SDG COVER PAGE

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

Lab Code: ACE Case No.: 51955 MA No.: SDG No.: YE8F7

SOW No. : SFAM01.1

EPA Sample No.	Lab Sample Id	Analysis Method ICP-AES	ICP-MS	Mercury	Cyanide
YE8F5	Q1136-01	X		X	
YE8F7	Q1136-02	X		X	
YE8F7D	Q1136-03	X		X	
YE8F7S	Q1136-04	X		X	
YE8F8	Q1136-05	X		X	
YE8E3	Q1136-06	X		X	
YE8E4	Q1136-07	X		X	
YE8E5	Q1136-08	X		X	
YE8E6	Q1136-09	X		X	
YE8E7	Q1136-10	X		X	
YE8E8	Q1136-11	X		X	
YE8D1	Q1136-12	X		X	
YE8D2	Q1136-13	X		X	
YE8D4	Q1136-14	X		X	
YE8C3	Q1136-15	X		X	
YE8D5	Q1136-17	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 # YE8F7

USEPA CLP COC (LAB COPY)
DateShipped: 1/17/2025
CarrierName: FedEx
AirbillNo: 7714 8858 7235

CHAIN OF CUSTODY RECORD

Case #: 51955
MA 3152.0

No: 9-011625-150913-0008
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-28-SO-17.5-18.5	YE8F5	Soil/ EAEST	Grab	ICP-AES/MS(21), SPLP ICP-AES(21)	332 (Wet Ice), 336 (Wet Ice) (3)	28	01/15/2025 12:30	1
MW-28-SO-3-4	YE8F7	Soil/ EAEST	Grab	ICP-AES/MS(21), SPLP ICP-AES(21)	346 (Wet Ice), 350 (Wet Ice) (3)	28	01/15/2025 09:05	2 QC SDG
MW-28-SO-8-10	YE8F8	Soil/ EAEST	Grab	ICP-AES/MS(21), SPLP ICP-AES(21)	353 (Wet Ice), 357 (Wet Ice) (3)	28	01/15/2025 09:10	3
MW-928-SO-8-10	YE8F9	Soil/ EAEST	Grab	ICP-AES/MS(21)	360 (Wet Ice) (1)	928	01/15/2025 09:10	

Sample(s) to be used for Lab QC: MW-28-SO-3-4 Tag 346, MW-28-SO-3-4 Tag 350

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES/MS=ICP-AES/MS Metals+Hg MA 3152.0, pH, 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
	Hilison Thuisa 01/17/25 1600			1/18/25	2-3°
				10:54	IRen H
					Temp blk Rec
					Cust Seal Rec

68HERH20D0011

SDG # YE8F7

USEPA CLP COC (LAB COPY)

DateShipped: 1/21/2025

CarrierName: FedEx

AirbillNo: 7715 3303 8663

CHAIN OF CUSTODY RECORD

Case #: 51955

MA 3152.0

No: 9-011825-122406-0013

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-26-SO-1-2	YE8E3	Soil/ EAEST	Grab	ICP-AES/MS(21), SPLP ICP-AES(21)	248 (Wet Ice), 252 (Wet Ice) (3)	26	01/17/2025 10:45	SPL
MW-26-SO-3-4	YE8E4	Soil/ EAEST	Grab	ICP-AES/MS(21), SPLP ICP-AES(21)	255 (Wet Ice), 259 (Wet Ice) (3)	26	01/17/2025 10:50	SPL
MW-26-SO-5-6	YE8E5	Soil/ EAEST	Grab	ICP-AES/MS(21), SPLP ICP-AES(21)	262 (Wet Ice), 266 (Wet Ice) (3)	26	01/17/2025 10:55	SPL
MW-26-SO-20-22	YE8E6	Soil/ EAEST	Grab	ICP-AES/MS(21)	269 (Wet Ice) (1)	26	01/17/2025 11:10	

Special Instructions:

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES/MS=ICP-AES/MS Metals+Hg MA 3152.0, pH, 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 Hulsa Hulsa EA	01/21/25 1600		10:15 1-22-25	IR Gun # 1 1.9 C Custody Seal Intact Temp Blank present

68HERH20D0011

SDG # YE8F7

USEPA CLP COC (LAB COPY)

DateShipped: 1/21/2025

CarrierName: FedEx

AirbillNo: 7715 3298 1764

CHAIN OF CUSTODY RECORD

Case #: 51955

MA 3152.0

No: 9-011825-123309-0014

Lab: Alliance Technical Group LLC

Lab Contact: Mohammad Ahmed

Lab Phone: 908-789-8900

4

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
MW-26-SO-20-22	YE8E6	Soil/ EAEST	Grab	SPLP ICP-AES(21)	273 (Wet Ice) (2)	26	01/17/2025 11:10	SMS
MW-26-SO-39-40	YE8E7	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	276 (Wet Ice), 277 (Wet Ice), 280 (Wet Ice) (4)	26	01/17/2025 15:55	SMS
MW-26-SO-51-52	YE8E8	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	283 (Wet Ice), 284 (Wet Ice), 287 (Wet Ice) (4)	26	01/17/2025 16:00	SMS

Special Instructions:

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

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

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Allison Huisa EA	01/21/25 1600		10:15 1.22.25	IR Gun #1 2.0° Custody Seal Intact Trip Blank present

68HERH20D0011

SDG # YE8F7

USEPA CLP COC (LAB COPY)

DateShipped: 1/21/2025

CarrierName: FedEx

AirbillNo: 7715 3303 2404

CHAIN OF CUSTODY RECORD

Case #: 51955

MA 3152.0

No: 9-011925-103859-0017

Lab: Alliance Technical Group LLC

Lab Contact: Mohammad Ahmed

Lab Phone: 908-789-8900

5

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-38-40	YE8D1	Soil/ EAEST	Grab	SPLP ICP-AES(21)	168 (Wet Ice) (2)	24	01/19/2025 09:15	
MW-24-SO-58-60	YE8D2	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	171 (Wet Ice), 172 (Wet Ice), 175 (Wet Ice) (4)	24	01/19/2025 09:50	
MW-924-SO-5-7	YE8D4	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	185 (Wet Ice), 186 (Wet Ice), 189 (Wet Ice) (4)	924	01/18/2025 16:30	

Special Instructions:

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

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

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Allison Hugo EA	01/21/25 1600		10:15 1-22-25	1.8° Custody Seal Intact Temp Blank present

68HERH20D0011

SDG # YE8F7

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

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	
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? N

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 Hucek EA	01/21/25 1600	R. Melendez	10:15 1.22.25	IR gun # 2.2
					Temp Blank present
					Custody Seal intact

9

68HERH20D0011

SDG # YE8F7

USEPA CLP COC (LAB COPY)

DateShipped: 1/21/2025

CarrierName: FedEx

AirbillNo: 7715 3307 8108

CHAIN OF CUSTODY RECORD

Case #: 51955

MA 3152.0

No: 9-011925-144654-0020

Lab: Alliance Technical Group LLC

Lab Contact: Mohammad Ahmed

Lab Phone: 908-789-8900

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-69-70	YE8D5	Soil/ EAEST	Grab	ICP-AES/MS(21), SVOA(21), SPLP ICP-AES(21)	192 (Wet Ice), 193 (Wet Ice), 196 (Wet Ice) (4)	24	01/19/2025 14:20	SPLP

Special Instructions:

Shipment for Case Complete? N

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 Hwisa EA	01/21/25 1600	R. Melendez	10:15 1-22-25	IR gun #1 2.5°
					Temp Blank present
					Custody seal intact

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 1 of 6
Received By (Print Name)		Log-in Date 1/18/2025
Received By (Signature)		
Case Number 51955	SDG No. ~~YE8F5~~ YE8F7	MA No. N/A

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	NA
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	771488587235 1
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	2.3 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	01/18/2025
12.Time Received	10:54

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1	YE8F5	N/A	336	Q1136-01	Intact
2	YE8F7	N/A	350	Q1136-02	Intact
3	YE8F7D	N/A	350	Q1136-03	Intact
4	YE8F7S	N/A	350	Q1136-04	Intact
5	YE8F8	N/A	357	Q1136-05	Intact
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	1/22/25	Logbook Page No.	N/A

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 2 of 6
Received By (Print Name)		Log-in Date 1/22/2025
Received By (Signature)		
Case Number 51955	SDG No. YE8F	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.	771533038663 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	01/22/2025
12.Time Received	10:15

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1	YE8E3	N/A	252	Q1136-06	Intact
2	YE8E4	N/A	259	Q1136-07	Intact
3	YE8E5	N/A	266	Q1136-08	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	1/22/25	Logbook Page No.	N/A

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 3 of 6
Received By (Print Name) Esperanza Rios		Log-in Date 1/22/2025
Received By (Signature)		
Case Number 51955	SDG No. YE8F5	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.	771532981764 3
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	2.0 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	YE8E6	N/A	273	Q1136-09	Intact
2	YE8E7	N/A	280	Q1136-10	Intact
3	YE8E8	N/A	287	Q1136-11	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	1/22/25	Logbook Page No.	N/A

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 4 of 6
Received By (Print Name) Esperanza Lera		Log-in Date 1/22/2025
Received By (Signature)		
Case Number 51955	SDG No. YE8F7	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.	771533032404 4
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	1.8 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	YE8D1	N/A	168	Q1136-12	Intact
2	YE8D2	N/A	175	Q1136-13	Intact
3	YE8D4	N/A	189	Q1136-14	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	1/22/25	Logbook Page No.	N/A

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 5 of 6
Received By (Print Name) Cassandra Lerma		Log-in Date 1/22/2025
Received By (Signature)		
Case Number 51955	SDG No. YE8F5	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 5
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	YE8C3	N/A	112	Q1136-15	Intact
2	~~YE8C9~~	~~N/A~~	~~154~~	~~Q1136-16~~	~~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 1/22/25	Logbook Page No. N/A

FORM DC-1

SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page 6 of 6
Received By (Print Name) Cassandra Fino		Log-in Date 1/22/2025
Received By (Signature)		
Case Number 51955	SDG No. YE8F5	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.	771533078108 6
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	2.5 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		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	YE8D5	N/A	196	Q1136-17	Intact
2	N/A	N/A	N/A	N/A	N/A
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	1/22/25	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.	**YE8F7**
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	7	✓	
3. Sample Log-In Sheet (DC-1)	8	13	✓	
4. CSF Inventory Sheet (DC-2)	14	16	✓	
5. SDG Narrative	17	19	✓	
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	20	33	✓	
9. Instrument raw data by instrument in analysis order	34	271	✓	
Other Data				
10. Standard and Reagent Preparation Logs	272	421	✓	
11. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	422	423	✓	
12. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	424	428	✓	
13. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
14. Extraction Logs for TCLP and SPLP	429	432	✓	
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	433	446	✓	
27. Instrument raw data by instrument in analysis order	447	449	✓	
Other Data				
28. Standard and Reagent Preparation Logs	450	485	✓	
29. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	486	487	✓	
30. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	488	491	✓	
31. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
32. Extraction Logs for TCLP and SPLP	492	495	✓	
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 6)	496	501	✓	
Sample Tags	NA	NA	✓	
Sample Log-In Sheet (Lab)	502	503	✓	
45. Misc. Shipping/Receiving Records (list all individual records)				
	NA	NA	✓	
46. Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
	504	504	✓	
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 # YE8F7
CASE # 51955
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID #Q1136

A. Number of Samples and Date of Receipt

14 Soil samples were delivered to the laboratory intact on 01/18/2025, 01/22/2025.

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: 2.3°C, 1.9°C, 2.0°C, 1.8°C, 2.2°C, 2.5°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 YE8F5 For Aluminum:

If C = 0.0310448 ppm
Vf = 50 ml
Vi = 50 ml
DF = 1

$$\text{Concentration or Result (µg/L)} = 0.0310448 \times \frac{50}{50} \times 1 \times 1000$$

$$= 31.0448 \text{ µg/L}$$

$$= 31 \text{ µg/L (Reported Result with Signification)}$$

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 YE8E5:

If C = 0.0437 ppb
DF = 1

Concentration or Result (µg/L) = 0.0437 x 1

= 0.0437 µg/L

= 0.044 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 Silver. 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.

YE8C3

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-15

% 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	60	J	03/04/2025	1934
7440-36-0	Antimony	60	U	03/04/2025	1934
7440-38-2	Arsenic	10	U	03/04/2025	1934
7440-39-3	Barium	260		03/04/2025	1934
7440-41-7	Beryllium	5.0	U	03/04/2025	1934
7440-43-9	Cadmium	5.0	U	03/04/2025	1934
7440-70-2	Calcium	8500		03/04/2025	1934
7440-47-3	Chromium	10	U	03/04/2025	1934
7440-48-4	Cobalt	2.0	J	03/04/2025	1934
7440-50-8	Copper	25	U	03/04/2025	1934
7439-89-6	Iron	110		03/04/2025	1934
7439-92-1	Lead	10	U	03/04/2025	1934
7439-95-4	Magnesium	3900	J	03/04/2025	1934
7439-96-5	Manganese	97		03/04/2025	1934
7440-02-0	Nickel	2.2	J	03/04/2025	1934
7440-09-7	Potassium	5000	U	03/04/2025	1934
7782-49-2	Selenium	35	U	03/04/2025	1934
7440-22-4	Silver	10	U*	03/04/2025	1934
7440-23-5	Sodium	5500		03/04/2025	1934
7440-28-0	Thallium	25	U	03/04/2025	1934
7440-62-2	Vanadium	50	U	03/04/2025	1934
7440-66-6	Zinc	81		03/04/2025	1934

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

Comments:

EPA SAMPLE NO.

YE8D1

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-12

% 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	48	J	03/04/2025	1922
7440-36-0	Antimony	60	U	03/04/2025	1922
7440-38-2	Arsenic	10	U	03/04/2025	1922
7440-39-3	Barium	260		03/04/2025	1922
7440-41-7	Beryllium	5.0	U	03/04/2025	1922
7440-43-9	Cadmium	5.0	U	03/04/2025	1922
7440-70-2	Calcium	8500		03/04/2025	1922
7440-47-3	Chromium	10	U	03/04/2025	1922
7440-48-4	Cobalt	2.4	J	03/04/2025	1922
7440-50-8	Copper	25	U	03/04/2025	1922
7439-89-6	Iron	75	J	03/04/2025	1922
7439-92-1	Lead	10	U	03/04/2025	1922
7439-95-4	Magnesium	3900	J	03/04/2025	1922
7439-96-5	Manganese	110		03/04/2025	1922
7440-02-0	Nickel	3.4	J	03/04/2025	1922
7440-09-7	Potassium	5000	U	03/04/2025	1922
7782-49-2	Selenium	35	U	03/04/2025	1922
7440-22-4	Silver	10	U*	03/04/2025	1922
7440-23-5	Sodium	5100		03/04/2025	1922
7440-28-0	Thallium	25	U	03/04/2025	1922
7440-62-2	Vanadium	50	U	03/04/2025	1922
7440-66-6	Zinc	86		03/04/2025	1922

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

Comments:

EPA SAMPLE NO.

YE8D2

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-13

% 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	28	J	03/04/2025	1926
7440-36-0	Antimony	60	U	03/04/2025	1926
7440-38-2	Arsenic	10	U	03/04/2025	1926
7440-39-3	Barium	240		03/04/2025	1926
7440-41-7	Beryllium	5.0	U	03/04/2025	1926
7440-43-9	Cadmium	2.4	J	03/04/2025	1926
7440-70-2	Calcium	8500		03/04/2025	1926
7440-47-3	Chromium	10	U	03/04/2025	1926
7440-48-4	Cobalt	10	J	03/04/2025	1926
7440-50-8	Copper	66		03/04/2025	1926
7439-89-6	Iron	690		03/04/2025	1926
7439-92-1	Lead	10	U	03/04/2025	1926
7439-95-4	Magnesium	3400	J	03/04/2025	1926
7439-96-5	Manganese	65		03/04/2025	1926
7440-02-0	Nickel	11	J	03/04/2025	1926
7440-09-7	Potassium	690	J	03/04/2025	1926
7782-49-2	Selenium	4.7	J	03/04/2025	1926
7440-22-4	Silver	10	U*	03/04/2025	1926
7440-23-5	Sodium	4600	J	03/04/2025	1926
7440-28-0	Thallium	25	U	03/04/2025	1926
7440-62-2	Vanadium	50	U	03/04/2025	1926
7440-66-6	Zinc	300		03/04/2025	1926

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

Comments:

EPA SAMPLE NO.

YE8D4

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-14

% 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	1100		03/04/2025	1930
7440-36-0	Antimony	60	U	03/04/2025	1930
7440-38-2	Arsenic	5.8	J	03/04/2025	1930
7440-39-3	Barium	210		03/04/2025	1930
7440-41-7	Beryllium	5.0	U	03/04/2025	1930
7440-43-9	Cadmium	5.0	U	03/04/2025	1930
7440-70-2	Calcium	7500		03/04/2025	1930
7440-47-3	Chromium	2.5	J	03/04/2025	1930
7440-48-4	Cobalt	1.2	J	03/04/2025	1930
7440-50-8	Copper	13	J	03/04/2025	1930
7439-89-6	Iron	2800		03/04/2025	1930
7439-92-1	Lead	10	U	03/04/2025	1930
7439-95-4	Magnesium	5300		03/04/2025	1930
7439-96-5	Manganese	51		03/04/2025	1930
7440-02-0	Nickel	5.8	J	03/04/2025	1930
7440-09-7	Potassium	5000	U	03/04/2025	1930
7782-49-2	Selenium	35	U	03/04/2025	1930
7440-22-4	Silver	10	U*	03/04/2025	1930
7440-23-5	Sodium	8600		03/04/2025	1930
7440-28-0	Thallium	25	U	03/04/2025	1930
7440-62-2	Vanadium	4.4	J	03/04/2025	1930
7440-66-6	Zinc	99		03/04/2025	1930

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

Comments:

EPA SAMPLE NO.

YE8D5

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-17

% 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	200	U	03/04/2025	1939
7440-36-0	Antimony	60	U	03/04/2025	1939
7440-38-2	Arsenic	10	U	03/04/2025	1939
7440-39-3	Barium	290		03/04/2025	1939
7440-41-7	Beryllium	5.0	U	03/04/2025	1939
7440-43-9	Cadmium	5.0	U	03/04/2025	1939
7440-70-2	Calcium	29000		03/04/2025	1939
7440-47-3	Chromium	10	U	03/04/2025	1939
7440-48-4	Cobalt	50	U	03/04/2025	1939
7440-50-8	Copper	25	U	03/04/2025	1939
7439-89-6	Iron	24	J	03/04/2025	1939
7439-92-1	Lead	10	U	03/04/2025	1939
7439-95-4	Magnesium	7900		03/04/2025	1939
7439-96-5	Manganese	490		03/04/2025	1939
7440-02-0	Nickel	3.4	J	03/04/2025	1939
7440-09-7	Potassium	5000	U	03/04/2025	1939
7782-49-2	Selenium	35	U	03/04/2025	1939
7440-22-4	Silver	10	U*	03/04/2025	1939
7440-23-5	Sodium	4500	J	03/04/2025	1939
7440-28-0	Thallium	25	U	03/04/2025	1939
7440-62-2	Vanadium	50	U	03/04/2025	1939
7440-66-6	Zinc	56	J	03/04/2025	1939

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

Comments:

EPA SAMPLE NO.

YE8E3

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-06

% 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	200	U	03/04/2025	1845
7440-36-0	Antimony	60	U	03/04/2025	1845
7440-38-2	Arsenic	10	U	03/04/2025	1845
7440-39-3	Barium	220		03/04/2025	1845
7440-41-7	Beryllium	5.0	U	03/04/2025	1845
7440-43-9	Cadmium	5.0	U	03/04/2025	1845
7440-70-2	Calcium	11000		03/04/2025	1845
7440-47-3	Chromium	10	U	03/04/2025	1845
7440-48-4	Cobalt	1.1	J	03/04/2025	1845
7440-50-8	Copper	64		03/04/2025	1845
7439-89-6	Iron	110		03/04/2025	1845
7439-92-1	Lead	10	U	03/04/2025	1845
7439-95-4	Magnesium	2800	J	03/04/2025	1845
7439-96-5	Manganese	46		03/04/2025	1845
7440-02-0	Nickel	6.4	J	03/04/2025	1845
7440-09-7	Potassium	2400	J	03/04/2025	1845
7782-49-2	Selenium	35	U	03/04/2025	1845
7440-22-4	Silver	10	U*	03/04/2025	1845
7440-23-5	Sodium	4100	J	03/04/2025	1845
7440-28-0	Thallium	25	U	03/04/2025	1845
7440-62-2	Vanadium	50	U	03/04/2025	1845
7440-66-6	Zinc	100		03/04/2025	1845

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

Comments:

EPA SAMPLE NO.

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

YE8E4

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

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8F7

Matrix: Water Lab Sample ID: Q1136-07

% 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	2300		03/04/2025	1849
7440-36-0	Antimony	60	U	03/04/2025	1849
7440-38-2	Arsenic	2.9	J	03/04/2025	1849
7440-39-3	Barium	300		03/04/2025	1849
7440-41-7	Beryllium	5.0	U	03/04/2025	1849
7440-43-9	Cadmium	5.0	U	03/04/2025	1849
7440-70-2	Calcium	8700		03/04/2025	1849
7440-47-3	Chromium	4.5	J	03/04/2025	1849
7440-48-4	Cobalt	1.2	J	03/04/2025	1849
7440-50-8	Copper	20	J	03/04/2025	1849
7439-89-6	Iron	4600		03/04/2025	1849
7439-92-1	Lead	2.6	J	03/04/2025	1849
7439-95-4	Magnesium	5200		03/04/2025	1849
7439-96-5	Manganese	54		03/04/2025	1849
7440-02-0	Nickel	6.8	J	03/04/2025	1849
7440-09-7	Potassium	5000	U	03/04/2025	1849
7782-49-2	Selenium	35	U	03/04/2025	1849
7440-22-4	Silver	10	U*	03/04/2025	1849
7440-23-5	Sodium	17000		03/04/2025	1849
7440-28-0	Thallium	25	U	03/04/2025	1849
7440-62-2	Vanadium	8.7	J	03/04/2025	1849
7440-66-6	Zinc	150		03/04/2025	1849

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

Comments:

EPA SAMPLE NO.

YE8E5

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-08

% 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	3600		03/04/2025	1853
7440-36-0	Antimony	60	U	03/04/2025	1853
7440-38-2	Arsenic	9.0	J	03/04/2025	1853
7440-39-3	Barium	210		03/04/2025	1853
7440-41-7	Beryllium	5.0	U	03/04/2025	1853
7440-43-9	Cadmium	5.0	U	03/04/2025	1853
7440-70-2	Calcium	7100		03/04/2025	1853
7440-47-3	Chromium	7.1	J	03/04/2025	1853
7440-48-4	Cobalt	50	U	03/04/2025	1853
7440-50-8	Copper	27		03/04/2025	1853
7439-89-6	Iron	10000		03/04/2025	1853
7439-92-1	Lead	10	U	03/04/2025	1853
7439-95-4	Magnesium	5300		03/04/2025	1853
7439-96-5	Manganese	14	J	03/04/2025	1853
7440-02-0	Nickel	6.2	J	03/04/2025	1853
7440-09-7	Potassium	5000	U	03/04/2025	1853
7782-49-2	Selenium	35	U	03/04/2025	1853
7440-22-4	Silver	10	U*	03/04/2025	1853
7440-23-5	Sodium	17000		03/04/2025	1853
7440-28-0	Thallium	25	U	03/04/2025	1853
7440-62-2	Vanadium	8.4	J	03/04/2025	1853
7440-66-6	Zinc	150		03/04/2025	1853

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

Comments:

EPA SAMPLE NO.

YE8E6

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-09

% 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	25	J	03/04/2025	1857
7440-36-0	Antimony	5.2	J	03/04/2025	1857
7440-38-2	Arsenic	18		03/04/2025	1857
7440-39-3	Barium	260		03/04/2025	1857
7440-41-7	Beryllium	5.0	U	03/04/2025	1857
7440-43-9	Cadmium	12		03/04/2025	1857
7440-70-2	Calcium	8800		03/04/2025	1857
7440-47-3	Chromium	10	U	03/04/2025	1857
7440-48-4	Cobalt	19	J	03/04/2025	1857
7440-50-8	Copper	92		03/04/2025	1857
7439-89-6	Iron	230		03/04/2025	1857
7439-92-1	Lead	10	U	03/04/2025	1857
7439-95-4	Magnesium	4400	J	03/04/2025	1857
7439-96-5	Manganese	290		03/04/2025	1857
7440-02-0	Nickel	190		03/04/2025	1857
7440-09-7	Potassium	1000	J	03/04/2025	1857
7782-49-2	Selenium	35	U	03/04/2025	1857
7440-22-4	Silver	10	U*	03/04/2025	1857
7440-23-5	Sodium	5500		03/04/2025	1857
7440-28-0	Thallium	25	U	03/04/2025	1857
7440-62-2	Vanadium	50	U	03/04/2025	1857
7440-66-6	Zinc	330		03/04/2025	1857

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

Comments:

EPA SAMPLE NO.

YE8E7

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-10

% 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	120	J	03/04/2025	1901
7440-36-0	Antimony	60	U	03/04/2025	1901
7440-38-2	Arsenic	10	U	03/04/2025	1901
7440-39-3	Barium	240		03/04/2025	1901
7440-41-7	Beryllium	5.0	U	03/04/2025	1901
7440-43-9	Cadmium	5.0	U	03/04/2025	1901
7440-70-2	Calcium	8700		03/04/2025	1901
7440-47-3	Chromium	10	U	03/04/2025	1901
7440-48-4	Cobalt	10	J	03/04/2025	1901
7440-50-8	Copper	4.6	J	03/04/2025	1901
7439-89-6	Iron	240		03/04/2025	1901
7439-92-1	Lead	10	U	03/04/2025	1901
7439-95-4	Magnesium	4700	J	03/04/2025	1901
7439-96-5	Manganese	480		03/04/2025	1901
7440-02-0	Nickel	13	J	03/04/2025	1901
7440-09-7	Potassium	5000	U	03/04/2025	1901
7782-49-2	Selenium	35	U	03/04/2025	1901
7440-22-4	Silver	10	U*	03/04/2025	1901
7440-23-5	Sodium	5600		03/04/2025	1901
7440-28-0	Thallium	25	U	03/04/2025	1901
7440-62-2	Vanadium	50	U	03/04/2025	1901
7440-66-6	Zinc	110		03/04/2025	1901

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

Comments:

EPA SAMPLE NO.

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

YE8E8

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

Lab Code: ACE Case No.: 51955 MA No. : SDG No.: YE8F7

Matrix: Water Lab Sample ID: Q1136-11

% 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	200	U	03/04/2025	1918
7440-36-0	Antimony	60	U	03/04/2025	1918
7440-38-2	Arsenic	10	U	03/04/2025	1918
7440-39-3	Barium	240		03/04/2025	1918
7440-41-7	Beryllium	0.18	J	03/04/2025	1918
7440-43-9	Cadmium	2.1	J	03/04/2025	1918
7440-70-2	Calcium	8100		03/04/2025	1918
7440-47-3	Chromium	10	U	03/04/2025	1918
7440-48-4	Cobalt	34	J	03/04/2025	1918
7440-50-8	Copper	3.4	J	03/04/2025	1918
7439-89-6	Iron	510		03/04/2025	1918
7439-92-1	Lead	10	U	03/04/2025	1918
7439-95-4	Magnesium	3900	J	03/04/2025	1918
7439-96-5	Manganese	220		03/04/2025	1918
7440-02-0	Nickel	260		03/04/2025	1918
7440-09-7	Potassium	1500	J	03/04/2025	1918
7782-49-2	Selenium	35	U	03/04/2025	1918
7440-22-4	Silver	10	U*	03/04/2025	1918
7440-23-5	Sodium	5300		03/04/2025	1918
7440-28-0	Thallium	25	U	03/04/2025	1918
7440-62-2	Vanadium	50	U	03/04/2025	1918
7440-66-6	Zinc	310		03/04/2025	1918

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

Comments:

EPA SAMPLE NO.

YE8F5

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-01

% Solids: Date Received: 01/18/2025

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	31	J	03/04/2025	1821
7440-36-0	Antimony	60	U	03/04/2025	1821
7440-38-2	Arsenic	10	U	03/04/2025	1821
7440-39-3	Barium	220		03/04/2025	1821
7440-41-7	Beryllium	5.0	U	03/04/2025	1821
7440-43-9	Cadmium	5.0	U	03/04/2025	1821
7440-70-2	Calcium	7700		03/04/2025	1821
7440-47-3	Chromium	10	U	03/04/2025	1821
7440-48-4	Cobalt	10	J	03/04/2025	1821
7440-50-8	Copper	25	U	03/04/2025	1821
7439-89-6	Iron	73	J	03/04/2025	1821
7439-92-1	Lead	10	U	03/04/2025	1821
7439-95-4	Magnesium	4500	J	03/04/2025	1821
7439-96-5	Manganese	300		03/04/2025	1821
7440-02-0	Nickel	9.8	J	03/04/2025	1821
7440-09-7	Potassium	580	J	03/04/2025	1821
7782-49-2	Selenium	35	U	03/04/2025	1821
7440-22-4	Silver	10	U*	03/04/2025	1821
7440-23-5	Sodium	5600		03/04/2025	1821
7440-28-0	Thallium	25	U	03/04/2025	1821
7440-62-2	Vanadium	50	U	03/04/2025	1821
7440-66-6	Zinc	70		03/04/2025	1821

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

Comments:

EPA SAMPLE NO.

YE8F7

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-02

% Solids: Date Received: 01/18/2025

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	03/04/2025	1825
7440-36-0	Antimony	60	U	03/04/2025	1825
7440-38-2	Arsenic	10	U	03/04/2025	1825
7440-39-3	Barium	230		03/04/2025	1825
7440-41-7	Beryllium	5.0	U	03/04/2025	1825
7440-43-9	Cadmium	5.0	U	03/04/2025	1825
7440-70-2	Calcium	8500		03/04/2025	1825
7440-47-3	Chromium	10	U	03/04/2025	1825
7440-48-4	Cobalt	50	U	03/04/2025	1825
7440-50-8	Copper	25	U	03/04/2025	1825
7439-89-6	Iron	55	J	03/04/2025	1825
7439-92-1	Lead	10	U	03/04/2025	1825
7439-95-4	Magnesium	2400	J	03/04/2025	1825
7439-96-5	Manganese	21		03/04/2025	1825
7440-02-0	Nickel	1.4	J	03/04/2025	1825
7440-09-7	Potassium	5900		03/04/2025	1825
7782-49-2	Selenium	35	U	03/04/2025	1825
7440-22-4	Silver	10	U*	03/04/2025	1825
7440-23-5	Sodium	4300	J	03/04/2025	1825
7440-28-0	Thallium	25	U	03/04/2025	1825
7440-62-2	Vanadium	50	U	03/04/2025	1825
7440-66-6	Zinc	120		03/04/2025	1825

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

Comments:

EPA SAMPLE NO.

YE8F8

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-05

% Solids: Date Received: 01/18/2025

Analytical Method: ICP_AES

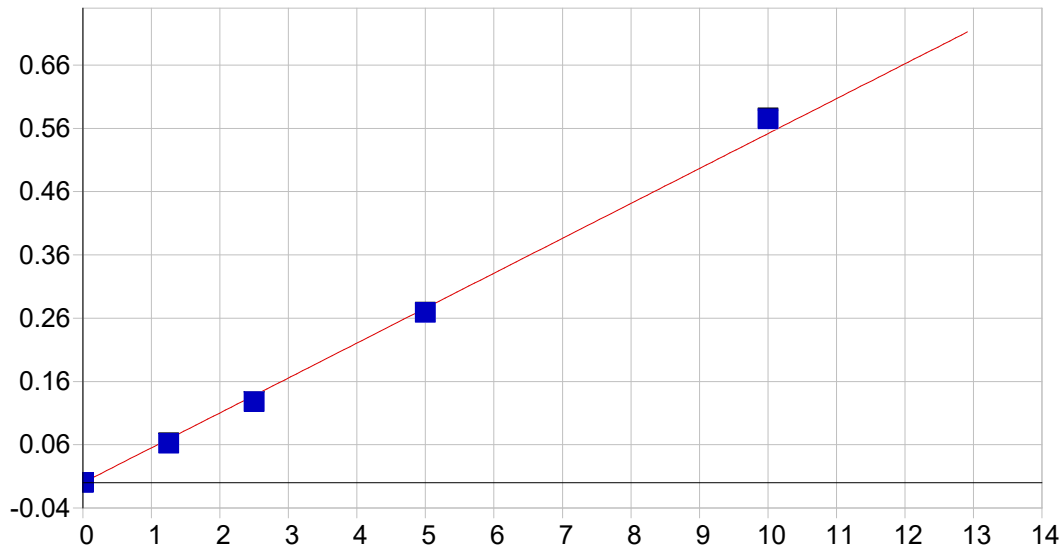
Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): ug/L

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	200	U	03/04/2025	1841
7440-36-0	Antimony	60	U	03/04/2025	1841
7440-38-2	Arsenic	10	U	03/04/2025	1841
7440-39-3	Barium	220		03/04/2025	1841
7440-41-7	Beryllium	5.0	U	03/04/2025	1841
7440-43-9	Cadmium	5.0	U	03/04/2025	1841
7440-70-2	Calcium	11000		03/04/2025	1841
7440-47-3	Chromium	10	U	03/04/2025	1841
7440-48-4	Cobalt	1.2	J	03/04/2025	1841
7440-50-8	Copper	2.5	J	03/04/2025	1841
7439-89-6	Iron	24	J	03/04/2025	1841
7439-92-1	Lead	10	U	03/04/2025	1841
7439-95-4	Magnesium	2800	J	03/04/2025	1841
7439-96-5	Manganese	55		03/04/2025	1841
7440-02-0	Nickel	2.9	J	03/04/2025	1841
7440-09-7	Potassium	520	J	03/04/2025	1841
7782-49-2	Selenium	35	U	03/04/2025	1841
7440-22-4	Silver	10	U*	03/04/2025	1841
7440-23-5	Sodium	4000	J	03/04/2025	1841
7440-28-0	Thallium	25	U	03/04/2025	1841
7440-62-2	Vanadium	50	U	03/04/2025	1841
7440-66-6	Zinc	96		03/04/2025	1841

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

Comments:

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



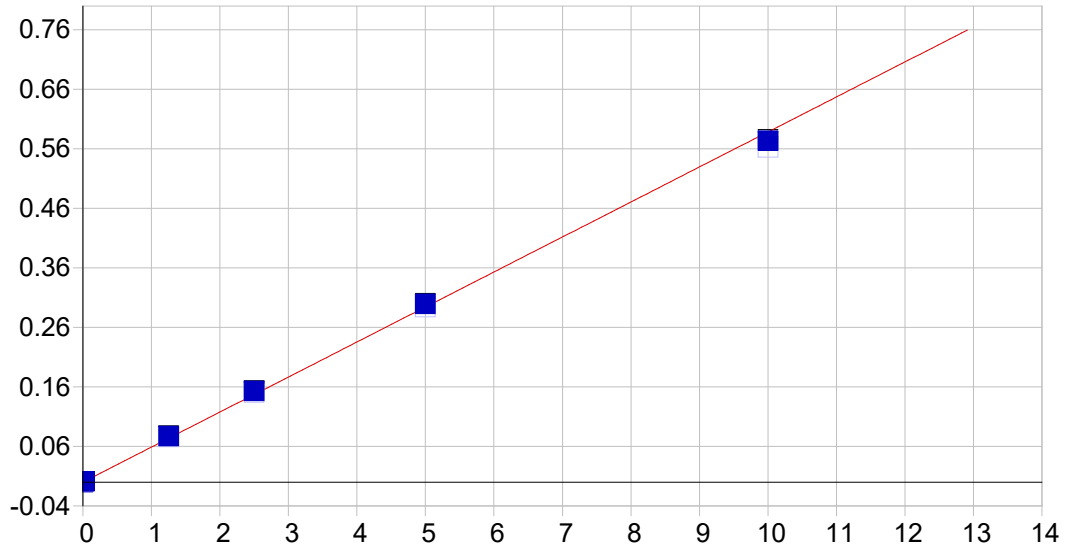
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A1 (Gain):	0.055176	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998803	Status:	OK.
Std Error of Est:	0.000045		
Predicted MDL:	0.002562		
Predicted MQL:	0.008541		

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



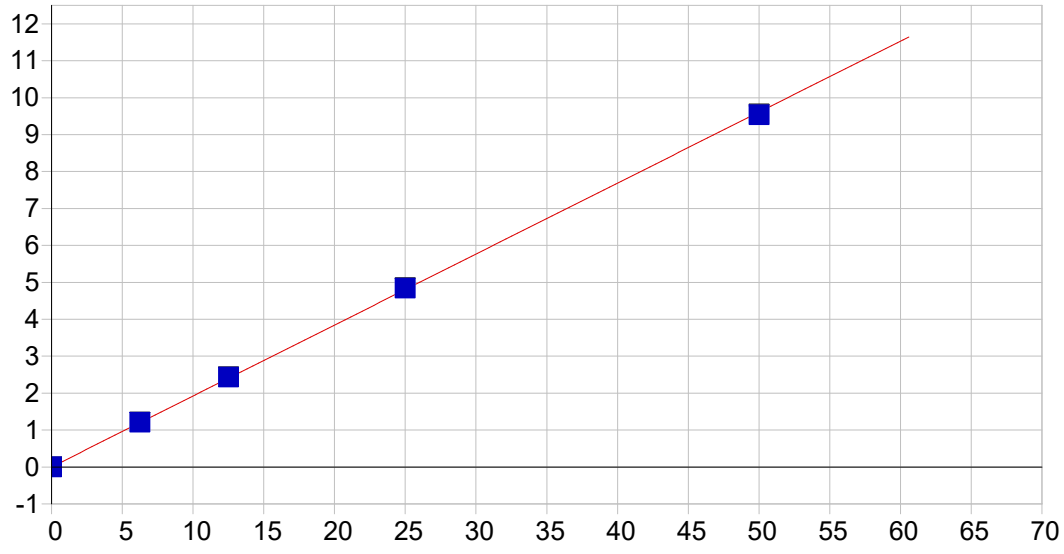
Tl 190.856 {477}

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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



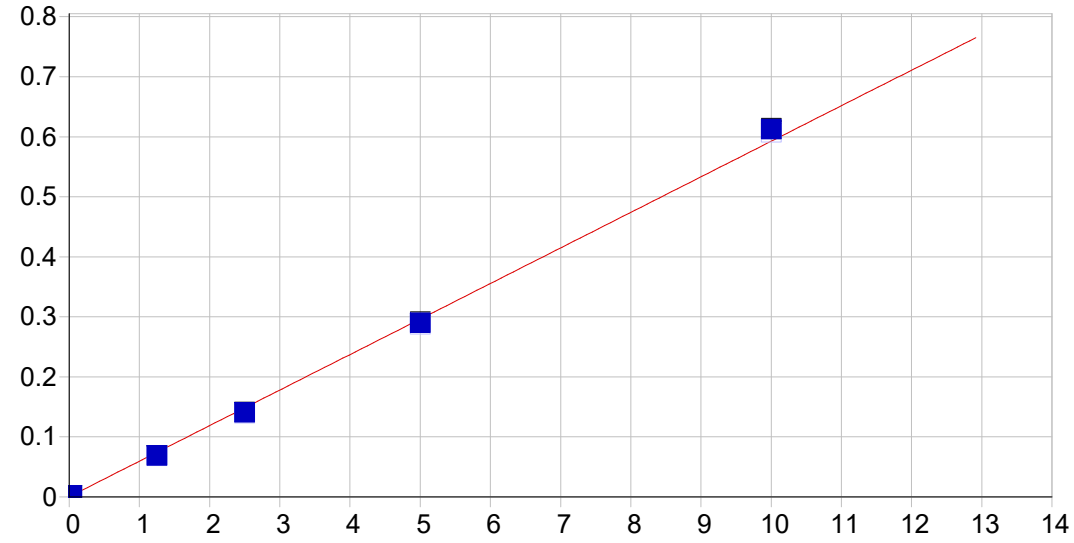
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A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999963	Status:	OK.
Std Error of Est:	0.000062		
Predicted MDL:	0.001394		
Predicted MQL:	0.004645		

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

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



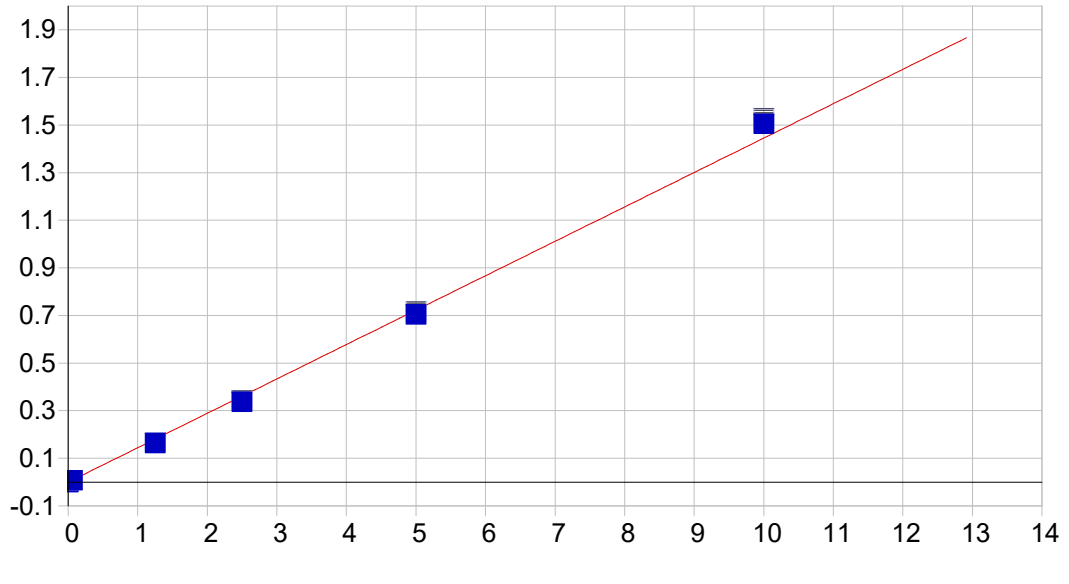
Se 196.090 {472}

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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



