Q1160-02	YE8C9D	N/A	N/A	N/A	N/A	100	N/A
Q1160-03	YE8C9S	N/A	N/A	N/A	N/A	100	N/A
Q1160-04	YE8D0	N/A	N/A	N/A	N/A	100	N/A
Q1160-05	YE8D3	N/A	N/A	N/A	N/A	100	N/A

Alliance TECHNICAL GROUP

SPLP Fluid Determination

pb166882

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

Thermometer ID : FLASHPOINT

SampleID	ClientID	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or 2	pH Extraction Fluid
pb166882TB	LEB882	N/A	N/A	N/A	N/A	#2	5.01
Q1160-01	YE8C9	N/A	N/A	N/A	N/A	#2	5.01
Q1160-02	YE8C9D	N/A	N/A	N/A	N/A	#2	5.01
Q1160-03	YE8C9S	N/A	N/A	N/A	N/A	#2	5.01
Q1160-04	YE8D0	N/A	N/A	N/A	N/A	#2	5.01
Q1160-05	YE8D3	N/A	N/A	N/A	N/A	#2	5.01

ORIGIN ID:MHRA (786) 608-9500
ALLISON HUISA
EA ENGINEERING SCIENCE & TECH
555 UNIVERSITY AVE
SUITE 182
SACRAMENTO, CA 95825
UNITED STATES US

SHIP DATE: 21JAN25
ACTWGT: 40.00 LB
CAD: 253267503/INET4535

BILL SENDER

TO **SOHIL JODHANI**
ALLIANCE TECHNICAL GROUP LLC
284 SHEFFIELD STREET
MOUNTAINSIDE NJ 07092
(908) 789-8900
INV:
PO:
REF: 1518821_3.13.2_030400
DEPT: 2185

58CJ3/EC17/C6C4

J251024121701uv

FedEx Express

TRK# 0201 **7715 3303 4885**

WED - 22 JAN 10:30A
PRIORITY OVERNIGHT

XE KBCA

07092
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R.M 10:15
2.20
1-22-25

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ALLISON HUISA
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555 UNIVERSITY AVE
SUITE 182
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SHIP DATE: 21JAN25
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CAD: 253267503/INET4535

BILL SENDER

TO **SOHIL JODHANI**
ALLIANCE TECHNICAL GROUP LLC
284 SHEFFIELD STREET
MOUNTAINSIDE NJ 07092
(908) 789-8900
INV:
PO:
REF: 1518921.3.13.2_030400
DEPT: 2195

1-28-25
9:55
1-9-c

58CJ3/EC17/C6C4

J251024121701uv

FedEx Express

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PRIORITY OVERNIGHT

TRK# 0201 **7715 3303 5859**

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284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Login Summary Report

Order ID :	Q1160	Order Date :	1/23/2025 9:55:00 AM	Project Mgr :	Deepak
Client :	USEPA CLP SMO	Project :	51955	Report Type :	USEPA CLP
Contact :	Anita Kapadia	Receive Date :	1/23/2025 9:55:00 AM	EDD Type :	EPA CLP
Date Sign Off :	1/24/2025 12:39:11 PM				

Sample ID	Client ID	Matrix	Sampling Date	Test	Test Group	Method	TAT Days	Fax Due Date	HC Due Date
Q1160-01	YE8C9	Solid	01/18/2025						
				SPLP Mercury		SFAM_HG	15	02/13/2025	02/13/2025
				SPLP MetalGroup3		SFAM_AES	15	02/13/2025	02/13/2025
Q1160-02	YE8C9D	Solid	01/18/2025						
				SPLP Mercury		SFAM_HG	15	02/13/2025	02/13/2025
				SPLP MetalGroup3		SFAM_AES	15	02/13/2025	02/13/2025
Q1160-03	YE8C9S	Solid	01/18/2025						
				SPLP Mercury		SFAM_HG	15	02/13/2025	02/13/2025
				SPLP MetalGroup3		SFAM_AES	15	02/13/2025	02/13/2025
Q1160-04	YE8D0	Solid	01/18/2025						
				SPLP Mercury		SFAM_HG	15	02/13/2025	02/13/2025
				SPLP MetalGroup3		SFAM_AES	15	02/13/2025	02/13/2025
Q1160-05	YE8D3	Solid	01/19/2025						
				SPLP Mercury		SFAM_HG	15	02/13/2025	02/13/2025
				SPLP MetalGroup3		SFAM_AES	15	02/13/2025	02/13/2025

WORKLIST(Hardcopy Internal Chain)

WorkList Name : splpq1160 **WorkList ID :** 187140 **Department :** TCLP Extraction **Date :** 01-24-2025 13:03:19

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1160-01	YE8C9	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C33	01/18/2025	1312
Q1160-02	YE8C9D	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C33	01/18/2025	1312
Q1160-03	YE8C9S	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C33	01/18/2025	1312
Q1160-04	YE8D0	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C33	01/18/2025	1312
Q1160-05	YE8D3	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C33	01/19/2025	1312

496

Date/Time 02/26/25 121.00

Raw Sample Received by: [signature]

Raw Sample Relinquished by: [signature]

Date/Time 02/26/25 1513

Raw Sample Received by: [signature]

Raw Sample Relinquished by: [signature]