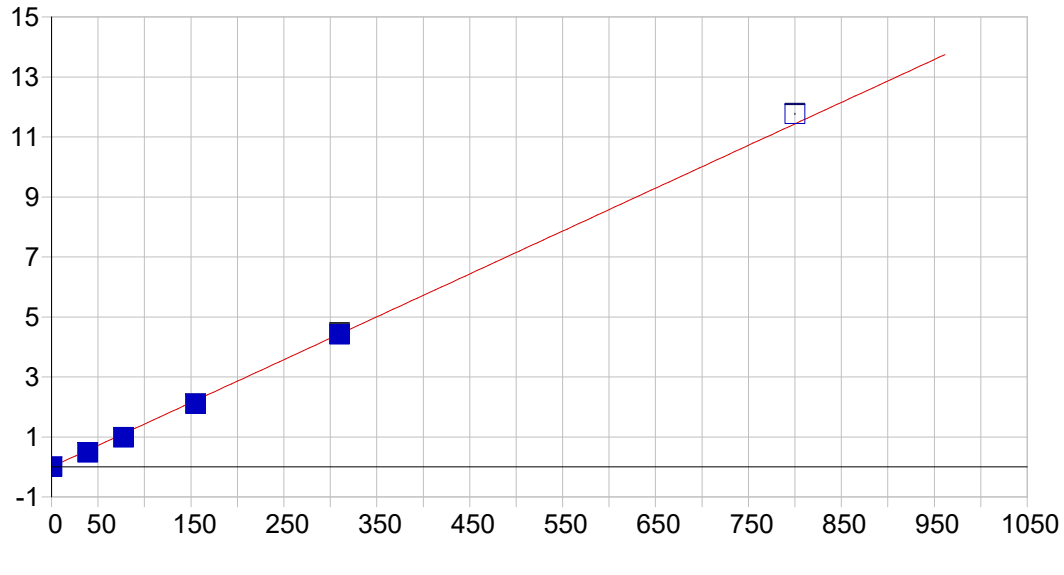
Sb 206.833 {463}

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



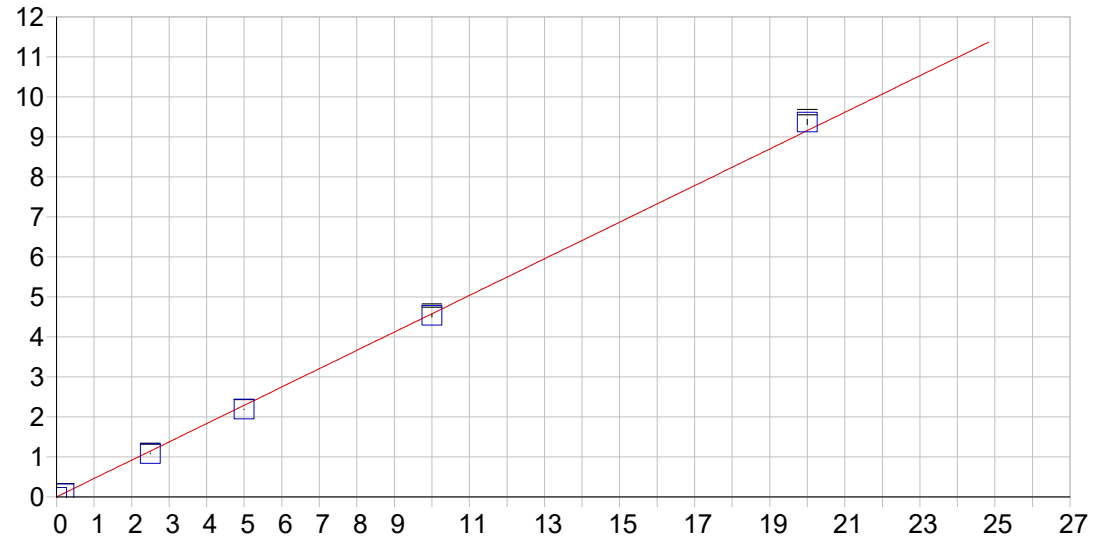
Al 396.152 { 85}

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

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



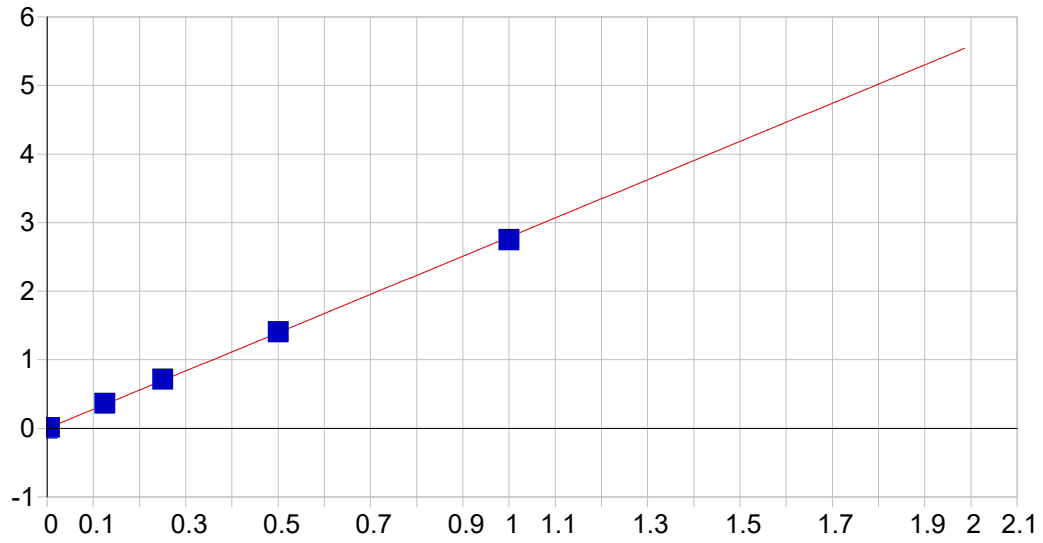
Ba 493.409 { 68}

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



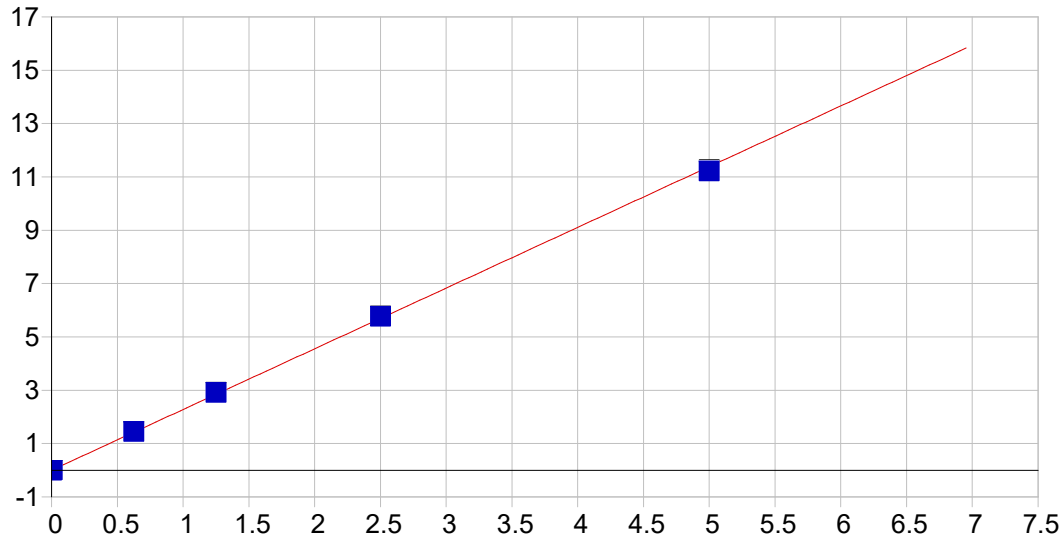
Be 234.861 {144}

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



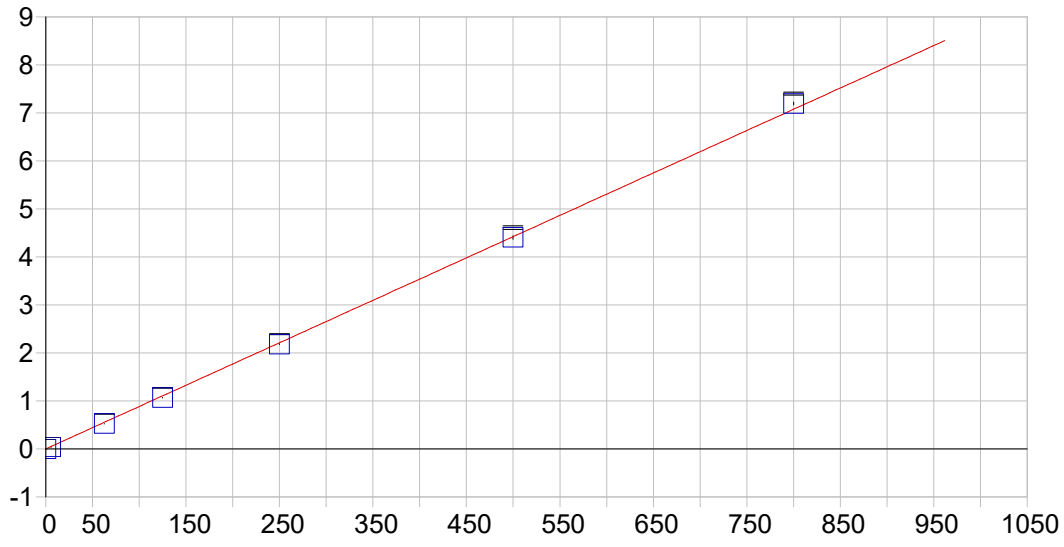
Cd 214.438 {457}

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



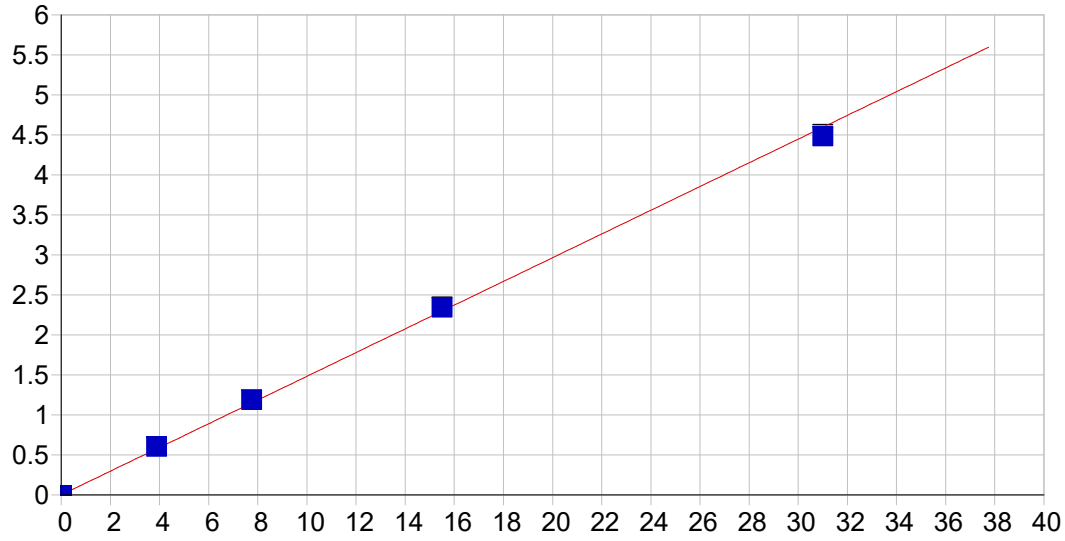
Ca 373.690 { 90}

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



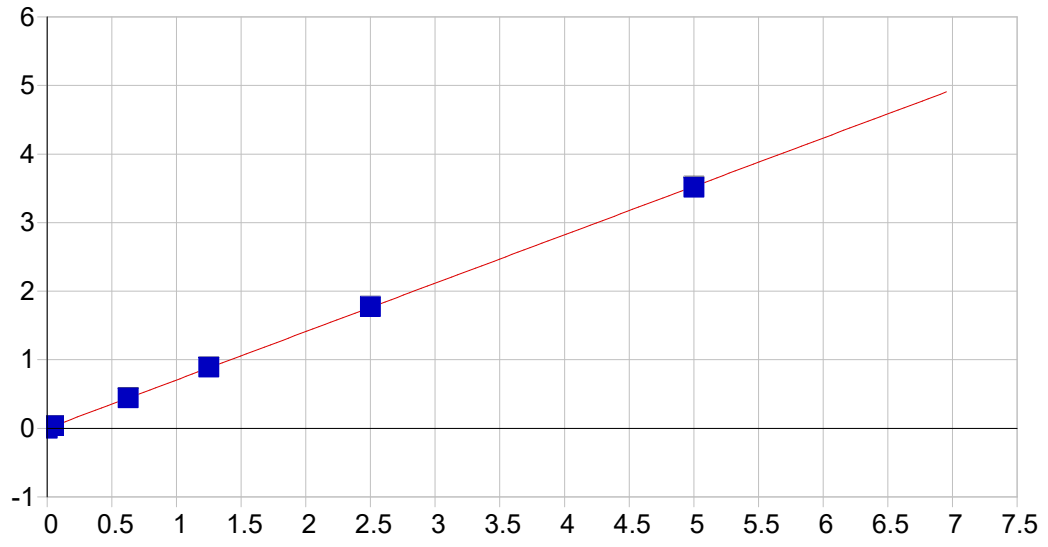
Cr 267.716 {126}

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



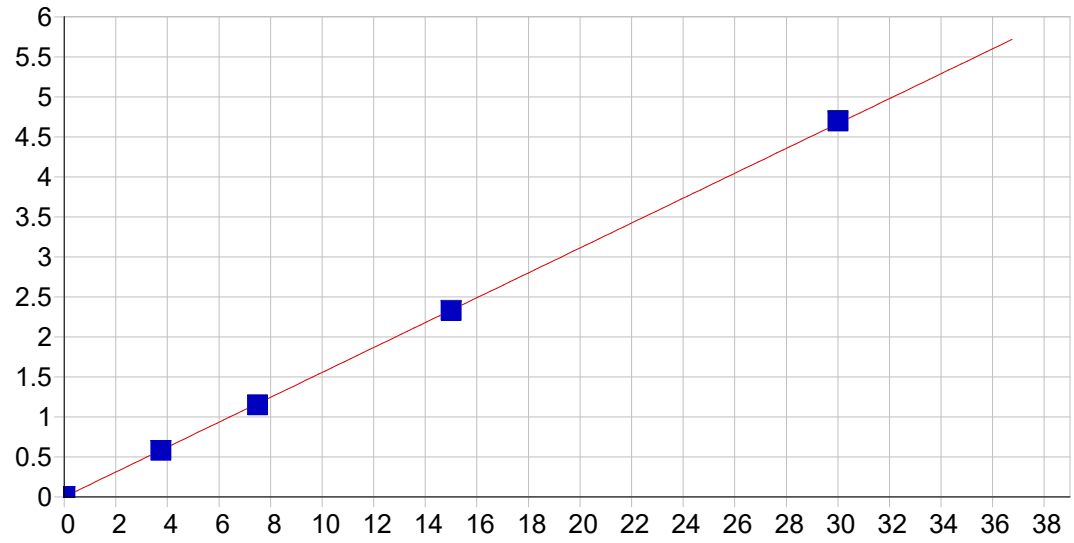
Co 228.616 {448}

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



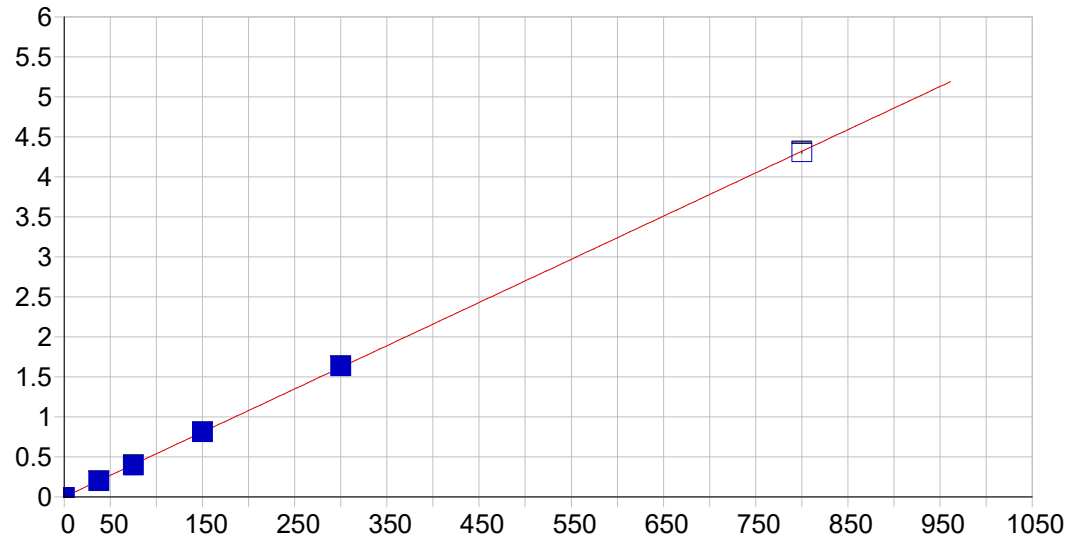
Cu 324.754 {104}

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



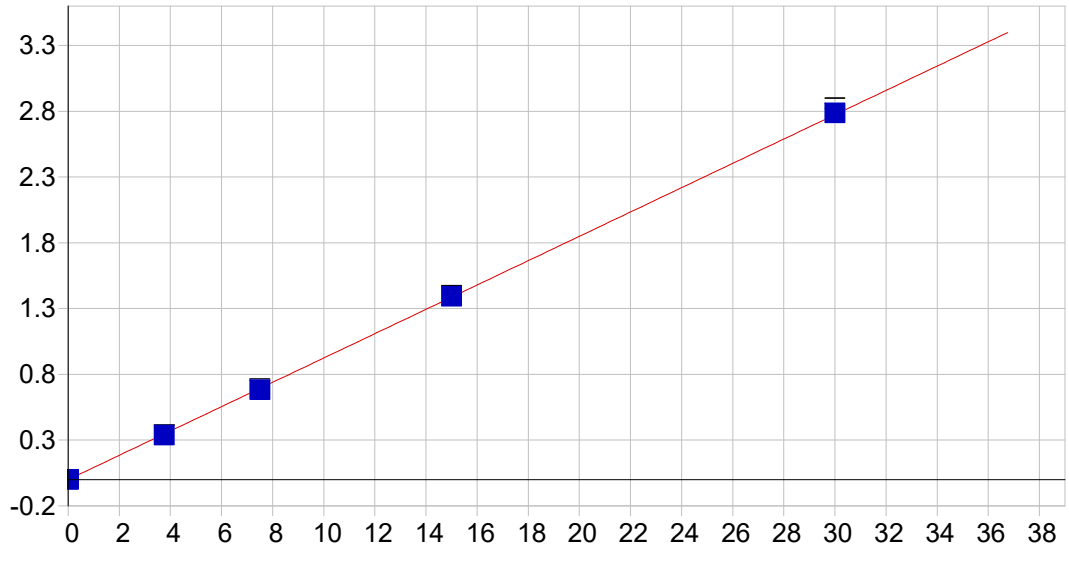
Fe 259.837 {130}

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



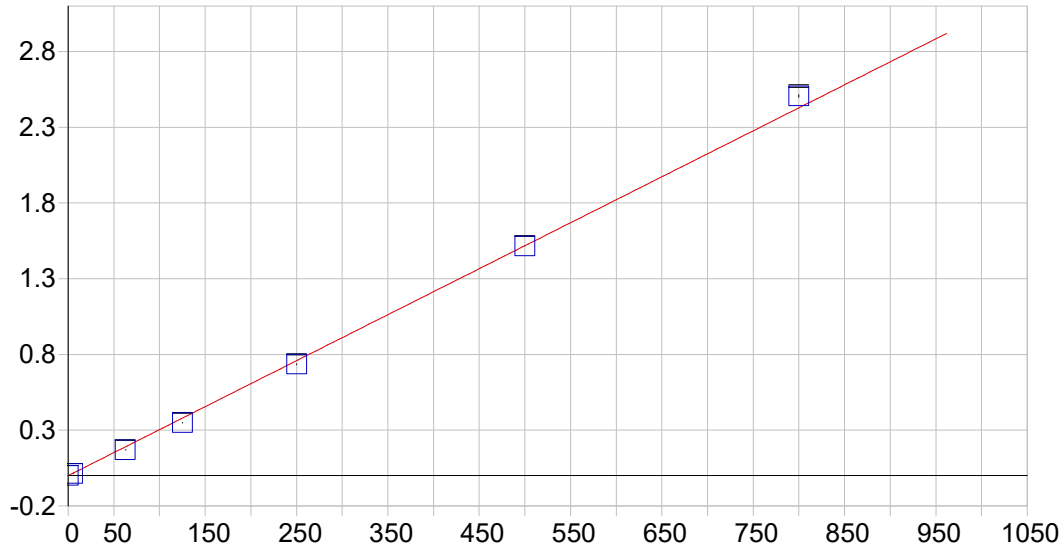
Mn 257.610 {131}

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



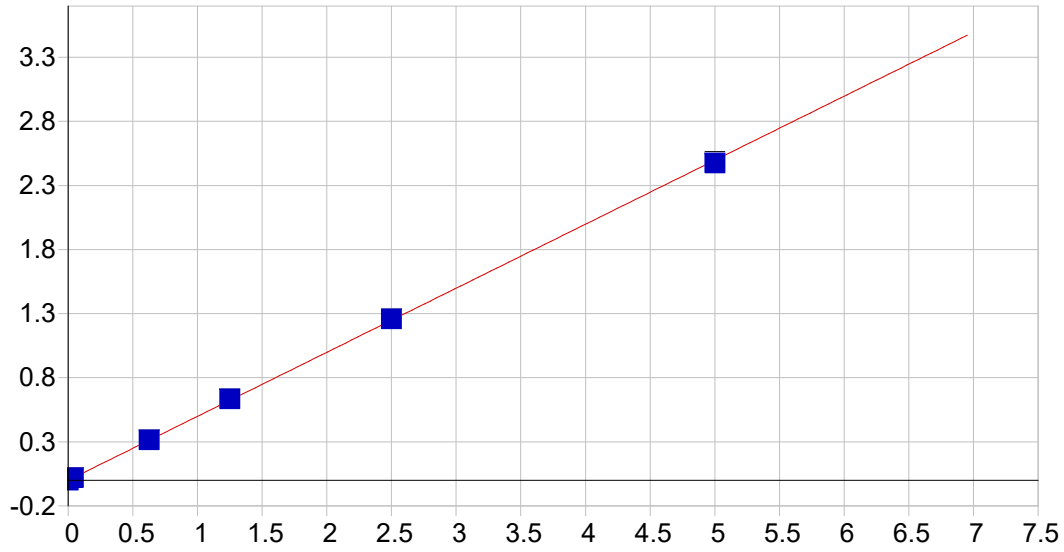
Mg 279.079 {121}

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



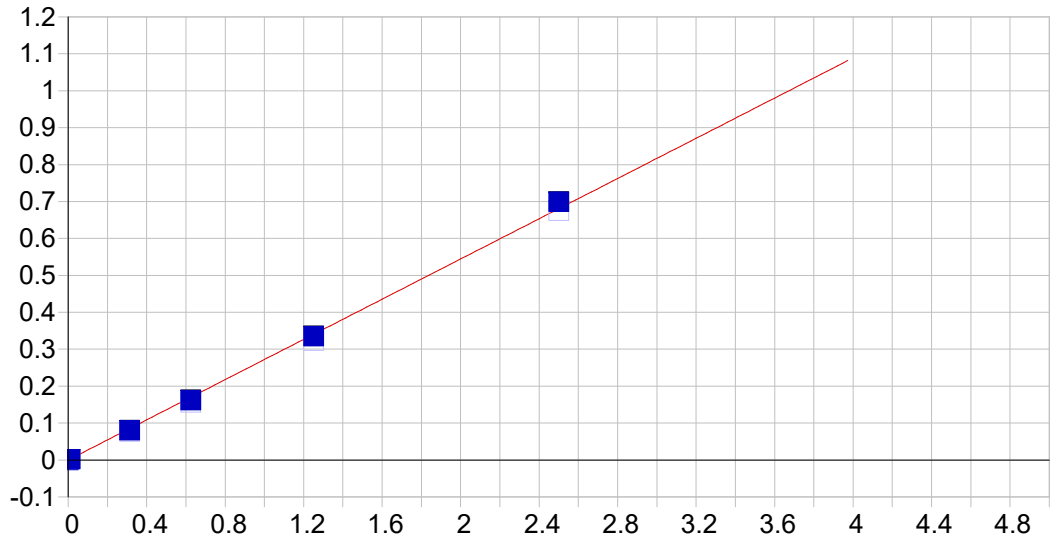
Ni 231.604 {446}

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



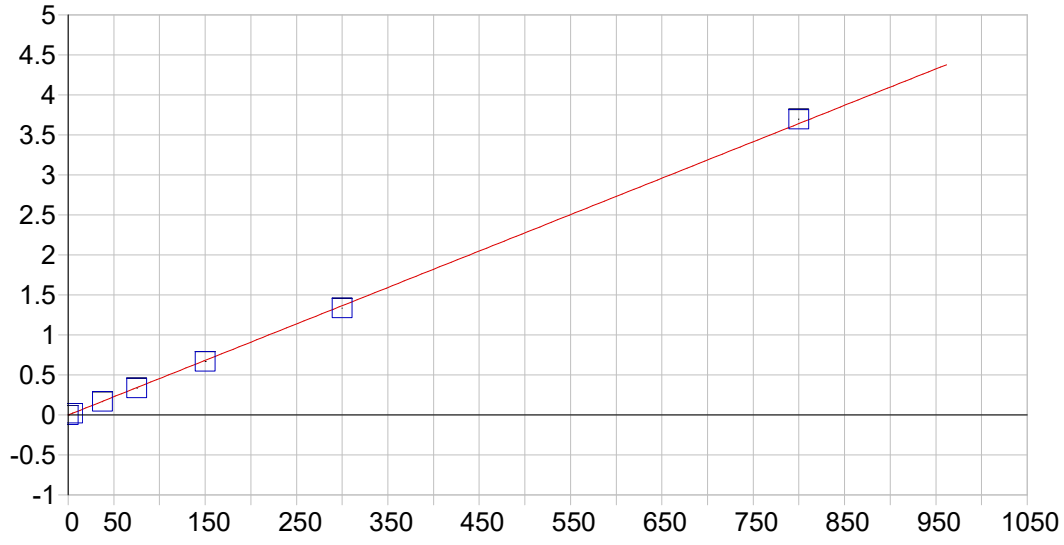
Ag 328.068 {103}

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



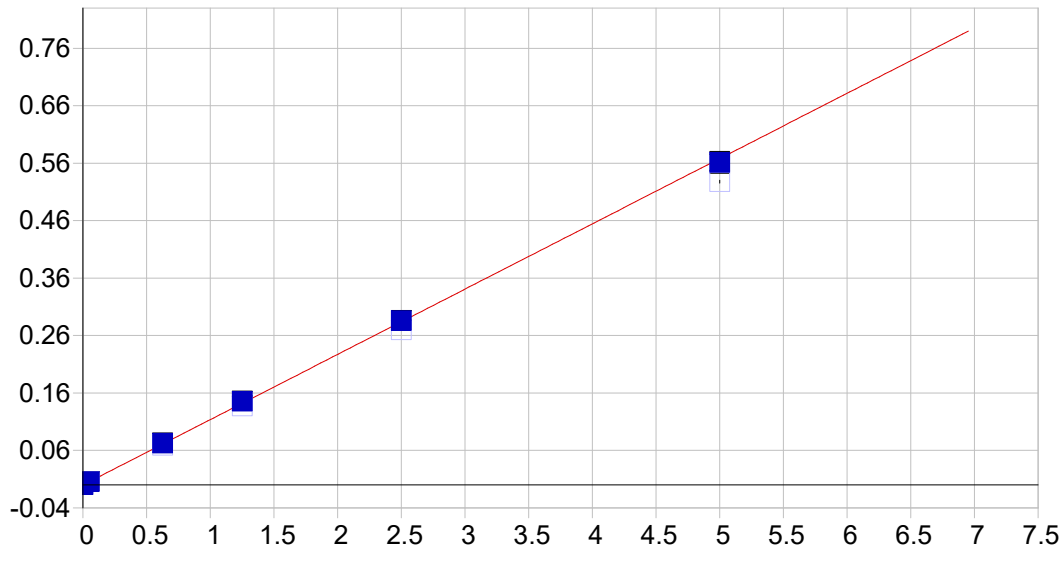
Na 818.326 { 41}

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



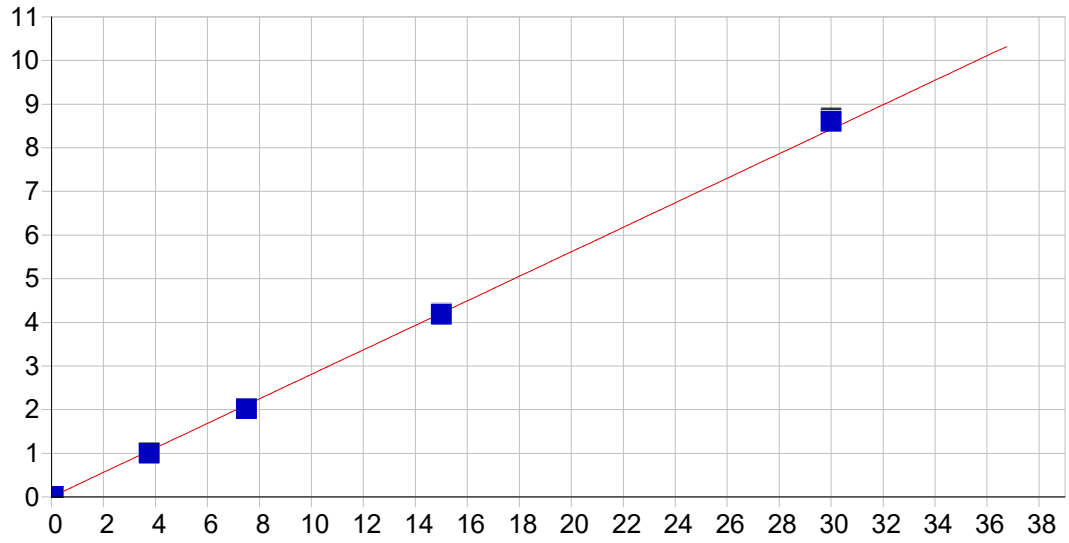
V 292.402 {115}

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



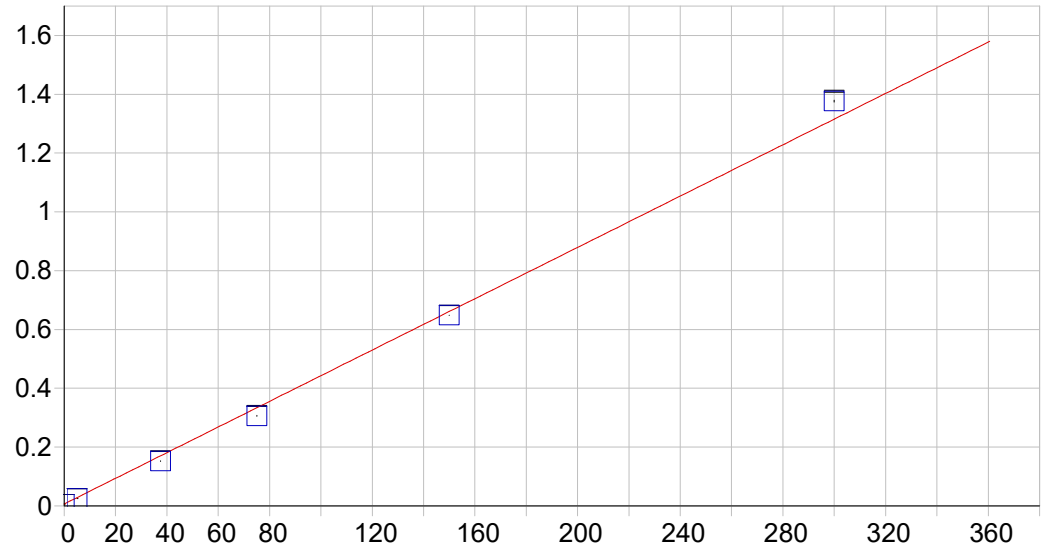
Zn 213.856 {158}

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



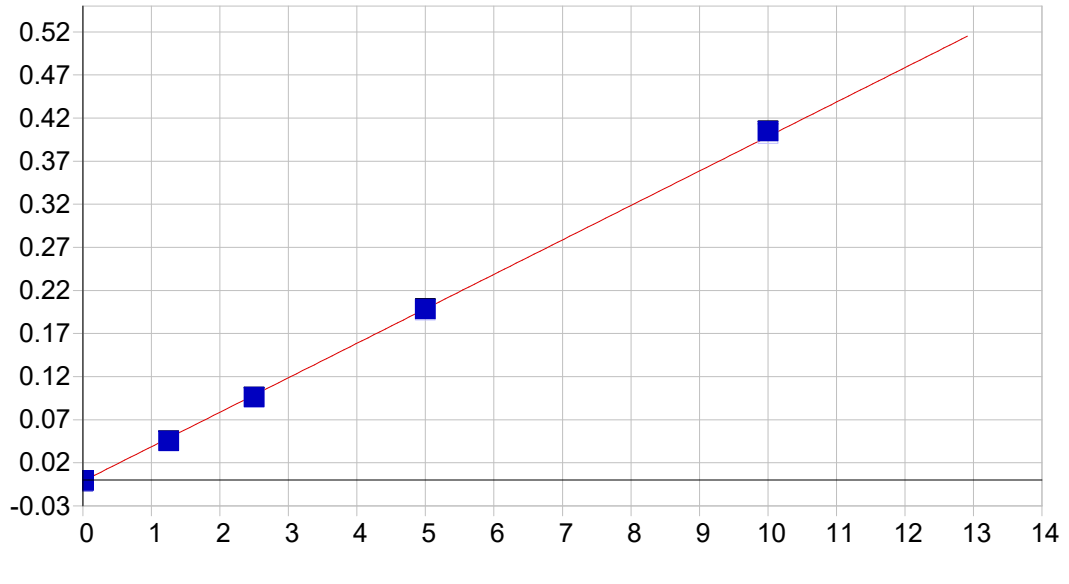
K 769.896 { 44}

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



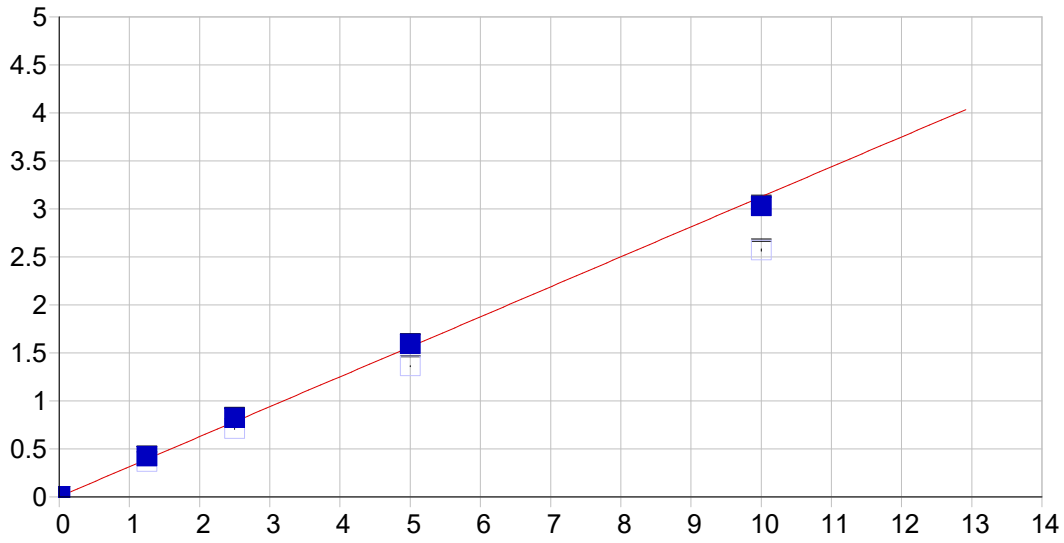
P 177.495 {490}

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

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



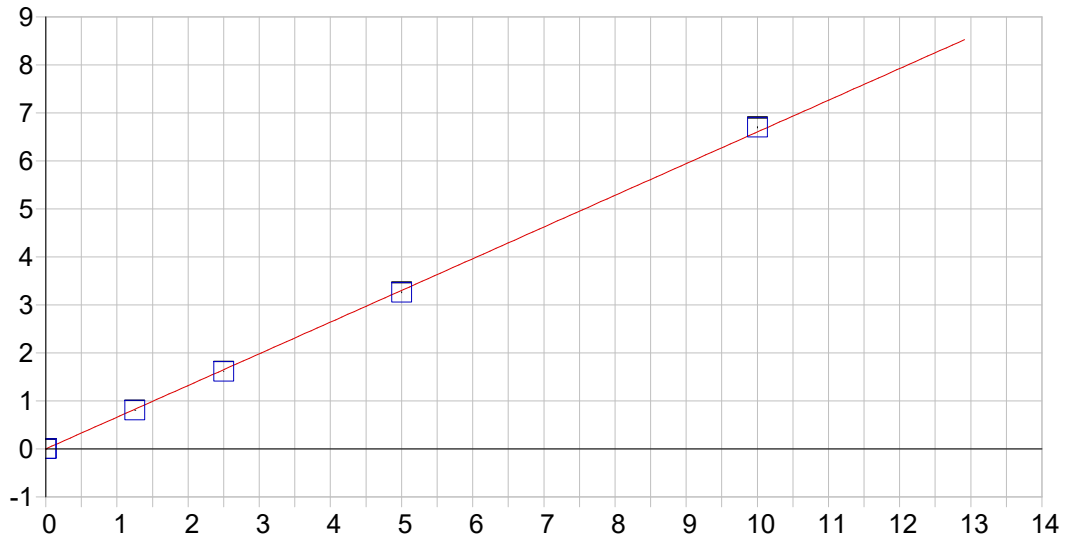
B 249.678 {135}

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



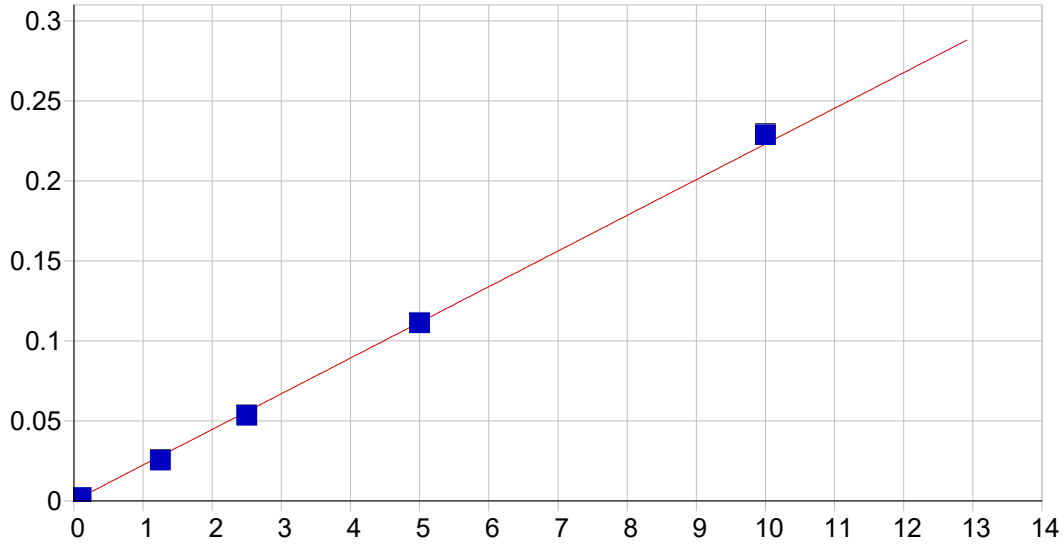
Mo 202.030 {467}

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



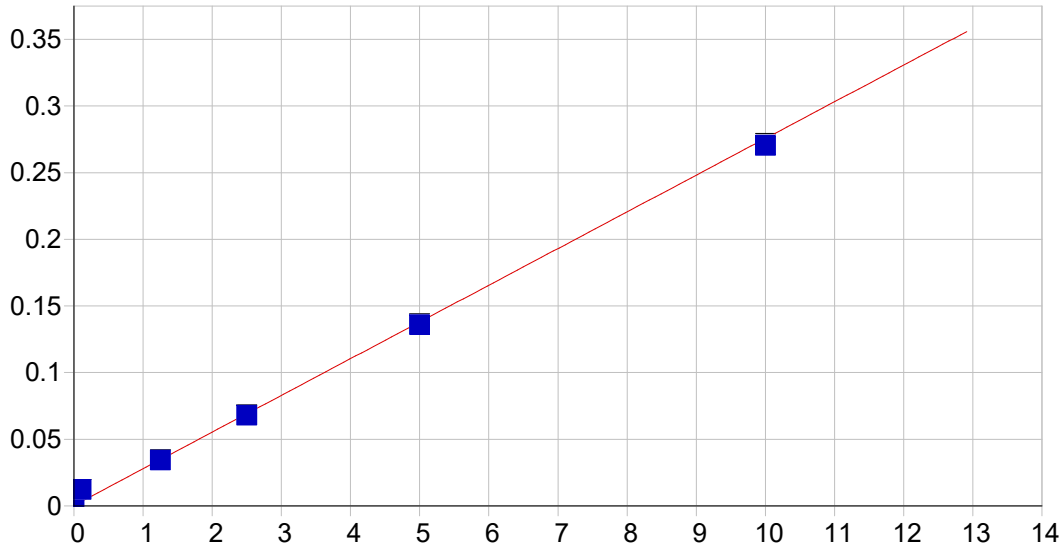
S 182.034 {485}

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



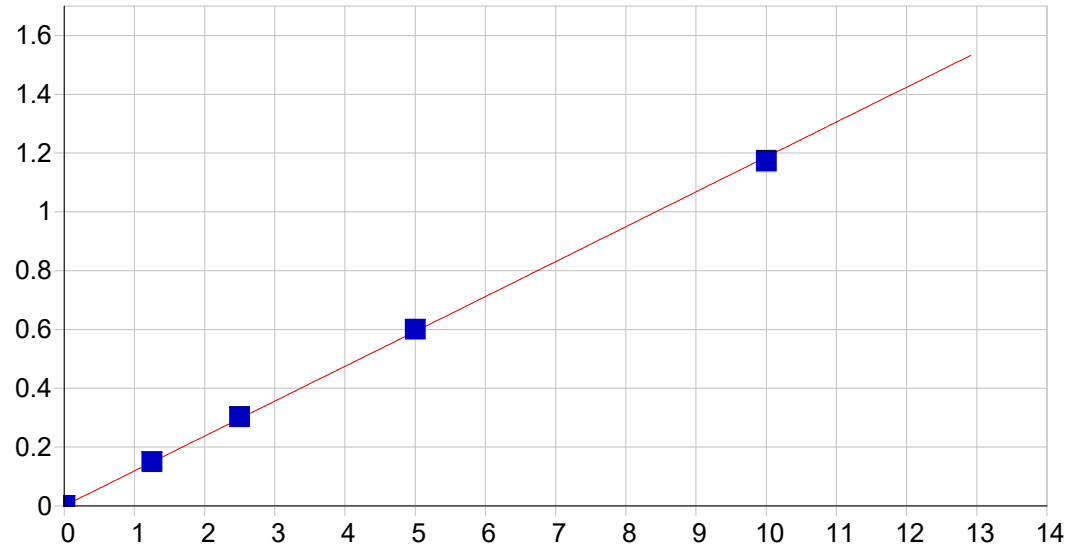
Si 251.611 {134}

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



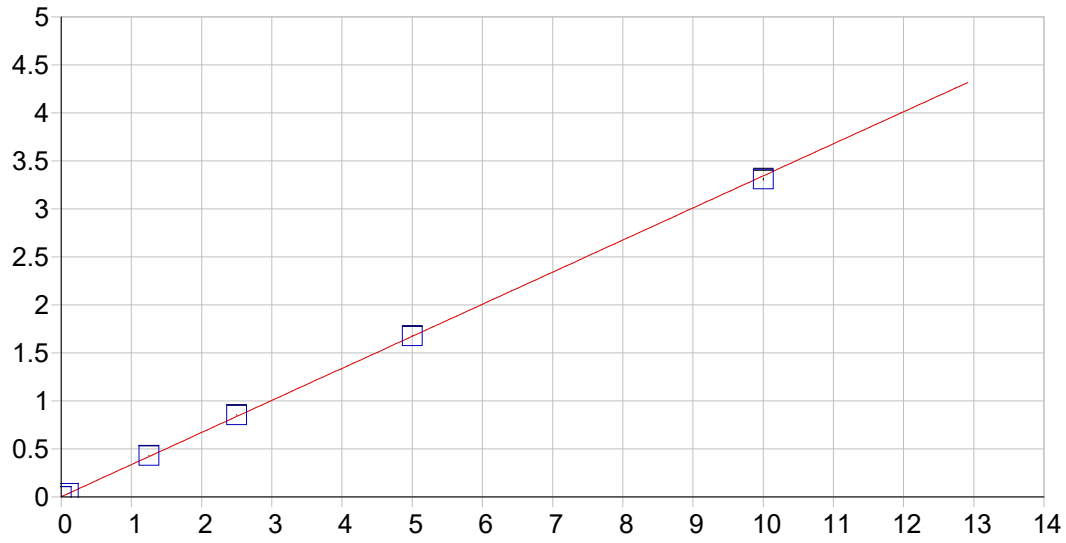
Sn 189.989 {478}

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



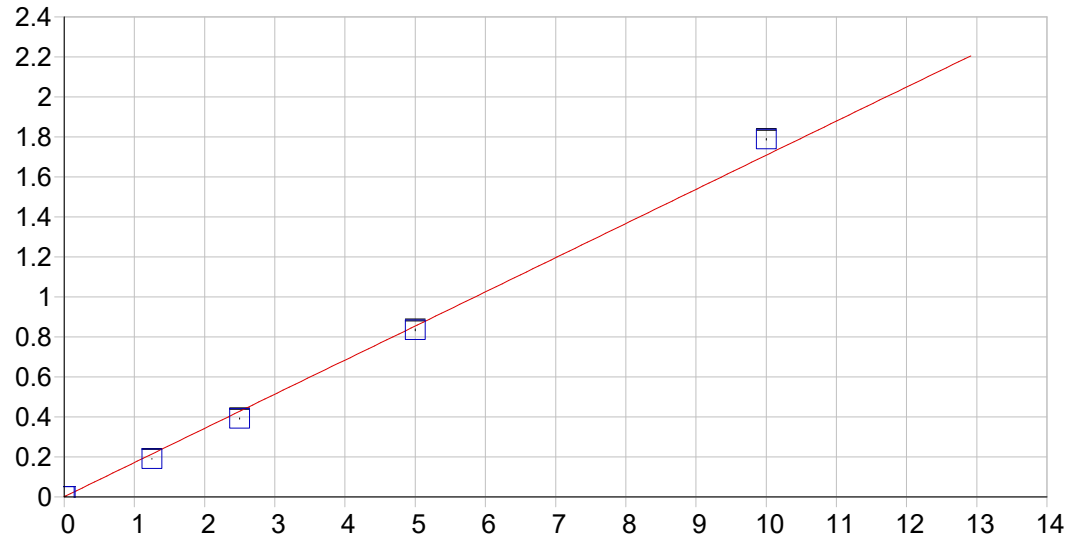
Ti 336.121 {100}

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



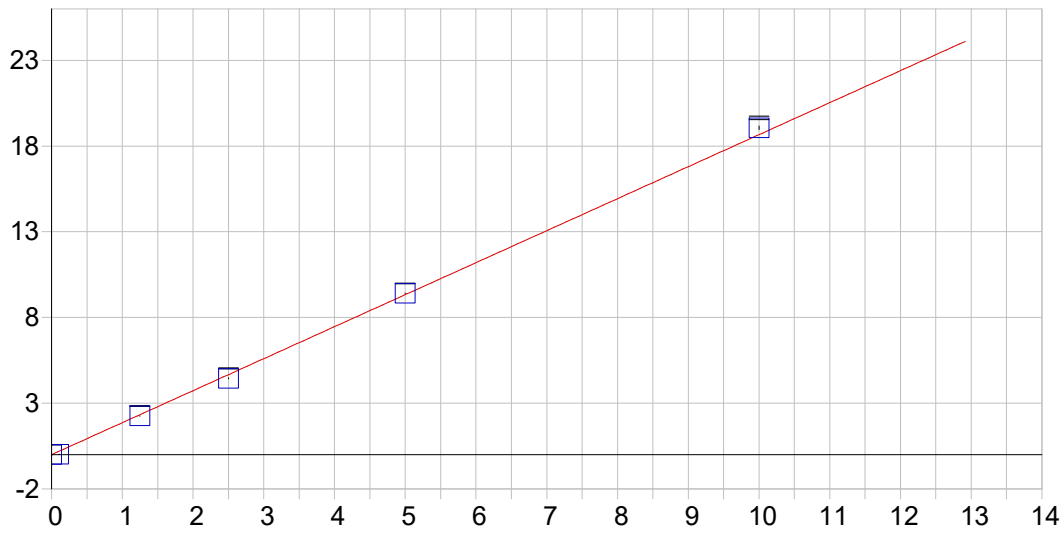
Li 670.784 { 50}

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



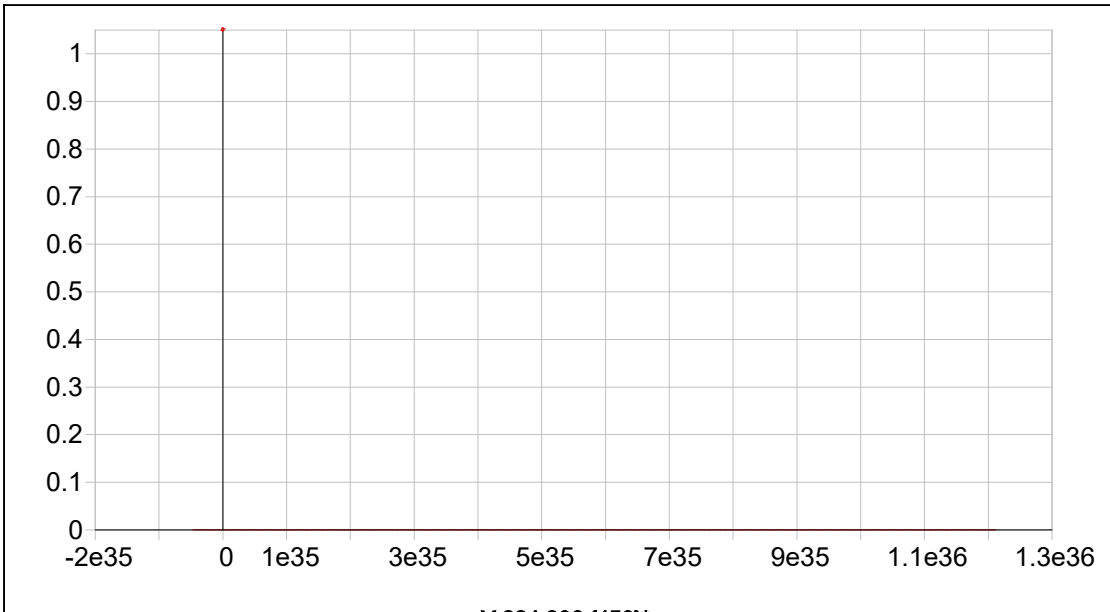
Sr 407.771 { 83}

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

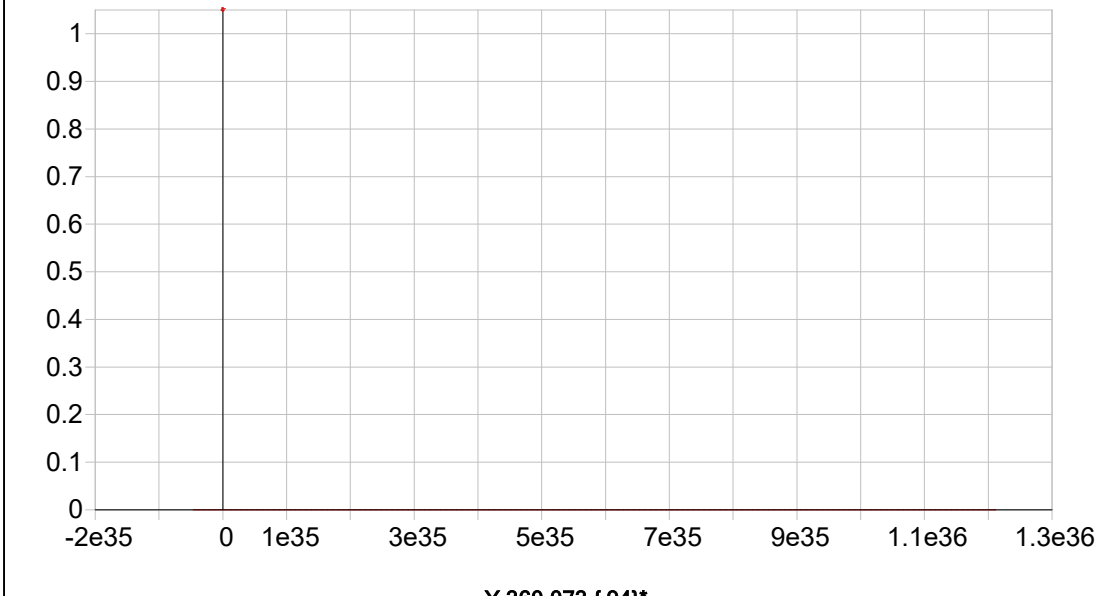
Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4



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



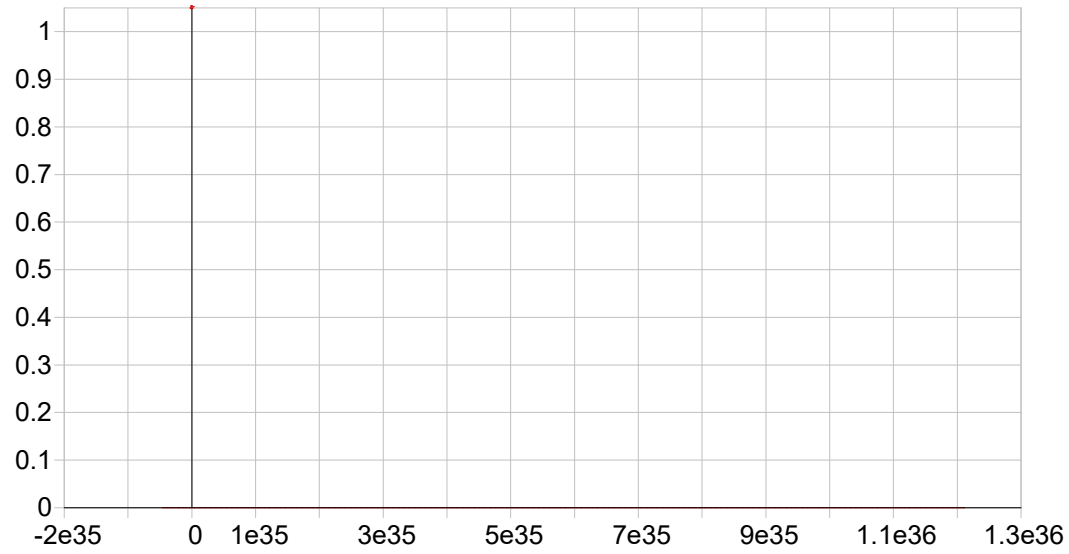
Y 360.073 { 94}*

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



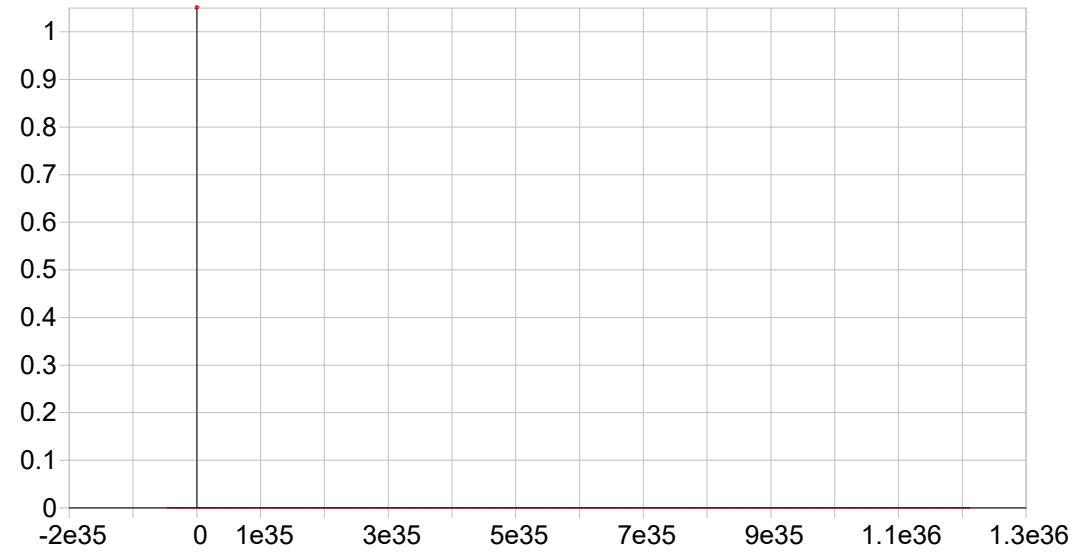
Y 371.030 { 91}*

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

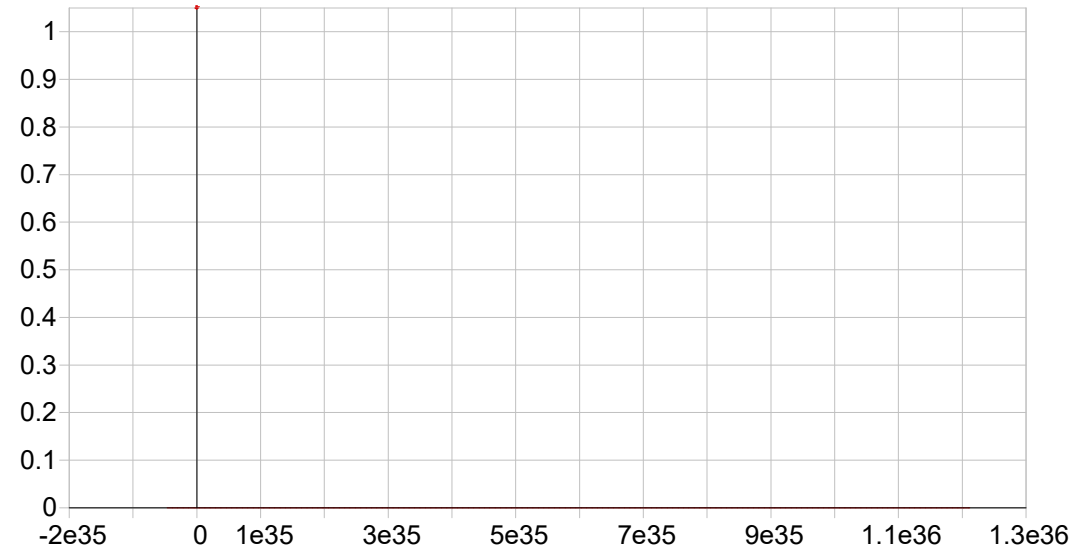


Y 224.306 {150}*

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 12:25:37 PM
Inst Id :P4

Sample Name: Q1136-11 Acquired: 3/4/2025 19:18:38 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E8 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002025**	**.0015828**	**.0006566**	**.0000413**	**.0012062**	**.0173128**
Stddev	.0008299	.0014462	.0004720	.0015845	.0004790	.0024798
%RSD	409.7721	91.36988	71.88727	3837.124	39.70928	14.32346
#1	-.000273	-.000009	.0004129	-.000397	.0010273	.0192256
#2	-.000281	.002816	.0003562	.001799	.0008424	.0145111
#3	.001161	.001942	.0012006	-.001278	.0017488	.0182016

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2381084**	**.0001814**	**.0020718**	**8.089723**	**-.000615**	**.0343585**
Stddev	.0019640	.0000644	.0000481	.033939	.000329	.0001607
%RSD	.8248265	35.48110	2.321628	.4195268	53.48255	.4676003
#1	.2397585	.0001339	.0020342	8.095577	-.000786	.0345241
#2	.2386305	.0002547	.0021260	8.120353	-.000236	.0342033
#3	.2359361	.0001556	.0020553	8.053238	-.000824	.0343480

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0033954**	**.5092572**	**.2201384**	**3.875011**	**.2594269**	**-.000066**
Stddev	.0012078	.0090971	.0011283	.019504	.0008039	.000244
%RSD	35.57248	1.786344	.5125269	.5033154	.3098831	366.5928
#1	.0039883	.5096495	.2204974	3.883989	.2590598	-.000270
#2	.0020057	.5181518	.2210434	3.888408	.2588721	.000203
#3	.0041922	.4999704	.2188742	3.852635	.2603489	-.000133

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.248973**	**.0012397**	**.3065723**	**1.537485**	**.0047309**	**.1192484**
Stddev	.062017	.0012483	.0015735	.028869	.0013400	.0009450
%RSD	1.181509	100.6998	.5132552	1.877686	28.32532	.7924925
#1	5.294173	.0026806	.3069122	1.560664	.0035804	.1193907
#2	5.178271	.0004867	.3079481	1.546643	.0044101	.1182403
#3	5.274475	.0005516	.3048566	1.505147	.0062022	.1201142

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

Sample Name: Q1136-11 Acquired: 3/4/2025 19:18:38 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8E8 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044738	F 11.61721	3.751897	-.001670	-.001487	.0015473
Stddev	.0002116	.03612	.007434	.000329	.000276	.0001745
%RSD	4.729552	.3108798	.1981479	19.73115	18.58305	11.28077
#1	.0045426	11.61136	3.760186	-.001991	-.001359	.0013460
#2	.0042364	11.58437	3.745820	-.001685	-.001297	.0016377
#3	.0046425	11.65589	3.749684	-.001333	-.001804	.0016580

Elem	Sr4077
Units	ppm
Avg	.0505466
Stddev	.0001711
%RSD	.3384046
#1	.0504552
#2	.0507439
#3	.0504406

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3646.934	80819.63	16803.84	3411.160	5100.520
Stddev	15.347	234.51	70.20	10.858	21.890
%RSD	.4208222	.2901624	.4177401	.3183045	.4291759
#1	3652.625	81018.77	16838.32	3418.961	5115.939
#2	3658.623	80561.15	16850.12	3398.760	5110.157
#3	3629.555	80878.96	16723.07	3415.761	5075.465

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

Sample Name: Q1136-12 Acquired: 3/4/2025 19:22:41 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002262**	**.0000594**	**.0001166**	**-.001258**	**.0002504**	**.0482274**	**.2587949**
Stddev	.000699	.0012547	.0003270	.002586	.0008725	.0041551	.0008875
%RSD	30.91956	2111.228	280.3419	205.4915	348.4971	8.615717	.3429289
#1	-.002913	-.001291	.0001068	-.004242	-.000304	.0438109	.2597935
#2	-.002349	.001189	-.000205	.000345	-.000201	.0520593	.2580961
#3	-.001523	.000280	.000448	.000122	.001256	.0488121	.2584952

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000394**	**.0000040**	**8.506318**	**-.000647**	**.0023714**	**.0017544**	**.0751349**
Stddev	.0000074	.0000335	.024749	.000146	.0000838	.0008326	.0015784
%RSD	18.78070	838.5354	.2909497	22.61436	3.532056	47.46044	2.100761
#1	.0000450	.0000406	8.496030	-.000625	.0023926	.0010245	.0747695
#2	.0000420	-.000004	8.488372	-.000802	.0022791	.0026613	.0768639
#3	.0000310	-.000025	8.534552	-.000512	.0024426	.0015774	.0737711

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1111728**	**3.877597**	**.0033498**	**-.000006**	**5.070063**	**.0001641**	**.0859968**
Stddev	.0005337	.020849	.0002462	.000118	.055524	.0019258	.0012001
%RSD	.4800633	.5376764	7.348539	1819.419	1.095132	1173.661	1.395518
#1	.1106370	3.872158	.0033858	-.000050	5.118049	.0023421	.0857364
#2	.1117043	3.860006	.0035760	-.000097	5.009247	-.001313	.0849483
#3	.1111770	3.900626	.0030876	.000127	5.082893	-.000536	.0873057

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.777501**	**.0058810**	**.0994937**	**.0004463**	**9.759994**	**5.843194**	**-.001807**
Stddev	.016067	.0020986	.0012624	.0002120	.022899	.038669	.000337
%RSD	2.066534	35.68439	1.268779	47.51087	.2346236	.6617833	18.67141
#1	-.763334	.0037475	.1006373	.0002298	9.786433	5.856229	-.001644
#2	-.774211	.0059526	.0981392	.0004554	9.747118	5.799692	-.001582
#3	-.794959	.0079428	.0997046	.0006536	9.746432	5.873662	-.002195

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

Sample Name: Q1136-12 Acquired: 3/4/2025 19:22:41 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D1 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0001322	.0063730	.0619261
Stddev	.0003307	.0006343	.0000749
%RSD	250.0728	9.953190	.1209651
#1	-.000079	.0070624	.0619918
#2	.000513	.0058141	.0618445
#3	-.000038	.0062426	.0619419

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3590.714	78773.81	16783.88	3311.086	5050.596
Stddev	9.809	222.54	35.51	26.218	11.633
%RSD	.2731665	.2825036	.2115511	.7918190	.2303203
#1	3586.693	78931.99	16767.04	3333.747	5053.203
#2	3601.894	78870.10	16824.67	3317.142	5060.704
#3	3583.555	78519.35	16759.92	3282.371	5037.881

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

Sample Name: Q1136-13 Acquired: 3/4/2025 19:26:47 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002590**	**.0005974**	**.0003207**	**.0046598**	**.0026125**	**.0276886**
Stddev	.001429	.0016778	.0002771	.0009406	.0006214	.0043399
%RSD	55.15726	280.8410	86.40169	20.18429	23.78530	15.67389
#1	-.000945	.0023025	.0005016	.0036793	.0033295	.0264237
#2	-.003306	-.001052	.0004588	.0047458	.0022317	.0241217
#3	-.003519	.000542	.0000017	.0055545	.0022762	.0325204

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2420635**	**.0001414**	**.0024043**	**8.492583**	**-.000615**	**.0103589**
Stddev	.0022046	.0000485	.0000578	.033596	.000143	.0001282
%RSD	.9107594	34.31537	2.405426	.3955943	23.23845	1.237245
#1	.2425815	.0001848	.0023669	8.523068	-.000596	.0103413
#2	.2396460	.0000890	.0023750	8.456563	-.000482	.0104950
#3	.2439630	.0001504	.0024709	8.498118	-.000766	.0102404

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0656888**	**.6898815**	**.0650745**	**3.367595**	**.0111163**	**.0000055**
Stddev	.0013821	.0066380	.0004292	.017200	.0002751	.0001223
%RSD	2.104032	.9621902	.6594725	.5107544	2.474898	2241.878
#1	.0670547	.6908142	.0655642	3.381161	.0111447	.0000735
#2	.0642911	.6828266	.0648955	3.348249	.0108281	-.000136
#3	.0657206	.6960038	.0647639	3.373373	.0113762	.000079

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.546452**	**.0004012**	**.2979823**	**.6920148**	**.0058585**	**.1363707**
Stddev	.053397	.0004661	.0039987	.0502917	.0021050	.0022844
%RSD	1.174472	116.1797	1.341926	7.267430	35.93055	1.675151
#1	4.488941	-.000032	.2986935	.7490419	.0082734	.1372134
#2	4.555958	.000895	.2936758	.6540045	.0048907	.1381141
#3	4.594457	.000341	.3015777	.6729979	.0044115	.1337846

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

Sample Name: Q1136-13 Acquired: 3/4/2025 19:26:47 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D2 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010101	F 10.53001	3.179247	-.002146	-.001532	.0007925
Stddev	.0003028	.02425	.033897	.000212	.000629	.0005720
%RSD	29.97911	.2302845	1.066186	9.858836	41.07979	72.16970
#1	.0013552	10.53965	3.193774	-.002262	-.002203	.0006376
#2	.0008868	10.50242	3.203459	-.002276	-.001438	.0003140
#3	.0007884	10.54795	3.140508	-.001902	-.000955	.0014260

Elem	Sr4077
Units	ppm
Avg	.0583536
Stddev	.0006585
%RSD	1.128441
#1	.0584385
#2	.0576568
#3	.0589655

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3648.774	80656.75	16836.34	3377.994	5120.935
Stddev	5.938	45.37	179.10	2.797	1.703
%RSD	.1627431	.0562536	1.063753	.0827925	.0332529
#1	3655.253	80703.01	16868.74	3374.861	5122.775
#2	3643.592	80612.32	16643.25	3378.882	5120.615
#3	3647.476	80654.91	16997.02	3380.239	5119.415

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

Sample Name: Q1136-14 Acquired: 3/4/2025 19:30:52 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D4 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057961	.0012704	.0012555	-.000149	.0018046	1.069618
Stddev	.0014029	.0006928	.0004007	.000677	.0004429	.003377
%RSD	24.20369	54.53213	31.91147	456.0141	24.54407	.3156782
#1	.0050698	.0012645	.0015191	.000573	.0015878	1.069027
#2	.0074132	.0019661	.0014529	-.000247	.0023141	1.073252
#3	.0049053	.0005806	.0007945	-.000771	.0015118	1.066577

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2097282	.0000695	.0000108	7.491368	.0025304	.0012362
Stddev	.0009177	.0000512	.0000534	.030840	.0001680	.0001315
%RSD	.4375869	73.74747	496.7308	.4116677	6.640476	10.63758
#1	.2107177	.0001071	.0000625	7.526222	.0026698	.0011056
#2	.2089050	.0000902	.0000140	7.480264	.0025776	.0012345
#3	.2095617	.0000111	-.000044	7.467618	.0023438	.0013686

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0131572	2.805938	.0508097	5.317882	.0057820	-.000288
Stddev	.0016376	.010177	.0001545	.008165	.0002958	.000185
%RSD	12.44613	.3627039	.3040257	.1535463	5.116557	64.42641
#1	.0112913	2.809097	.0507896	5.325595	.0058474	-.000230
#2	.0143556	2.814161	.0506662	5.318721	.0060396	-.000138
#3	.0138248	2.794556	.0509732	5.309329	.0054589	-.000495

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.547137	.0043795	.0988095	-1.00038	.1869724	.2032238
Stddev	.098664	.0007447	.0010044	.02386	.0012746	.0011964
%RSD	1.154351	17.00399	1.016489	2.385293	.6816952	.5887248
#1	8.436844	.0037925	.0998039	-.98054	.1857957	.2045582
#2	8.627004	.0052172	.0988293	-1.02686	.1883263	.2028665
#3	8.577564	.0041289	.0977954	-.99373	.1867951	.2022468

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

Sample Name: Q1136-14 Acquired: 3/4/2025 19:30:52 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D4 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007939	F 11.06196	4.031250	-.001127	.0179961	-.000396
Stddev	.0001462	.02118	.024160	.000301	.0002445	.000716
%RSD	18.41552	.1914274	.5993111	26.73252	1.358586	180.6885
#1	.0007687	11.06430	4.059086	-.001172	.0177632	-.001048
#2	.0009510	11.08186	4.018928	-.001403	.0182508	.000370
#3	.0006619	11.03971	4.015735	-.000806	.0179742	-.000510

Elem	Sr4077
Units	ppm
Avg	.0593078
Stddev	.0000944
%RSD	.1590931
#1	.0593673
#2	.0593571
#3	.0591990

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3703.463	79978.15	16788.26	3364.415	5182.310
Stddev	11.345	175.05	35.21	8.156	14.244
%RSD	.3063230	.2188750	.2097121	.2424249	.2748634
#1	3714.696	79837.10	16789.95	3361.626	5197.562
#2	3703.684	80174.06	16822.60	3358.019	5180.017
#3	3692.010	79923.29	16752.24	3373.600	5169.351

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

Sample Name: Q1136-15 Acquired: 3/4/2025 19:34:56 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003330**	**.0013357**	**-.000839**	**-.001652**	**.0008571**	**.0603679**
Stddev	.0009668	.0007350	.000669	.000857	.0019597	.0023347
%RSD	290.2918	55.02826	79.77224	51.85808	228.6502	3.867411
#1	.0013892	.0013034	-.000485	-.001294	-.000940	.0612233
#2	.0001181	.0020864	-.000421	-.002629	.002946	.0621542
#3	-.000508	.0006174	-.001611	-.001032	.000565	.0577261

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2630779**	**-.000000**	**-.000016**	**8.452840**	**-.000513**	**.0019757**
Stddev	.0016260	.000066	.000026	.017793	.000061	.0002070
%RSD	.6180596	14735.20	159.9533	.2104973	11.83454	10.47822
#1	.2632177	-.000075	-.000046	8.453768	-.000583	.0017391
#2	.2646294	.000023	-.000007	8.470151	-.000486	.0021234
#3	.2613864	.000051	.000004	8.434601	-.000471	.0020646

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0017470**	**.1094741**	**.0964879**	**3.867381**	**.0022221**	**-.000052**
Stddev	.0009952	.0039698	.0006726	.012746	.0002849	.000575
%RSD	56.96715	3.626223	.6970893	.3295781	12.82251	1104.222
#1	.0028887	.1134674	.0962764	3.853819	.0018962	.000415
#2	.0012900	.1094268	.0972408	3.869210	.0023462	.000123
#3	.0010624	.1055282	.0959464	3.879113	.0024240	-.000694

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.469406**	**.0007492**	**.0813499**	**-.823950**	**.0072698**	**.1061806**
Stddev	.336697	.0014919	.0005661	.021036	.0019714	.0006337
%RSD	6.156000	199.1302	.6959479	2.553020	27.11713	.5968490
#1	5.093243	-.000917	.0811117	-.803037	.0072798	.1054729
#2	5.742579	.001960	.0819963	-.845106	.0092362	.1063733
#3	5.572396	.001205	.0809418	-.823708	.0052935	.1066957

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

Sample Name: Q1136-15 Acquired: 3/4/2025 19:34:56 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8C3 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005139	F 10.03026	6.152652	-.001021	.0000683	.0057976
Stddev	.0003043	.03862	.006148	.000242	.0001574	.0000914
%RSD	59.20501	.3850758	.0999238	23.68396	230.4354	1.576269
#1	.0008100	10.03273	6.146440	-.001088	-.000045	.0057221
#2	.0005296	9.99046	6.158734	-.000753	.000002	.0058992
#3	.0002021	10.06759	6.152781	-.001222	.000248	.0057715

Elem	Sr4077
Units	ppm
Avg	.0609153
Stddev	.0004206
%RSD	.6903909
#1	.0605319
#2	.0613651
#3	.0608488

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3634.106	79555.21	16193.22	3347.066	5113.900
Stddev	13.702	246.97	25.39	8.250	19.326
%RSD	.3770471	.3104424	.1567900	.2464827	.3779055
#1	3646.750	79837.94	16207.96	3343.410	5133.031
#2	3636.022	79381.57	16207.81	3341.276	5114.284
#3	3619.547	79446.11	16163.91	3356.513	5094.385

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

Sample Name: Q1136-17 Acquired: 3/4/2025 19:39:02 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D5 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003028**	**-.000147**	**-.000499**	**-.000134**	**.0021223**	**-.014116**
Stddev	.0021310	.001477	.000477	.001959	.0014667	.008859
%RSD	703.8749	1004.532	95.60062	1456.193	69.10707	62.75913
#1	.0026569	-.001618	-.000891	-.000788	.0020261	-.021724
#2	-.001494	.001337	.000032	.002067	.0036347	-.016235
#3	-.000254	-.000161	-.000639	-.001683	.0007061	-.004390

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2910617**	**.0000788**	**-.000039**	**29.35032**	**-.000762**	**.0005915**
Stddev	.0013003	.0000565	.000030	.07787	.000346	.0000754
%RSD	.4467335	71.71707	77.56951	.2653023	45.45238	12.75166
#1	.2904389	.0000757	-.000005	29.40769	-.000367	.0006783
#2	.2925562	.0001368	-.000050	29.38158	-.000904	.0005424
#3	.2901900	.0000239	-.000062	29.26167	-.001015	.0005537

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0022121**	**.0241866**	**.4877495**	**7.918821**	**.0033753**	**-.000062**
Stddev	.0011619	.0030110	.0020221	.032159	.0003771	.000132
%RSD	52.52143	12.44921	.4145685	.4061078	11.17279	212.1612
#1	.0021721	.0275854	.4881897	7.924985	.0032817	-.000097
#2	.0010708	.0231218	.4895152	7.947451	.0037904	.000084
#3	.0033935	.0218527	.4855436	7.884026	.0030538	-.000173

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.477987**	**.0012114**	**.0562989**	**-.609224**	**.0021764**	**.0709834**
Stddev	.117159	.0008006	.0016066	.014427	.0014418	.0015315
%RSD	2.616321	66.08712	2.853626	2.368098	66.24870	2.157512
#1	4.348406	.0010892	.0558702	-.595636	.0029861	.0697373
#2	4.576433	.0004790	.0549501	-.607672	.0005117	.0705198
#3	4.509122	.0020661	.0580763	-.624364	.0030314	.0726931

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

Sample Name: Q1136-17 Acquired: 3/4/2025 19:39:02 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8D5 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0203371	F 11.46782	2.117003	-.002682	-.001707	-.000624
Stddev	.0004045	.01876	.002905	.000341	.000316	.000529
%RSD	1.988830	.1636050	.1372302	12.71063	18.54292	84.70280
#1	.0200090	11.48220	2.119210	-.002342	-.001931	-.001196
#2	.0202132	11.44660	2.118087	-.002681	-.001844	-.000525
#3	.0207890	11.47467	2.113712	-.003024	-.001345	-.000152

Elem	Sr4077
Units	ppm
Avg	.2977080
Stddev	.0015046
%RSD	.5054073
#1	.2970380
#2	.2994312
#3	.2966547

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3552.419	77598.43	16608.86	3275.442	4921.260
Stddev	15.107	146.24	87.64	2.191	15.713
%RSD	.4252697	.1884594	.5276568	.0669038	.3192926
#1	3567.467	77725.86	16648.48	3276.511	4930.480
#2	3552.538	77438.76	16669.69	3272.921	4930.184
#3	3537.253	77630.66	16508.41	3276.894	4903.117

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

Sample Name: Q1106-01 Acquired: 3/4/2025 19:43:07 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004271**	**-.003353**	**.0050829**	**-.011939**	**.0007727**	**-.099465**	**2.107845**
Stddev	.002103	.001782	.0007062	.003046	.0016331	.006601	.014464
%RSD	49.24231	53.14941	13.89421	25.50996	211.3543	6.636130	.6862131
#1	-.002772	-.003599	.0058887	-.009901	.0005444	-.097476	2.099629
#2	-.006676	-.005000	.0045714	-.010476	-.000734	-.094088	2.124546
#3	-.003367	-.001461	.0047887	-.015440	.002508	-.106832	2.099358

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000010**	**-.000110**	**722.6976**	**.0205767**	**-.000887**	**.0011876**	**.0042759**
Stddev	.000029	.000083	2.1457	.0004413	.000134	.0018698	.0048198
%RSD	279.3211	75.75232	.2969045	2.144699	15.07125	157.4493	112.7186
#1	.000017	-.000169	720.3966	.0210615	-.001017	.0033448	.0020916
#2	-.000040	-.000015	724.6438	.0201982	-.000893	.0000328	.0009350
#3	-.000007	-.000147	723.0524	.0204705	-.000750	.0001851	.0098011

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0017754**	**.0110386**	**-.000303**	**-.000933**	**31.27681**	**.0001935**	**.0682801**
Stddev	.0002200	.0118973	.000162	.000371	.20171	.0010755	.0017270
%RSD	12.38918	107.7788	53.47745	39.78553	.6449217	555.8220	2.529232
#1	.0016431	.0246204	-.000483	-.000505	31.41211	.0001980	.0684049
#2	.0020293	.0060357	-.000257	-.001131	31.04497	-.000884	.0664941
#3	.0016538	.0024598	-.000169	-.001163	31.37336	.001267	.0699413

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**130.2680**	**-.000924**	**.0321197**	**.0208497**	**4.385763**	**.1830852**	**-.005103**
Stddev	.9168	.001644	.0004556	.0002359	.007858	.0010077	.000812
%RSD	.7037441	177.8768	1.418455	1.131589	.1791768	.5503907	15.90917
#1	129.5448	.000973	.0316830	.0210847	4.394219	.1833582	-.006027
#2	131.2991	-.001823	.0320840	.0206128	4.378685	.1819692	-.004774
#3	129.9602	-.001922	.0325921	.0208515	4.384385	.1839283	-.004507

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

Sample Name: Q1106-01 Acquired: 3/4/2025 19:43:07 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G3 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.023459	.3140041	6.251195
Stddev	.001427	.0016975	.032967
%RSD	6.081217	.5406059	.5273752
#1	-.022960	.3127379	6.215872
#2	-.025068	.3159330	6.256569
#3	-.022348	.3133415	6.281146

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3097.716	68985.47	15589.14	2882.420	3895.725
Stddev	4.530	248.22	44.61	16.984	6.589
%RSD	.1462436	.3598091	.2861291	.5892312	.1691263
#1	3102.890	69261.95	15581.60	2892.542	3902.609
#2	3095.793	68781.82	15637.03	2862.812	3889.478
#3	3094.464	68912.64	15548.78	2891.907	3895.088

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

Sample Name: Q1106-02 Acquired: 3/4/2025 19:47:30 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G5 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001748**	**.0000969**	**.0001022**	**-.001288**	**.0015906**	**.2486769**
Stddev	.000619	.0004647	.0009514	.003474	.0011555	.0033576
%RSD	35.43160	479.6062	930.8665	269.6379	72.64603	1.350174
#1	-.002055	-.000309	-.000233	-.000588	.0002576	.2525490
#2	-.002154	-.000004	.001176	-.005060	.0023083	.2469091
#3	-.001035	.000604	-.000636	.001782	.0022058	.2465726

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2293876**	**-.000030**	**-.000020**	**11.78678**	**-.000106**	**.0013455**
Stddev	.0014807	.000057	.000027	.02480	.000129	.0001138
%RSD	.6455147	185.9367	132.6845	.2103896	122.1184	8.456477
#1	.2299487	-.000095	-.000039	11.81286	-.000050	.0014567
#2	.2305058	-.000006	.000011	11.78399	-.000013	.0012293
#3	.2277083	.000009	-.000033	11.76350	-.000253	.0013507

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0040021**	**.5225496**	**.6097828**	**5.216223**	**.0012293**	**-.000153**
Stddev	.0006723	.0041291	.0045502	.045682	.0003131	.000250
%RSD	16.79825	.7901745	.7461935	.8757731	25.47204	162.9152
#1	.0032644	.5252347	.6134856	5.253685	.0008695	.000071
#2	.0041615	.5246191	.6111595	5.229654	.0013787	-.000422
#3	.0045803	.5177951	.6047032	5.165331	.0014398	-.000108

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.109301**	**.0022122**	**.0866162**	**-.375954**	**.0271043**	**.0915949**
Stddev	.112089	.0008886	.0006888	.012704	.0020746	.0013028
%RSD	1.834732	40.16878	.7952451	3.379258	7.654264	1.422405
#1	6.215967	.0021083	.0866158	-.366486	.0292189	.0909179
#2	6.119458	.0013801	.0873053	-.370984	.0270220	.0907700
#3	5.992480	.0031481	.0859276	-.390392	.0250721	.0930969

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

Sample Name: Q1106-02 Acquired: 3/4/2025 19:47:30 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G5 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0181185	F 11.74983	2.861912	-.002112	.0145089	-.002118
Stddev	.0001375	.02647	.008169	.000198	.0002047	.000150
%RSD	.7591151	.2252992	.2854322	9.371588	1.410634	7.079231
#1	.0182762	11.73602	2.871337	-.002312	.0143092	-.001972
#2	.0180557	11.73312	2.857523	-.002107	.0147182	-.002272
#3	.0180235	11.78035	2.856875	-.001916	.0144995	-.002109

Elem	Sr4077
Units	ppm
Avg	.1639635
Stddev	.0006379
%RSD	.3890762
#1	.1645109
#2	.1641167
#3	.1632629

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3622.611	81716.66	16961.12	3384.483	5056.483
Stddev	2.723	20.29	67.63	7.248	7.836
%RSD	.0751669	.0248321	.3987567	.2141570	.1549596
#1	3623.782	81733.15	17023.42	3381.704	5057.235
#2	3624.553	81694.00	16970.76	3392.709	5063.915
#3	3619.499	81722.83	16889.19	3379.036	5048.298

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

Sample Name: Q1106-03 Acquired: 3/4/2025 19:51:34 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001395**	**.0013484**	**.0000302**	**-.001768**	**.0008529**	**.3694371**
Stddev	.000456	.0005078	.0011020	.001437	.0012087	.0048866
%RSD	32.69087	37.66221	3654.479	81.26339	141.7213	1.322722
#1	-.000884	.0007860	-.001048	-.002380	.0000774	.3651511
#2	-.001540	.0014857	-.000016	-.002797	.0002357	.3747584
#3	-.001761	.0017735	.001154	-.000127	.0022456	.3684019

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2212465**	**-.000038**	**-.000086**	**119.4155**	**.0237495**	**-.000119**
Stddev	.0007320	.000019	.000066	.0570	.0002106	.000145
%RSD	.3308655	49.01000	76.33624	.0477276	.8869007	121.5753
#1	.2208723	-.000019	-.000019	119.4686	.0235143	-.000234
#2	.2207773	-.000056	-.000151	119.3553	.0238132	-.000168
#3	.2220900	-.000041	-.000089	119.4227	.0239209	.000044

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0024956**	**.0038056**	**.0033956**	**.0329474**	**.0001594**	**-.000521**
Stddev	.0009594	.0033156	.0001567	.0049216	.0003009	.000043
%RSD	38.44356	87.12456	4.615687	14.93786	188.7327	8.196970
#1	.0015073	.0017370	.0032977	.0354414	.0004755	-.000543
#2	.0034233	.0076299	.0035764	.0272780	-.000123	-.000472
#3	.0025563	.0020499	.0033127	.0361227	.000126	-.000548

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.742430**	**.0031925**	**.0252846**	**-.084738**	**.0034212**	**.0289601**
Stddev	.120277	.0006405	.0007272	.019224	.0009930	.0003591
%RSD	3.213875	20.06212	2.876203	22.68587	29.02544	1.240119
#1	3.701866	.0038676	.0260718	-.092732	.0044795	.0286509
#2	3.647679	.0031165	.0246378	-.098674	.0032744	.0288752
#3	3.877744	.0025934	.0251442	-.062807	.0025098	.0293540

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

Sample Name: Q1106-03 Acquired: 3/4/2025 19:51:34 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0515143	F 11.98998	3.379312	-.003692	-.005511	.0023666
Stddev	.0002650	.01070	.014264	.001022	.000383	.0004007
%RSD	.5145041	.0892380	.4220969	27.68112	6.955508	16.93163
#1	.0514521	12.00229	3.394611	-.004862	-.005444	.0028241
#2	.0512859	11.98472	3.366379	-.002973	-.005924	.0021977
#3	.0518049	11.98292	3.376945	-.003242	-.005166	.0020780

Elem	Sr4077
Units	ppm
Avg	.2687582
Stddev	.0010141
%RSD	.3773154
#1	.2684092
#2	.2699006
#3	.2679646

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3481.474	76973.66	16486.48	3174.475	4734.238
Stddev	1.931	74.07	52.63	10.235	1.285
%RSD	.0554548	.0962215	.3192400	.3224301	.0271496
#1	3479.685	77029.28	16483.41	3186.122	4734.181
#2	3483.520	77002.11	16540.58	3166.912	4732.983
#3	3481.215	76889.59	16435.45	3170.390	4735.551

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

Sample Name: Q1106-04 Acquired: 3/4/2025 19:55:40 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000684**	**.0007024**	**-.000309**	**-.002791**	**.0014474**	**.5687996**
Stddev	.002170	.0006662	.001071	.002700	.0021055	.0055723
%RSD	317.3069	94.84145	346.4115	96.74766	145.4754	.9796605
#1	.000664	.0006753	.000914	-.005805	.0011815	.5636406
#2	-.003188	.0013818	-.001079	-.000592	-.000513	.5747091
#3	.000471	.0000502	-.000763	-.001977	.003673	.5680492

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1576696**	**.0000097**	**-.000025**	**76.23037**	**.0180372**	**-.000046**
Stddev	.0008431	.0001053	.000010	.08582	.0002869	.000204
%RSD	.5347326	1086.643	39.24251	.1125760	1.590513	440.9069
#1	.1586415	-.000062	-.000035	76.32834	.0177235	.000187
#2	.1572330	.000131	-.000026	76.16851	.0181020	-.000190
#3	.1571343	-.000040	-.000015	76.19427	.0182861	-.000136

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0032182**	**.0071554**	**.0002900**	**.0335900**	**.0001217**	**-.000206**
Stddev	.0017943	.0023359	.0001031	.0100855	.0003952	.000141
%RSD	55.75286	32.64489	35.55378	30.02538	324.6821	68.27618
#1	.0036604	.0064597	.0003575	.0371981	.0005595	-.000332
#2	.0012442	.0052463	.0001713	.0413753	.0000146	-.000231
#3	.0047501	.0097600	.0003410	.0221967	-.000209	-.000055

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.577863**	**.0076089**	**.0216259**	**.1989980**	**.0044906**	**.0323969**
Stddev	.178132	.0006357	.0008195	.0036096	.0011501	.0008664
%RSD	4.978726	8.354927	3.789578	1.813862	25.61248	2.674367
#1	3.724045	.0071875	.0219200	.1970098	.0040045	.0333371
#2	3.379456	.0072991	.0222579	.2031645	.0058039	.0322230
#3	3.630088	.0083401	.0207000	.1968197	.0036633	.0316307

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

Sample Name: Q1106-04 Acquired: 3/4/2025 19:55:40 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6D Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0442660	F 12.61940	6.256289	-.003623	-.003942	-.000359
Stddev	.0002800	.04276	.010881	.000424	.000386	.000361
%RSD	.6325973	.3388210	.1739246	11.71429	9.798237	100.5045
#1	.0442692	12.64105	6.268687	-.004077	-.003572	-.000775
#2	.0445444	12.57015	6.248324	-.003556	-.003911	-.000175
#3	.0439843	12.64701	6.251856	-.003236	-.004343	-.000127

Elem	Sr4077
Units	ppm
Avg	.1921196
Stddev	.0005215
%RSD	.2714385
#1	.1922096
#2	.1915590
#3	.1925903

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3548.968	78162.68	16545.86	3244.160	4894.859
Stddev	5.391	102.74	18.52	16.532	14.164
%RSD	.1519096	.1314458	.1119325	.5095998	.2893580
#1	3553.395	78224.91	16563.00	3245.064	4899.341
#2	3550.544	78219.04	16548.36	3260.222	4906.239
#3	3542.964	78044.09	16526.22	3227.194	4878.997

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

Sample Name: Q1106-03LX5 Acquired: 3/4/2025 19:59:46 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6L Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000510**	**-.000650**	**.0022433**	**-.001121**	**.0006563**	**.1101030**	**.0306254**
Stddev	.001106	.001795	.0003239	.000430	.0011858	.0057640	.0006834
%RSD	216.8011	275.9166	14.43782	38.37760	180.6917	5.235102	2.231444
#1	-.001650	-.002555	.0025979	-.001583	.0016078	.1110967	.0309072
#2	-.000440	-.000406	.0021688	-.000732	-.000672	.1039068	.0298462
#3	.000559	.001010	.0019631	-.001048	.001033	.1153056	.0311229

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000007**	**-.000067**	**15.00038**	**.0036632**	**.0002267**	**.0009709**	**.0035069**
Stddev	.0000369	.000027	.05681	.0001722	.0002693	.0005849	.0012815
%RSD	5366.833	40.08511	.3787150	4.701390	118.7921	60.24882	36.54197
#1	-.000016	-.000056	15.02709	.0036323	.0005279	.0005960	.0041145
#2	.000043	-.000097	15.03892	.0035086	.0000091	.0006718	.0020346
#3	-.000025	-.000047	14.93514	.0038489	.0001432	.0016449	.0043717

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004035**	**-.002177**	**.0001692**	**-.000264**	**.9230137**	**.0006769**	**.0057797**
Stddev	.0000537	.007241	.0001758	.000104	.0862887	.0007554	.0012914
%RSD	13.30382	332.6403	103.8675	39.55612	9.348580	111.6009	22.34362
#1	.0003582	-.010181	-.000033	-.000148	.8233928	.0005040	.0046590
#2	.0003895	-.000267	.000254	-.000350	.9712466	.0015037	.0071919
#3	.0004628	.003918	.000287	-.000294	.9744017	.0000229	.0054881

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0083948**	**.0010322**	**.0027852**	**.0088586**	**2.451294**	**1.233452**	**-.001321**
Stddev	.0129668	.0016481	.0002329	.0002316	.006977	.003767	.000345
%RSD	154.4630	159.6697	8.362680	2.614917	.2846113	.3053700	26.08554
#1	.0206325	-.000071	.0026799	.0087706	2.448015	1.231599	-.000932
#2	-.005195	.002927	.0026234	.0091213	2.446561	1.230971	-.001442
#3	.009747	.000241	.0030521	.0086838	2.459306	1.237787	-.001588

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

Sample Name: Q1106-03LX5 Acquired: 3/4/2025 19:59:46 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6L Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001422	-.000241	.0388660
Stddev	.000602	.000262	.0002495
%RSD	42.37472	108.6760	.6419427
#1	-.001290	-.000165	.0390440
#2	-.002079	-.000533	.0389732
#3	-.000896	-.000026	.0385808

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3617.083	78590.53	16507.51	3304.266	5039.591
Stddev	8.069	202.88	37.26	15.066	5.982
%RSD	.2230860	.2581482	.2257153	.4559448	.1186926
#1	3622.531	78410.03	16527.03	3287.797	5043.087
#2	3620.905	78551.45	16530.96	3307.644	5043.001
#3	3607.813	78810.11	16464.55	3317.355	5032.684

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

Sample Name: Q1106-05 Acquired: 3/4/2025 20:03:53 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6S Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0449262	.0553658	.0180667	.0975554	.1061907	1.830659
Stddev	.0021731	.0020274	.0014191	.0016708	.0017710	.007645
%RSD	4.836943	3.661898	7.854676	1.712626	1.667752	.4175968
#1	.0473955	.0550172	.0196452	.0994701	.1068481	1.831500
#2	.0433053	.0575449	.0168967	.0968031	.1041850	1.837849
#3	.0440780	.0535352	.0176582	.0963931	.1075391	1.822629

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.035941	.0523836	.0483010	31.77856	.2230342	.4861064
Stddev	.010959	.0001637	.0001225	.09792	.0006988	.0002926
%RSD	.5383011	.3124681	.2535352	.3081178	.3133177	.0601911
#1	2.043151	.0525089	.0481756	31.77813	.2233175	.4860164
#2	2.041343	.0521984	.0484203	31.87669	.2235469	.4858694
#3	2.023329	.0524435	.0483070	31.68086	.2222382	.4864334

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2572586	.9976160	.8226300	8.901739	.5155940	.0381078
Stddev	.0009331	.0038839	.0034823	.003521	.0010510	.0001415
%RSD	.3627113	.3893225	.4233175	.0395584	.2038350	.3713818
#1	.2563415	1.000134	.8250887	8.897761	.5146825	.0381196
#2	.2572273	.993143	.8241562	8.902997	.5153560	.0382430
#3	.2582070	.999571	.8186452	8.904458	.5167436	.0379607

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.063413	.5220936	.5133842	1.533253	.0057086	.0676193
Stddev	.111766	.0034098	.0045622	.018033	.0002583	.0003088
%RSD	2.750550	.6530934	.8886600	1.176129	4.525046	.4567046
#1	4.188803	.5202903	.5129886	1.513461	.0057758	.0679480
#2	3.974267	.5199641	.5090327	1.537544	.0059267	.0675748
#3	4.027168	.5260263	.5181314	1.548753	.0054234	.0673352

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

Sample Name: Q1106-05 Acquired: 3/4/2025 20:03:53 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8G6S Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0278492	F 14.89283	1.589699	-.002538	-.003023	.0008075
Stddev	.0000786	.05491	.009868	.000804	.000701	.0002316
%RSD	.2822797	.3686755	.6207643	31.67673	23.18772	28.68473
#1	.0279067	14.84672	1.593081	-.003398	-.003636	.0010657
#2	.0277596	14.95357	1.578584	-.001806	-.003176	.0007386
#3	.0278813	14.87818	1.597432	-.002410	-.002259	.0006181

Elem	Sr4077
Units	ppm
Avg	.2502540
Stddev	.0010248
%RSD	.4095186
#1	.2502092
#2	.2513005
#3	.2492523

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3572.615	77942.07	16542.65	3264.401	4957.686
Stddev	7.901	111.60	69.33	18.041	6.844
%RSD	.2211653	.1431772	.4191171	.5526673	.1380567
#1	3572.339	78038.94	16564.76	3285.214	4963.104
#2	3580.650	77820.04	16598.23	3254.776	4959.961
#3	3564.855	77967.24	16464.96	3253.213	4949.994

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

Sample Name: Q1106-06 Acquired: 3/4/2025 20:07:52 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H0 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007137**	**-.000145**	**.0016760**	**-.000050**	**.0018953**	**2.129688**
Stddev	.0006767	.000317	.0016236	.001663	.0016312	.017778
%RSD	94.81217	219.2743	96.87412	3315.635	86.06546	.8347580
#1	.0004924	-.000507	.0028317	-.001584	.0001874	2.150164
#2	.0001754	-.000015	-.000180	-.000284	.0034371	2.118188
#3	.0014734	.000087	.002377	.001717	.0020614	2.120712

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2622759**	**.0000826**	**.0001618**	**15.28822**	**.0053665**	**.0013742**
Stddev	.0005232	.0000962	.0000128	.02835	.0001843	.0001776
%RSD	.1994642	116.4297	7.918236	.1854577	3.433774	12.92614
#1	.2627945	.0000032	.0001527	15.32046	.0054329	.0015380
#2	.2622849	.0000550	.0001765	15.26714	.0051582	.0011854
#3	.2617483	.0001895	.0001562	15.27707	.0055083	.0013994

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0121358**	**3.995950**	**.0725177**	**6.536069**	**.0020397**	**-.000187**
Stddev	.0001549	.025489	.0001490	.028828	.0001571	.000212
%RSD	1.276320	.6378825	.2054833	.4410586	7.699835	113.5413
#1	.0123144	4.024905	.0725653	6.568971	.0019029	-.000021
#2	.0120379	3.986044	.0726372	6.515245	.0022112	-.000425
#3	.0120550	3.976900	.0723508	6.523990	.0020050	-.000113

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.32266**	**.0127612**	**.1190200**	**-.599903**	**.1412918**	**.1653304**
Stddev	.06127	.0009252	.0018272	.053254	.0028575	.0012515
%RSD	.4278002	7.250239	1.535229	8.877059	2.022449	.7569878
#1	14.35542	.0129620	.1187380	-.626440	.1445024	.1639574
#2	14.36059	.0135695	.1173501	-.634674	.1390272	.1664073
#3	14.25198	.0117521	.1209718	-.538595	.1403458	.1656264

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

Sample Name: Q1106-06 Acquired: 3/4/2025 20:07:52 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H0 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0242357	F 13.32944	5.934358	-.001969	.1075997	-.001879
Stddev	.0002048	.03752	.007868	.000978	.0005781	.000317
%RSD	.8450901	.2814521	.1325893	49.68479	.5372427	16.86895
#1	.0241780	13.36030	5.929314	-.002325	.1071249	-.001590
#2	.0240660	13.28768	5.930335	-.002719	.1074307	-.002218
#3	.0244632	13.34033	5.943424	-.000862	.1082434	-.001828

Elem	Sr4077
Units	ppm
Avg	.0967994
Stddev	.0006811
%RSD	.7036277
#1	.0975628
#2	.0965814
#3	.0962539

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3566.249	78292.97	16907.90	3283.502	4913.726
Stddev	10.254	186.18	82.46	6.663	13.430
%RSD	.2875357	.2377993	.4877085	.2029285	.2733183
#1	3573.214	78116.98	16992.57	3290.429	4924.240
#2	3571.058	78487.89	16903.26	3282.937	4918.340
#3	3554.474	78274.05	16827.85	3277.139	4898.596

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

Sample Name: Q1106-07 Acquired: 3/4/2025 20:11:55 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0085101**	**.0003042**	**.0047653**	**-.001748**	**.0030367**	**5.292980**
Stddev	.0018819	.0015898	.0001526	.002301	.0013763	.021111
%RSD	22.11374	522.5911	3.202429	131.6135	45.32399	.3988452
#1	.0068011	-.001445	.0048732	-.003014	.0044409	5.284044
#2	.0082023	.001661	.0045907	-.003139	.0016900	5.317089
#3	.0105270	.000697	.0048319	.000908	.0029791	5.277807

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3383171**	**.0002338**	**.0002073**	**12.93730**	**.0249348**	**.0045851**
Stddev	.0021740	.0000775	.0000221	.03798	.0001445	.0001122
%RSD	.6425979	33.15762	10.65752	.2935971	.5796411	2.447633
#1	.3366570	.0003232	.0001863	12.94002	.0249133	.0046727
#2	.3407779	.0001864	.0002304	12.97385	.0248022	.0046239
#3	.3375164	.0001916	.0002052	12.89803	.0250889	.0044586

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0444571**	**10.27491**	**.3552002**	**6.653912**	**.0070433**	**-.000233**
Stddev	.0010988	.05101	.0018605	.013289	.0001600	.000054
%RSD	2.471596	.4964228	.5237948	.1997111	2.271246	23.06047
#1	.0456142	10.25776	.3536471	6.657020	.0071756	-.000263
#2	.0434278	10.33228	.3572622	6.665372	.0068655	-.000266
#3	.0443294	10.23468	.3546913	6.639345	.0070889	-.000171

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.19245**	**.0479253**	**.3031333**	**1.112054**	**.3267381**	**.3032523**
Stddev	.24429	.0011244	.0021759	.040881	.0021726	.0011832
%RSD	1.851710	2.346262	.7177899	3.676144	.6649341	.3901836
#1	12.99324	.0466314	.3008516	1.138254	.3247039	.3026160
#2	13.46500	.0484788	.3051850	1.132960	.3264837	.3025233
#3	13.11910	.0486657	.3033635	1.064948	.3290267	.3046175

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

Sample Name: Q1106-07 Acquired: 3/4/2025 20:11:55 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H1 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067777	F 12.62374	9.787744	-.001157	.4060755	-.000074
Stddev	.0002101	.04377	.029967	.000739	.0009129	.000616
%RSD	3.100022	.3467611	.3061637	63.84146	.2248115	838.2384
#1	.0066123	12.67355	9.782692	-.001995	.4052802	-.000689
#2	.0070141	12.59136	9.760625	-.000600	.4058740	.000544
#3	.0067068	12.60632	9.819916	-.000877	.4070723	-.000076

Elem	Sr4077
Units	ppm
Avg	.1248853
Stddev	.0009883
%RSD	.7913844
#1	.1251749
#2	.1256965
#3	.1237845

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3633.839	78450.31	16590.63	3267.731	5018.867
Stddev	4.624	76.28	115.45	6.087	1.743
%RSD	.1272516	.0972389	.6958523	.1862890	.0347353
#1	3634.227	78362.23	16550.33	3265.371	5016.989
#2	3638.256	78495.29	16720.82	3274.645	5020.433
#3	3629.032	78493.41	16500.73	3263.177	5019.179

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

Sample Name: Q1106-08 Acquired: 3/4/2025 20:15:56 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0684677**	**.0001786**	**.0028515**	**.0002712**	**.0014985**	**.1582025**
Stddev	.0016377	.0020245	.0002217	.0022754	.0010963	.0011531
%RSD	2.391935	1133.414	7.775355	839.1046	73.15524	.7289091
#1	.0700692	.0016754	.0028410	-.002184	.0025330	.1590250
#2	.0685378	-.002125	.0026353	.000689	.0016131	.1586982
#3	.0667961	.000985	.0030783	.002309	.0003495	.1568844

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1965261**	**-.000008**	**.0000592**	**30.33147**	**.0021495**	**.0019592**
Stddev	.0004250	.000054	.0000525	.01824	.0001706	.0000470
%RSD	.2162365	640.3300	88.59946	.0601224	7.938031	2.397405
#1	.1964117	.000047	.0000043	30.31708	.0021350	.0019544
#2	.1961701	-.000012	.0001088	30.32534	.0023269	.0020085
#3	.1969966	-.000060	.0000646	30.35198	.0019866	.0019149

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0084905**	**1.074415**	**.2811776**	**22.98931**	**.0040710**	**-.000257**
Stddev	.0009918	.004595	.0013614	.04170	.0001800	.000211
%RSD	11.68125	.4276924	.4841706	.1813716	4.422272	82.09331
#1	.0089353	1.074108	.2817270	23.02299	.0042770	-.000489
#2	.0073542	1.069981	.2796274	23.00226	.0039436	-.000078
#3	.0091820	1.079156	.2821785	22.94267	.0039925	-.000203

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.051162**	**.0036266**	**.2133471**	**.3711532**	**.0524884**	**.2032105**
Stddev	.181216	.0006385	.0033832	.0603142	.0030889	.0004358
%RSD	2.250812	17.60577	1.585750	16.25049	5.884889	.2144565
#1	7.843181	.0033207	.2106971	.3569315	.0557284	.2031245
#2	8.175084	.0043606	.2171578	.3192208	.0521599	.2036829
#3	8.135222	.0031987	.2121863	.4373074	.0495769	.2028242

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

Sample Name: Q1106-08 Acquired: 3/4/2025 20:15:56 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H2 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059589	F 56.68751	1.124207	-.002971	.0121563	-.002222
Stddev	.0001824	.13019	.008601	.000198	.0002353	.000805
%RSD	3.061249	.2296674	.7651008	6.666042	1.935433	36.25012
#1	.0057631	56.58500	1.123331	-.003139	.0121913	-.001780
#2	.0061240	56.83400	1.133213	-.002752	.0123720	-.001735
#3	.0059895	56.64355	1.116077	-.003021	.0119054	-.003152

Elem	Sr4077
Units	ppm
Avg	.4389643
Stddev	.0016901
%RSD	.3850211
#1	.4393528
#2	.4371138
#3	.4404264

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3623.522	78858.76	16733.87	3263.301	5018.121
Stddev	4.216	145.47	23.36	12.073	2.759
%RSD	.1163522	.1844709	.1395788	.3699615	.0549818
#1	3626.048	78816.09	16728.50	3277.231	5021.296
#2	3625.864	79020.79	16713.67	3256.822	5016.305
#3	3618.655	78739.39	16759.45	3255.851	5016.762

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

Sample Name: Q1106-09 Acquired: 3/4/2025 20:20:00 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0071398**	**.0002173**	**-.000029**	**-.001040**	**.0015146**	**.1326946**
Stddev	.0013092	.0010364	.000812	.000650	.0019784	.0037339
%RSD	18.33628	476.9567	2792.380	62.47494	130.6267	2.813921
#1	.0073488	-.000501	.000684	-.000752	.0000884	.1352336
#2	.0057386	-.000253	.000142	-.001783	.0006821	.1344430
#3	.0083318	.001405	-.000913	-.000584	.0037732	.1284073

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1470222**	**.0000370**	**.0001200**	**13.23195**	**-.000231**	**.0111362**
Stddev	.0011584	.0000420	.0000380	.01830	.000134	.0000811
%RSD	.7878714	113.4374	31.61379	.1383284	58.08259	.7281485
#1	.1478171	.0000854	.0000988	13.24960	-.000229	.0111606
#2	.1456931	.0000091	.0001638	13.21305	-.000098	.0110457
#3	.1475562	.0000166	.0000974	13.23320	-.000367	.0112023

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0079307**	**.3726357**	**.1230107**	**11.61747**	**.0154366**	**-.000104**
Stddev	.0006036	.0027318	.0006712	.02580	.0001887	.000281
%RSD	7.611044	.7330914	.5456091	.2220427	1.222224	270.4602
#1	.0076811	.3704277	.1237854	11.60102	.0155641	-.000413
#2	.0086191	.3717887	.1226045	11.64720	.0155258	.000134
#3	.0074920	.3756906	.1226423	11.60420	.0152198	-.000032

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.594824**	**.0013370**	**.1771484**	**-.240467**	**.0230603**	**.1055261**
Stddev	.071989	.0012534	.0016857	.029624	.0009063	.0003092
%RSD	.9478727	93.75099	.9515733	12.31921	3.930229	.2929765
#1	7.567759	.0019611	.1754942	-.274671	.0229833	.1052482
#2	7.540289	.0021558	.1788640	-.223715	.0221950	.1058591
#3	7.676423	-.000106	.1770869	-.223015	.0240027	.1054710

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

Sample Name: Q1106-09 Acquired: 3/4/2025 20:20:00 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H3 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015728	F 24.78102	2.628714	-.002261	.0163350	-.001601
Stddev	.0000767	.04001	.002409	.000775	.0010683	.000558
%RSD	4.875701	.1614738	.0916263	34.28133	6.539763	34.82838
#1	.0015937	24.73483	2.628472	-.001405	.0152668	-.002227
#2	.0014879	24.80336	2.631234	-.002462	.0163346	-.001422
#3	.0016369	24.80488	2.626435	-.002916	.0174034	-.001155

Elem	Sr4077
Units	ppm
Avg	.2535974
Stddev	.0007317
%RSD	.2885182
#1	.2529690
#2	.2544006
#3	.2534225

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3615.675	80148.95	16780.06	3343.642	5029.369
Stddev	9.825	80.84	25.14	10.054	10.414
%RSD	.2717390	.1008638	.1498061	.3006924	.2070702
#1	3625.972	80239.98	16808.38	3354.081	5041.368
#2	3614.649	80085.54	16771.42	3342.822	5024.061
#3	3606.402	80121.32	16760.38	3334.023	5022.678

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

Sample Name: Q1106-10 Acquired: 3/4/2025 20:24:04 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H4 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0027262**	**.0010480**	**.0010504**	**-.000799**	**.0014003**	**4.456569**
Stddev	.0008580	.0009519	.0005836	.001167	.0005659	.018656
%RSD	31.47148	90.83199	55.55892	146.1927	40.41147	.4186235
#1	.0033682	.0000354	.0016066	-.002117	.0017936	4.470255
#2	.0030586	.0011840	.0004428	-.000381	.0007518	4.435318
#3	.0017517	.0019245	.0011017	.000103	.0016555	4.464133

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3003492**	**.0001270**	**.0001201**	**9.728378**	**.0150438**	**.0032204**
Stddev	.0004499	.0000246	.0000145	.037742	.0003741	.0001071
%RSD	.1498051	19.36260	12.06475	.3879574	2.486994	3.324224
#1	.3004009	.0001046	.0001181	9.734391	.0146121	.0033313
#2	.2998756	.0001231	.0001355	9.687991	.0152460	.0032121
#3	.3007710	.0001534	.0001067	9.762753	.0152733	.0031177

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0187769**	**9.602517**	**.1592425**	**5.245061**	**.0042337**	**-.000073**
Stddev	.0009303	.049253	.0004930	.038114	.0001699	.000110
%RSD	4.954332	.5129135	.3096228	.7266684	4.012862	150.8008
#1	.0195681	9.633201	.1586828	5.269796	.0040429	-.000004
#2	.0177521	9.545706	.1594318	5.201169	.0043688	-.000015
#3	.0190104	9.628645	.1596128	5.264219	.0042893	-.000200

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.93613**	**.0274260**	**.1900426**	**-.467800**	**.2346456**	**.2269170**
Stddev	.10064	.0016843	.0013306	.027019	.0006958	.0011907
%RSD	.7221380	6.141341	.7001617	5.775756	.2965240	.5247188
#1	14.01558	.0257193	.1885901	-.492575	.2344891	.2256450
#2	13.82296	.0290870	.1912026	-.438991	.2354063	.2280049
#3	13.96986	.0274716	.1903352	-.471833	.2340414	.2271011

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

Sample Name: Q1106-10 Acquired: 3/4/2025 20:24:04 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H4 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0050301	F 12.49620	9.884043	-.001221	.2683167	-.001731
Stddev	.0000702	.03773	.037716	.000027	.0017966	.000401
%RSD	1.395172	.3019266	.3815835	2.228982	.6695640	23.16903
#1	.0050398	12.47999	9.845695	-.001235	.2668211	-.001700
#2	.0050950	12.46929	9.921093	-.001238	.2703095	-.001346
#3	.0049556	12.53933	9.885341	-.001189	.2678196	-.002146

Elem	Sr4077
Units	ppm
Avg	.0826694
Stddev	.0006546
%RSD	.7918529
#1	.0830220
#2	.0819140
#3	.0830720

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3654.718	80322.75	16986.01	3354.961	5045.897
Stddev	3.256	228.31	76.33	2.989	6.702
%RSD	.0890883	.2842383	.4493668	.0890837	.1328304
#1	3657.423	80147.88	17028.78	3352.976	5050.789
#2	3655.626	80581.04	16897.89	3353.508	5048.645
#3	3651.104	80239.34	17031.37	3358.398	5038.257

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

Sample Name: Q1106-11 Acquired: 3/4/2025 20:28:04 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H5 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0101754**	**.0002552**	**.0012206**	**-.000817**	**.0021299**	**1.125518**
Stddev	.0012240	.0002621	.0004275	.003076	.0010153	.011546
%RSD	12.02931	102.7029	35.02522	376.4149	47.66850	1.025878
#1	.0092437	.0002714	.0007282	-.003899	.0011117	1.133239
#2	.0115616	.0005087	.0014975	.002253	.0021357	1.131070
#3	.0097207	-.000015	.0014361	-.000806	.0031423	1.112244

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1969393**	**.0000080**	**.0000417**	**11.15573**	**.0024485**	**.0013340**
Stddev	.0013925	.0000044	.0000743	.02267	.0001569	.0000637
%RSD	.7070506	55.12125	178.1383	.2032309	6.406500	4.771555
#1	.1967693	.0000065	-.000043	11.16846	.0024736	.0013037
#2	.1984089	.0000045	.000093	11.16917	.0025913	.0014072
#3	.1956396	.0000129	.000075	11.12955	.0022806	.0012912

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0163329**	**2.414590**	**.0464482**	**9.773104**	**.0023571**	**-.000172**
Stddev	.0000340	.006741	.0000313	.038289	.0001890	.000217
%RSD	.2082195	.2791586	.0674663	.3917792	8.019046	126.3577
#1	.0163594	2.417287	.0464267	9.789233	.0025462	-.000409
#2	.0163447	2.419565	.0464336	9.800690	.0021681	.000017
#3	.0162946	2.406919	.0464841	9.729389	.0023569	-.000123

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.41920**	**.0137780**	**.1514060**	**-.260342**	**.0649384**	**.1702381**
Stddev	.06410	.0010010	.0009368	.044141	.0010265	.0007593
%RSD	.4776976	7.265033	.6187525	16.95498	1.580731	.4460008
#1	13.34718	.0127170	.1524608	-.260761	.0653954	.1694345
#2	13.44037	.0139113	.1510862	-.215993	.0637628	.1709435
#3	13.47003	.0147056	.1506709	-.304272	.0656570	.1703363

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

Sample Name: Q1106-11 Acquired: 3/4/2025 20:28:04 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H5 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0066810	F 20.47791	4.187005	-.001629	.0639014	-.001420
Stddev	.0002211	.03548	.019851	.000695	.0005236	.000452
%RSD	3.309795	.1732705	.4741124	42.69055	.8194198	31.85422
#1	.0064331	20.51024	4.203206	-.001427	.0639068	-.000953
#2	.0067520	20.43995	4.164861	-.001057	.0644223	-.001857
#3	.0068579	20.48355	4.192947	-.002403	.0633751	-.001451

Elem	Sr4077
Units	ppm
Avg	.2010470
Stddev	.0004522
%RSD	.2249244
#1	.2010798
#2	.2014819
#3	.2005793

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3614.940	79692.73	16865.20	3324.134	5024.942
Stddev	2.485	91.95	58.50	6.353	5.039
%RSD	.0687400	.1153788	.3468972	.1911262	.1002827
#1	3612.255	79681.49	16855.51	3317.703	5030.730
#2	3617.158	79789.78	16927.95	3330.407	5022.561
#3	3615.408	79606.92	16812.14	3324.293	5021.533

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

Sample Name: Q1106-12 Acquired: 3/4/2025 20:32:07 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H6 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000067**	**-.001470**	**-.000140**	**.0005907**	**.0007105**	**.2664971**
Stddev	.001476	.000536	.000373	.0020620	.0015673	.0014991
%RSD	2210.757	36.49560	266.0753	349.0742	220.6016	.5625042
#1	.001398	-.001308	-.000218	-.001581	.0018327	.2682274
#2	-.001554	-.002068	.000266	.000830	-.001080	.2655901
#3	-.000045	-.001032	-.000467	.002523	.001379	.2656739

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2012675**	**.0000927**	**.0000476**	**7.917881**	**-.000633**	**.0027482**
Stddev	.0008241	.0000718	.0000627	.036004	.000083	.0001043
%RSD	.4094578	77.44582	131.6801	.4547132	13.02809	3.794156
#1	.2009937	.0000515	-.000022	7.882737	-.000622	.0028168
#2	.2006152	.0000510	.000064	7.916220	-.000557	.0027997
#3	.2021937	.0001757	.000100	7.954686	-.000721	.0026282

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0040708**	**.7287381**	**1.155689**	**4.204993**	**.0019004**	**.0000614**
Stddev	.0010046	.0028859	.003549	.011791	.0002731	.0002909
%RSD	24.67673	.3960094	.3070915	.2803938	14.36819	473.9216
#1	.0030246	.7284934	1.153365	4.192353	.0022100	-.000273
#2	.0041603	.7317386	1.153927	4.206935	.0017973	.000255
#3	.0050277	.7259824	1.159774	4.215693	.0016939	.000202

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.307414**	**.0014847**	**.0691972**	**-.907546**	**.0221954**	**.0868314**
Stddev	.070363	.0003809	.0012461	.027503	.0004332	.0003897
%RSD	.9628978	25.65339	1.800838	3.030471	1.951945	.4488467
#1	7.288383	.0018089	.0681848	-.884567	.0217136	.0872475
#2	7.385335	.0010653	.0688179	-.938020	.0225530	.0867718
#3	7.248524	.0015799	.0705889	-.900052	.0223197	.0864749

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

Sample Name: Q1106-12 Acquired: 3/4/2025 20:32:07 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8H6 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0064637	F 11.13212	5.257271	-.001683	.0351622	-.000198
Stddev	.0000952	.03105	.023824	.000534	.0007608	.000589
%RSD	1.472932	.2789592	.4531622	31.70803	2.163819	297.9794
#1	.0063758	11.13186	5.247064	-.002191	.0358004	-.000117
#2	.0064506	11.10119	5.240252	-.001126	.0343202	-.000823
#3	.0065648	11.16330	5.284498	-.001733	.0353659	.000347

Elem	Sr4077
Units	ppm
Avg	.1354059
Stddev	.0003823
%RSD	.2823435
#1	.1358274
#2	.1350815
#3	.1353088

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3600.971	80283.10	17008.81	3335.661	5048.175
Stddev	7.392	167.13	48.85	9.853	9.523
%RSD	.2052670	.2081733	.2871762	.2953833	.1886349
#1	3609.401	80416.20	17065.02	3344.250	5058.682
#2	3597.913	80337.57	16984.69	3337.827	5045.728
#3	3595.599	80095.53	16976.71	3324.905	5040.115

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

Sample Name: Q1106-13 Acquired: 3/4/2025 20:36:12 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F6 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0098448**	**-.000363**	**.0005647**	**-.000447**	**.0019589**	**.9798661**
Stddev	.0014796	.001386	.0004235	.000991	.0019418	.0025814
%RSD	15.02870	381.3031	75.00104	221.4200	99.12800	.2634420
#1	.0113921	-.001720	.0003225	-.001228	-.000283	.9785804
#2	.0084438	-.000420	.0003178	-.000781	.003051	.9828379
#3	.0096985	.001050	.0010538	.000667	.003108	.9781801

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2533437**	**.0000328**	**.0001237**	**20.20680**	**.0026007**	**.0020263**
Stddev	.0015909	.0000104	.0000505	.02233	.0002520	.0001648
%RSD	.6279474	31.73087	40.84163	.1104835	9.690439	8.134391
#1	.2551792	.0000370	.0000951	20.23095	.0026588	.0021446
#2	.2524906	.0000209	.0001821	20.18692	.0028185	.0020963
#3	.2523613	.0000404	.0000940	20.20251	.0023247	.0018380

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0185907**	**3.579401**	**.0629555**	**4.720156**	**.0095602**	**-.000020**
Stddev	.0013843	.013860	.0003203	.013210	.0003056	.000082
%RSD	7.446232	.3872257	.5087620	.2798600	3.196962	400.9456
#1	.0169924	3.581825	.0633234	4.733892	.0099130	-.000086
#2	.0193728	3.564488	.0628047	4.707544	.0093770	-.000047
#3	.0194069	3.591889	.0627385	4.719033	.0093906	.000071

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.774856**	**.0068547**	**.1704243**	**-.341693**	**.0847896**	**.1645759**
Stddev	.008808	.0000907	.0030710	.026331	.0014678	.0004702
%RSD	.0901080	1.323372	1.801961	7.706163	1.731167	.2857235
#1	9.769291	.0068152	.1726643	-.321705	.0847177	.1651186
#2	9.785011	.0067905	.1716850	-.371529	.0833590	.1643191
#3	9.770265	.0069585	.1669236	-.331844	.0862921	.1642899

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

Sample Name: Q1106-13 Acquired: 3/4/2025 20:36:12 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: YE8F6 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094911	F 13.70528	4.314732	-.001522	.0807129	-.001010
Stddev	.0000839	.04253	.043840	.000470	.0005215	.001023
%RSD	.8842483	.3103050	1.016047	30.86662	.6460620	101.2310
#1	.0094427	13.71881	4.365225	-.001533	.0801389	.000157
#2	.0095880	13.65763	4.292603	-.001987	.0811574	-.001750
#3	.0094426	13.73939	4.286367	-.001047	.0808424	-.001437

Elem	Sr4077
Units	ppm
Avg	.1223303
Stddev	.0007021
%RSD	.5739021
#1	.1216436
#2	.1223004
#3	.1230468

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3580.967	78811.00	17092.04	3260.112	4958.212
Stddev	11.303	69.17	70.22	4.459	7.072
%RSD	.3156532	.0877651	.4108636	.1367601	.1426335
#1	3589.001	78795.96	17031.97	3255.368	4964.998
#2	3585.860	78886.45	17074.90	3264.216	4958.753
#3	3568.042	78750.59	17169.25	3260.754	4950.885

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

Sample Name: CCV003 Acquired: 3/4/2025 20:40:15 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV003 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.726090**	**4.513728**	**23.78173**	**4.700724**	**4.742152**	**376.3899**
Stddev	.011394	.017772	.01976	.012762	.013749	1.8790
%RSD	.2410855	.3937357	.0830695	.2714934	.2899292	.4992285
#1	4.738384	4.528265	23.80006	4.715225	4.737683	376.4748
#2	4.715885	4.519005	23.76081	4.691201	4.731193	374.4698
#3	4.723999	4.493916	23.78432	4.695747	4.757579	378.2250

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.15828**	**.4898919**	**2.415943**	**393.2144**	**14.98288**	**2.422810**
Stddev	.08746	.0035264	.003182	1.2686	.04288	.000952
%RSD	.8610182	.7198229	.1317065	.3226268	.2861796	.0392752
#1	10.06654	.4860639	2.418420	394.5471	15.01653	2.421915
#2	10.16758	.4906041	2.417056	392.0214	14.93460	2.423810
#3	10.24072	.4930079	2.412354	393.0749	14.99750	2.422706

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.70306**	**389.6944**	**15.12838**	**386.2387**	**2.420497**	**1.256258**
Stddev	.02755	2.3944	.11487	2.0436	.000433	.001673
%RSD	.1873457	.6144307	.7592922	.5291149	.0178686	.1331725
#1	14.73106	392.4504	15.25489	388.5019	2.420081	1.258157
#2	14.70213	388.1253	15.03062	384.5283	2.420944	1.255003
#3	14.67599	388.5075	15.09961	385.6858	2.420466	1.255613

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**393.7167**	**2.461645**	**14.88838**	**148.8766**	**5.019476**	F **5.857300**
Stddev	.4199	.002714	.10650	1.3338	.015060	.024041
%RSD	.1066521	.1102387	.7153212	.8959115	.3000292	.4104372
#1	394.1760	2.458993	15.00958	150.3736	5.005034	5.830197
#2	393.3525	2.461527	14.84578	148.4414	5.035085	5.865652
#3	393.6215	2.464416	14.80977	147.8147	5.018308	5.876051

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

Sample Name: CCV003 Acquired: 3/4/2025 20:40:15 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV003 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.744694**	**4.895404**	**4.990853**	**4.800402**	**4.995427**	**5.008811**
Stddev	.003775	.021529	.013061	.006405	.011923	.055491
%RSD	.0795572	.4397828	.2617084	.1334348	.2386693	1.107877
#1	4.748156	4.881429	4.999888	4.807768	5.005911	5.071386
#2	4.745255	4.920197	4.975877	4.797293	4.982458	4.989466
#3	4.740670	4.884587	4.996793	4.796144	4.997914	4.965581

Elem	Sr4077
Units	ppm
Avg	**4.927389**
Stddev	.065602
%RSD	1.331383
#1	4.981529
#2	4.854435
#3	4.946203

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2826.999**	**64899.19**	**15315.71**	**2655.026**	**3551.947**
Stddev	2.446	244.29	78.74	9.354	4.496
%RSD	.0865286	.3764083	.5140843	.3523295	.1265654
#1	2826.734	64683.12	15380.27	2644.306	3551.460
#2	2829.566	65164.26	15338.87	2661.531	3556.667
#3	2824.695	64850.18	15227.99	2659.241	3547.715

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

Sample Name: CCB003 Acquired: 3/4/2025 20:48:52 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB003 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000135**	**.0024092**	**-.000317**	**.0002701**	**-.000235**	**.0073081**	**-.000401**
Stddev	.000778	.0012576	.000547	.0015375	.001413	.0017551	.000424
%RSD	575.1495	52.20221	172.5870	569.1886	601.9701	24.01611	105.7207
#1	-.000784	.0029093	-.000913	-.001379	-.000885	.0052921	-.000281
#2	.000727	.0009784	.000161	.000526	.001386	.0084955	-.000872
#3	-.000348	.0033398	-.000198	.001663	-.001205	.0081367	-.000050

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000007**	**-.000022**	**.0087861**	**.0002266**	**.0003355**	**.0009210**	**.0086561**
Stddev	.000035	.000017	.0017310	.0001804	.0001238	.0017092	.0058412
%RSD	504.2865	76.69919	19.70114	79.64019	36.90837	185.5744	67.48109
#1	-.000008	-.000004	.0106861	.0000932	.0002145	-.000962	.0127602
#2	.000028	-.000025	.0083737	.0004319	.0004620	.002374	.0112396
#3	-.000042	-.000037	.0072987	.0001546	.0003299	.001351	.0019686

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002925**	**.0026437**	**.0000386**	**-.000165**	**.1329592**	**.0011787**	**.0007295**
Stddev	.0000642	.0100018	.0004301	.000124	.1747887	.0018551	.0003718
%RSD	21.93453	378.3340	1114.201	75.01572	131.4605	157.3901	50.95935
#1	.0002234	-.006667	-.000379	-.000294	.1334369	.0001278	.0003763
#2	.0003501	.001381	.000015	-.000048	.3075085	.0033206	.0006948
#3	.0003041	.013217	.000480	-.000153	-.042068	.0000876	.0011174

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.012762**	**.0018326**	**.0005389**	**.0002609**	**.0028406**	**.0074652**	**-.000236**
Stddev	.015336	.0018285	.0004477	.0000301	.0031441	.0021999	.000349
%RSD	120.1665	99.77864	83.08273	11.55568	110.6853	29.46862	147.5786
#1	-.017476	-.000261	.0001726	.0002594	.0038378	.0099972	-.000544
#2	-.025187	.003118	.0010380	.0002315	.0053651	.0063751	.000143
#3	.004377	.002640	.0004061	.0002917	-.000681	.0060231	-.000308

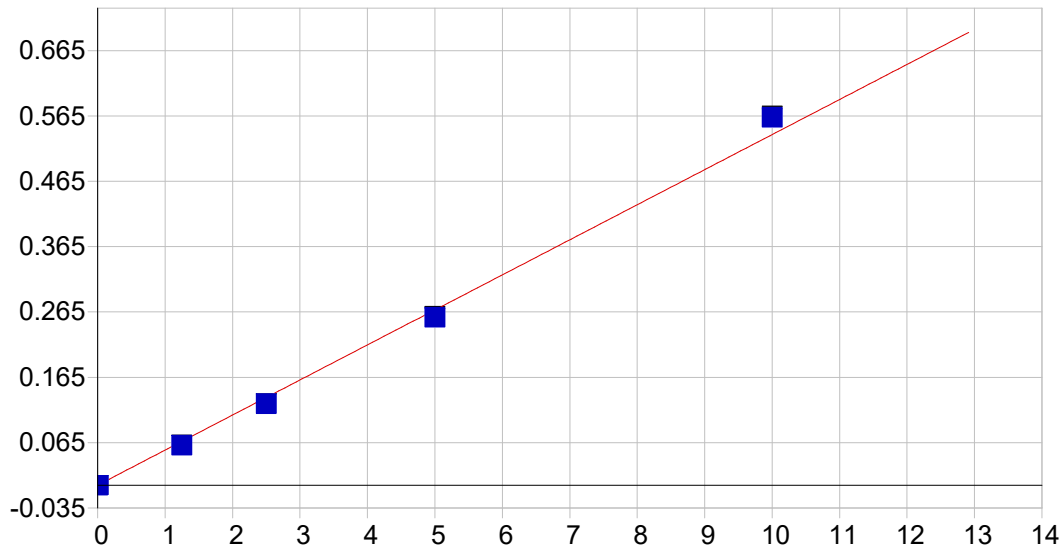
Reviewed By:kareem
On:3/7/2025 12:25:37 PM
Inst Id :P4

Sample Name: CCB003 Acquired: 3/4/2025 20:48:52 Type: Unk
Method: EPA SFAM01.0(v66) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB003 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000802	.0000938	.0000743
Stddev	.000736	.0008025	.0000325
%RSD	91.77745	855.2208	43.79483
#1	-.000216	-.000346	.0000661
#2	-.000562	-.000393	.0001101
#3	-.001628	.001020	.0000466

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3654.927	80064.34	16449.11	3364.540	5147.399
Stddev	8.094	67.33	12.65	11.441	5.063
%RSD	.2214584	.0840888	.0768957	.3400530	.0983639
#1	3651.903	80111.07	16442.17	3364.180	5142.818
#2	3648.780	80094.77	16441.45	3376.157	5146.545
#3	3664.097	79987.17	16463.71	3353.283	5152.835

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



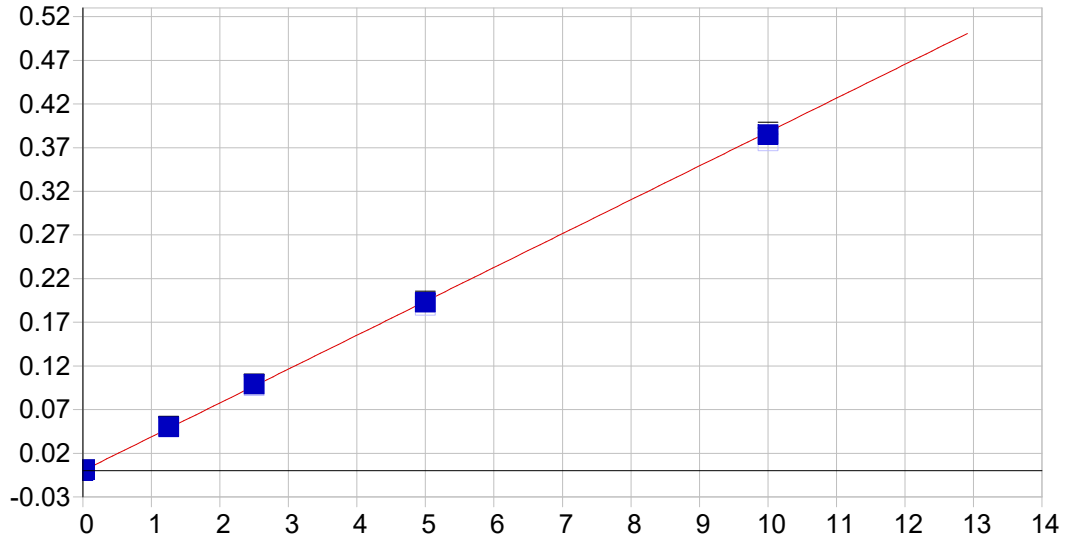
As 189.042 {479}

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



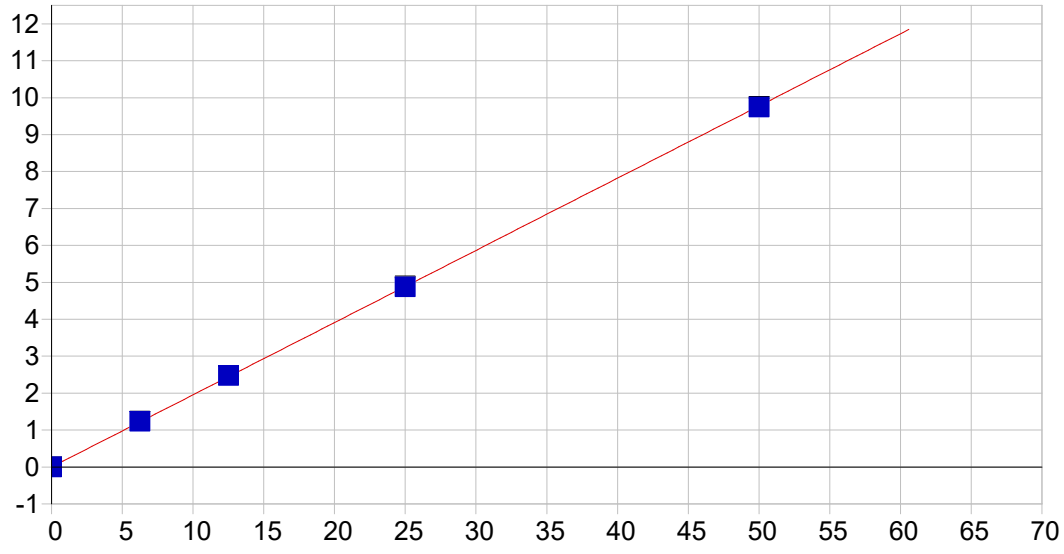
Tl 190.856 {477}

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



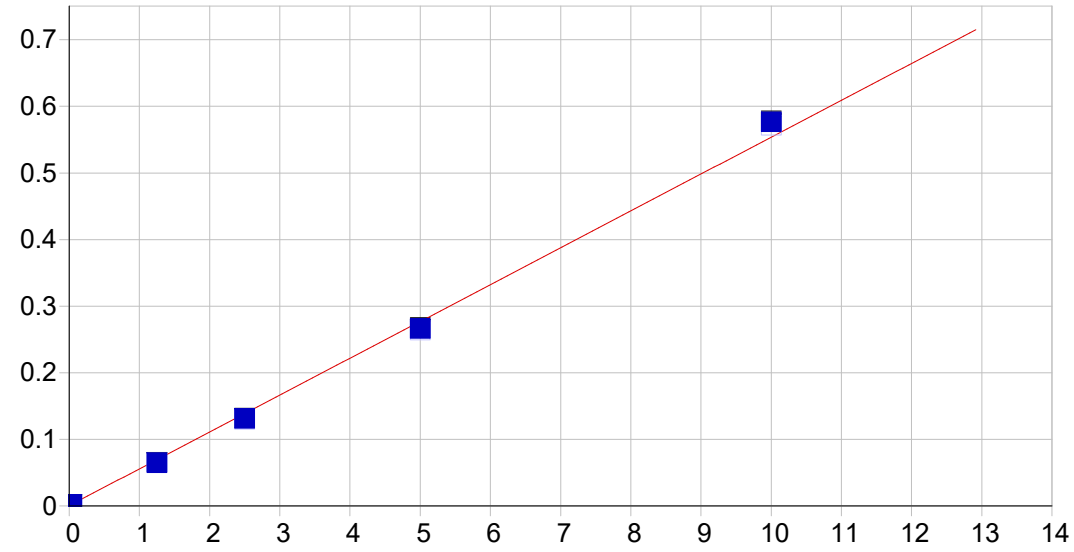
Pb 220.353 {453}

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



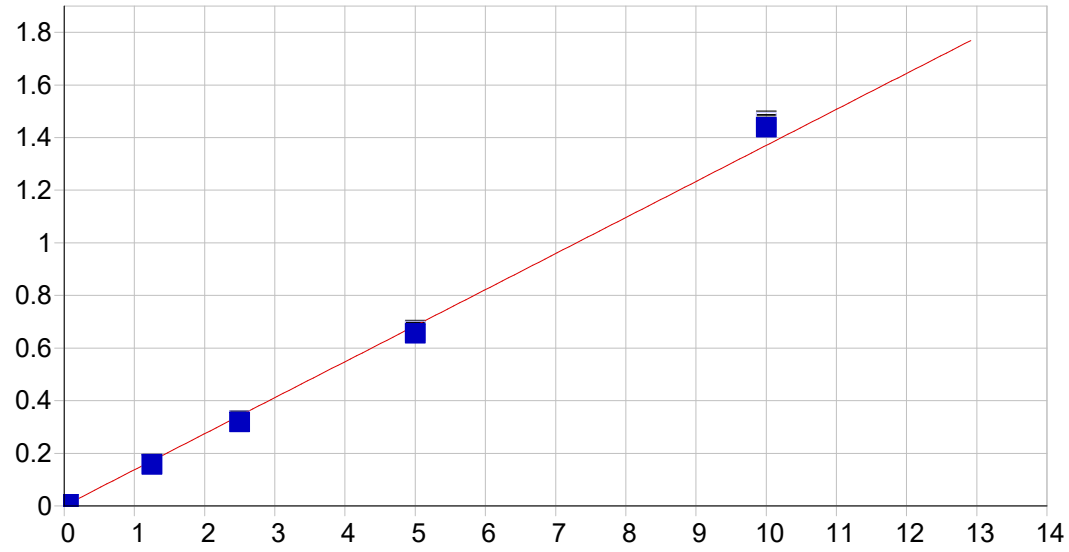
Se 196.090 {472}

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



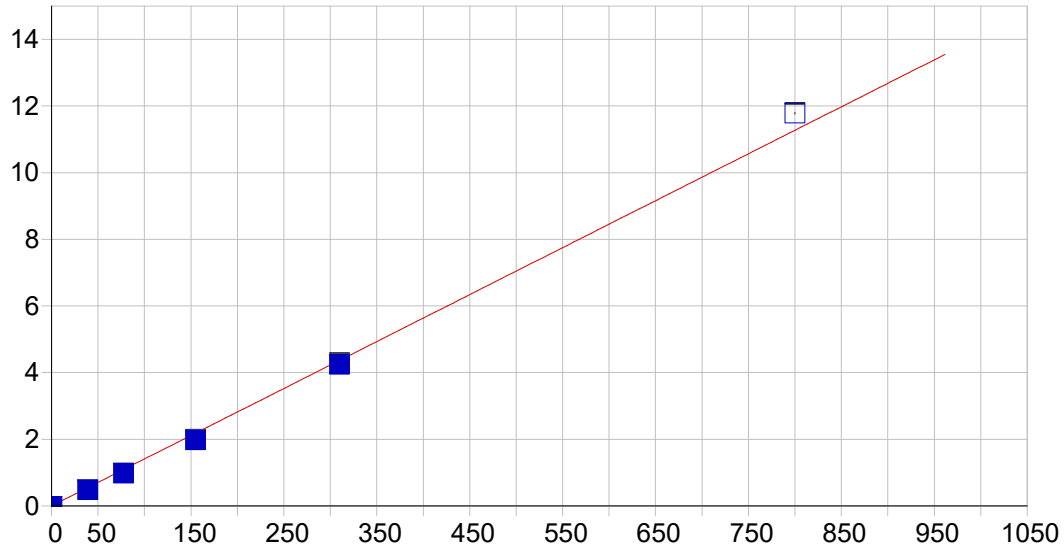
Sb 206.833 {463}

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

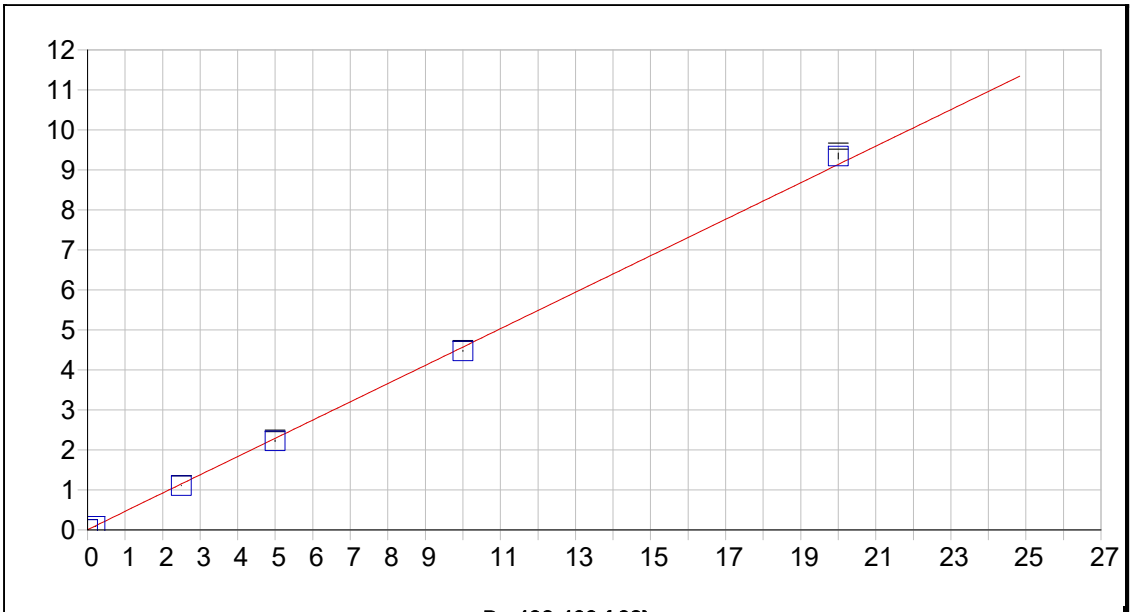


Al 396.152 { 85}

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



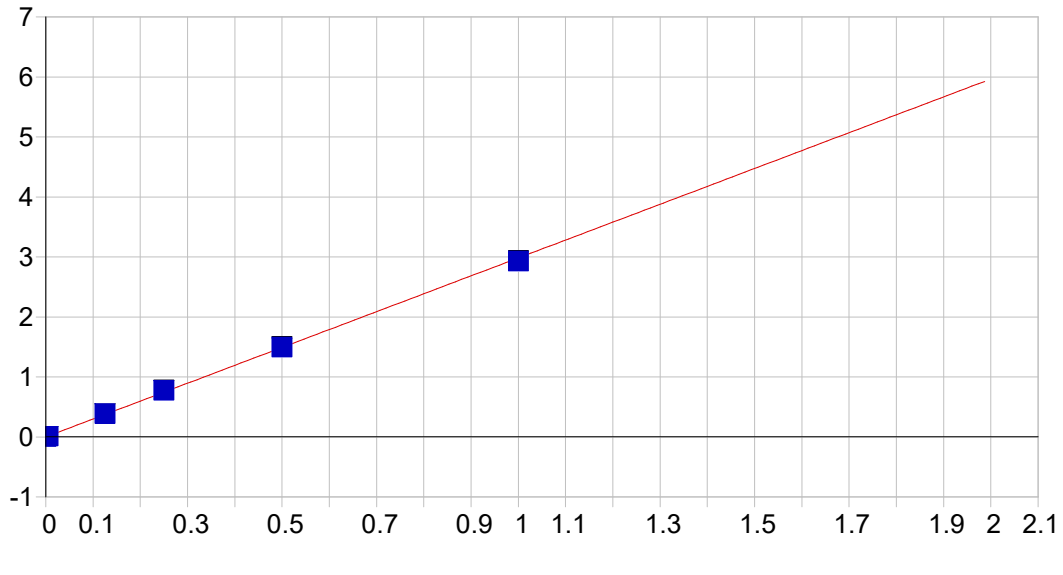
Ba 493.409 { 68}

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



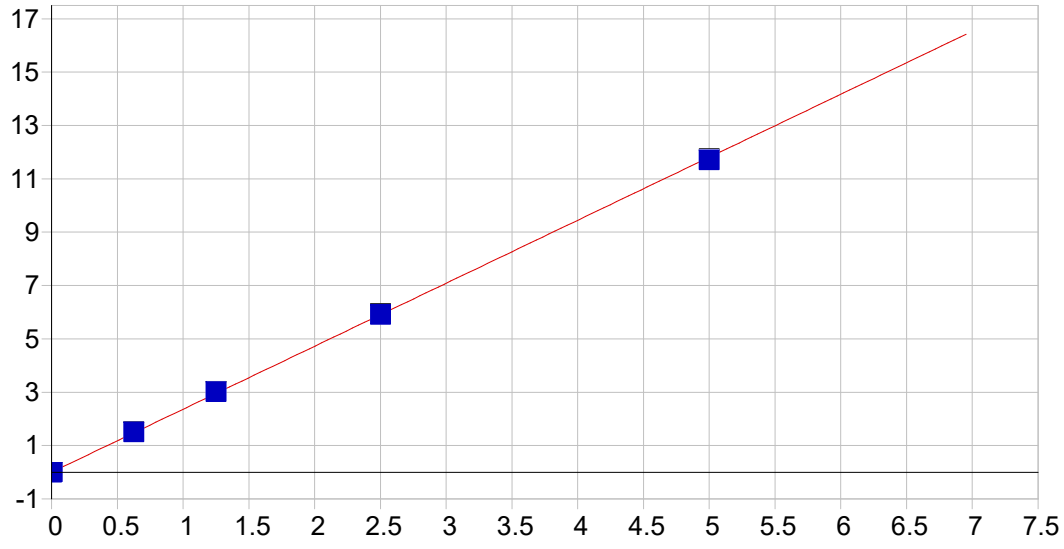
Be 234.861 {144}

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



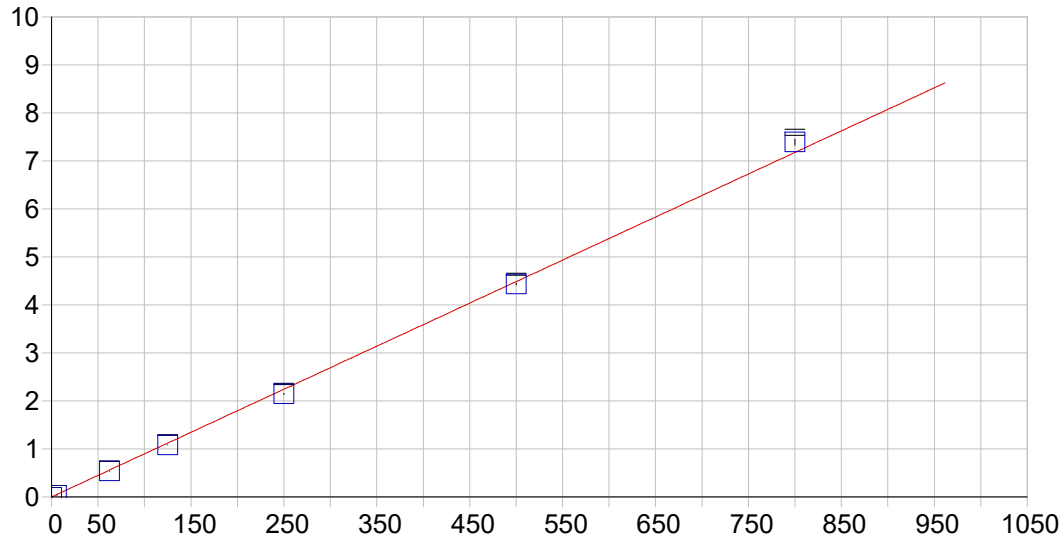
Cd 214.438 {457}

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



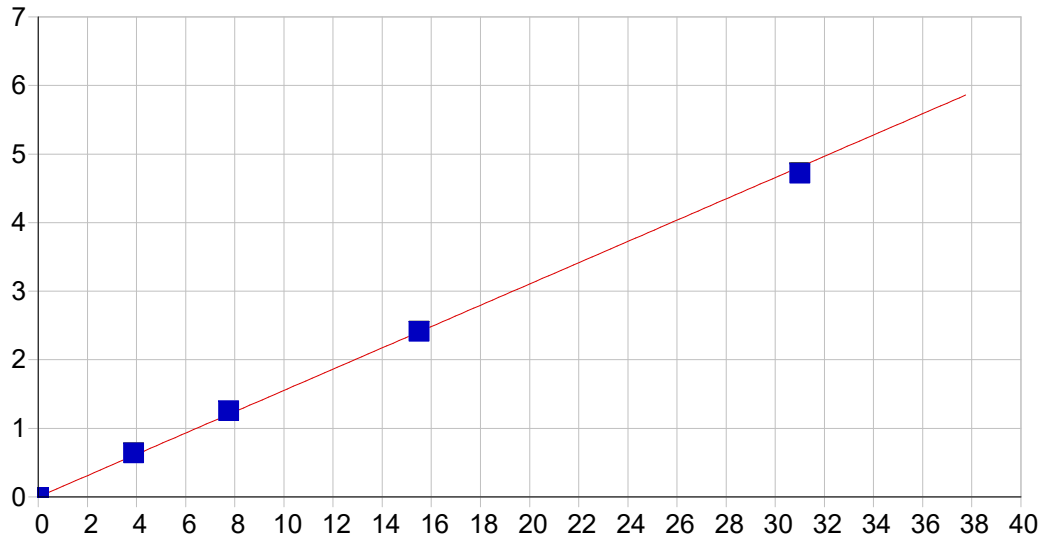
Ca 373.690 { 90}

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



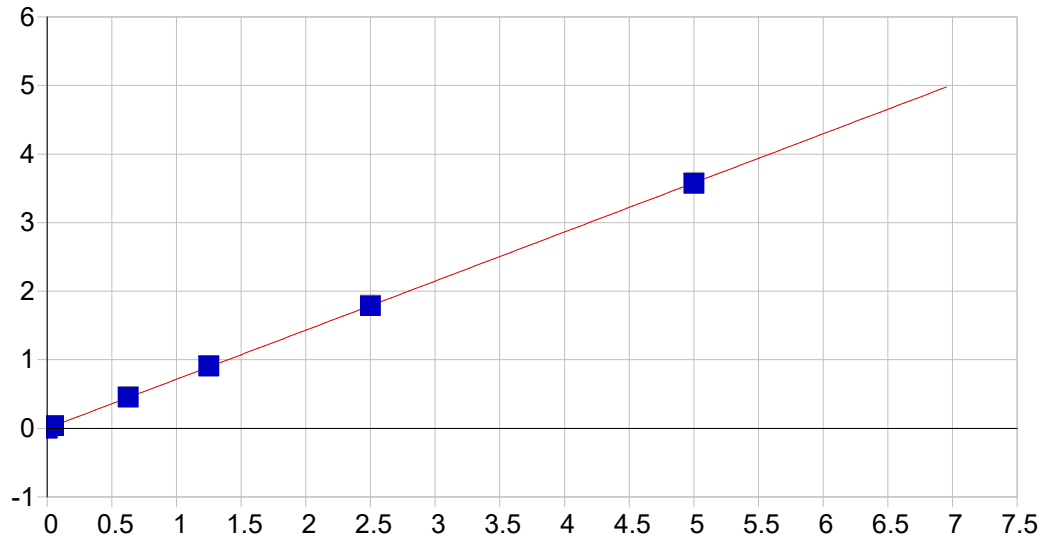
Cr 267.716 {126}

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



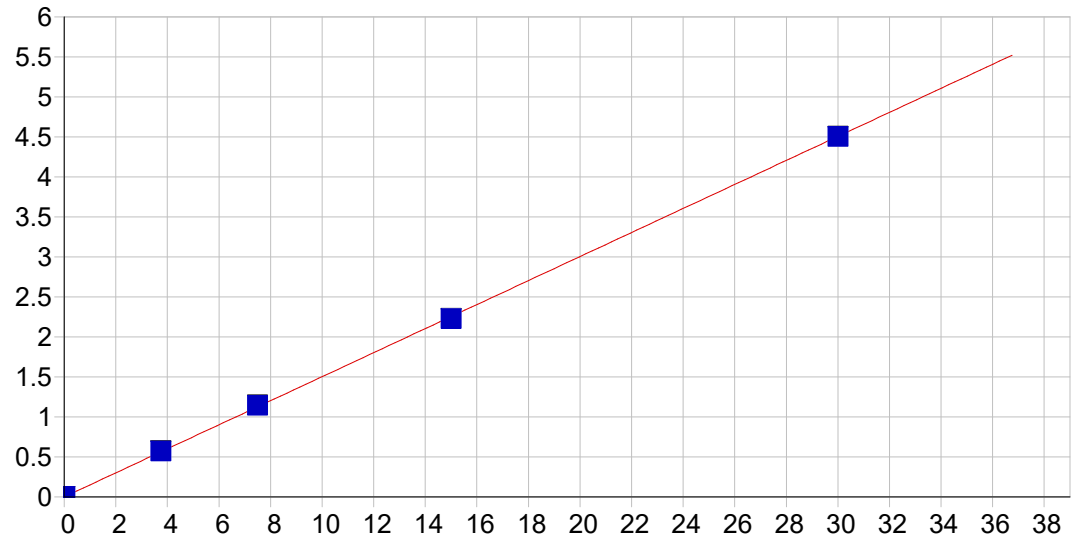
Co 228.616 {448}

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



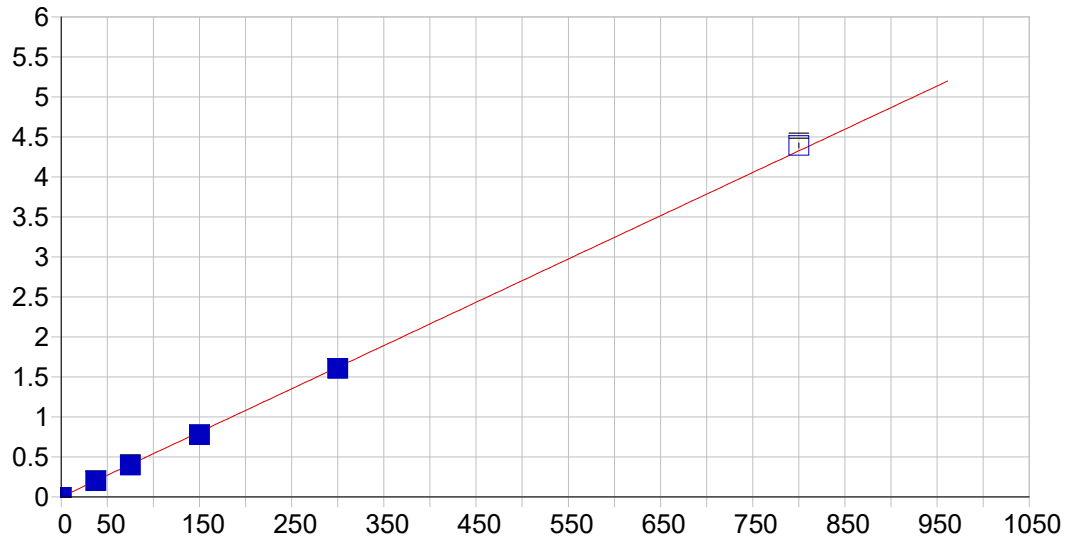
Cu 324.754 {104}

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



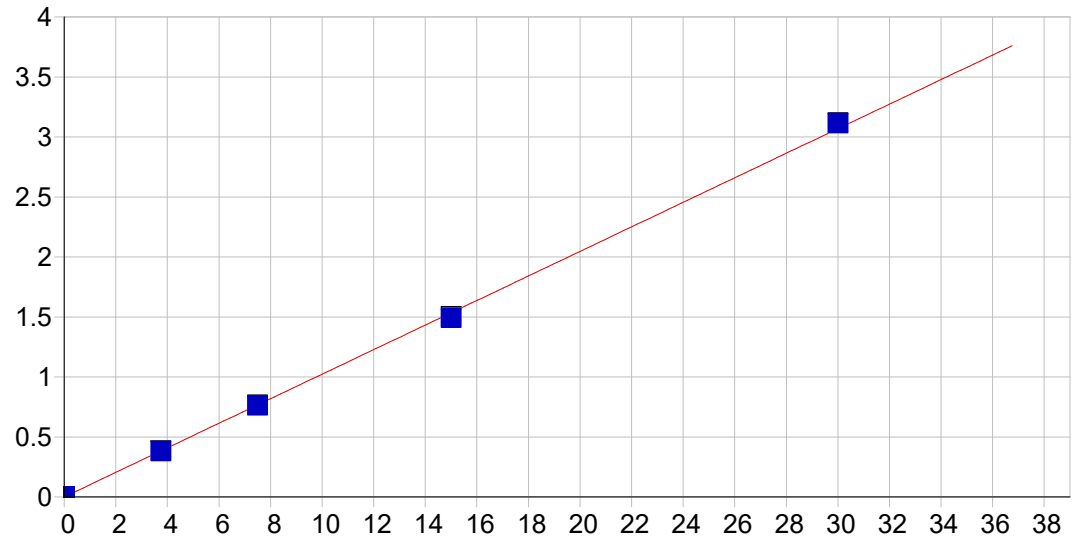
Fe 259.837 {130}

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

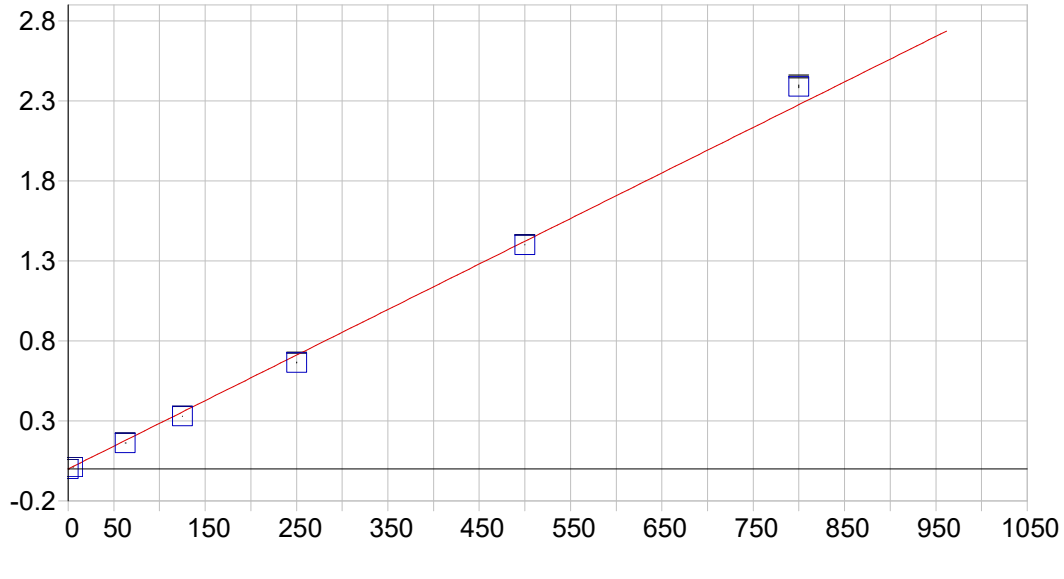


Mn 257.610 {131}

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



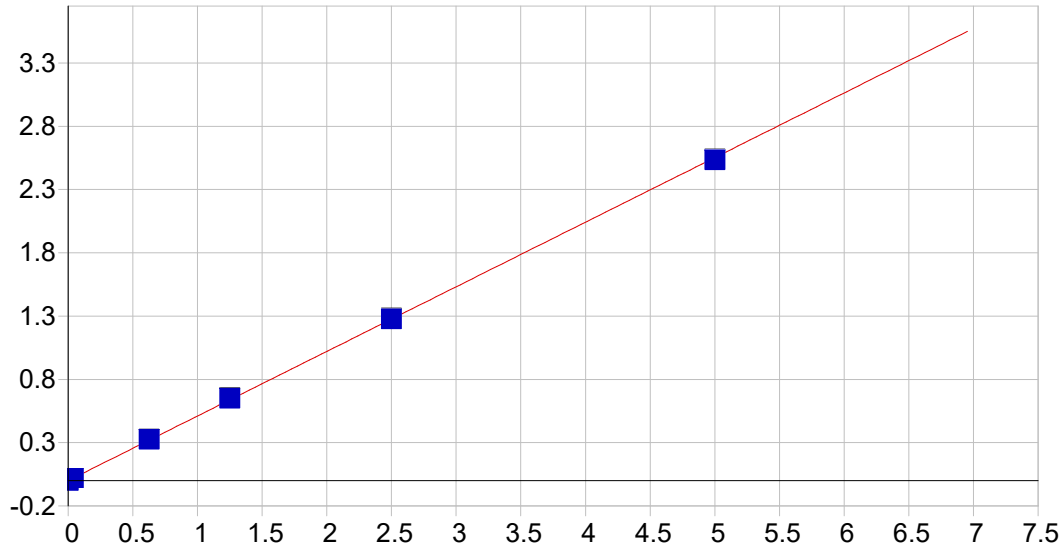
Mg 279.079 {121}

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



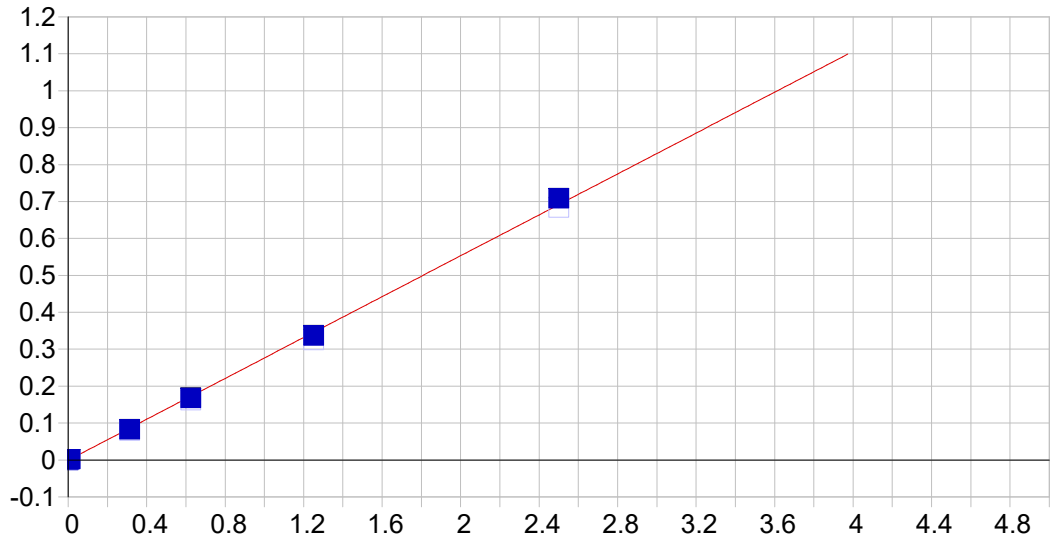
Ni 231.604 {446}

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



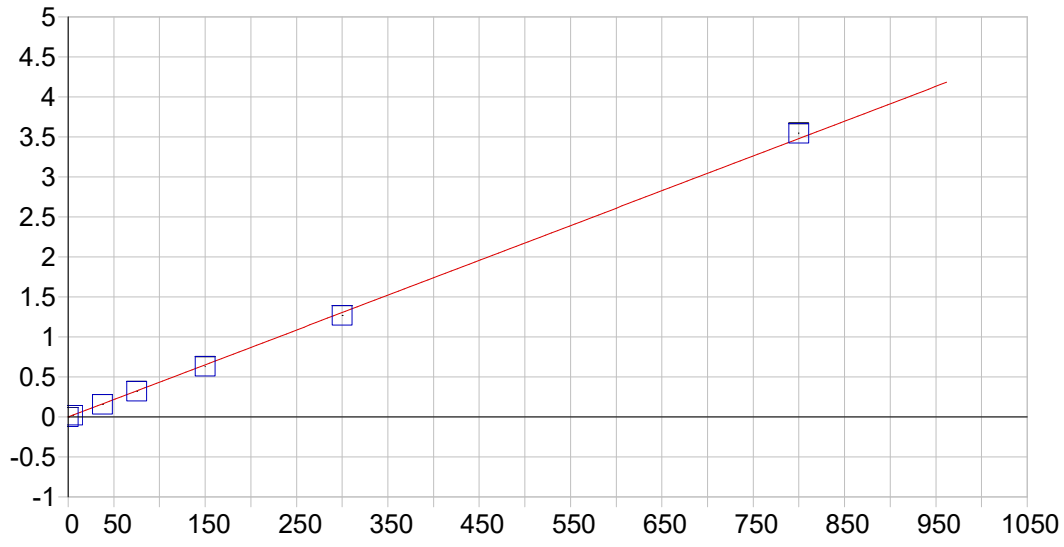
Ag 328.068 {103}

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



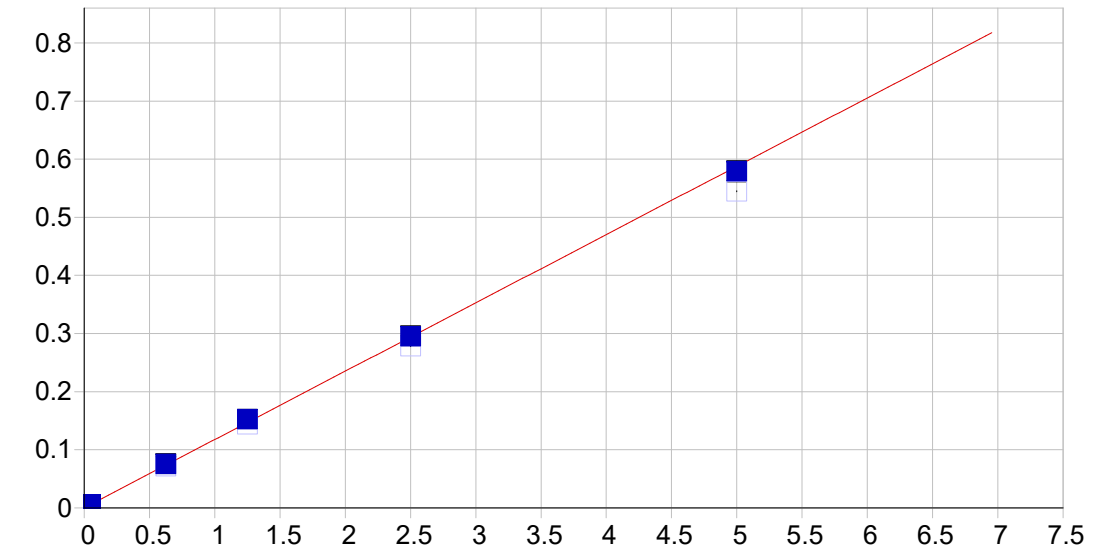
Na 818.326 { 41}

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



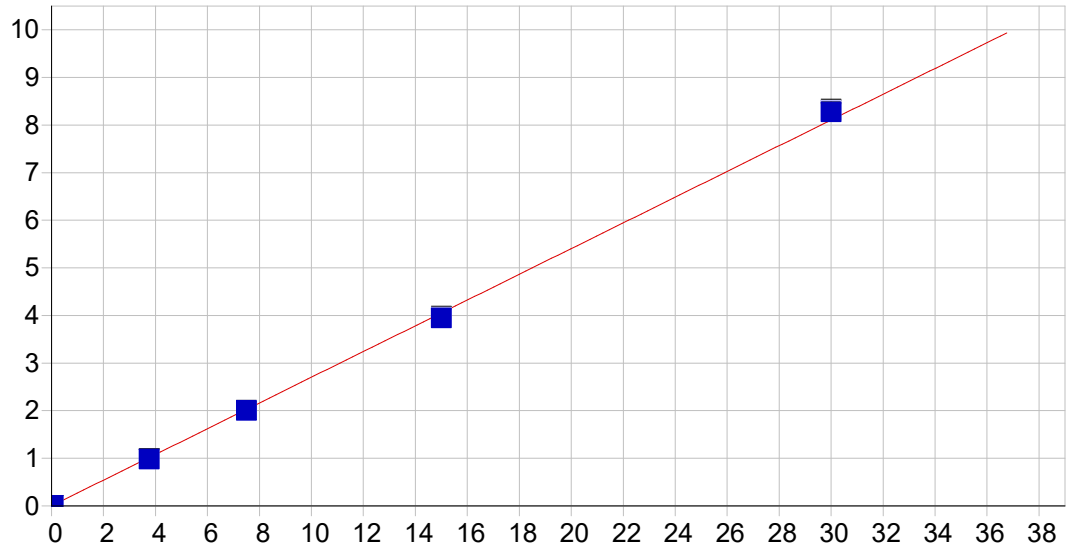
V 292.402 {115}

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



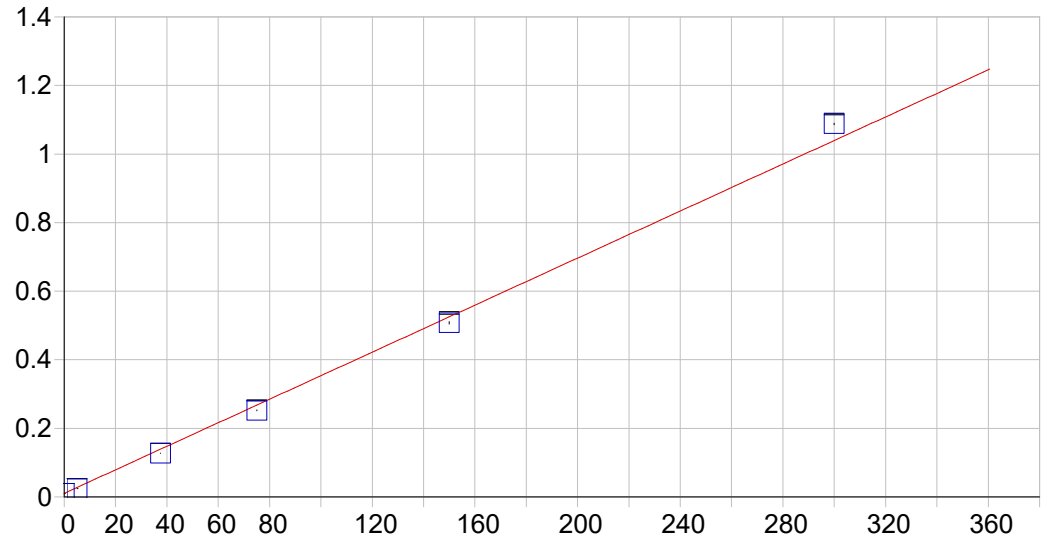
Zn 213.856 {158}

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



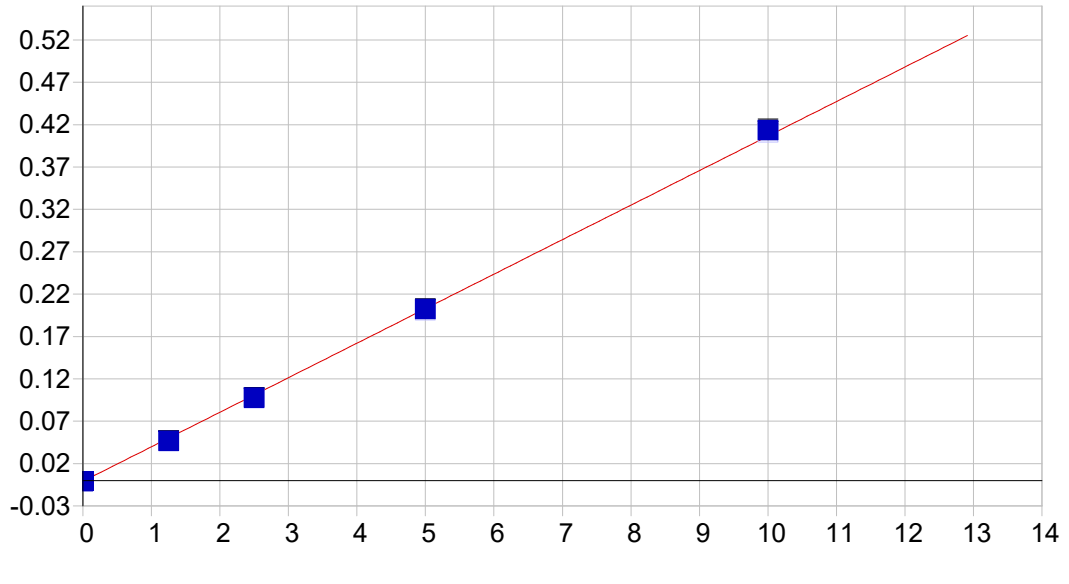
K 769.896 { 44}

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



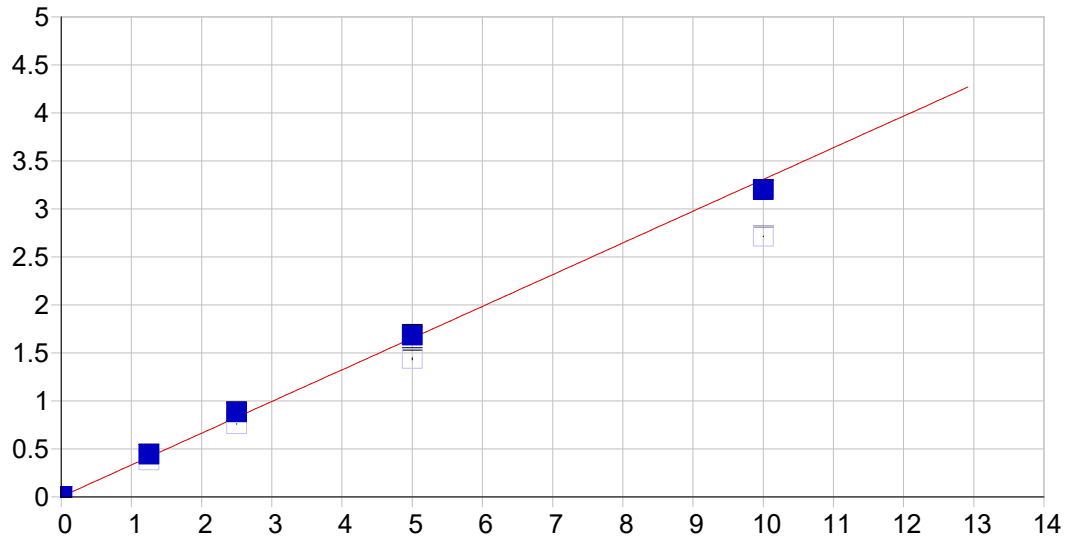
P 177.495 {490}

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



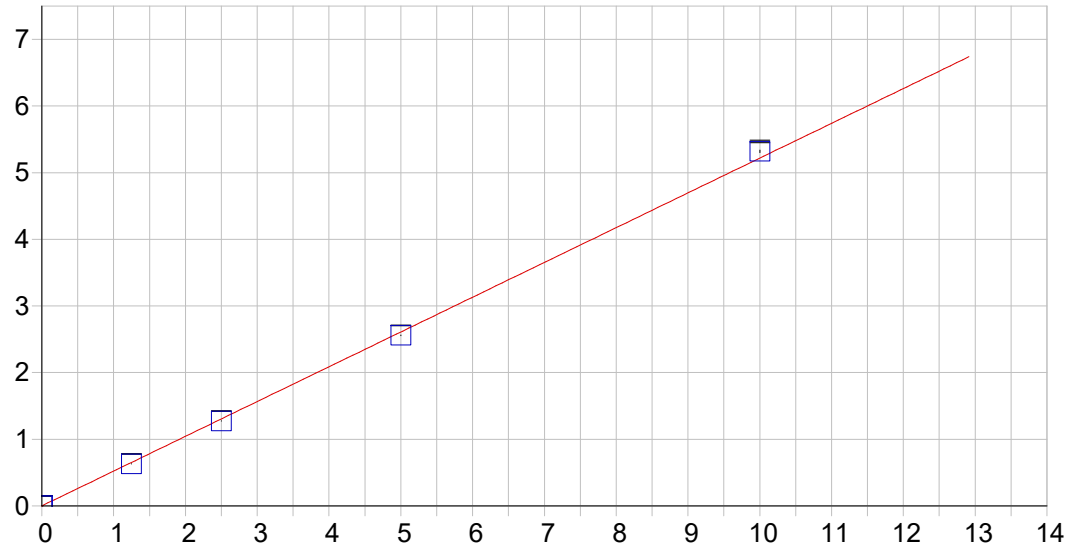
B 249.678 {135}

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



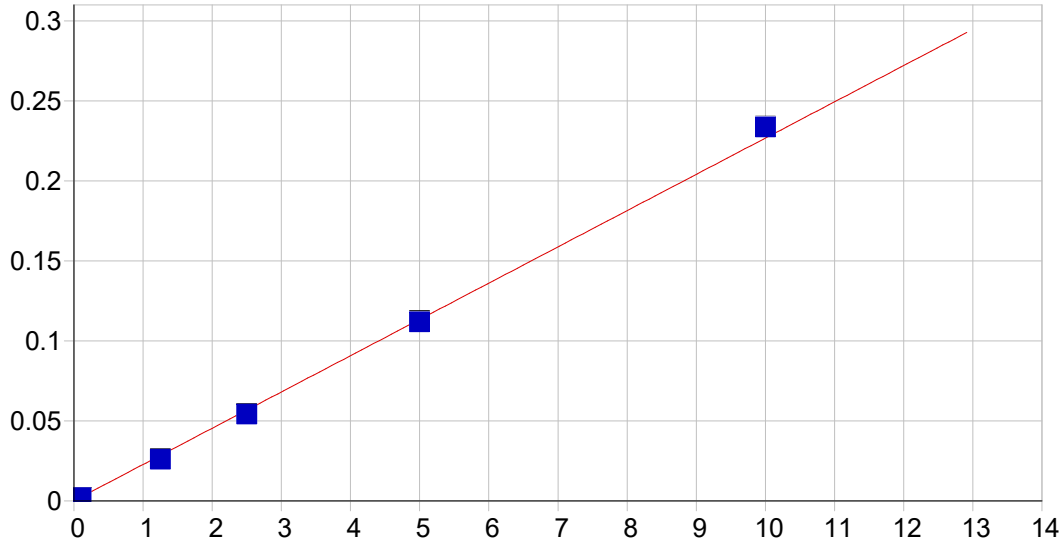
Mo 202.030 {467}

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



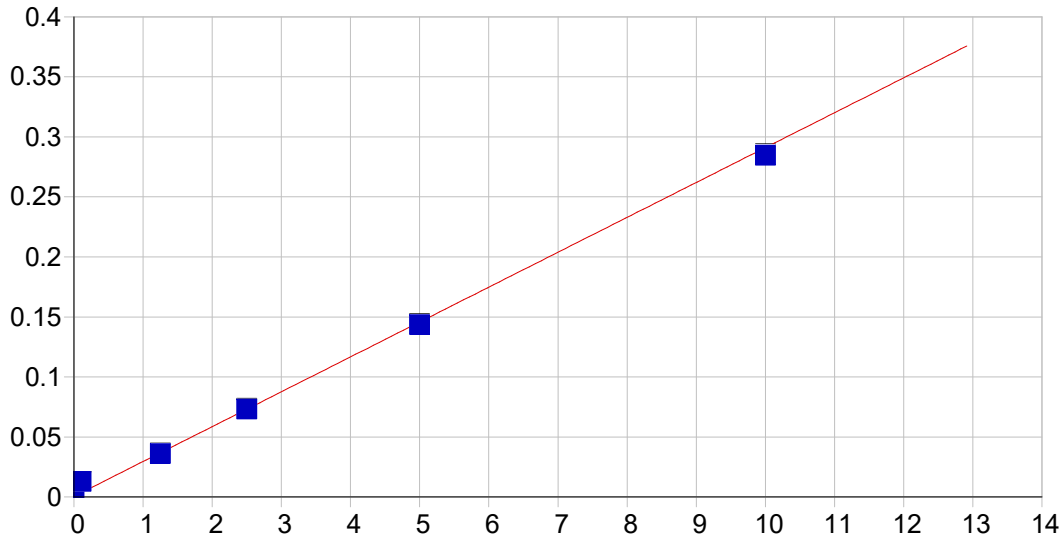
S 182.034 {485}

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



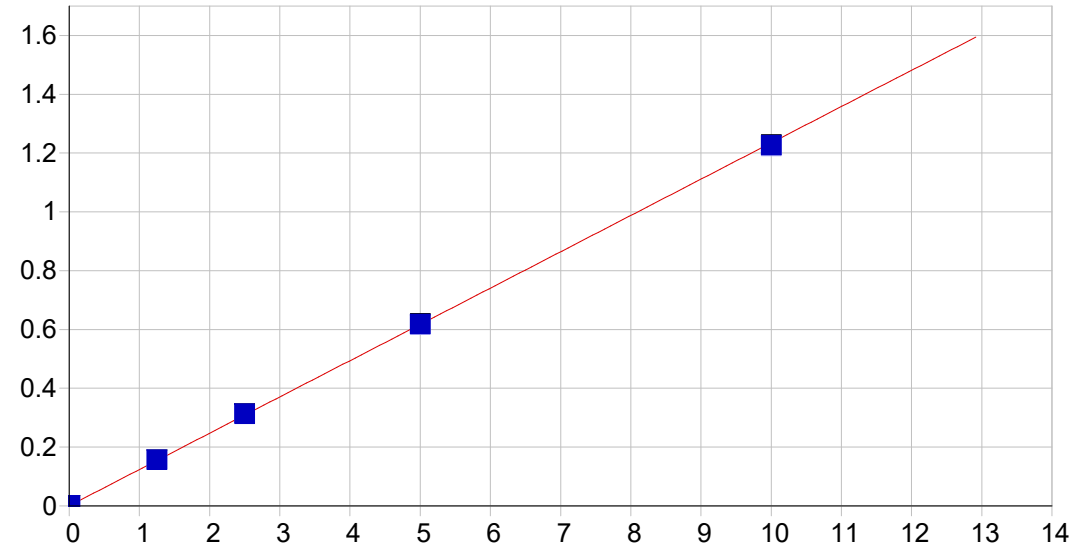
Si 251.611 {134}

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



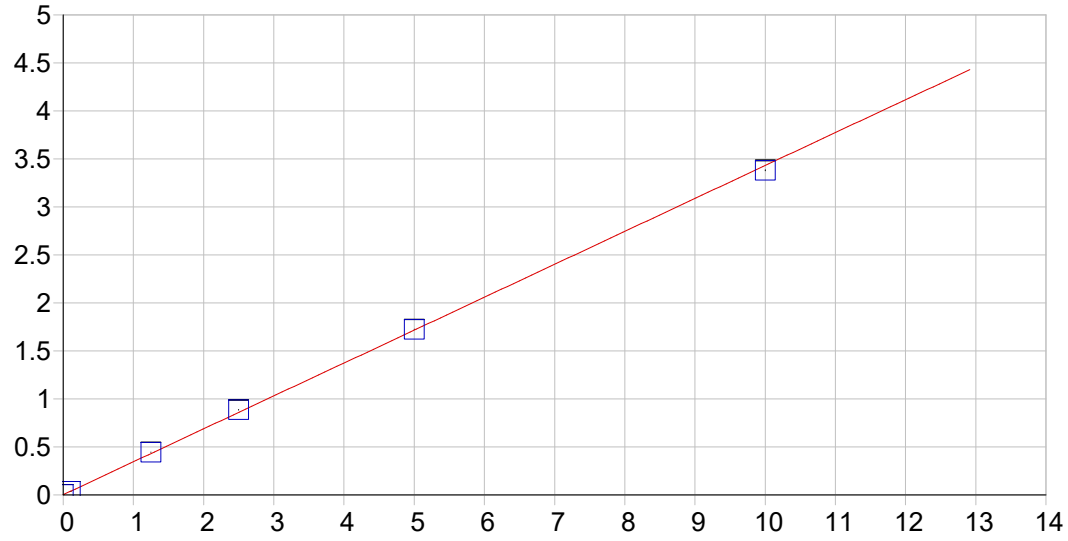
Sn 189.989 {478}

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

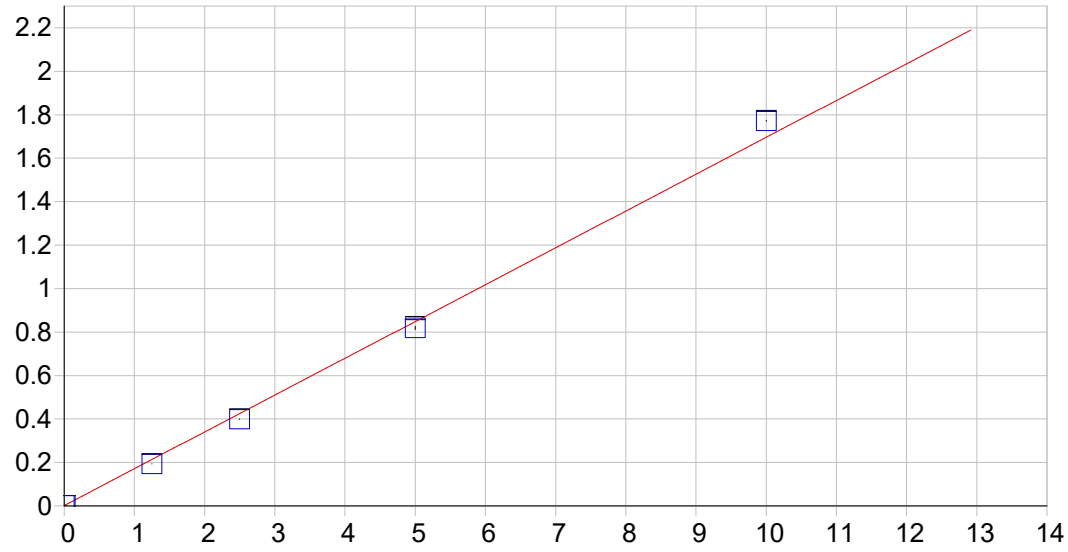


Ti 336.121 {100}

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



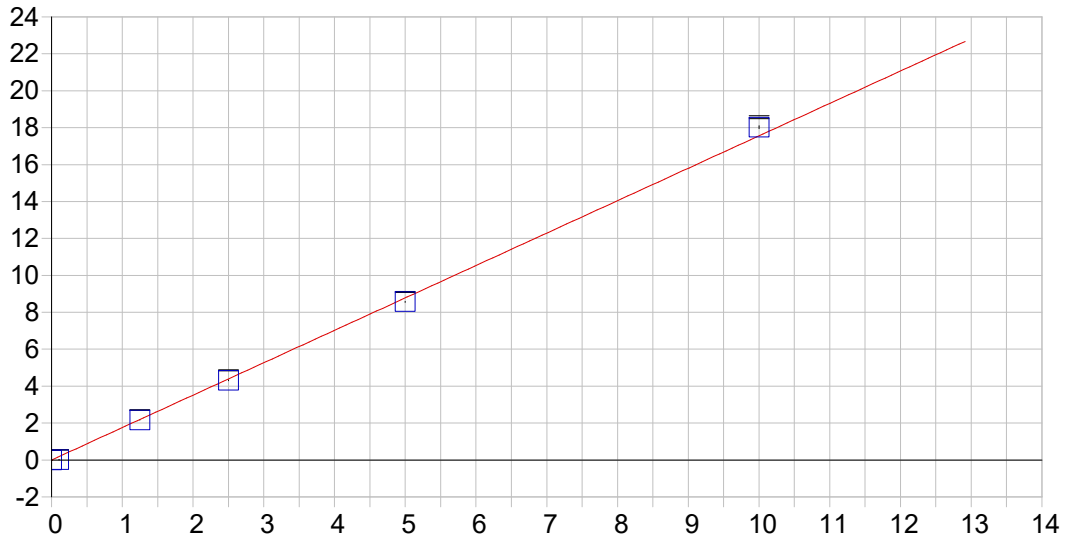
Li 670.784 { 50}

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

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



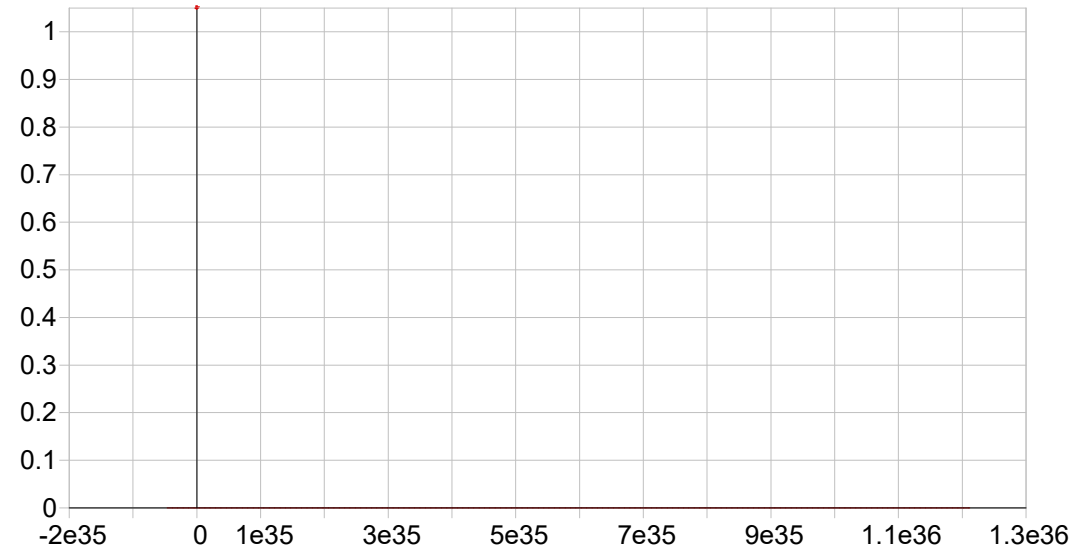
Sr 407.771 { 83}

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

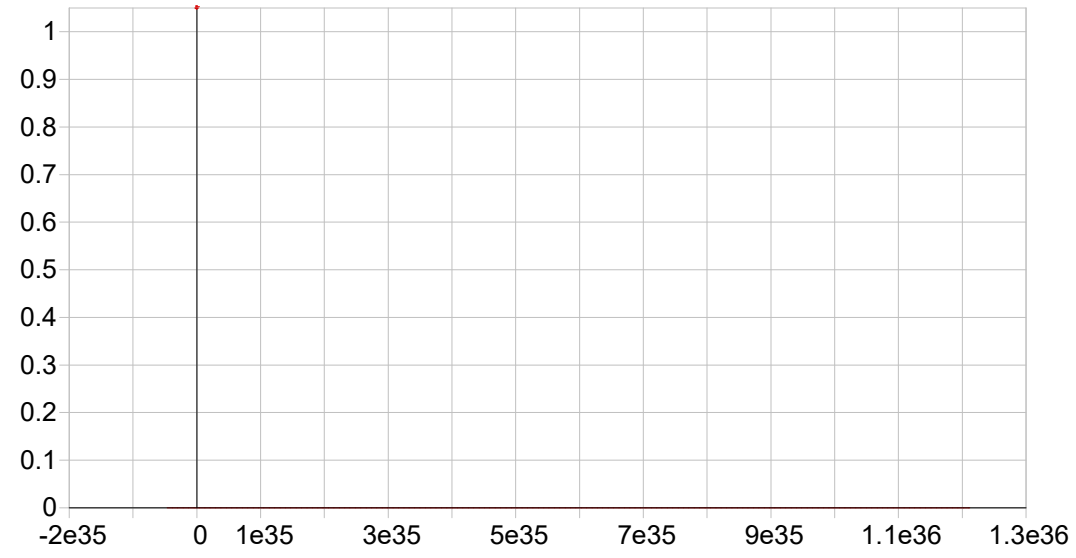
Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



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



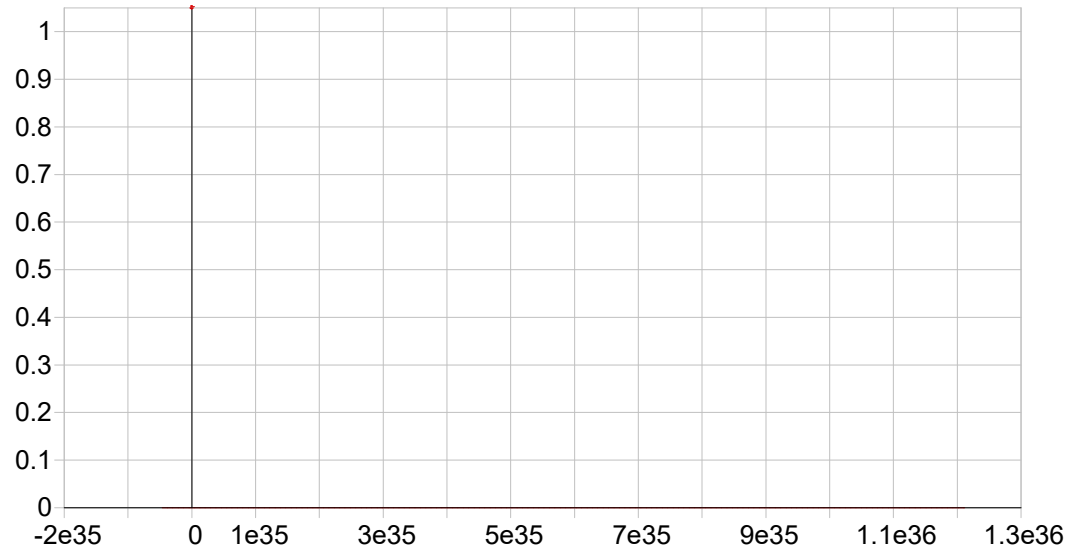
Y 360.073 { 94}*

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	

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



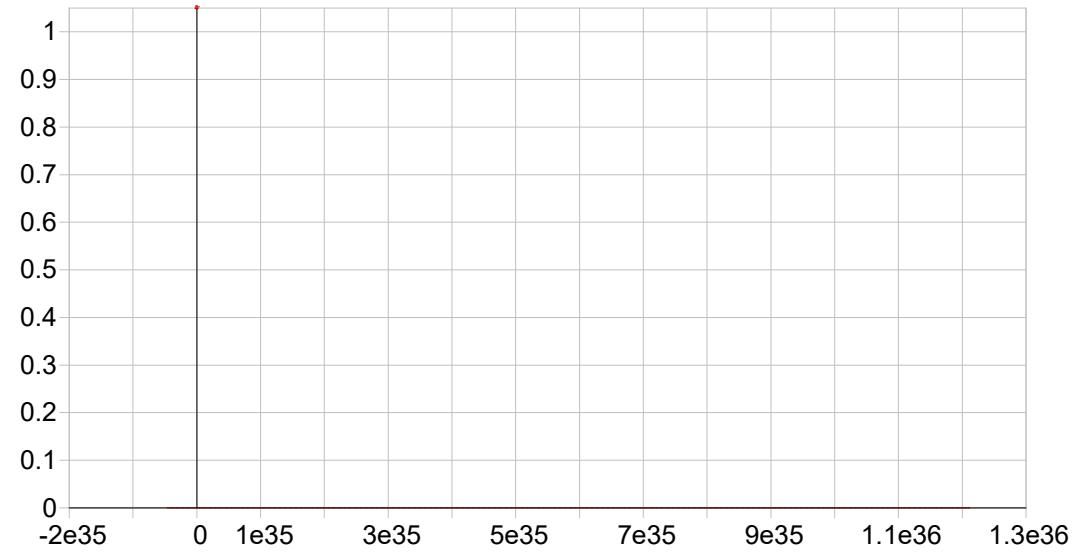
Y 371.030 { 91}*

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

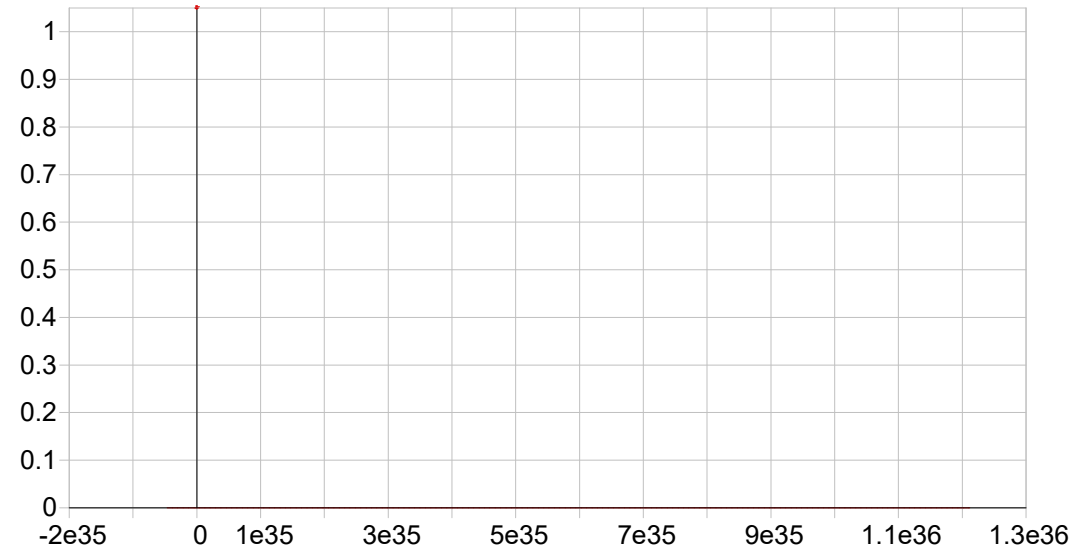
Reviewed By:kareem
On:3/7/2025 12:26:46 PM
Inst Id :P4



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

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Prep Standard - Chemical Standard Summary

Order ID : Q1136

Test : SPLP MetalGroup3

Prepbatch ID : PB166911,

Sequence ID/Qc Batch ID: LB134905,LB134916,

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,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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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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CHEMICAL RECEIPT LOG BOOK

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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CHEMICAL RECEIPT LOG BOOK

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

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

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

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

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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.	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

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

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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.	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

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

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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.	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

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

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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-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

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

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CHEMICAL RECEIPT LOG BOOK

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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inorganicventures.com

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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) HNO3
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

M6032

R 8/5/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
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296

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		

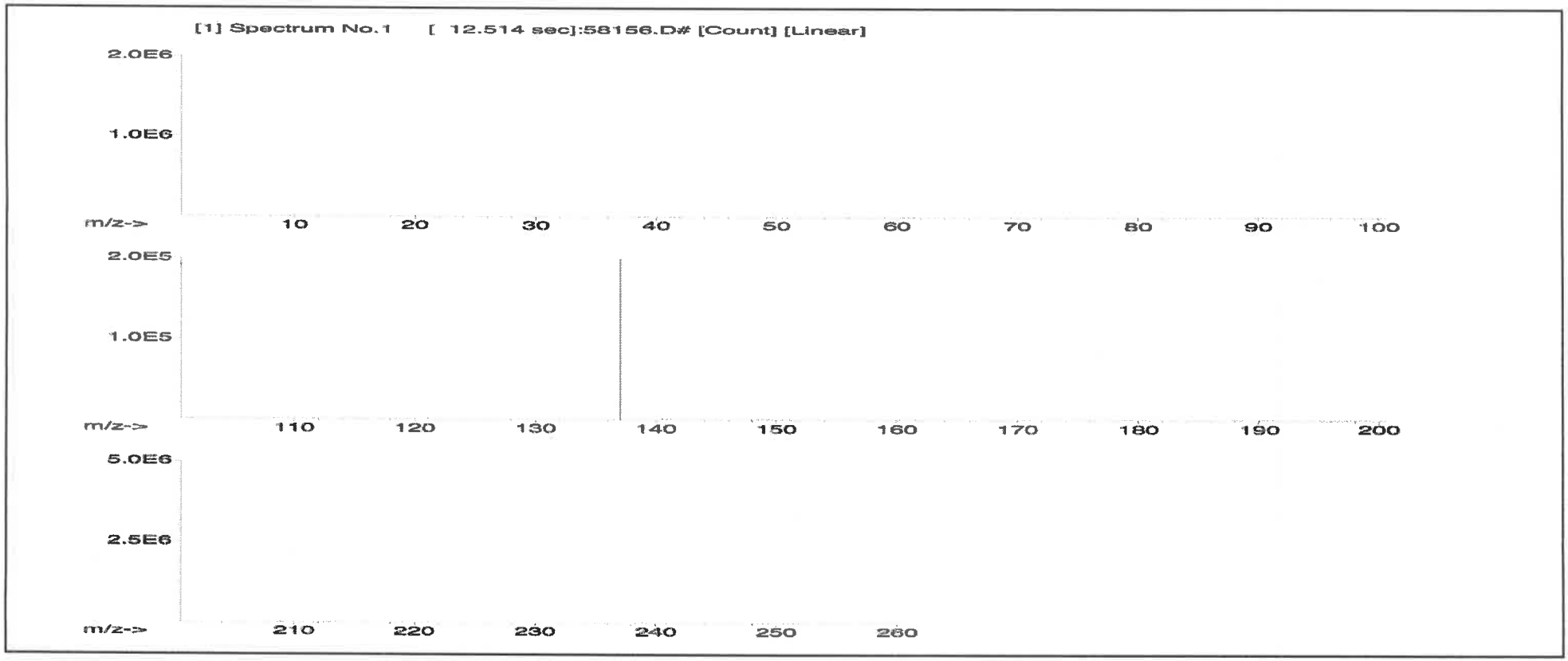
Giovanni Esposito

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



297

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

R 8/15/24

M6028

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298

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		

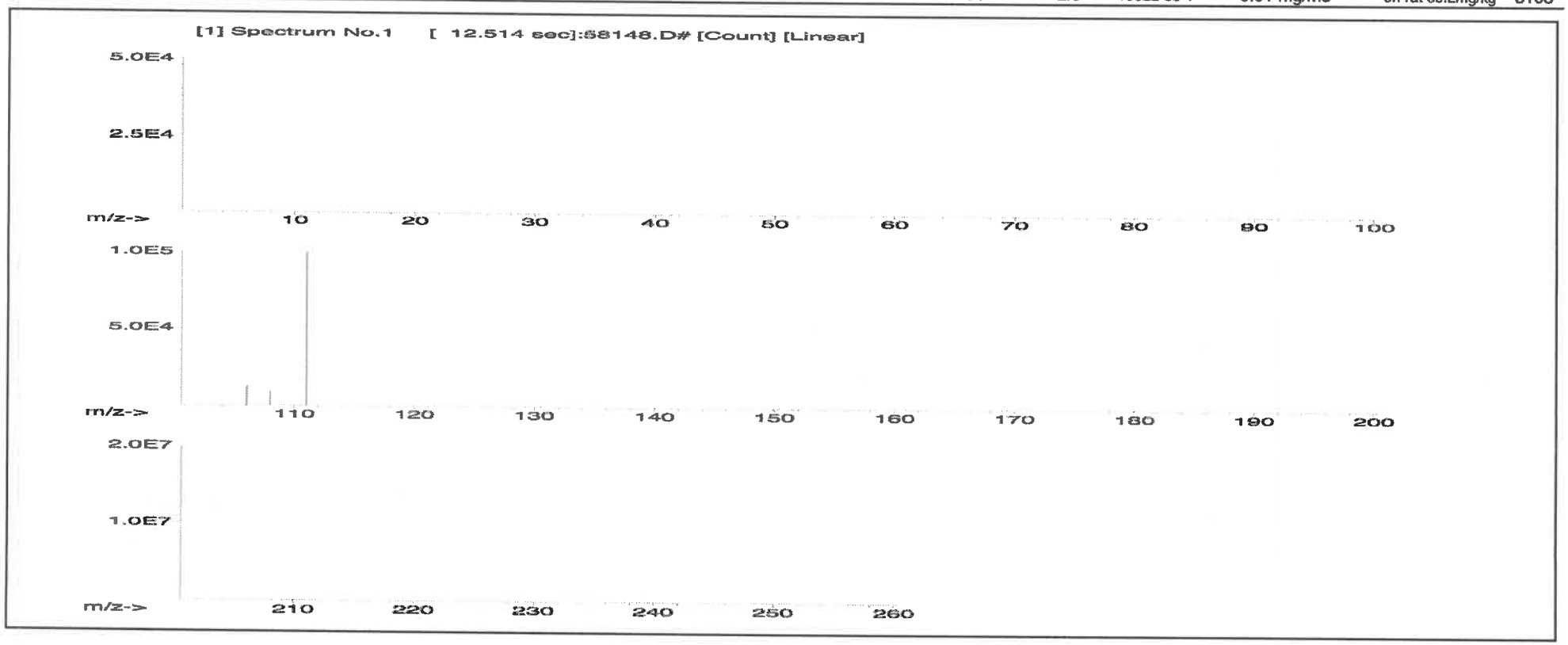
Aleah O'Brady

Formulated By:	Aleah O'Brady	070124

Pedro Rentas

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



299

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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Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	S2-MEB711673
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

Density: 1.030 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

300

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

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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



INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

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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:

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

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:

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

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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

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

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X_a = mean of Assay Method A with

$u_{char\ a}$ = 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

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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"

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 27, 2022

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

11.2 Lot Expiration Date

- **January 27, 2027**

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

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

11.3 Period of Validity

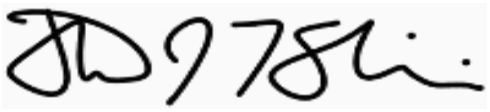
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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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.

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

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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:

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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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4.2 Balance Calibration

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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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 13, 2022

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

11.2 Lot Expiration Date

- **January 13, 2027**

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

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

11.3 Period of Validity

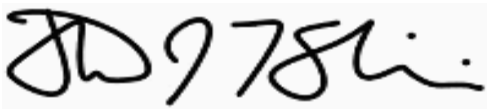
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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

Certified Reference Material CRM

R : 01/03/24. M5810, M5811

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

310

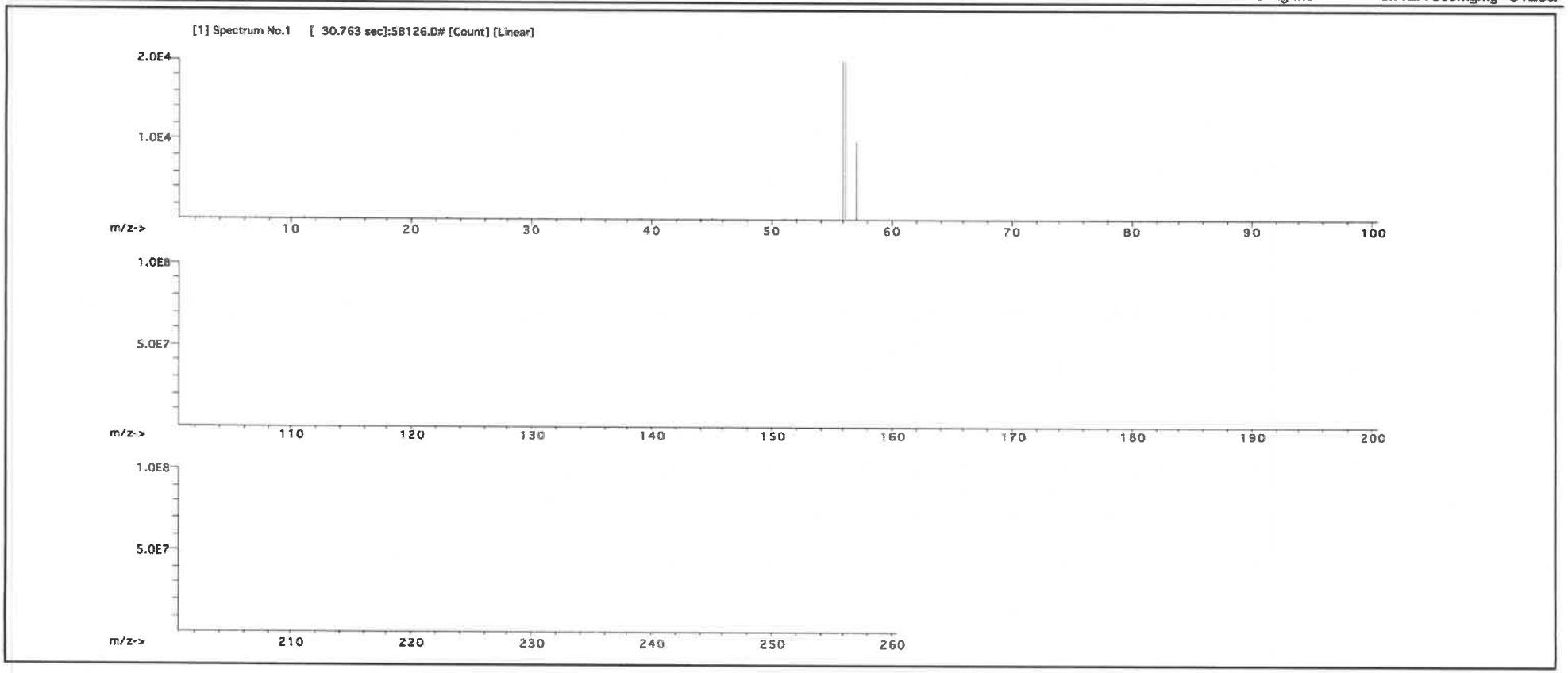
CERTIFIED WEIGHT REPORT:

		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



311

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).
* 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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312

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

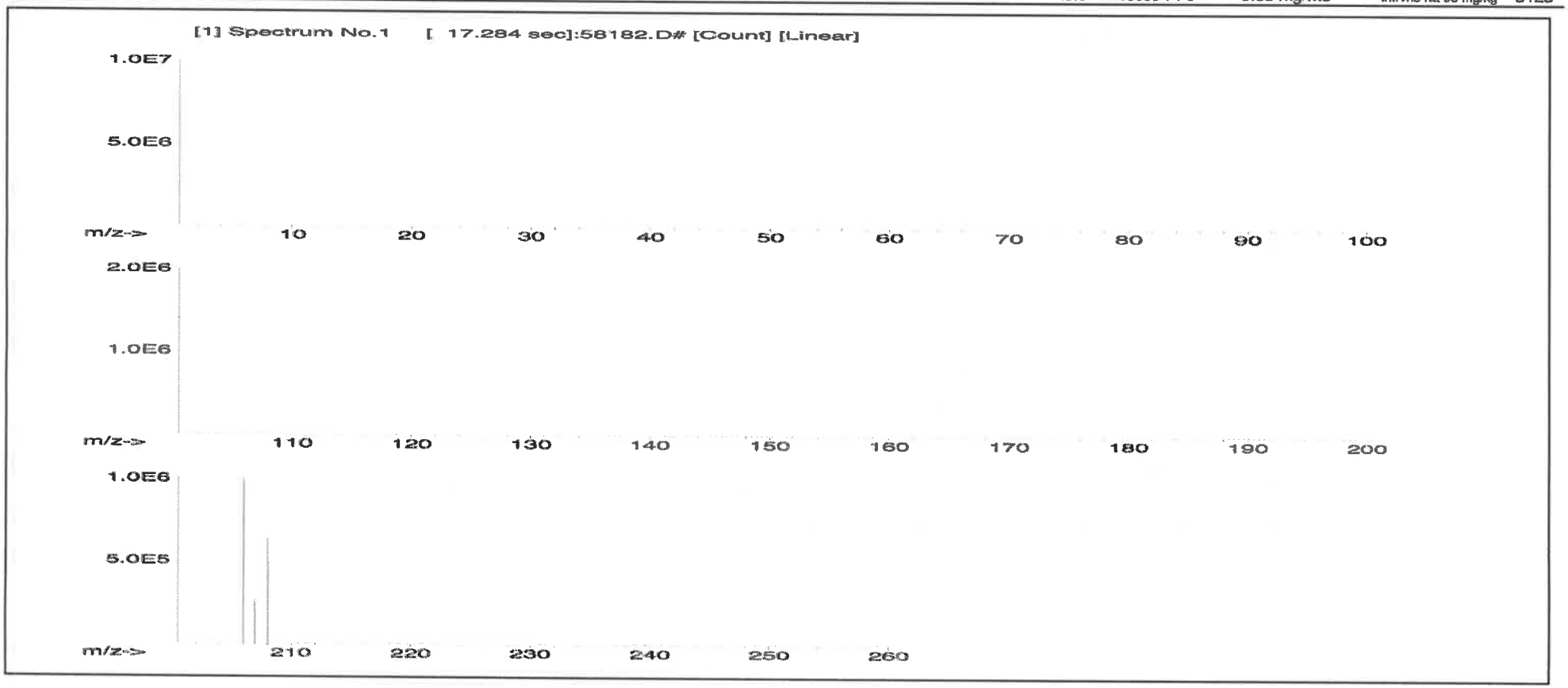
Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance 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



313

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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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

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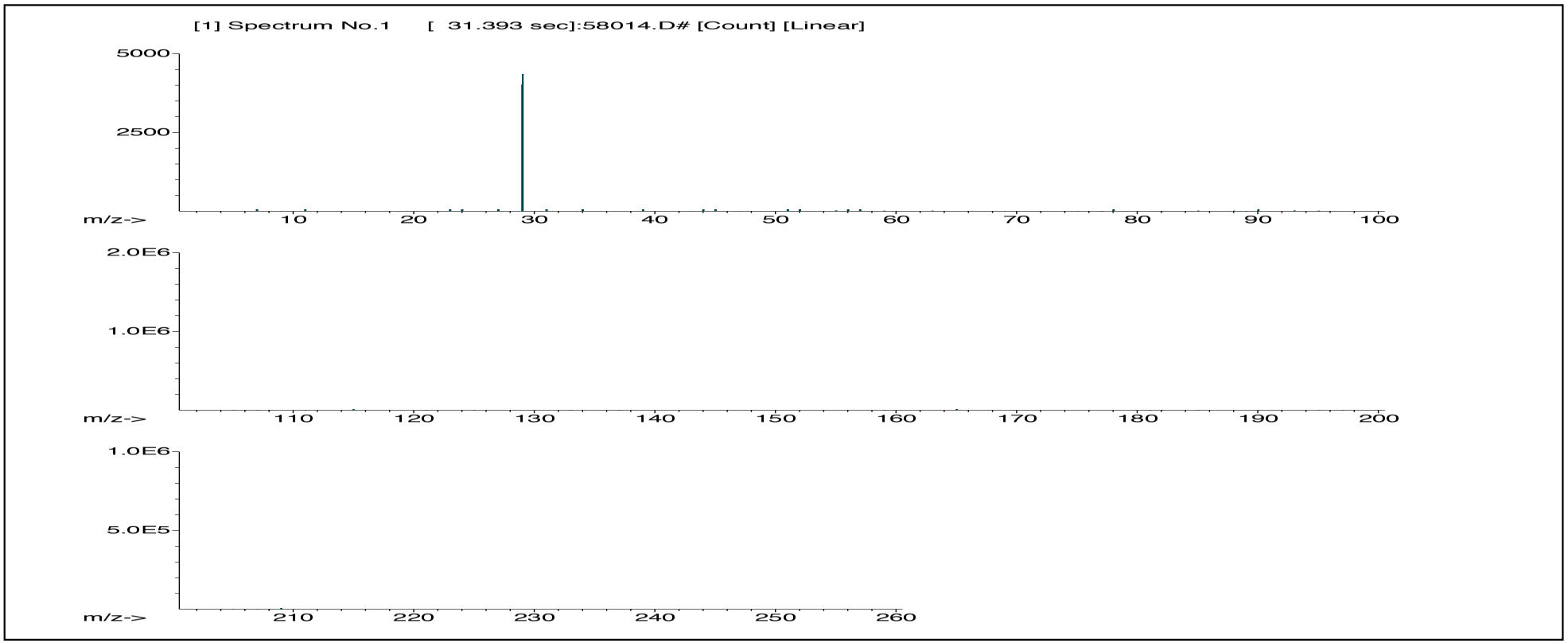
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57014**	19410105	Nitric Acid	
Lot Number:	**030921**			
Description:	**Silicon (Si)**			
		2.0%	60.0	Nitric Acid
Expiration Date:	030924		(mL)	
Recommended Storage:	Ambient (20 ºC)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	3000.41	0.058	Flask Uncertainty	

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

314

	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



315

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:

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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* 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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IN 5019 R: 12/09/21 (BH)

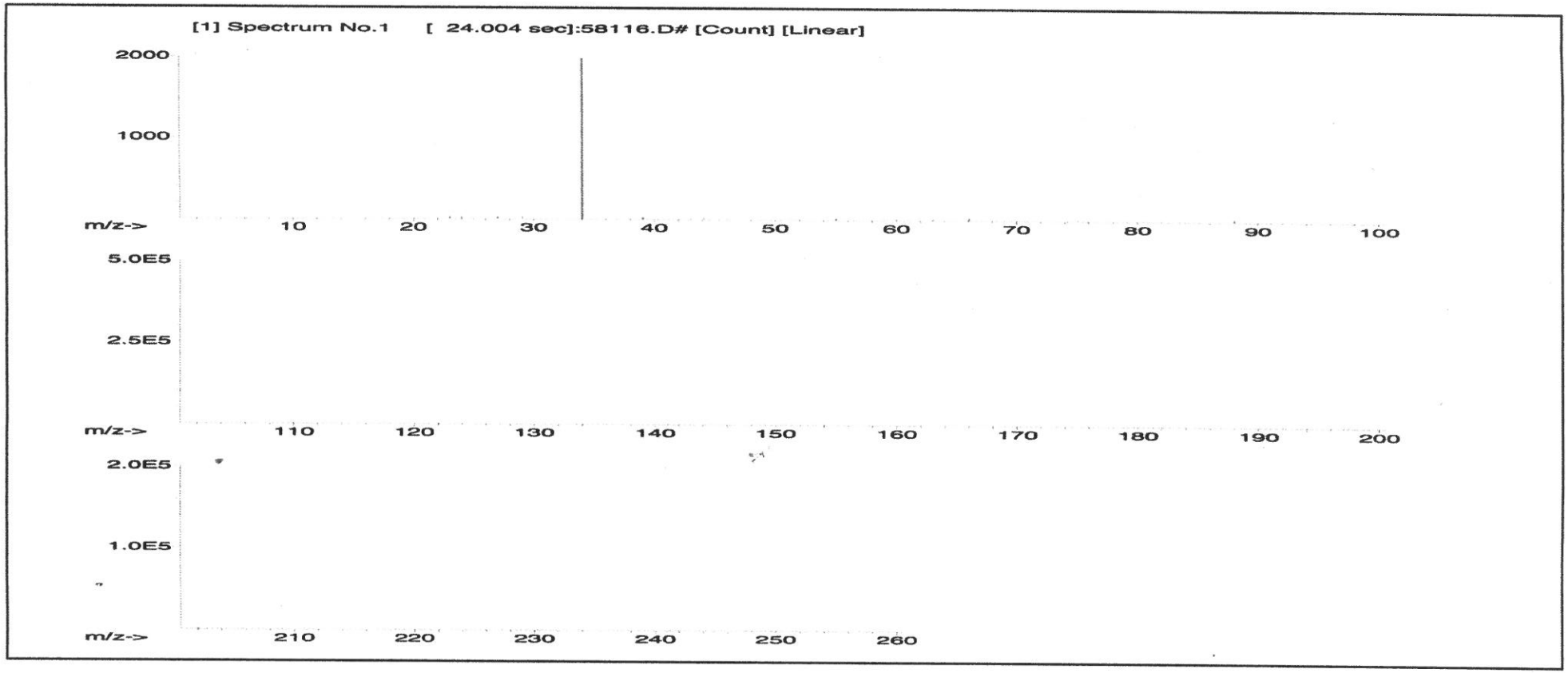
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CERTIFIED WEIGHT REPORT:

Part Number:	**57116**	**Solvent:**	Lot # 011421	ASTM Type 1 Water
Lot Number:	**011421**			
Description:	**Sulfur (S)**			
Expiration Date:	011424			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**10000**			
NIST Test Number:	23060	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	1999.53	0.100	Flask Uncertainty	

Formulated By:	Lawrence Barry	011421
Reviewed By:	Pedro L. Rentas	011421

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



316

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.

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317

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318

CERTIFIED WEIGHT REPORT:

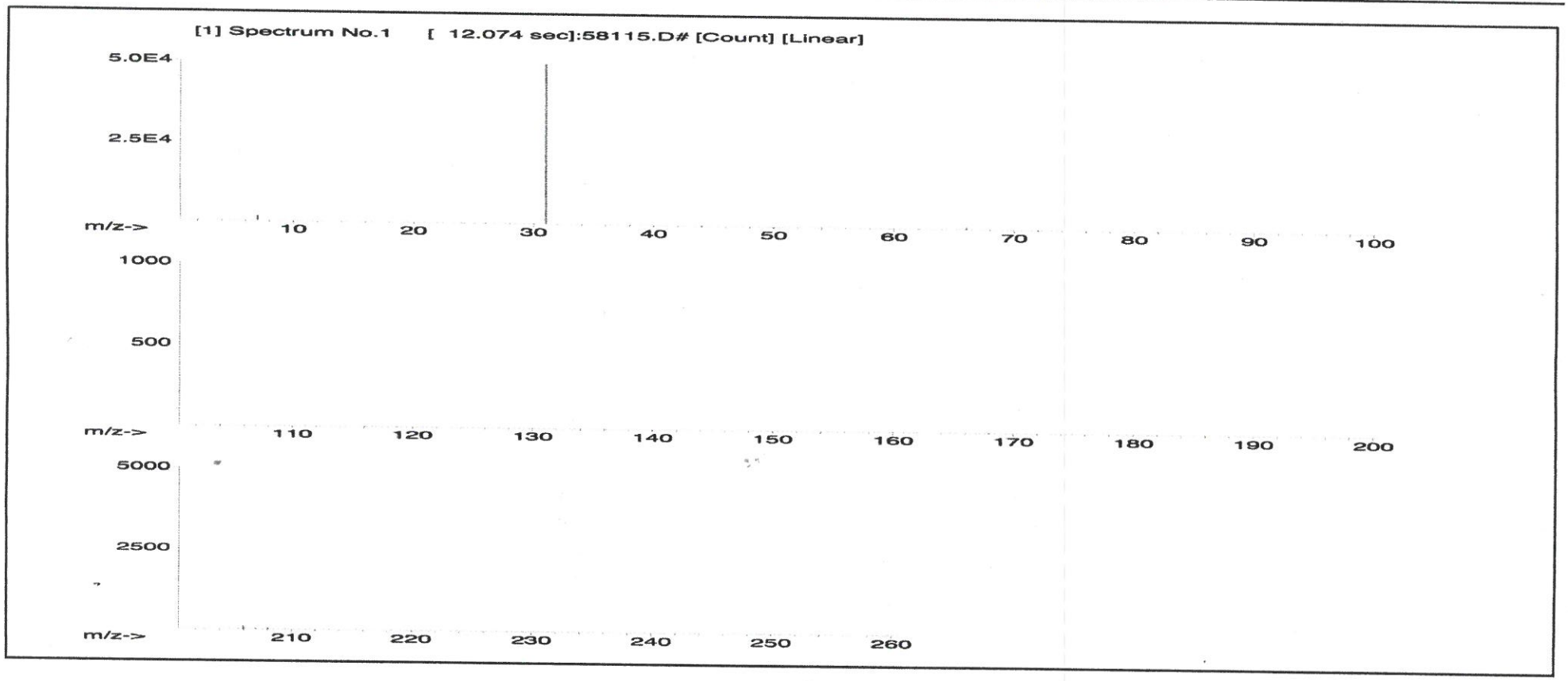
Part Number: 57115
Lot Number: 032921
Description: Phosphorous (P)

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



319

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.
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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-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:

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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



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

M5289 R: 07/12/22 (BH)

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

Part Number: 58113
Lot Number: 070622
Description: Aluminum (Al)

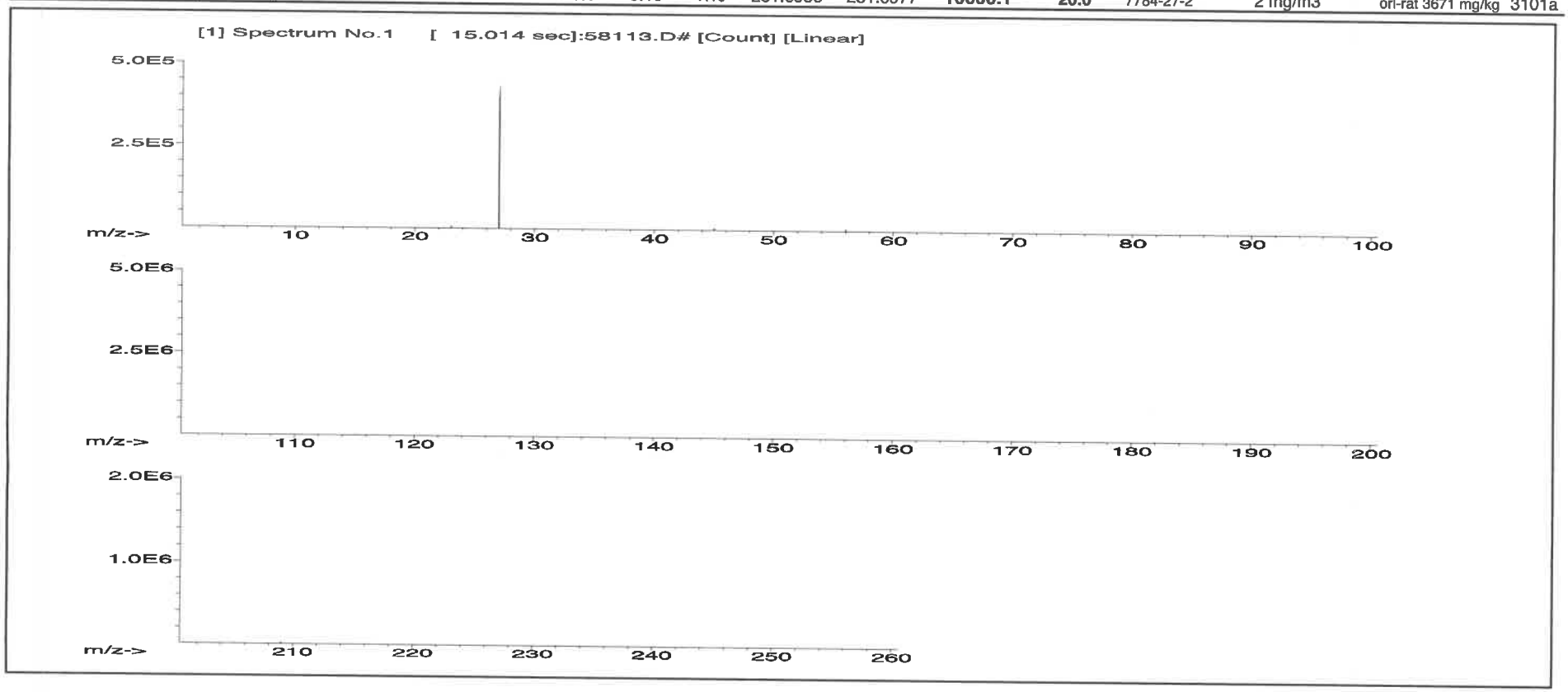
Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02 ± 0.058 Flask Uncertainty

		Lot #	
Solvent:	20370011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

5E-05 Balance 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.
* 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

M5429 R1 01/26/23 BH

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

CERTIFIED WEIGHT REPORT:

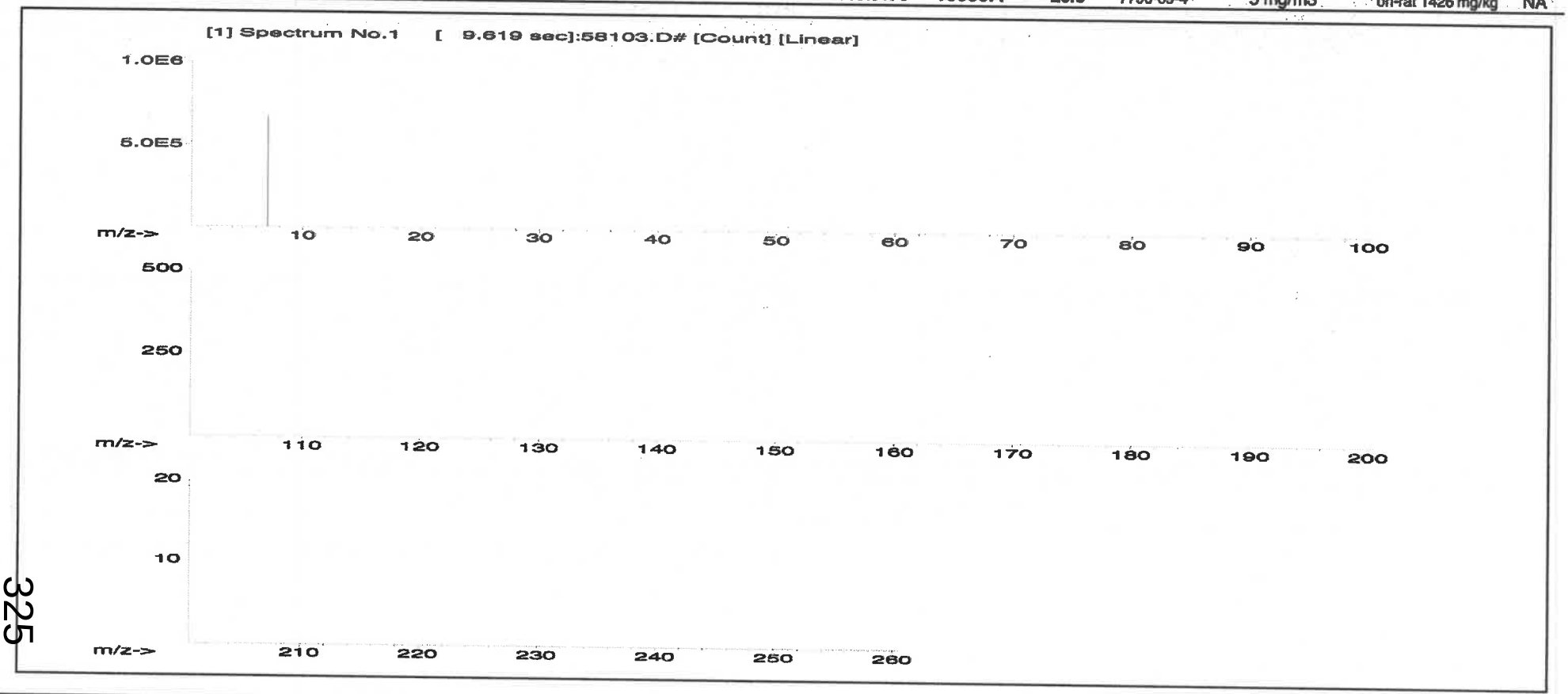
Part Number: 57103
Lot Number: 070622
Description: Lithium (Li)

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 ± 0.058 Flask Uncertainty

	Lot #		
Solvent:	20510011	Nitric Acid	
2%	20.0 (mL)	Nitric Acid	± 5E-05 Balance 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



325

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:

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).

326

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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

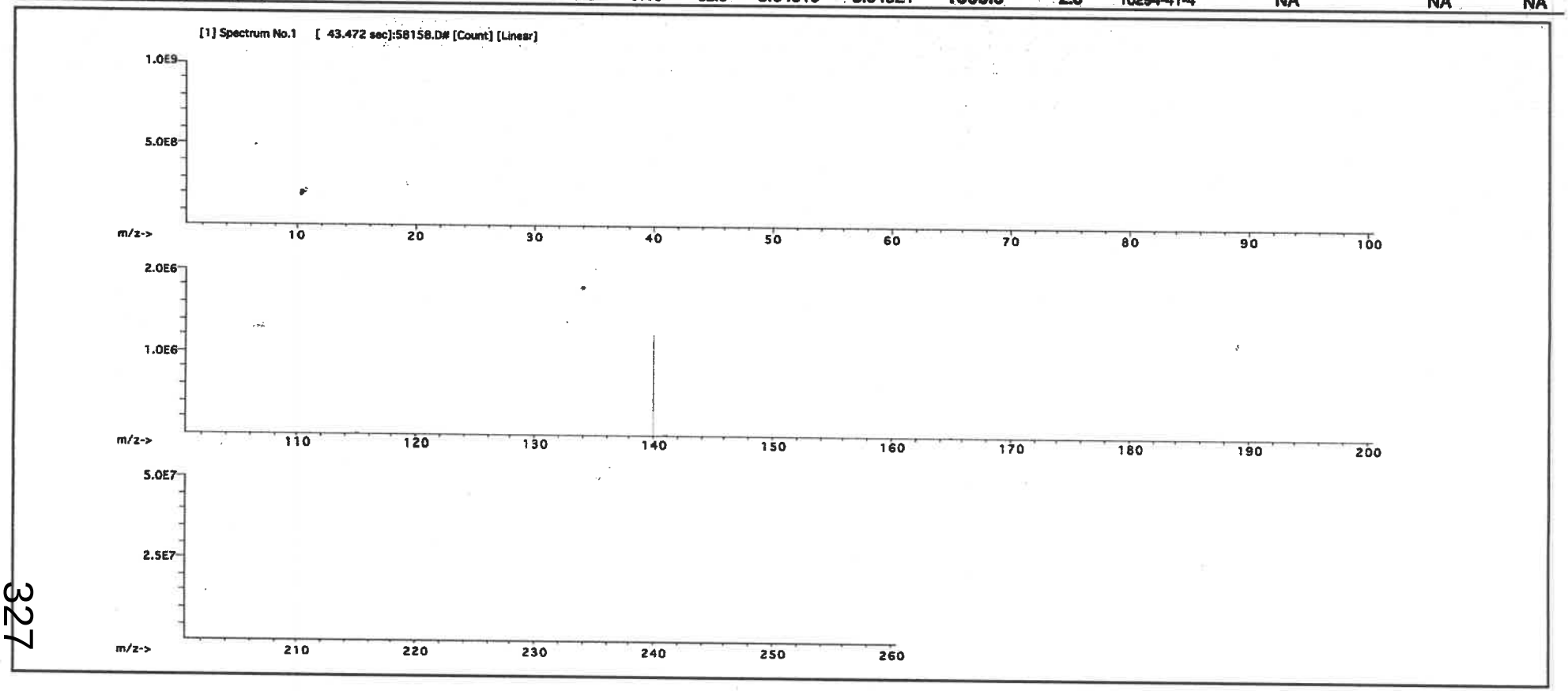
Weight shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

		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



327

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).

328

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Certified Reference Material CRM

M5496 R 7/20/23

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329

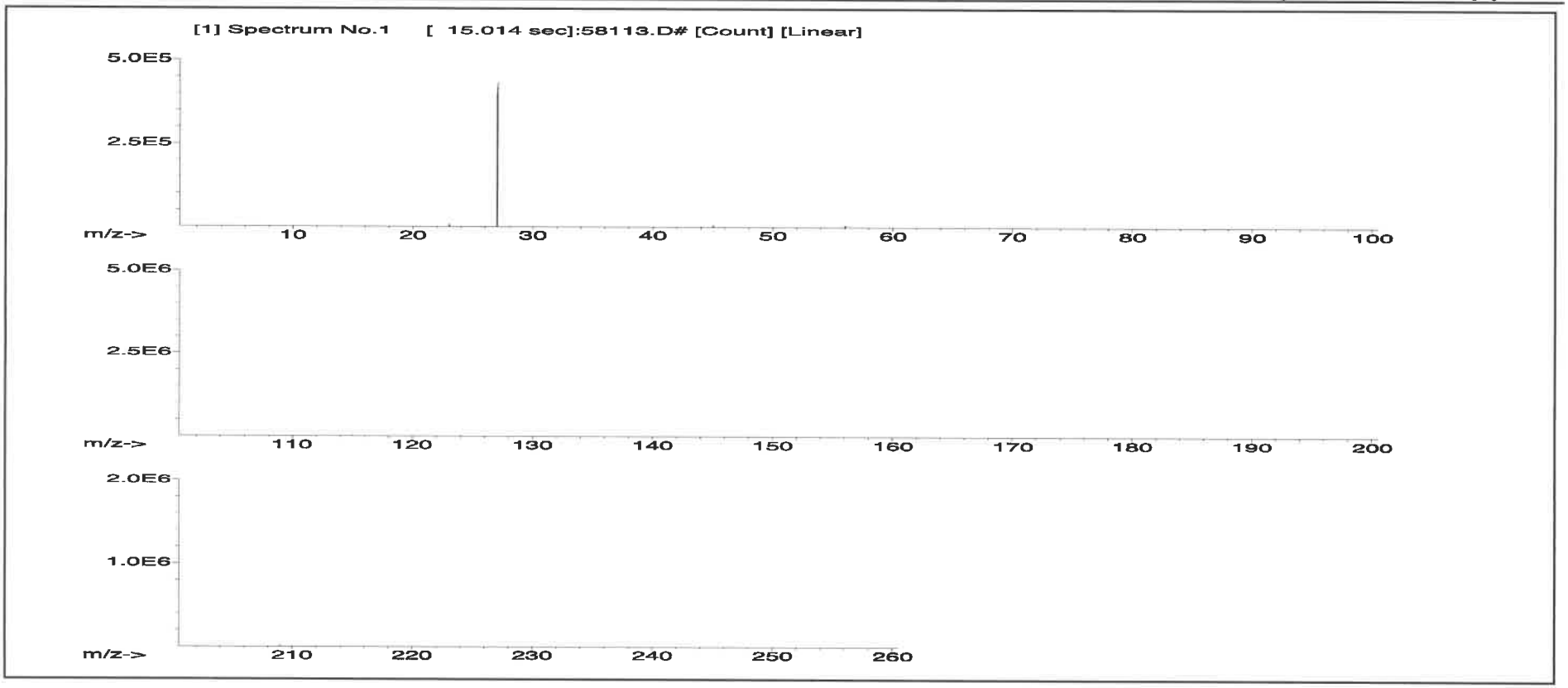
CERTIFIED WEIGHT REPORT:

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
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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M5497 - M5498 R: 03/17/23 BH

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CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 031523
Description: Calcium (Ca)

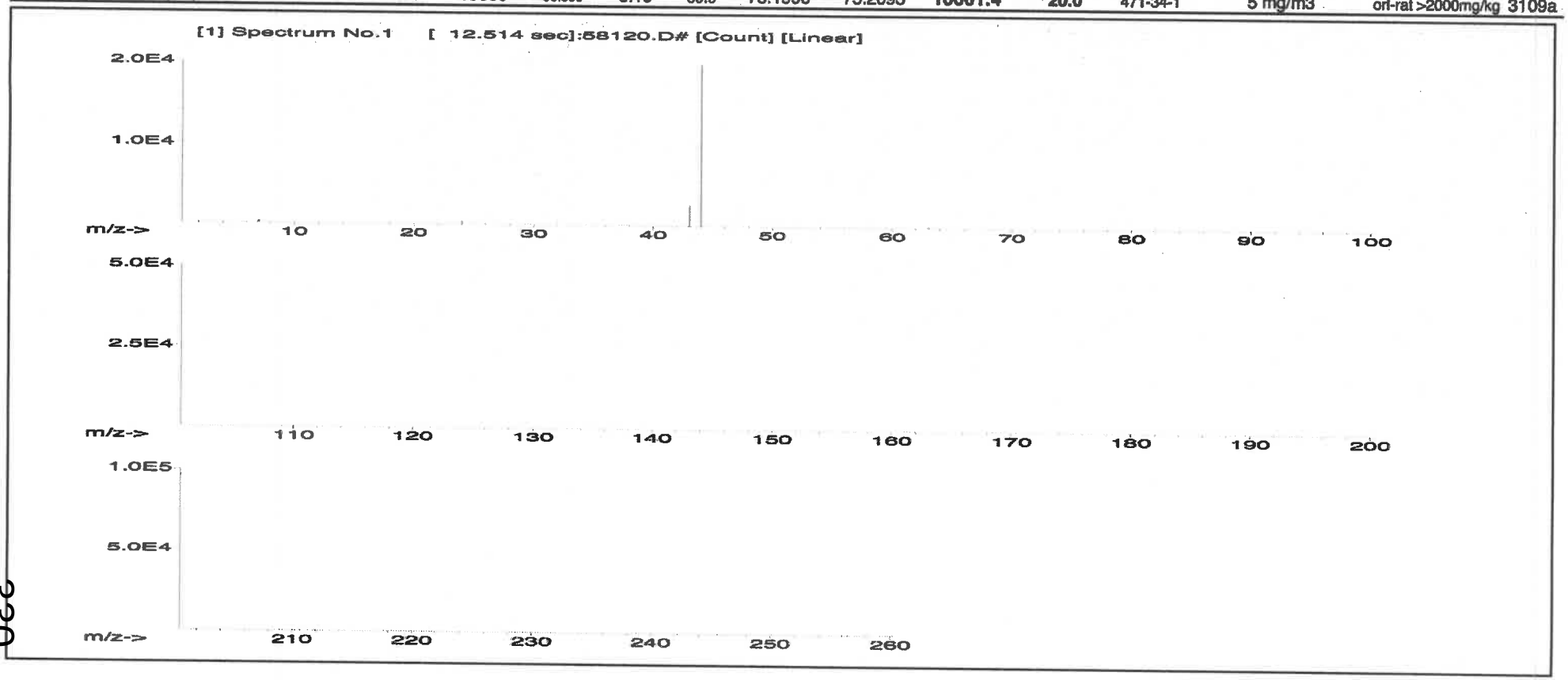
Expiration Date: 031526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 ± 0.058 Flask Uncertainty

	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



330

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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Certified Reference Material CRM

M5497 - M5498 R: 03/17/23 BH

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

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 031523
Description: Calcium (Ca)

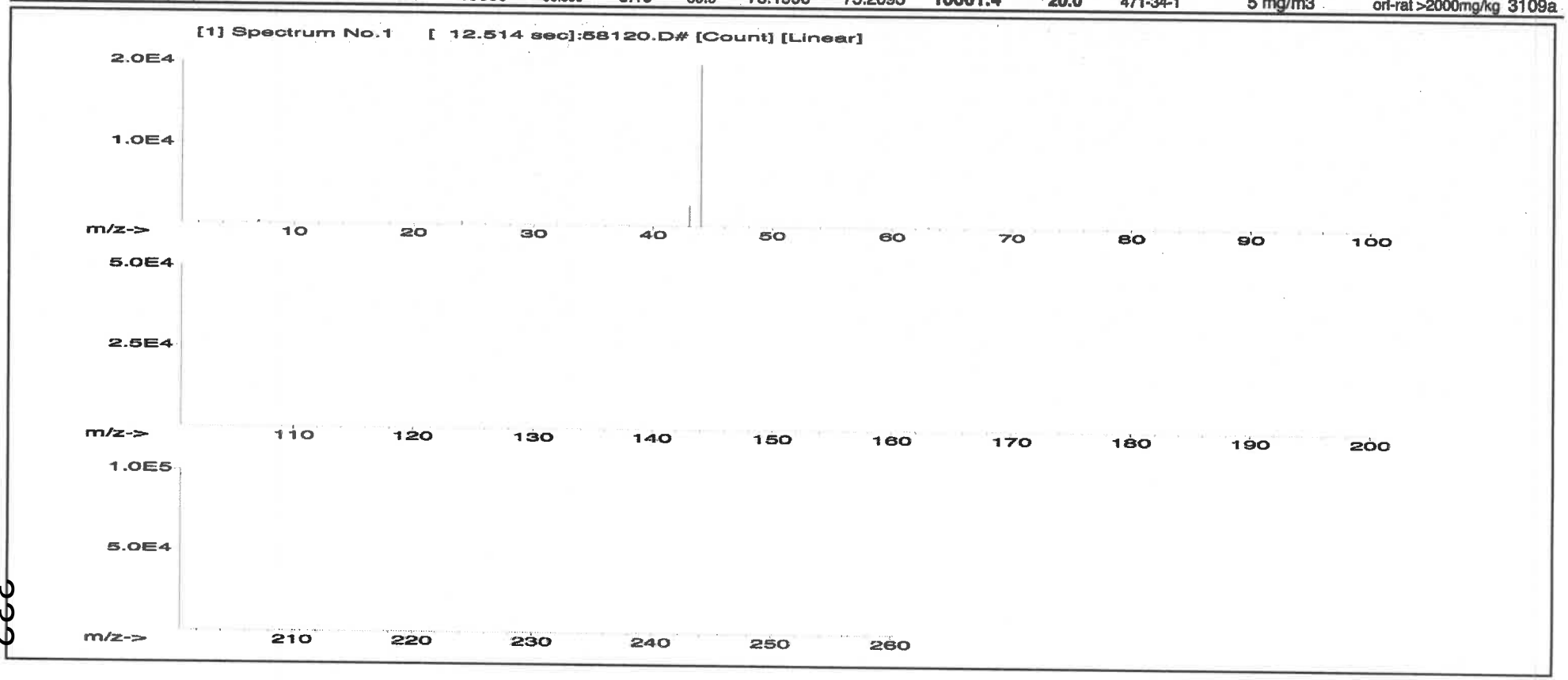
Expiration Date: 031526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 0.058 Flask Uncertainty

	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



332

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.
* 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

MS513 R:03/17/23

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AR-1539 Certificate Number
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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

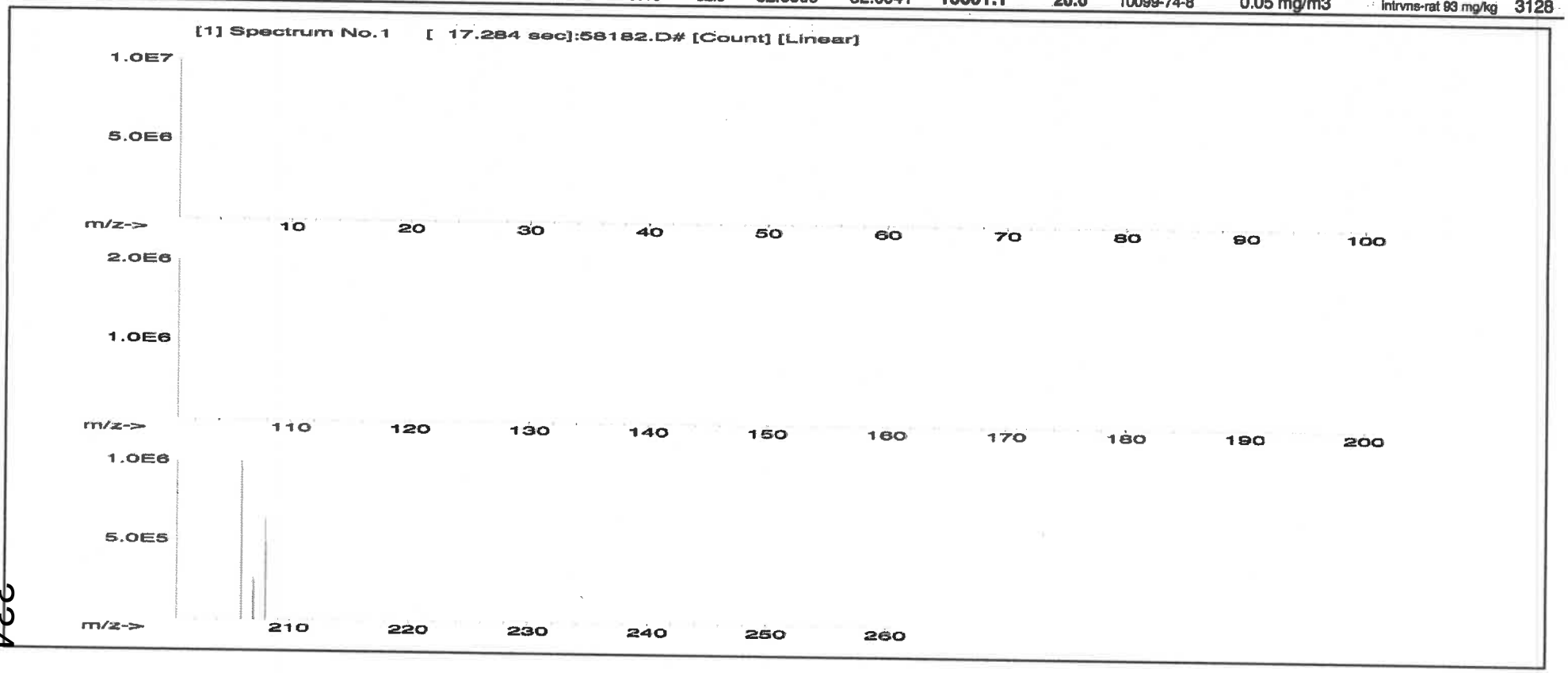
	Lot #		
Solvent:	20510011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	

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



334

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).
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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).

335

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M5519. M5520 BH R:03/17/23

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336

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

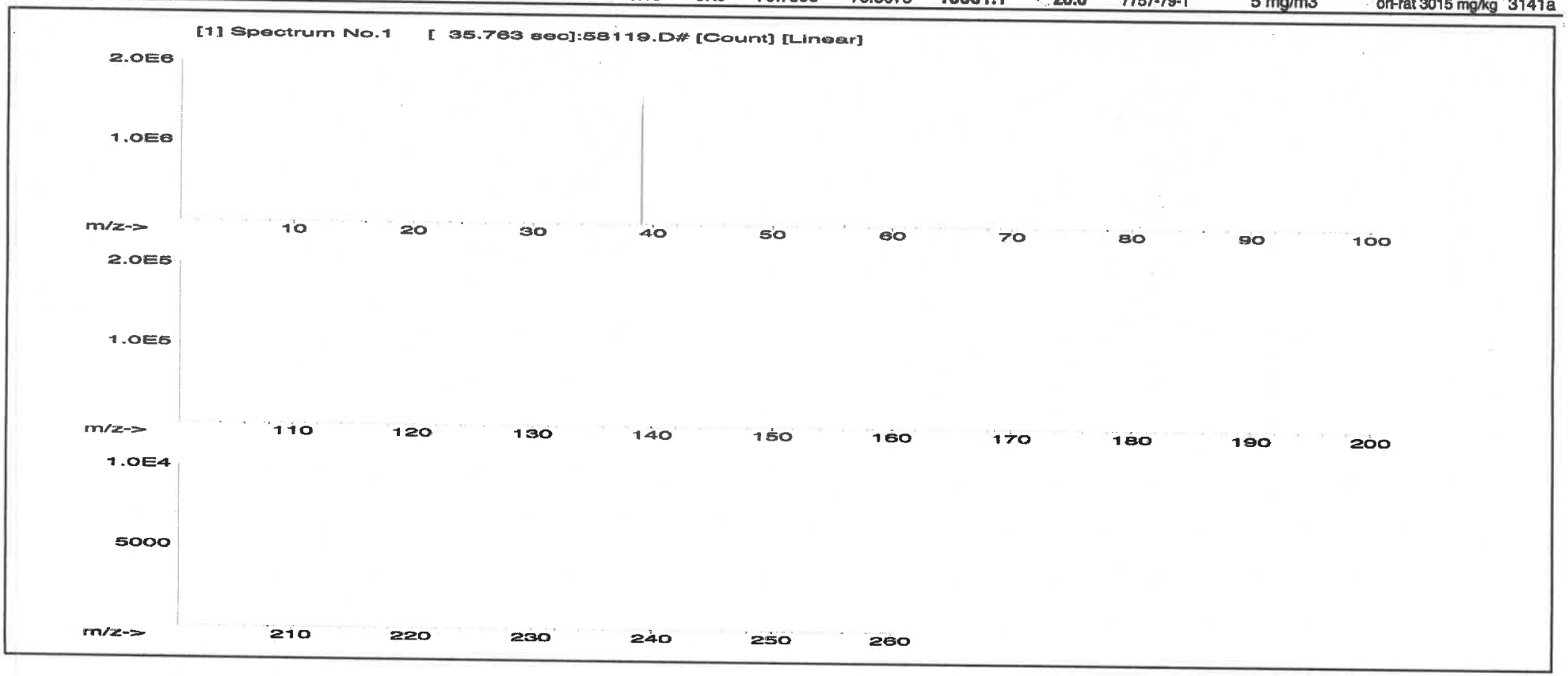
	Lot #		
Solvent:	20510011	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	

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



337

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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:



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

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inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	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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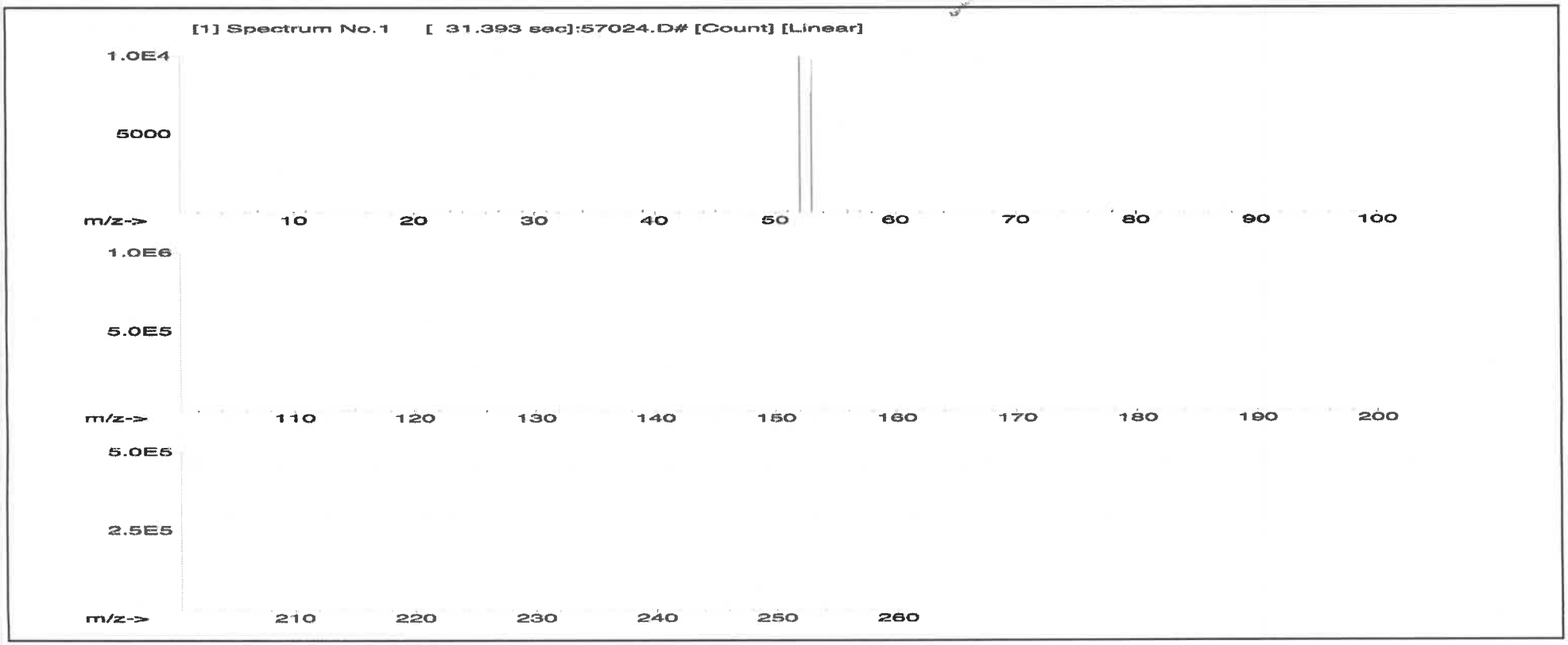
342

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



343

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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Certified Reference Material CRM

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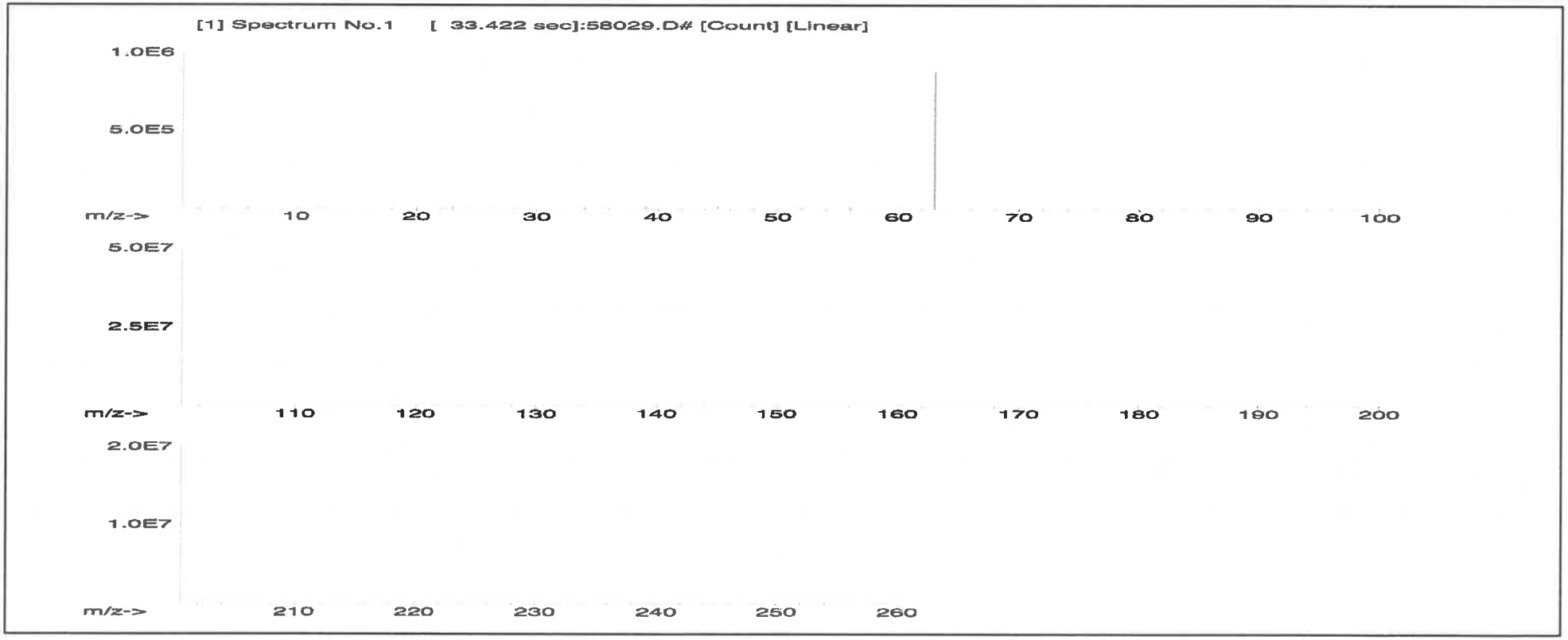
344

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



345

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* 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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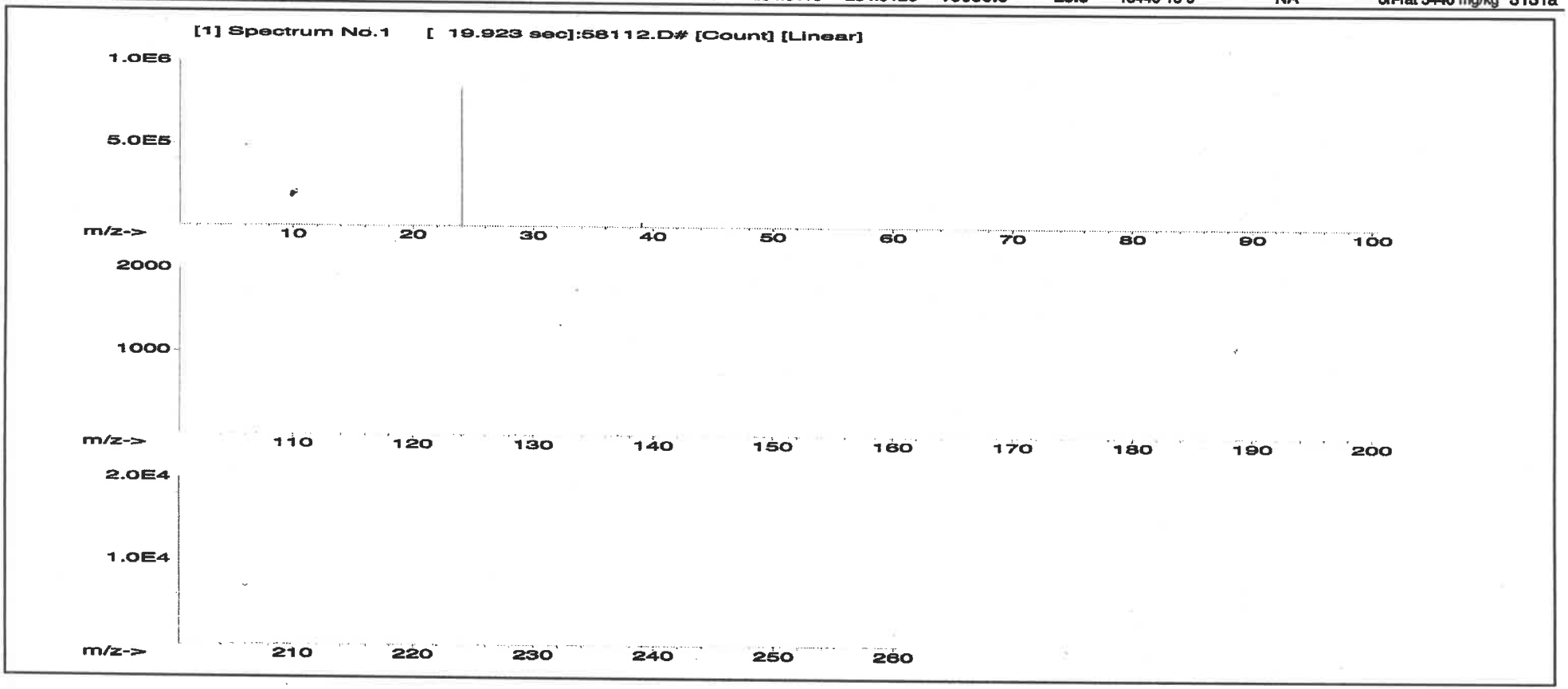
346

CERTIFIED WEIGHT REPORT:

			Lot #	
Part Number:	**58112**	**Solvent:**	24002546	Nitric Acid
Lot Number:	**091823**			
Description:	**Magnesium (Mg)**	2%	40.0 (mL)	Nitric Acid
Expiration Date:	091826			
Recommended Storage:	Ambient (20 °C)	M5768, M5769 (BP) R: 1/3/24		
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	091823
Reviewed By:	Pedro L. Rentas	091823

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGD052023A1	10000	99.999	0.10	8.51	234.9118	234.9126	**10000.0**	**20.0**	13446-18-9	NA	orl-rat 5440 mg/kg	3131a



347

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.
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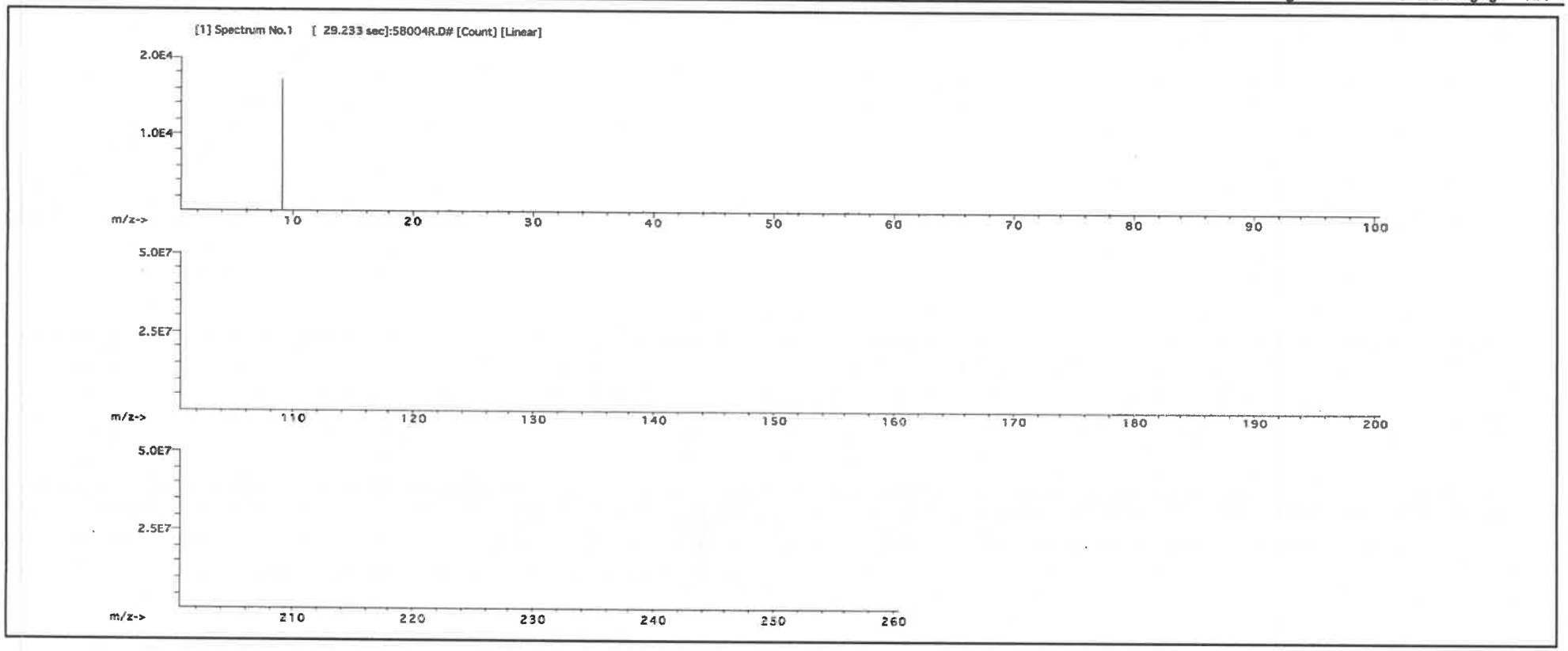
348

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.

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349

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350

CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

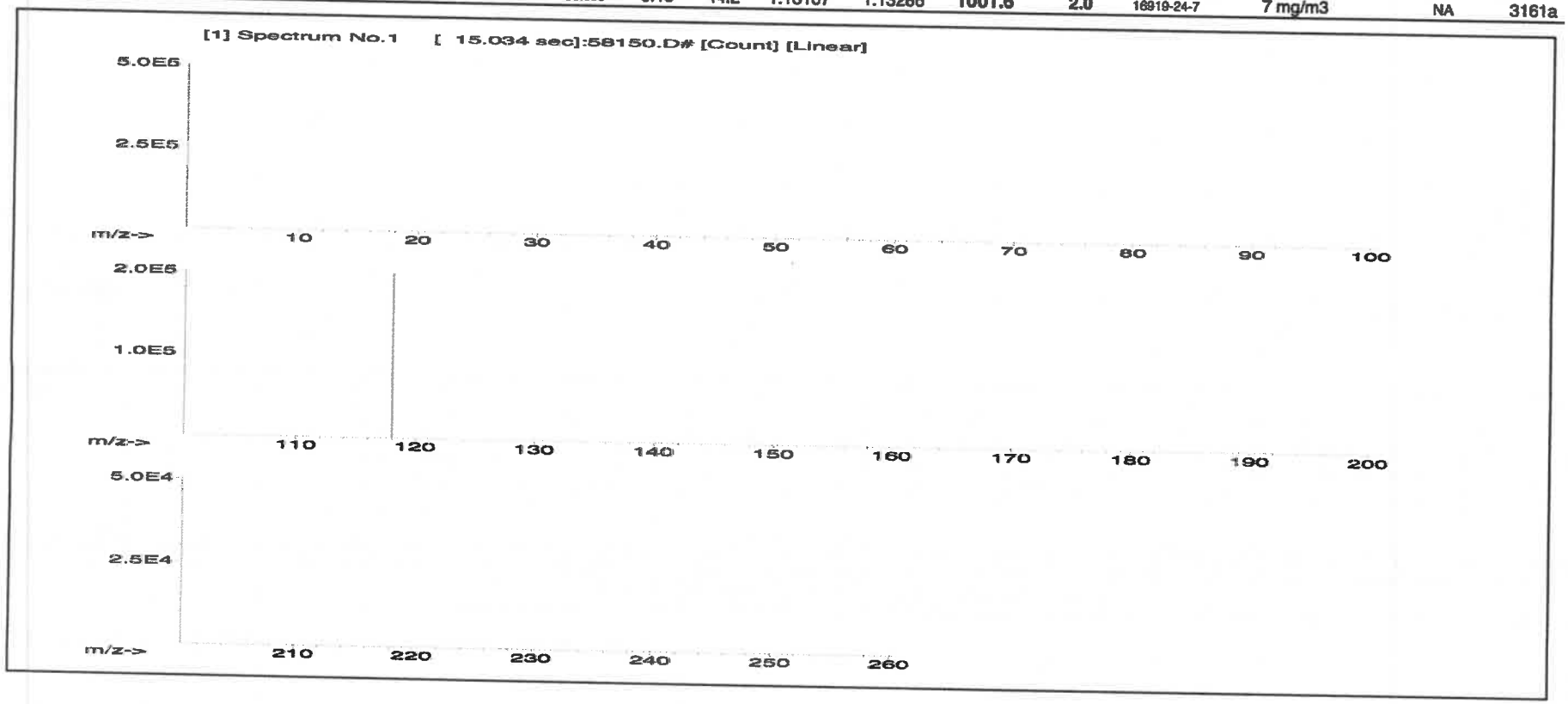
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	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



351

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:

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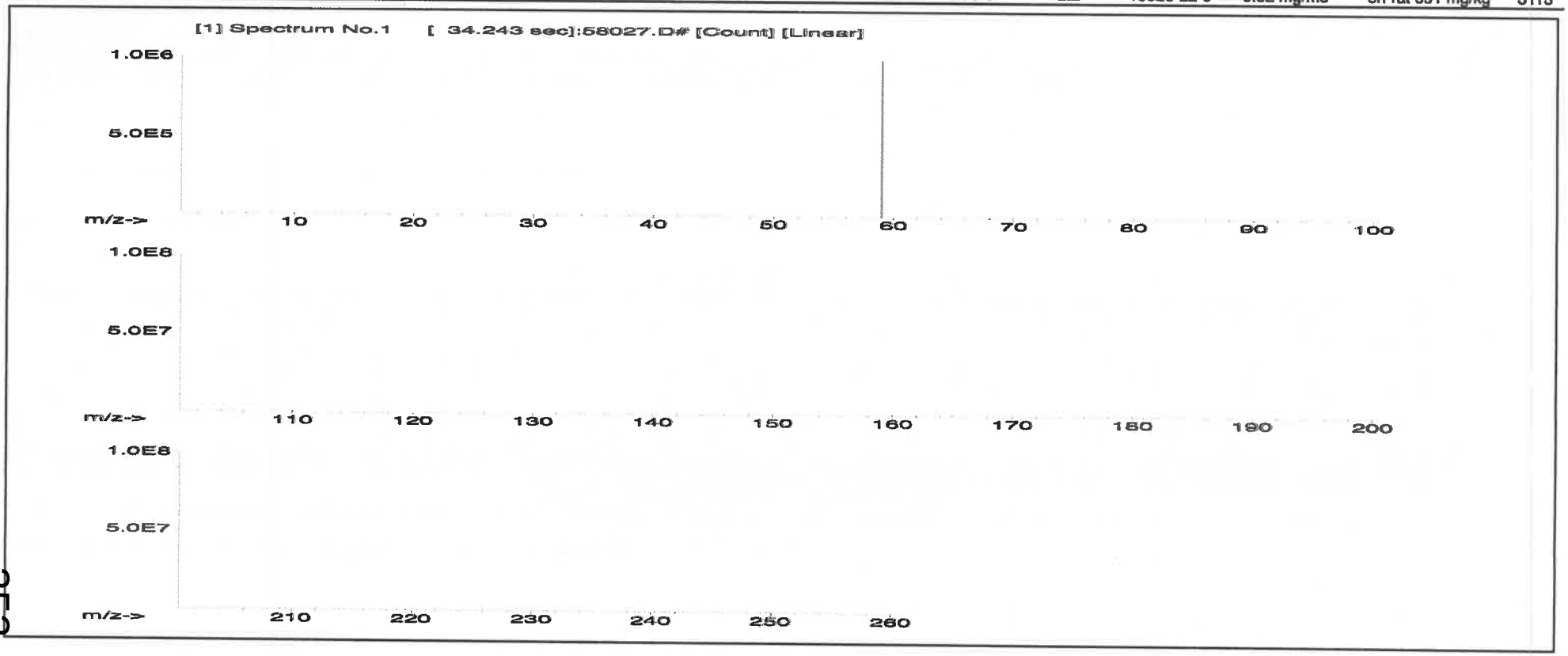
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CERTIFIED WEIGHT REPORT:

		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



352

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.

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353

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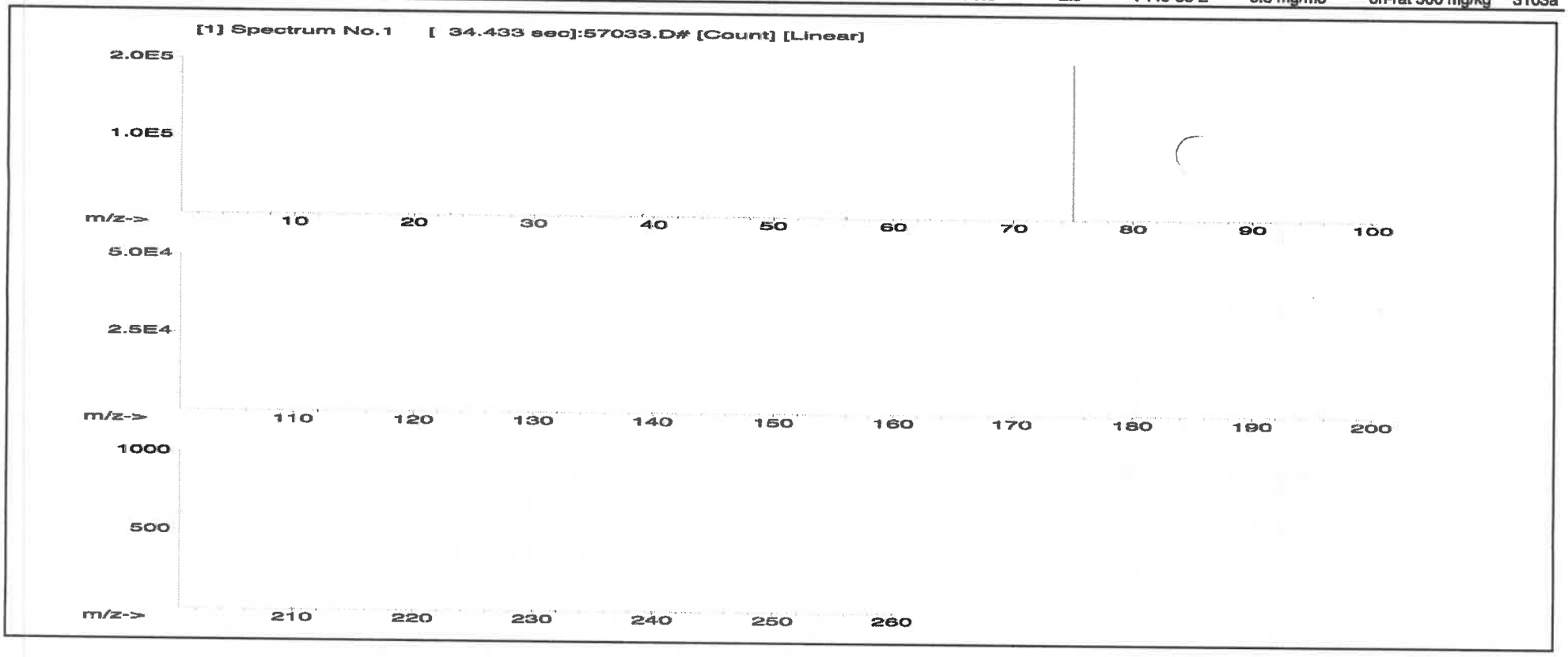
354

CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**	24002546	Nitric Acid		
Lot Number:	**111323**				
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



355

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

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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

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R1 02/09/24. M58165

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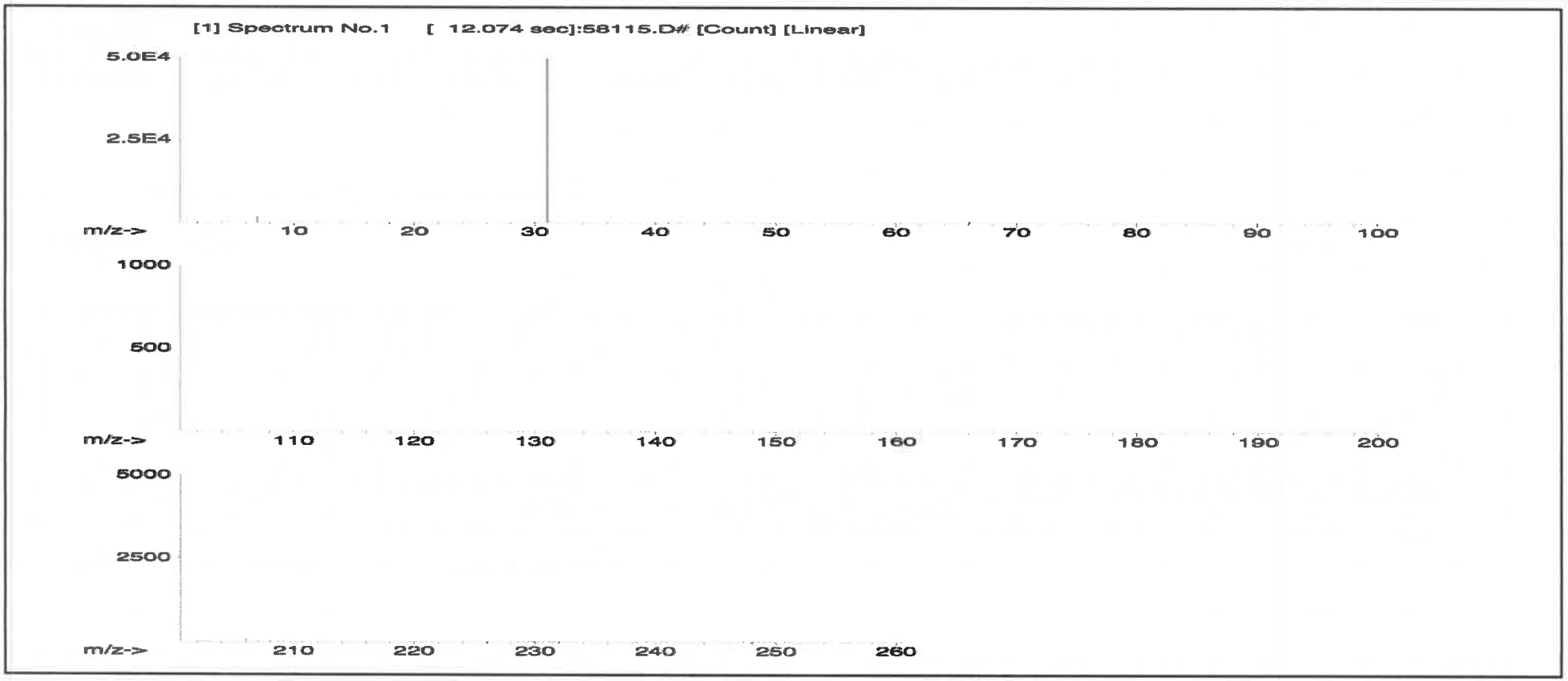
356

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



357

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.

* 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: 02/09/24 M5817

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

358

CERTIFIED WEIGHT REPORT:

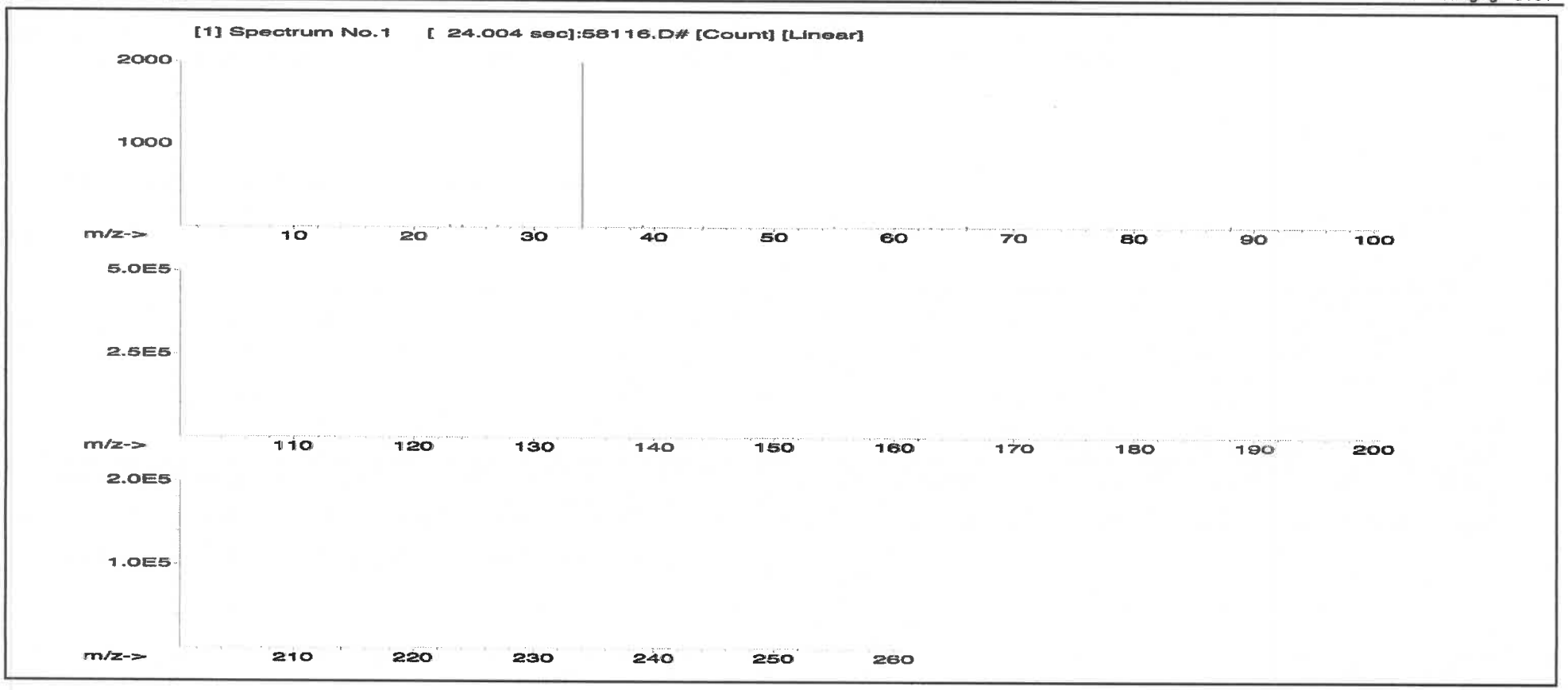
Part Number: 57116
Lot Number: 071123
Description: Sulfur (S)

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



359

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

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

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

(T)= Target analyte

Physical Characterization:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* 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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1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTI1
Lot Number:	T2-TI719972
Matrix:	2% (v/v) HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Titanium
Starting Material:	Ti Metal
Starting Material Lot#:	2094
Starting Material Purity:	99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **1002 ± 4 µg/mL**
ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 chemically stable for years in 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

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

11.2 Lot Expiration Date

- **June 17, 2027**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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info@inorganicventures.com

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:	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

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

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

11.2 Lot Expiration Date

- February 20, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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Certified Reference Material CRM

M5961 R: 6/11/24

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

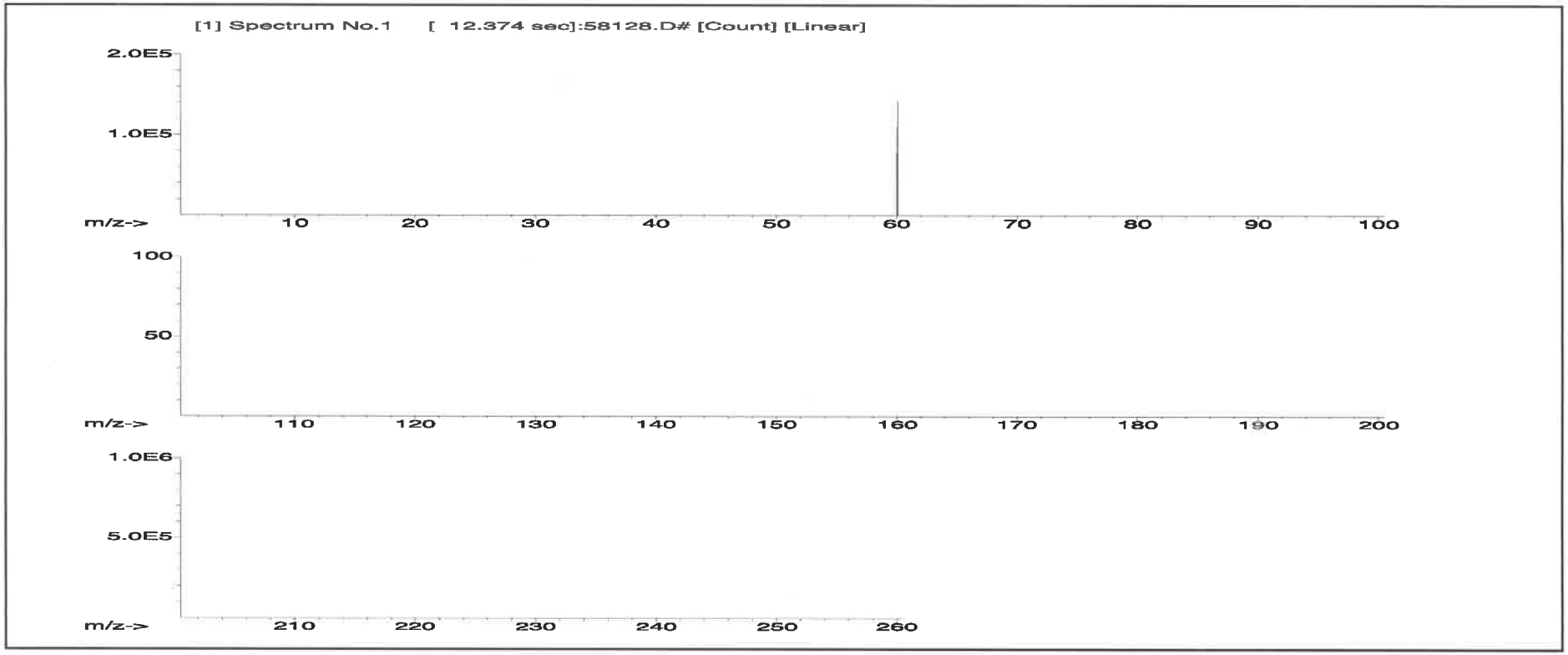
368

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



369

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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https://Absolutestandards.com

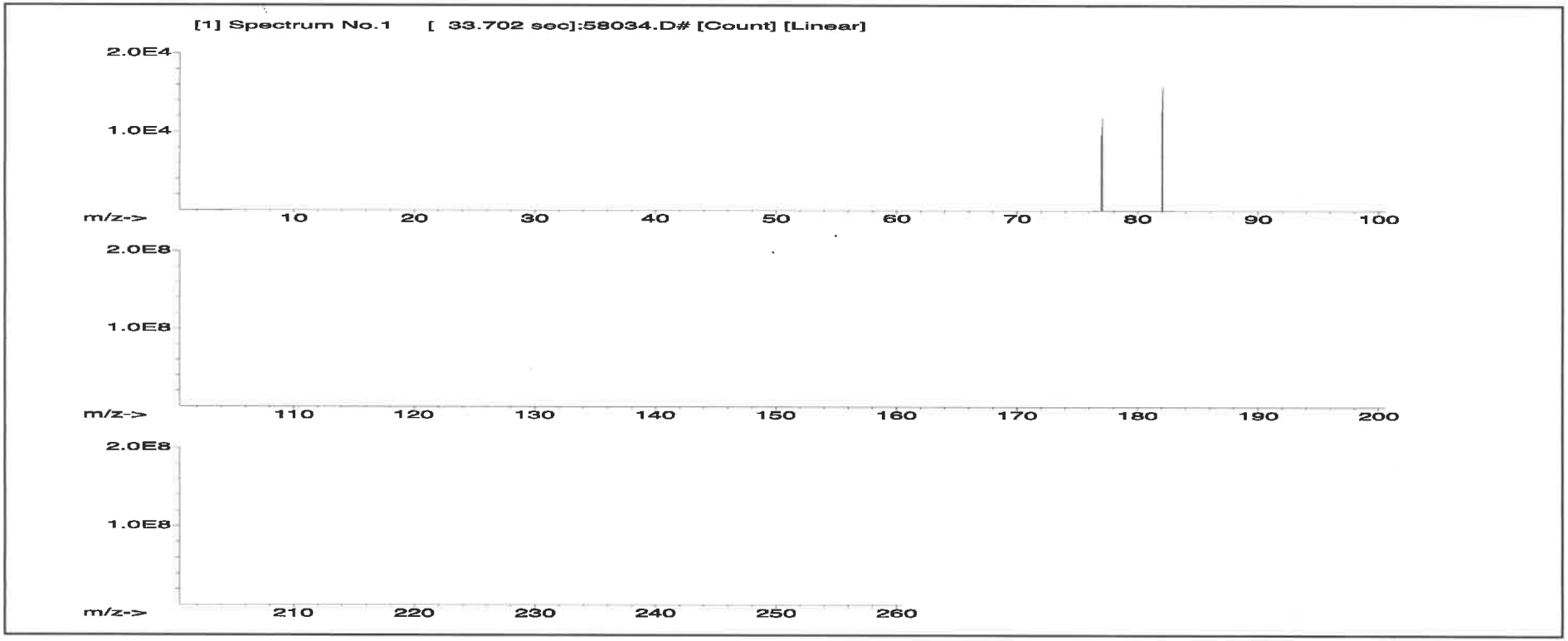
370

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



371

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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CERTIFIED WEIGHT REPORT:

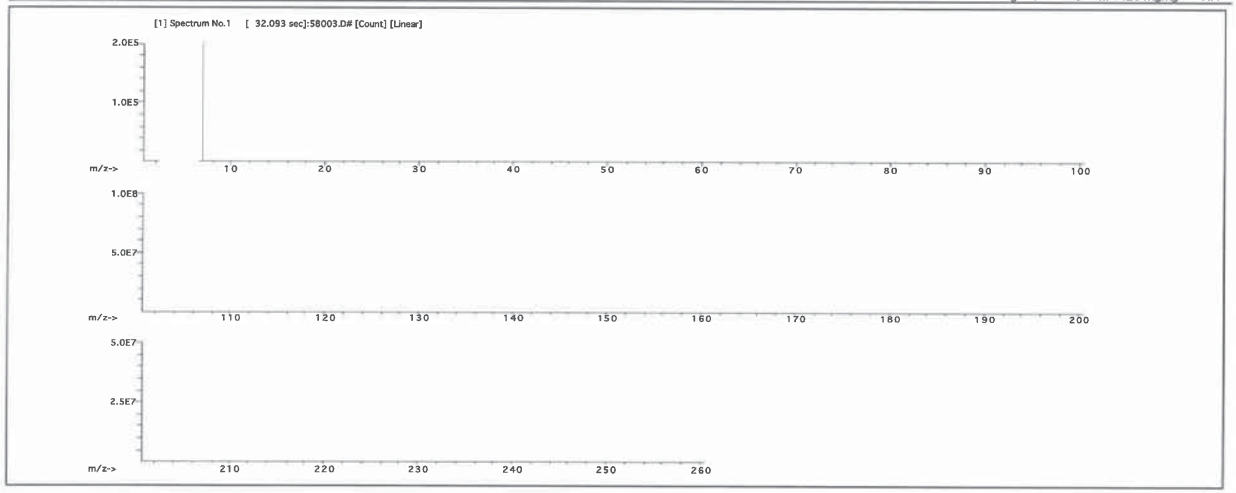
		Lot #	Solvent:		
Part Number:	**57003**	24002546	Nitric Acid		
Lot Number:	**062124**				
Description:	**Lithium (Li)**				
		2.0%	5.0 (mL)	Nitric Acid	
Expiration Date:	062127				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	250.11	0.016	Flask Uncertainty		

Giovanni Esposito

Formulated By: Giovanni Esposito 062124

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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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).

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Certificate of Analysis

M5976, M5977
R: 02/22/24

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Christiansburg, VA 24073 USA
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info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

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

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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MS985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

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

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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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

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

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

11.2 Lot Expiration Date

- September 06, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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

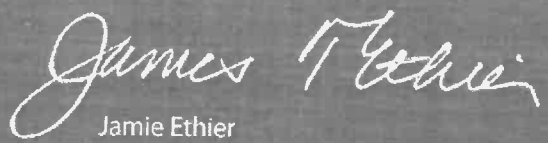
386

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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390

CERTIFIED WEIGHT REPORT:

R→ 1/13/25

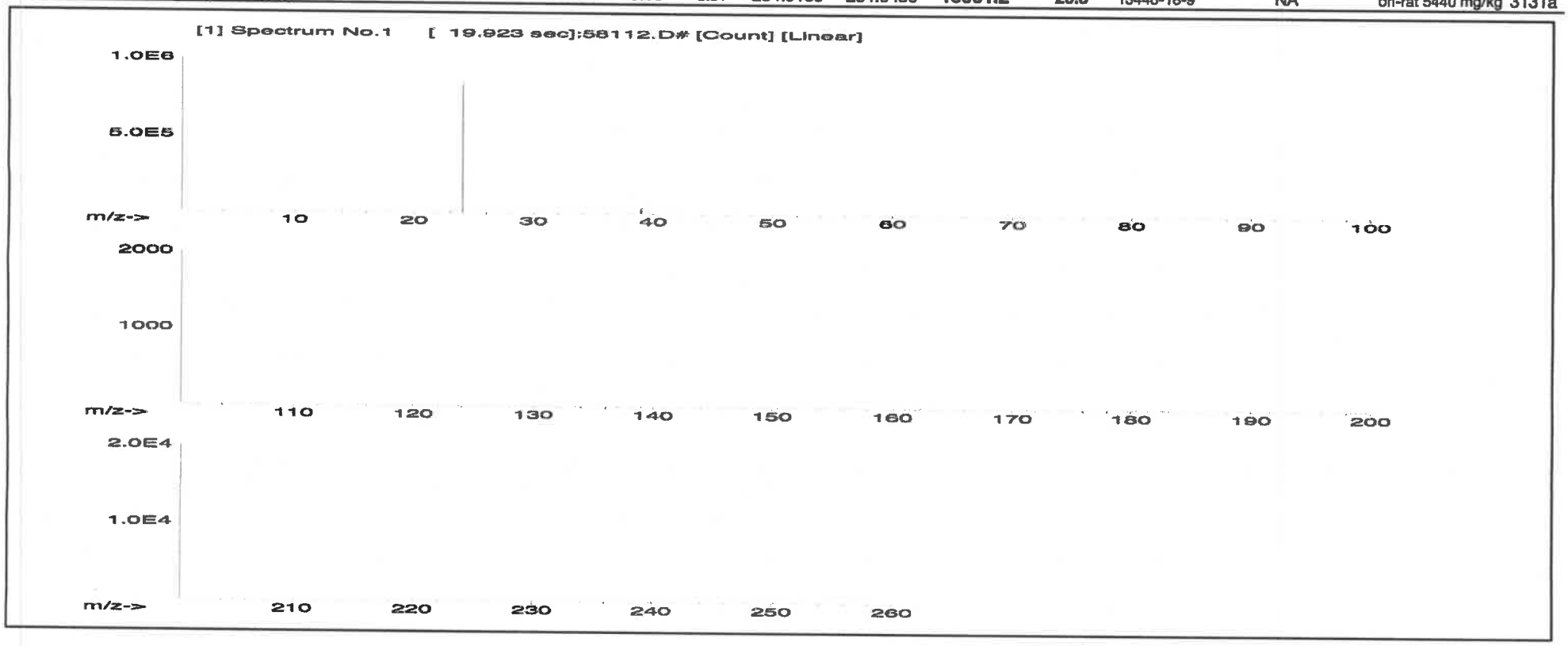
M 6127

Part Number:	**58112**		**Solvent:**	**Lot #** 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



391

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.
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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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392

CERTIFIED WEIGHT REPORT:

R->1/13/28

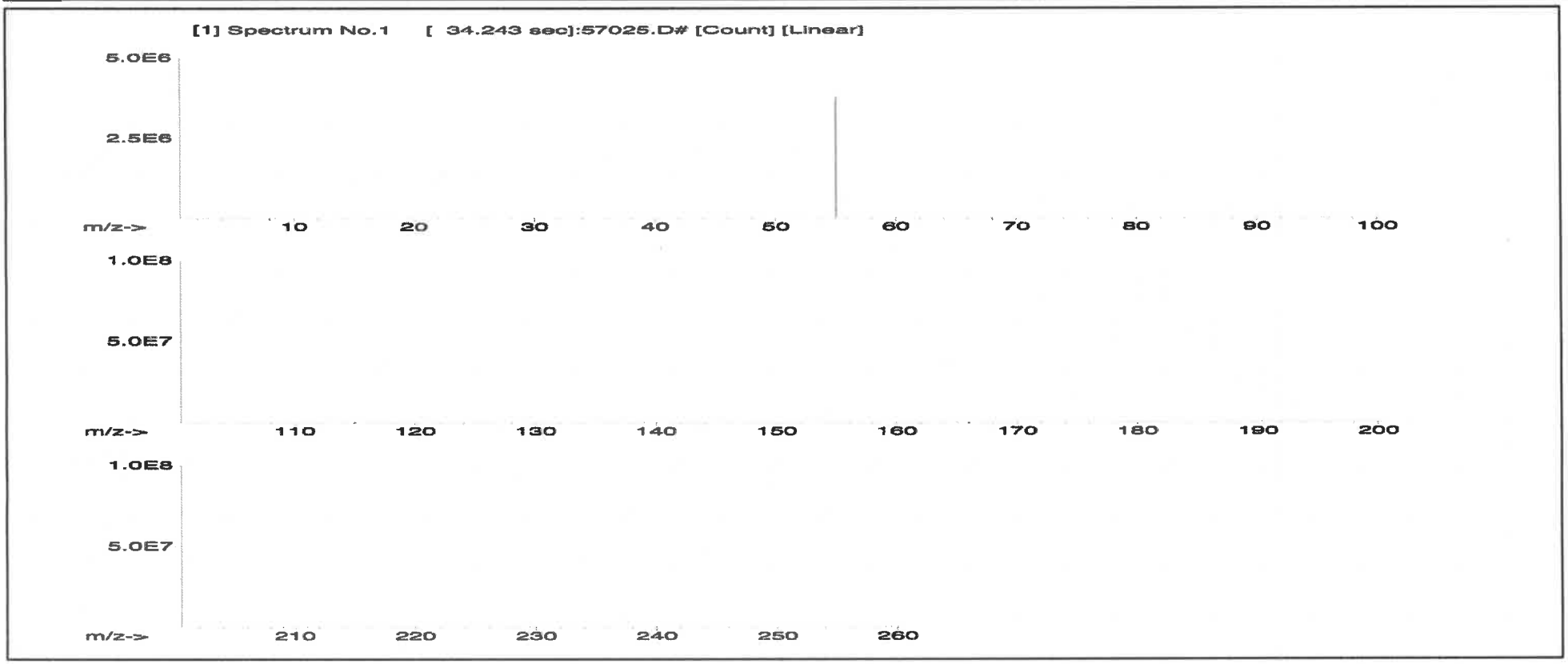
M6128

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
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



393

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:

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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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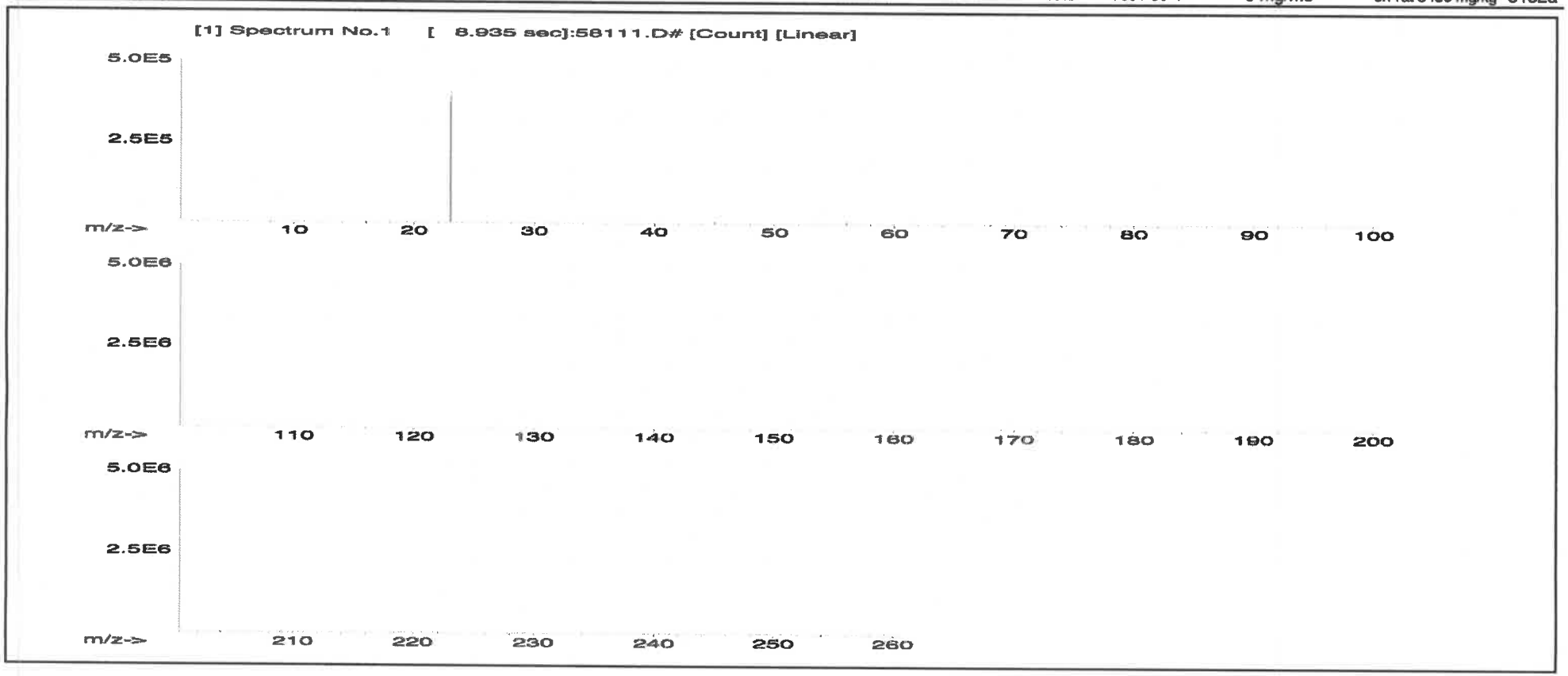
CERTIFIED WEIGHT REPORT:

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



395

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.

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396

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

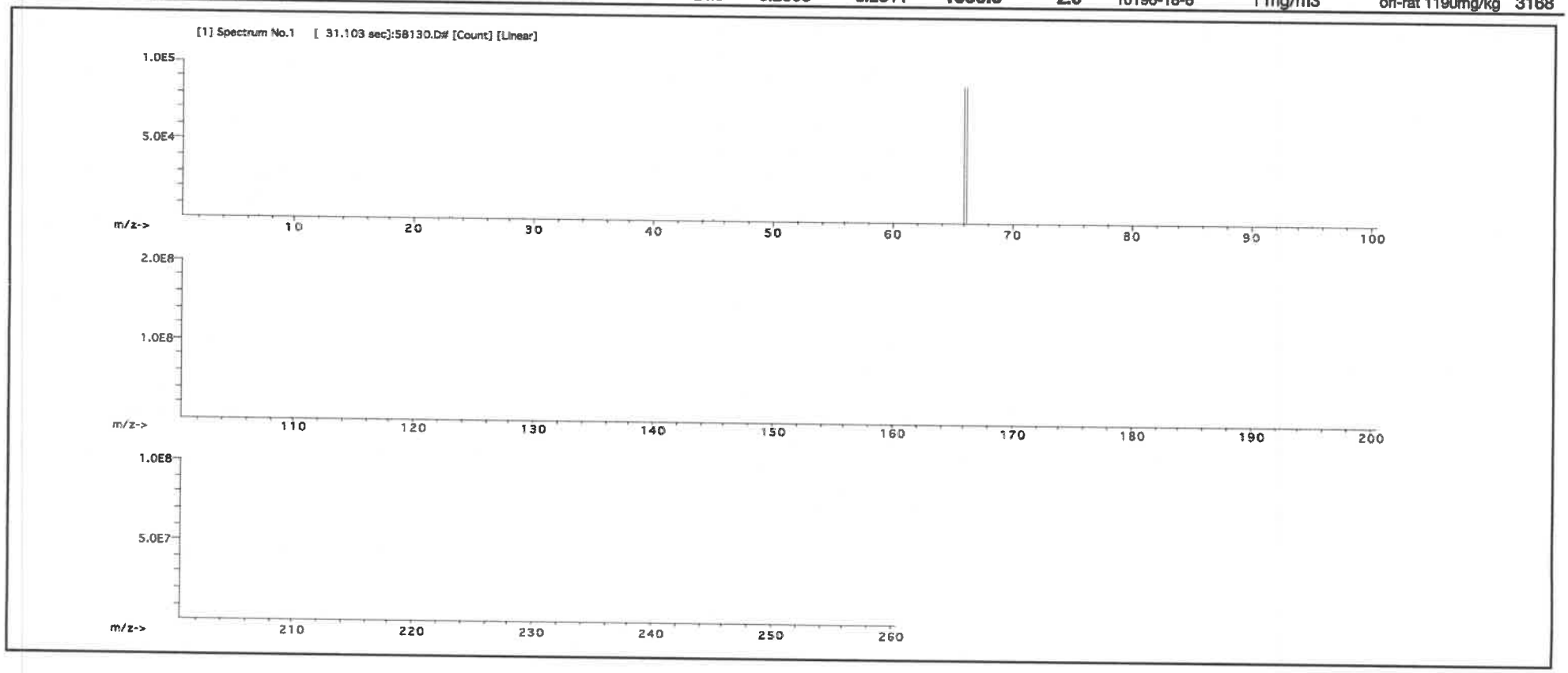
	Lot #	
Solvent:	24012496	Nitric Acid
2%	40.0 (mL)	Nitric Acid

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 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



397

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:

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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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Certified Reference Material CRM

R: 01/03/24 M5806, M5807

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400

CERTIFIED WEIGHT REPORT:

			Lot #	
Part Number:	**58111**	**Solvent:**	24002546	Nitric Acid
Lot Number:	**122223**			
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	

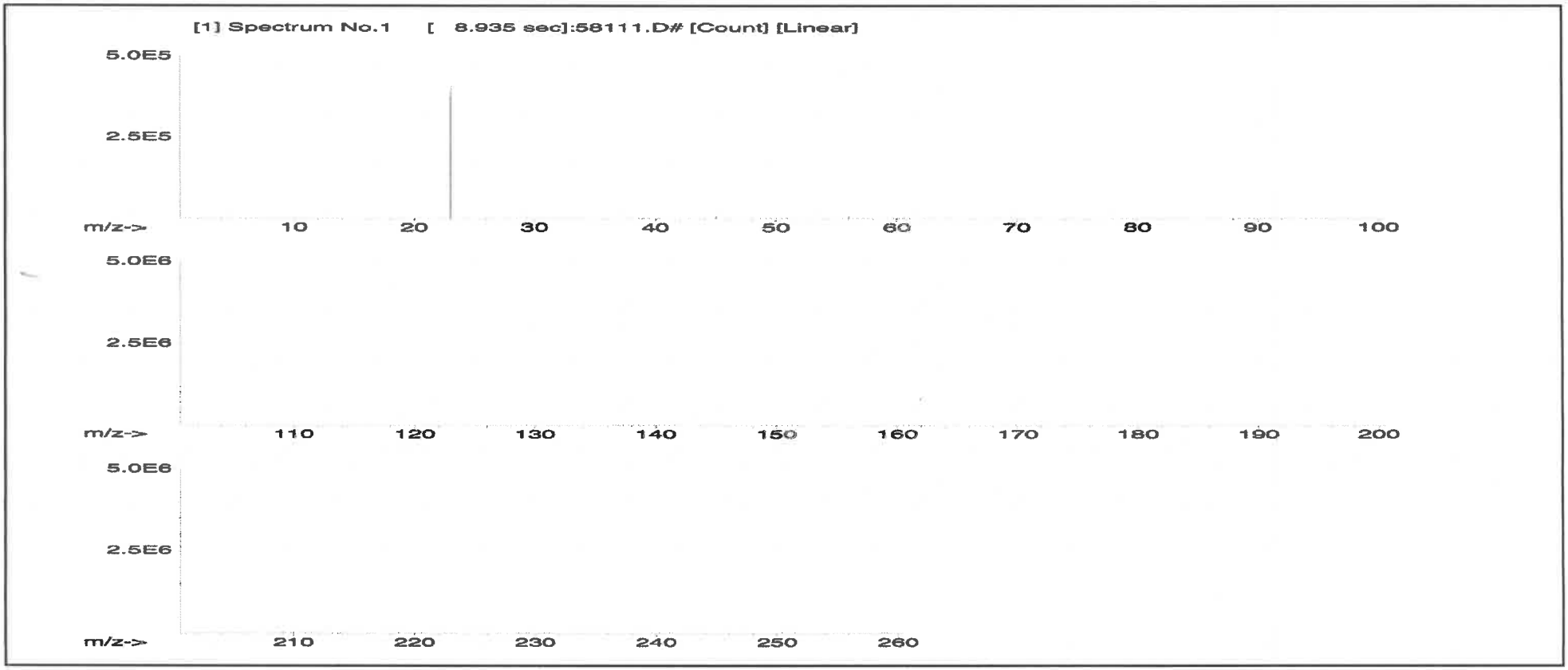
Aleah O'Brady

Formulated By:	Aleah O'Brady	122223

Pedro Rentas

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



401

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.
* 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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R: 01/03/24 M5802, M5803

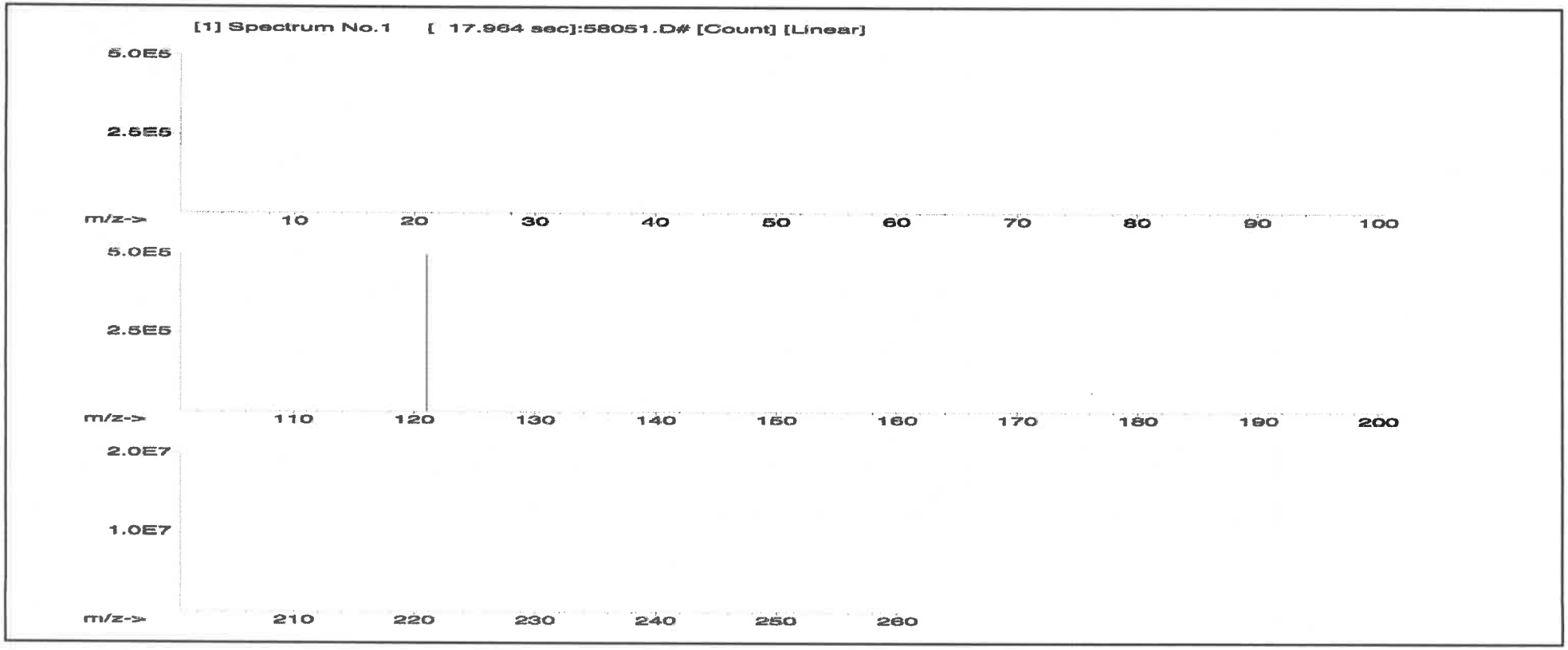
402

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



403

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.
* 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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M6030

R: 8/5/24

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404

CERTIFIED WEIGHT REPORT:

Part Number: 57047
Lot Number: 122823
Description: Silver (Ag)

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

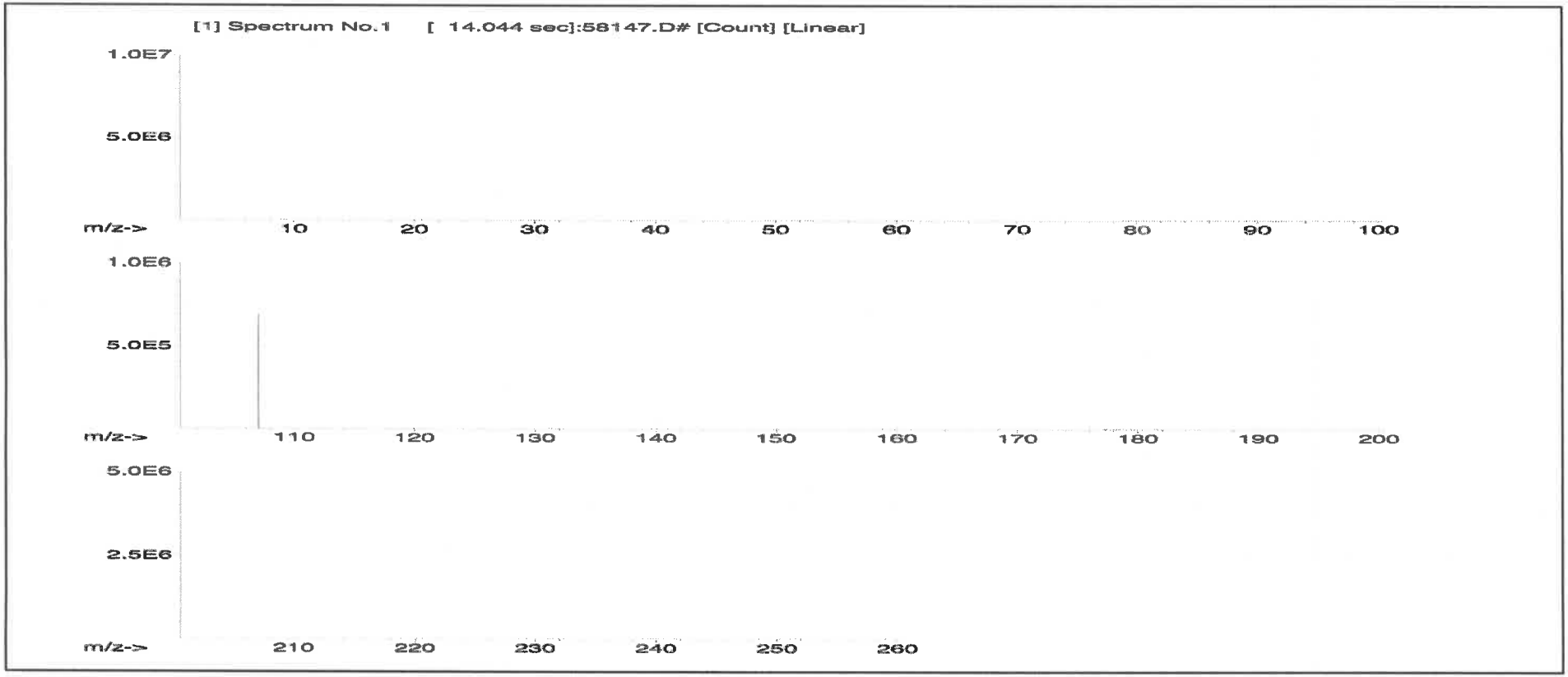
Weight shown below was diluted to (mL): 4000.30 0.058 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	80.0 (mL)	Nitric Acid	

5E-05 Balance 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



405

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:

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

Certified by:

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

R : 04/20/21

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
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Instructions for QATS Reference Material: *ICP-AES ICS*

QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

M6152

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.



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Instructions for QATS Reference Material: *ICP-AES ICS*

QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

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.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,



Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

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R: 8/5/24 M6019

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inorganicventures.com

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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 888.01 ACCREDITED Reference Material Producer Certificate 888.02

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



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Certified Reference Material CRM

R: 03/16/23 M5473, M5474, M5475, M5476

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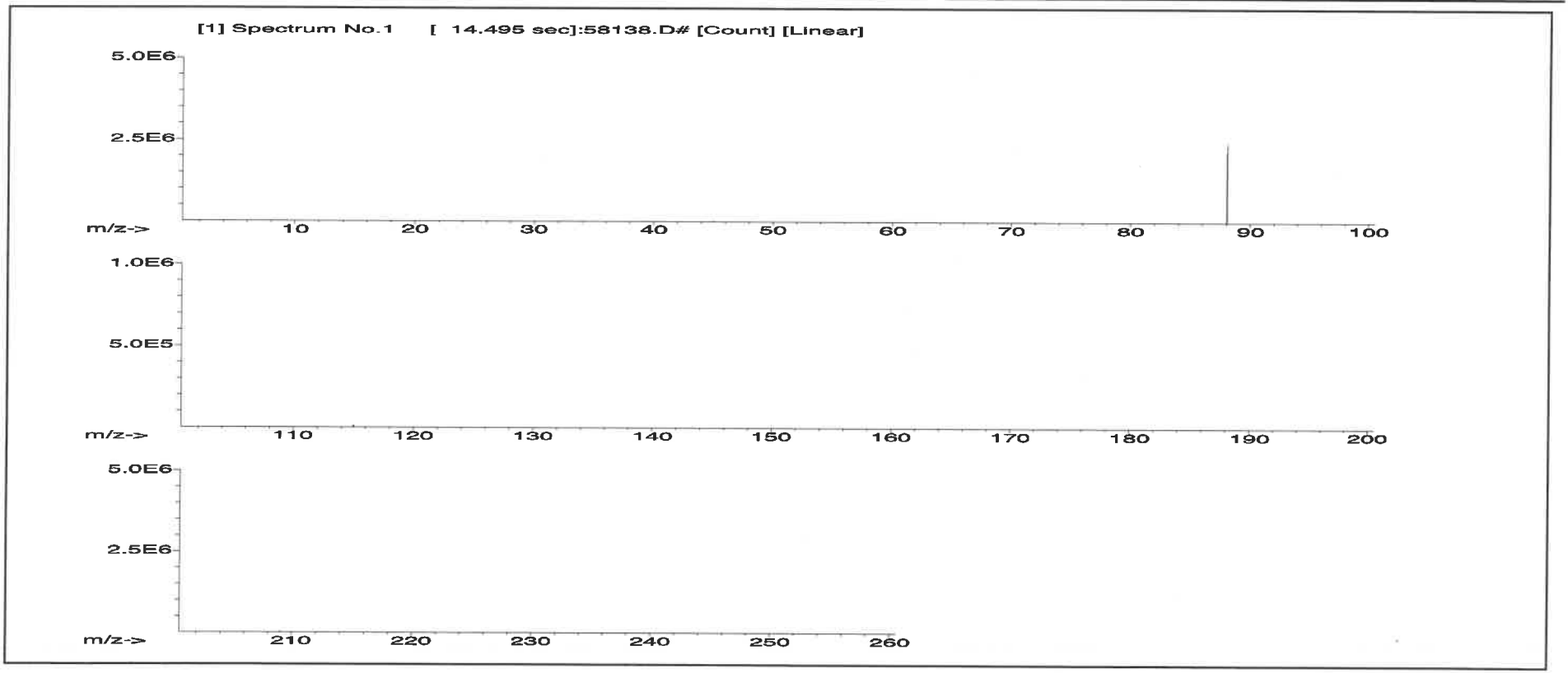
414

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



415

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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R: 03/16/23 M5473, M5474, M5475, M5476

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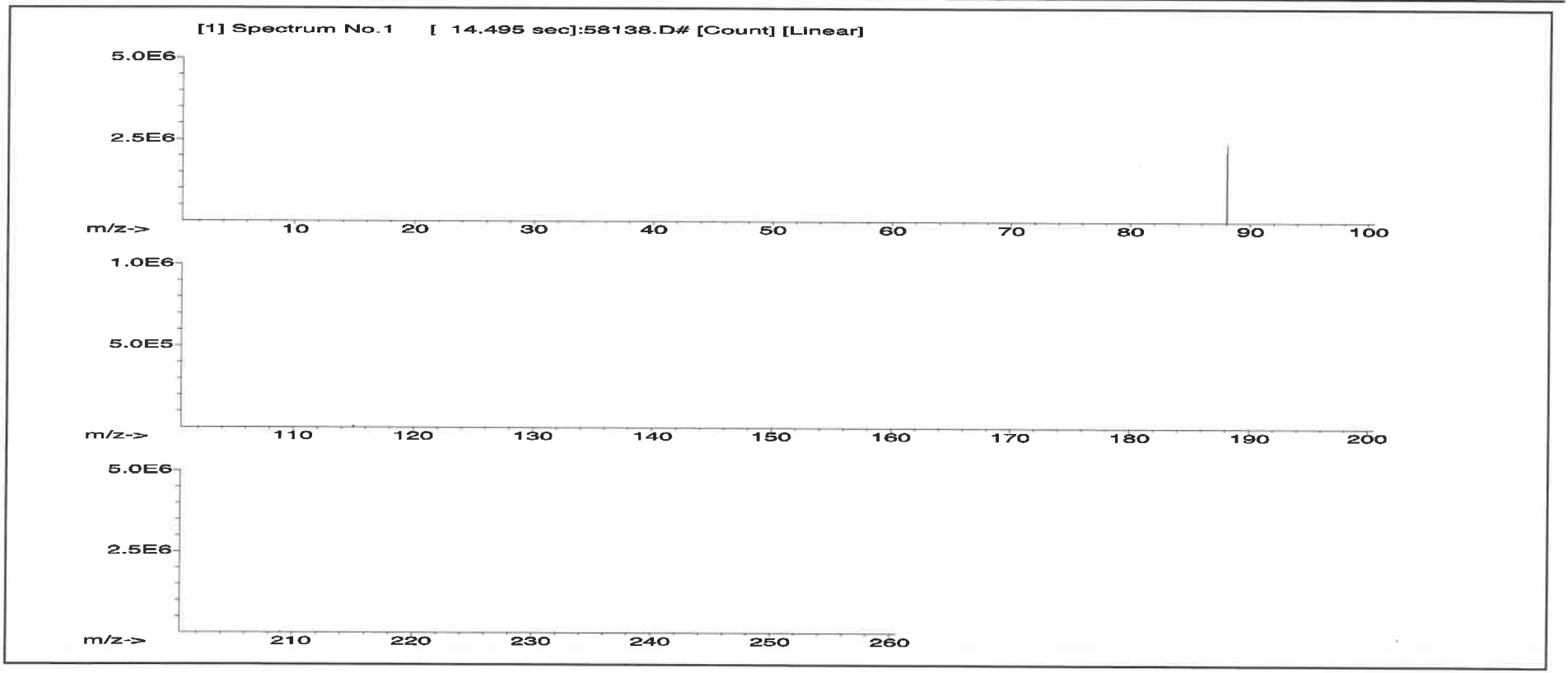
416

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



417

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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418

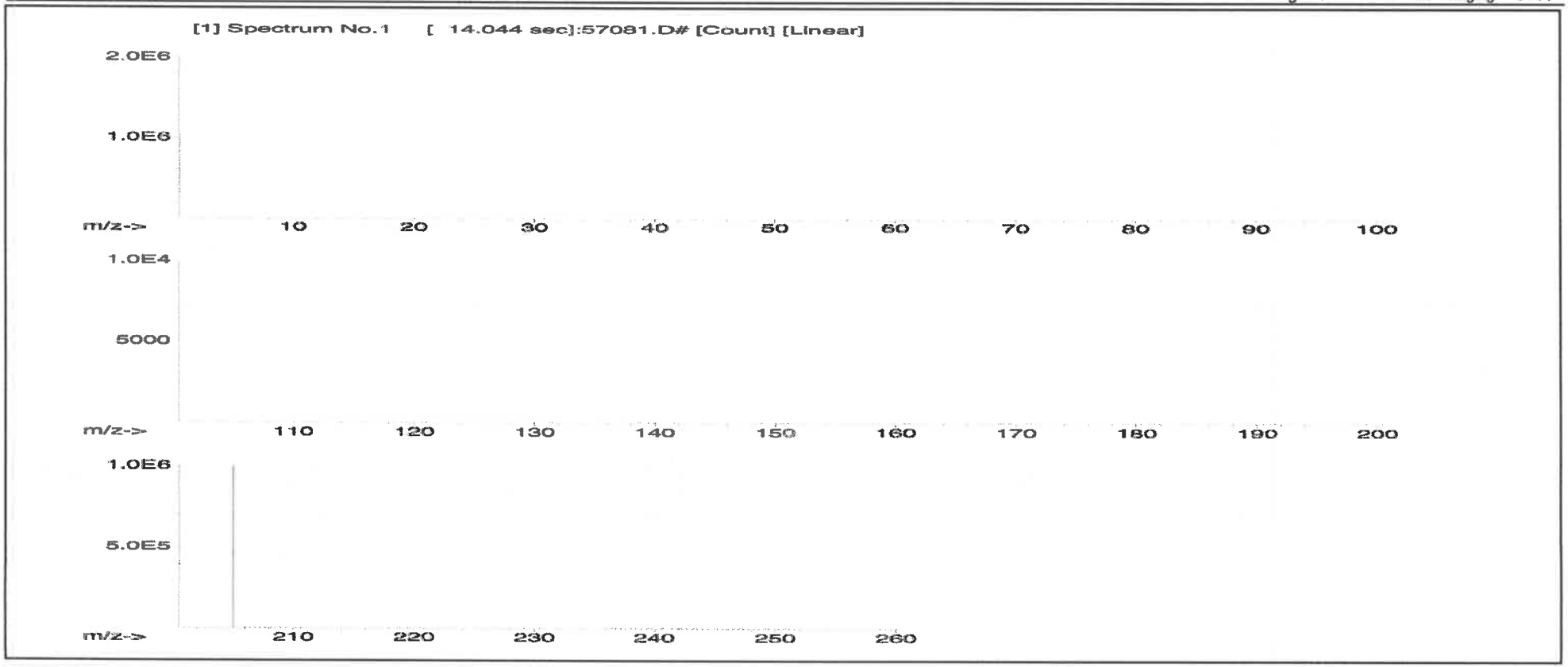
CERTIFIED WEIGHT REPORT:

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



419

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.
* 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

M6021

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420

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	

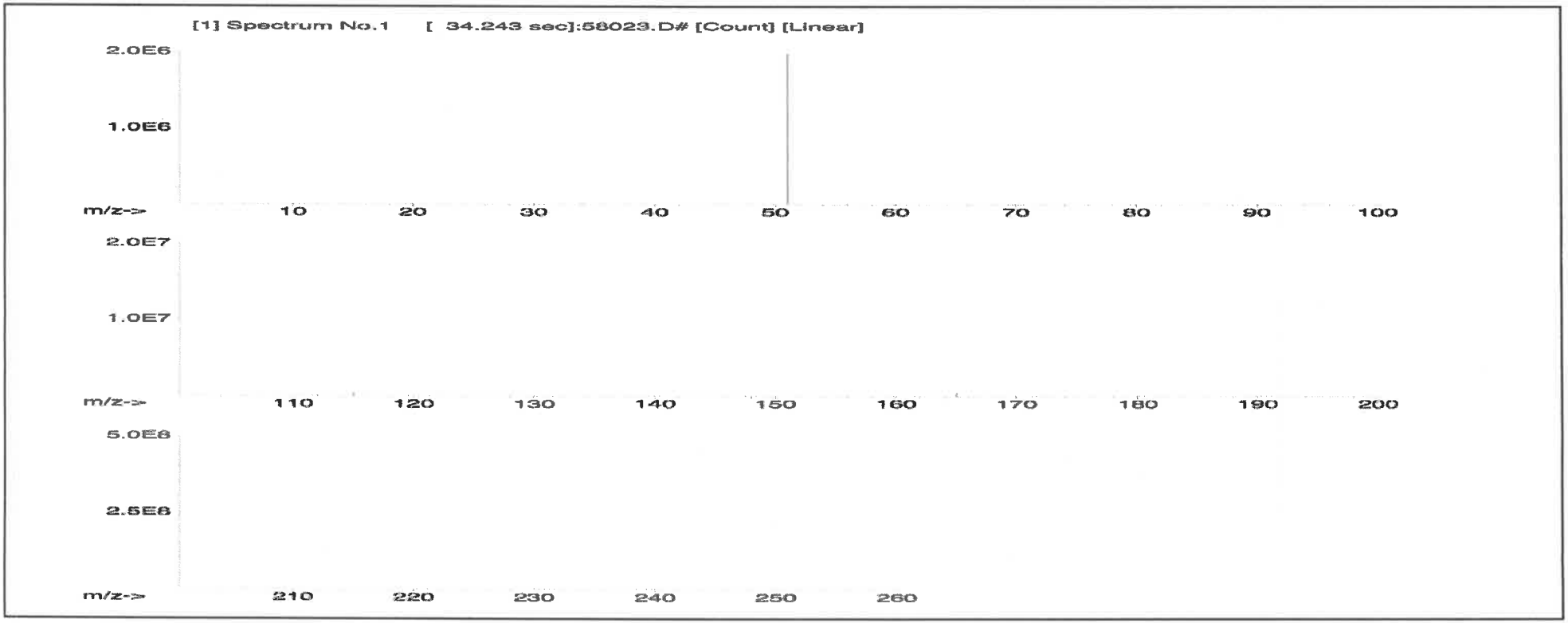
Aleah O'Brady

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



421

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:

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).

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB166911

SOP ID : M200.7-Trace Elements-22, MSFAM01.1-Trace Metals-2

SDG No : YE8F7

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 :** 12:10 **Temp :** 96 °C

End Digest Date: 02/27/2025 **Time :** 14:15 **Temp :** 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: SJB

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 96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/27/25 15:15	SJB, met-dig.	[illegible]
	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
PB166911BL	PBW911	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	22
PB166911BS	LCS911	<2	50	50	Colorless	Colorless	Clear	Clear	MP84656	23
PB166911TB	LEB911	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	40
Q1136-01	YE8F5	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	24
Q1136-02	YE8F7	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	25
Q1136-03	YE8F7D	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	26
Q1136-04	YE8F7S	<2	50	50	Colorless	Colorless	Clear	Clear	MP84663	27
Q1136-05	YE8F8	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	28
Q1136-06	YE8E3	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	29
Q1136-07	YE8E4	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	30
Q1136-08	YE8E5	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	31
Q1136-09	YE8E6	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	32
Q1136-10	YE8E7	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	33
Q1136-11	YE8E8	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	34
Q1136-12	YE8D1	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	35
Q1136-13	YE8D2	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	36
Q1136-14	YE8D4	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	37
Q1136-15	YE8C3	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	38
Q1136-17	YE8D5	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	39

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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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

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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

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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

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

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

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

pb166823

SOP ID : M1311-TCLP-15

SDG No : YE8F7

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-1 / T-2

TCLP Filter ID : 115525

Start Prep Date : 02/20/2025 **Time :** 14:00

End Prep Date : 02/21/2025 **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-1 /T-2 checked,30 rpm.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/21/25 11:00	JP / TCLP Room	S129. / IN4-D14
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

pb166823

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
PB166823TB	LEB823	15	N/A	2000	N/A	N/A	N/A	5.03	1.03	T-2
Q1136-01	YE8F5	01	100.02	2000	N/A	N/A	N/A	4.77	1.44	T-1
Q1136-02	YE8F7	02	100.01	2000	N/A	N/A	N/A	5.33	1.52	T-1
Q1136-03	YE8F7D	02	100.01	2000	N/A	N/A	N/A	5.33	1.52	T-1
Q1136-04	YE8F7S	02	100.01	2000	N/A	N/A	N/A	5.33	1.52	T-1
Q1136-05	YE8F8	03	100.02	2000	N/A	N/A	N/A	5.37	1.36	T-1
Q1136-06	YE8E3	04	100.03	2000	N/A	N/A	N/A	3.77	1.23	T-1
Q1136-07	YE8E4	05	100.03	2000	N/A	N/A	N/A	6.04	1.31	T-1
Q1136-08	YE8E5	06	100.04	2000	N/A	N/A	N/A	6.54	1.40	T-1
Q1136-09	YE8E6	07	100.03	2000	N/A	N/A	N/A	4.66	1.36	T-1
Q1136-10	YE8E7	08	100.02	2000	N/A	N/A	N/A	5.54	1.31	T-1
Q1136-11	YE8E8	09	100.02	2000	N/A	N/A	N/A	5.38	1.48	T-1
Q1136-12	YE8D1	10	100.03	2000	N/A	N/A	N/A	5.72	1.58	T-1
Q1136-13	YE8D2	11	100.02	2000	N/A	N/A	N/A	5.38	1.51	T-2
Q1136-14	YE8D4	12	100.03	2000	N/A	N/A	N/A	6.30	1.63	T-2
Q1136-15	YE8C3	13	100.03	2000	N/A	N/A	N/A	7.00	1.78	T-2
Q1136-17	YE8D5	14	100.02	2000	N/A	N/A	N/A	7.22	1.72	T-2

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
PB166823TB	LEB823	N/A	N/A	N/A	N/A	N/A	N/A
Q1136-01	YE8F5	N/A	N/A	N/A	N/A	100	N/A
Q1136-02	YE8F7	N/A	N/A	N/A	N/A	100	N/A
Q1136-03	YE8F7D	N/A	N/A	N/A	N/A	100	N/A
Q1136-04	YE8F7S	N/A	N/A	N/A	N/A	100	N/A
Q1136-05	YE8F8	N/A	N/A	N/A	N/A	100	N/A
Q1136-06	YE8E3	N/A	N/A	N/A	N/A	100	N/A
Q1136-07	YE8E4	N/A	N/A	N/A	N/A	100	N/A
Q1136-08	YE8E5	N/A	N/A	N/A	N/A	100	N/A
Q1136-09	YE8E6	N/A	N/A	N/A	N/A	100	N/A
Q1136-10	YE8E7	N/A	N/A	N/A	N/A	100	N/A
Q1136-11	YE8E8	N/A	N/A	N/A	N/A	100	N/A
Q1136-12	YE8D1	N/A	N/A	N/A	N/A	100	N/A
Q1136-13	YE8D2	N/A	N/A	N/A	N/A	100	N/A
Q1136-14	YE8D4	N/A	N/A	N/A	N/A	100	N/A
Q1136-15	YE8C3	N/A	N/A	N/A	N/A	100	N/A
Q1136-17	YE8D5	N/A	N/A	N/A	N/A	100	N/A

Alliance TECHNICAL GROUP

SPLP Fluid Determination

pb166823

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
PB166823TB	LEB823	N/A	N/A	N/A	N/A	#2	5.03
Q1136-01	YE8F5	N/A	N/A	N/A	N/A	#2	5.03
Q1136-02	YE8F7	N/A	N/A	N/A	N/A	#2	5.03
Q1136-03	YE8F7D	N/A	N/A	N/A	N/A	#2	5.03
Q1136-04	YE8F7S	N/A	N/A	N/A	N/A	#2	5.03
Q1136-05	YE8F8	N/A	N/A	N/A	N/A	#2	5.03
Q1136-06	YE8E3	N/A	N/A	N/A	N/A	#2	5.03
Q1136-07	YE8E4	N/A	N/A	N/A	N/A	#2	5.03
Q1136-08	YE8E5	N/A	N/A	N/A	N/A	#2	5.03
Q1136-09	YE8E6	N/A	N/A	N/A	N/A	#2	5.03
Q1136-10	YE8E7	N/A	N/A	N/A	N/A	#2	5.03
Q1136-11	YE8E8	N/A	N/A	N/A	N/A	#2	5.03
Q1136-12	YE8D1	N/A	N/A	N/A	N/A	#2	5.03
Q1136-13	YE8D2	N/A	N/A	N/A	N/A	#2	5.03
Q1136-14	YE8D4	N/A	N/A	N/A	N/A	#2	5.03
Q1136-15	YE8C3	N/A	N/A	N/A	N/A	#2	5.03
Q1136-17	YE8D5	N/A	N/A	N/A	N/A	#2	5.03

EPA SAMPLE NO.

YE8C3

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-15

% 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	1551

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

Comments:

EPA SAMPLE NO.

YE8D1

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-12

% 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	1539

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

Comments:

EPA SAMPLE NO.

YE8D2

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-13

% 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	1546

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

Comments:

EPA SAMPLE NO.

YE8D4

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-14

% 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	1548

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

Comments:

EPA SAMPLE NO.

YE8D5

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-17

% 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	1553

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

Comments:

EPA SAMPLE NO.

YE8E3

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-06

% 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	1526

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

Comments:

EPA SAMPLE NO.

YE8E4

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-07

% 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	1528

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

Comments:

EPA SAMPLE NO.

YE8E5

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-08

% 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	0.044	J	02/28/2025	1530

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

Comments:

EPA SAMPLE NO.

YE8E6

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-09

% 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	1532

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

Comments:

EPA SAMPLE NO.

YE8E7

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-10

% 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	1535

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

Comments:

EPA SAMPLE NO.

YE8E8

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-11

% 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	1537

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

Comments:

EPA SAMPLE NO.

YE8F5

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-01

% Solids: Date Received: 01/18/2025

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	1514

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

Comments:

EPA SAMPLE NO.

YE8F7

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-02

% Solids: Date Received: 01/18/2025

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	1516

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

Comments:

EPA SAMPLE NO.

YE8F8

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.: YE8F7

Matrix: Water Lab Sample ID: Q1136-05

% Solids: Date Received: 01/18/2025

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	1523

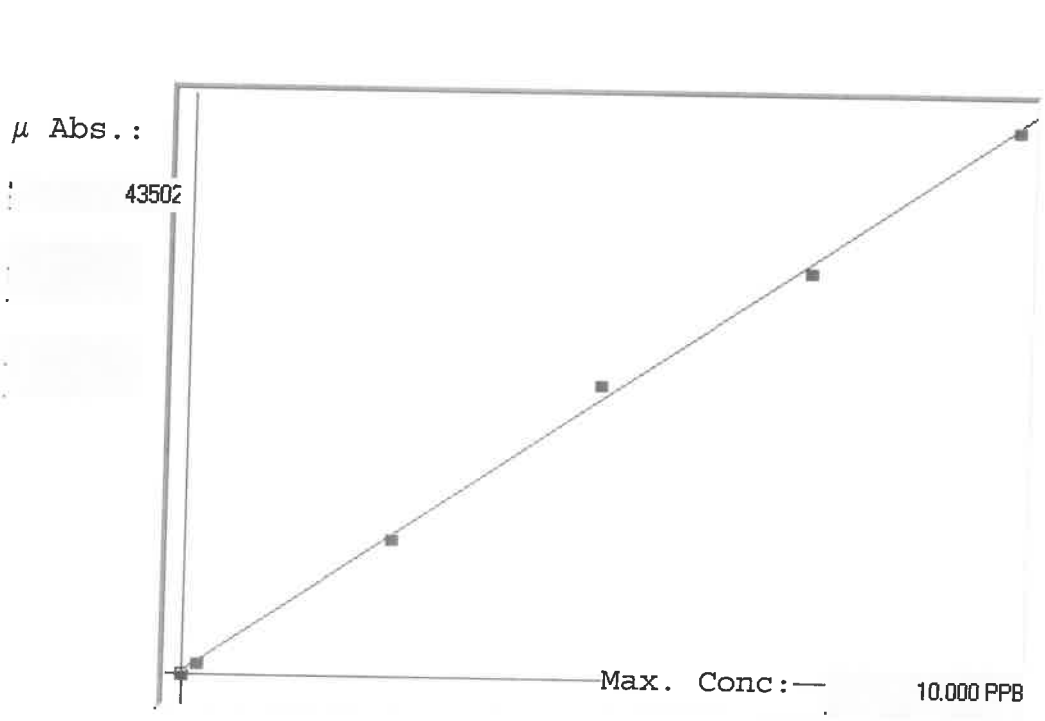
NOTE: Hardness (total) is reported in mg/L

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

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

Prep Standard - Chemical Standard Summary

Order ID : Q1136

Test : SPLP Mercury

Prepbatch ID : PB166945,

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,

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

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

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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
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

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

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

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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Fax : 908 789 8922

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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Fax : 908 789 8922

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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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-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

465

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.

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

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.

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 HNO_3. 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% HNO_3 / LDPE container, stable in 10% HNO_3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO_3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO_3 / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxide (Soluble in HNO_3); 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

471

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

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

472

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

MF884
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 >>>

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

PB166945

SOP ID : M7470A-Mercury-19, MSFAM01.1-Mercury in Water-2

SDG No : YE8F7

Matrix : WATER

Pippete ID: HG A

Balance ID : N/A

Filter paper ID : NA

pH Strip ID : M6069

Hood ID : #1

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

Start Digest Date: 02/24/2025 **Time :** 07:20 **Temp :** 93 °C

End Digest Date: 02/24/2025 **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. N/A 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
2/24/25 @ 10:15	MB - HG Prep Lab	MB - HG Metals Lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB166945

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Comment	Prep Pos
PB166945BL	PBW945	100	100	<2	N/A	2-8
PB166945TB	LEB945	100	100	<2	N/A	9
Q1136-01	YE8F5	100	100	<2	N/A	10
Q1136-02	YE8F7	100	100	<2	N/A	11
Q1136-03	YE8F7D	100	100	<2	N/A	12
Q1136-04	YE8F7S	100	100	<2	MP84701	13
Q1136-05	YE8F8	100	100	<2	N/A	14
Q1136-06	YE8E3	100	100	<2	N/A	15
Q1136-07	YE8E4	100	100	<2	N/A	16
Q1136-08	YE8E5	100	100	<2	N/A	17
Q1136-09	YE8E6	100	100	<2	N/A	18
Q1136-10	YE8E7	100	100	<2	N/A	19
Q1136-11	YE8E8	100	100	<2	N/A	20
Q1136-12	YE8D1	100	100	<2	N/A	21
Q1136-13	YE8D2	100	100	<2	N/A	22
Q1136-14	YE8D4	100	100	<2	N/A	23
Q1136-15	YE8C3	100	100	<2	N/A	24
Q1136-17	YE8D5	100	100	<2	N/A	25

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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Instrument ID: CV1

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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

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SPLP EXTRACTION LOGPAGE

pb166823

SOP ID : M1311-TCLP-15

SDG No : YE8F7

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-1 / T-2

TCLP Filter ID : 115525

Start Prep Date : 02/20/2025 **Time :** 14:00

End Prep Date : 02/21/2025 **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-1 /T-2 checked,30 rpm.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/21/25 11:00	JP / TCLP Room	S129. / IN4-D14
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

SPLP EXTRACTION LOGPAGE

pb166823

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
PB166823TB	LEB823	15	N/A	2000	N/A	N/A	N/A	5.03	1.03	T-2
Q1136-01	YE8F5	01	100.02	2000	N/A	N/A	N/A	4.77	1.44	T-1
Q1136-02	YE8F7	02	100.01	2000	N/A	N/A	N/A	5.33	1.52	T-1
Q1136-03	YE8F7D	02	100.01	2000	N/A	N/A	N/A	5.33	1.52	T-1
Q1136-04	YE8F7S	02	100.01	2000	N/A	N/A	N/A	5.33	1.52	T-1
Q1136-05	YE8F8	03	100.02	2000	N/A	N/A	N/A	5.37	1.36	T-1
Q1136-06	YE8E3	04	100.03	2000	N/A	N/A	N/A	3.77	1.23	T-1
Q1136-07	YE8E4	05	100.03	2000	N/A	N/A	N/A	6.04	1.31	T-1
Q1136-08	YE8E5	06	100.04	2000	N/A	N/A	N/A	6.54	1.40	T-1
Q1136-09	YE8E6	07	100.03	2000	N/A	N/A	N/A	4.66	1.36	T-1
Q1136-10	YE8E7	08	100.02	2000	N/A	N/A	N/A	5.54	1.31	T-1
Q1136-11	YE8E8	09	100.02	2000	N/A	N/A	N/A	5.38	1.48	T-1
Q1136-12	YE8D1	10	100.03	2000	N/A	N/A	N/A	5.72	1.58	T-1
Q1136-13	YE8D2	11	100.02	2000	N/A	N/A	N/A	5.38	1.51	T-2
Q1136-14	YE8D4	12	100.03	2000	N/A	N/A	N/A	6.30	1.63	T-2
Q1136-15	YE8C3	13	100.03	2000	N/A	N/A	N/A	7.00	1.78	T-2
Q1136-17	YE8D5	14	100.02	2000	N/A	N/A	N/A	7.22	1.72	T-2

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
PB166823TB	LEB823	N/A	N/A	N/A	N/A	N/A	N/A
Q1136-01	YE8F5	N/A	N/A	N/A	N/A	100	N/A
Q1136-02	YE8F7	N/A	N/A	N/A	N/A	100	N/A
Q1136-03	YE8F7D	N/A	N/A	N/A	N/A	100	N/A
Q1136-04	YE8F7S	N/A	N/A	N/A	N/A	100	N/A
Q1136-05	YE8F8	N/A	N/A	N/A	N/A	100	N/A
Q1136-06	YE8E3	N/A	N/A	N/A	N/A	100	N/A
Q1136-07	YE8E4	N/A	N/A	N/A	N/A	100	N/A
Q1136-08	YE8E5	N/A	N/A	N/A	N/A	100	N/A
Q1136-09	YE8E6	N/A	N/A	N/A	N/A	100	N/A
Q1136-10	YE8E7	N/A	N/A	N/A	N/A	100	N/A
Q1136-11	YE8E8	N/A	N/A	N/A	N/A	100	N/A
Q1136-12	YE8D1	N/A	N/A	N/A	N/A	100	N/A
Q1136-13	YE8D2	N/A	N/A	N/A	N/A	100	N/A
Q1136-14	YE8D4	N/A	N/A	N/A	N/A	100	N/A
Q1136-15	YE8C3	N/A	N/A	N/A	N/A	100	N/A
Q1136-17	YE8D5	N/A	N/A	N/A	N/A	100	N/A

Alliance TECHNICAL GROUP

SPLP Fluid Determination

pb166823

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
PB166823TB	LEB823	N/A	N/A	N/A	N/A	#2	5.03
Q1136-01	YE8F5	N/A	N/A	N/A	N/A	#2	5.03
Q1136-02	YE8F7	N/A	N/A	N/A	N/A	#2	5.03
Q1136-03	YE8F7D	N/A	N/A	N/A	N/A	#2	5.03
Q1136-04	YE8F7S	N/A	N/A	N/A	N/A	#2	5.03
Q1136-05	YE8F8	N/A	N/A	N/A	N/A	#2	5.03
Q1136-06	YE8E3	N/A	N/A	N/A	N/A	#2	5.03
Q1136-07	YE8E4	N/A	N/A	N/A	N/A	#2	5.03
Q1136-08	YE8E5	N/A	N/A	N/A	N/A	#2	5.03
Q1136-09	YE8E6	N/A	N/A	N/A	N/A	#2	5.03
Q1136-10	YE8E7	N/A	N/A	N/A	N/A	#2	5.03
Q1136-11	YE8E8	N/A	N/A	N/A	N/A	#2	5.03
Q1136-12	YE8D1	N/A	N/A	N/A	N/A	#2	5.03
Q1136-13	YE8D2	N/A	N/A	N/A	N/A	#2	5.03
Q1136-14	YE8D4	N/A	N/A	N/A	N/A	#2	5.03
Q1136-15	YE8C3	N/A	N/A	N/A	N/A	#2	5.03
Q1136-17	YE8D5	N/A	N/A	N/A	N/A	#2	5.03

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: 17JAN25
ACTWGT: 40.00 LB
CAD: 253267503/INET4535

BILL SENDER

TO **SOHIL JODHANI**
ALLIANCE TECHNICAL GROUP LLC
284 SHEFFIELD STREET
MOUNTAINSIDE NJ 07092
(908) 728-3152
INV:
PO:
REF: 1518921_3.13.2_030400
DEPT: 2195

58CJ3/EC17/C6C4

J251024121701uv

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SATURDAY 12:00P
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ALISON 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) 789-6900
INV:
PO:
REF: 1518921.3.13.2_030400
DEPT: 2195

1-22-25
10:15
1-9-

58CJ3/EC17/C6C4

J2510241217O1uv

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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: 1518921_3.13.2_030400
DEPT: 2195

1-22-25
2.0.c
10:15

58CJ3/EC17/C6C4

FedEx Express

J2510241217O1uv

WED - 22 JAN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7715 3298 1764**

XE KBCA

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NJ-US EWR

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(908) 789-8900
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10:15
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58CJ3/EC17/C8C4

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TRK# 0201 **7715 3303 2404**

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ALLISON HUISA
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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 REF: 1518921_3.13.2_030400
INV:
PO: DEPT: 2195

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PRIORITY OVERNIGHT

TRK# 0201 **7715 3303 4885**

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ALLISON HUISA
EA ENGINEERING SCIENCE & TECH
555 UNIVERSITY AVE
SUITE 182
SACRAMENTO, CA 95825
UNITED STATES US

SHIP DATE: 21JAN25
ACTWGT: 25.00 LB
CAD: 253267503/INET4535

BILL SENDER

TO **SOHIL JODHANI**
ALLIANCE TECHNICAL GROUP LLC
284 SHEFFIELD STREET

MOUNTAINSIDE NJ 07092
(908) 789-8900 REF: 1518921_3.13.2_030400
INV:
PO: DEPT: 2195

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J251024121701uv

WED - 22 JAN 10:30A
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TRK# 0201 **7715 3307 8108**

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R.M 2.5°

10:15 1.22.25

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501

020
Small
cooler
4
jars

Alliance TECHNICAL GROUP 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Login Summary Report

Order ID :	Q1136	Order Date :	1/22/2025 10:15:00 AM	Project Mgr :	Deepak
Client :	USEPA CLP SMO	Project :	51955	Report Type :	USEPA CLP
Contact :	Anita Kapadia	Receive Date :	1/22/2025 10:15:00 AM	EDD Type :	EPA CLP
Date Sign Off :	1/23/2025 11:18:54 AM				

Sample ID	Client ID	Matrix	Sampling Date	Test	Test Group	Method	TAT Days	Fax Due Date	HC Due Date
Q1136-01	YE8F5	Solid	01/15/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-02	YE8F7	Solid	01/15/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-03	YE8F7D	Solid	01/15/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-04	YE8F7S	Solid	01/15/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-05	YE8F8	Solid	01/15/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-06	YE8E3	Solid	01/17/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-07	YE8E4	Solid	01/17/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-08	YE8E5	Solid	01/17/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-09	YE8E6	Solid	01/17/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025
Q1136-10	YE8E7	Solid	01/17/2025						
				SPLP Mercury		SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3		SFAM_AES	15	02/12/2025	02/12/2025

Q1136-11	YE8E8	Solid	01/17/2025					
				SPLP Mercury	SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3	SFAM_AES	15	02/12/2025	02/12/2025
Q1136-12	YE8D1	Solid	01/19/2025					
				SPLP Mercury	SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3	SFAM_AES	15	02/12/2025	02/12/2025
Q1136-13	YE8D2	Solid	01/19/2025					
				SPLP Mercury	SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3	SFAM_AES	15	02/12/2025	02/12/2025
Q1136-14	YE8D4	Solid	01/18/2025					
				SPLP Mercury	SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3	SFAM_AES	15	02/12/2025	02/12/2025
Q1136-15	YE8C3	Solid	01/19/2025					
				SPLP Mercury	SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3	SFAM_AES	15	02/12/2025	02/12/2025
Q1136-17	YE8D5	Solid	01/19/2025					
				SPLP Mercury	SFAM_HG	15	02/12/2025	02/12/2025
				SPLP MetalGroup3	SFAM_AES	15	02/12/2025	02/12/2025

WORKLIST(Hardcopy Internal Chain)

WorkList Name : splpq1136 **WorkList ID :** 187093 **Department :** TCLP Extraction **Date :** 01-23-2025 11:20:47

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1136-01	YE8F5	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/15/2025	1312
Q1136-02	YE8F7	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/15/2025	1312
Q1136-03	YE8F7D	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/15/2025	1312
Q1136-04	YE8F7S	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/15/2025	1312
Q1136-05	YE8F8	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/15/2025	1312
Q1136-06	YE8E3	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/15/2025	1312
Q1136-13	YE8D2	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/17/2025	1312
Q1136-14	YE8D4	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/19/2025	1312
Q1136-15	YE8C3	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/18/2025	1312
Q1136-17	YE8D5	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/19/2025	1312
Q1136-07	YE8E4	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/19/2025	1312
Q1136-08	YE8E5	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/17/2025	1312
Q1136-09	YE8E6	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/17/2025	1312
Q1136-10	YE8E7	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/17/2025	1312
Q1136-11	YE8E8	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/17/2025	1312
Q1136-12	YE8D1	Solid	SPLP Extraction	Cool 4 deg C	USEP01	C11	01/19/2025	1312

504

Date/Time 02/20/25 16:30

Raw Sample Received by: JR (WPC)

Raw Sample Relinquished by: QR SM

Date/Time 02/20/25 18:30

Raw Sample Received by: QR SM

Raw Sample Relinquished by: JR (WPC)