

## Cover Page

**Order ID :** Q3103

**Project ID :** 540 Degraw St, Brooklyn, NY - E9309

**Client :** ENTACT

**Lab Sample Number**

Q3103-01

**Client Sample Number**

TW-WTS-14

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

Signature : \_\_\_\_\_

Date: 9/19/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

## DATA REPORTING QUALIFIERS- INORGANIC

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

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

## APPENDIX A

### QA REVIEW GENERAL DOCUMENTATION

Project #: Q3103

Completed

For thorough review, the report must have the following:

#### GENERAL:

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

✓

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

✓

Is the chain of custody signed and complete

✓

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

✓

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

✓

#### COVER PAGE:

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

✓

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

✓

#### CHAIN OF CUSTODY:

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

✓

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

✓

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

✓

Were the samples received within hold time

✓

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

✓

#### ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: PRADIP PRAJAPATI

Date: 09/19/2025

## LAB CHRONICLE

|                 |                 |                   |                                     |
|-----------------|-----------------|-------------------|-------------------------------------|
| <b>OrderID:</b> | Q3103           | <b>OrderDate:</b> | 9/15/2025 12:11:00 PM               |
| <b>Client:</b>  | ENTACT          | <b>Project:</b>   | 540 Degraw St, Brooklyn, NY - E9309 |
| <b>Contact:</b> | Austin Farmerie | <b>Location:</b>  | J22,VOA Lab                         |

| LabID           | ClientID         | Matrix       | Test          | Method | Sample Date     | Prep Date | Anal Date | Received        |
|-----------------|------------------|--------------|---------------|--------|-----------------|-----------|-----------|-----------------|
| <b>Q3103-01</b> | <b>TW-WTS-14</b> | <b>Water</b> |               |        | <b>09/15/25</b> |           |           | <b>09/15/25</b> |
|                 |                  |              | Mercury       | 7470A  |                 | 09/17/25  | 09/17/25  |                 |
|                 |                  |              | Metals Group4 | 6010D  |                 | 09/17/25  | 09/18/25  |                 |





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

**Hit Summary Sheet**  
**SW-846**

**SDG No.:** Q3103

**Order ID:** Q3103

**Client:** ENTACT

**Project ID:** 540 Degraw St, Brooklyn, NY - E9309

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| Sample ID | Client ID | Matrix | Parameter | Concentration | C | MDL | RDL | Units |
|-----------|-----------|--------|-----------|---------------|---|-----|-----|-------|
|-----------|-----------|--------|-----------|---------------|---|-----|-----|-------|

Client ID :



# SAMPLE DATA

## Report of Analysis

|                   |                                     |                 |          |
|-------------------|-------------------------------------|-----------------|----------|
| Client:           | ENTACT                              | Date Collected: | 09/15/25 |
| Project:          | 540 Degraw St, Brooklyn, NY - E9309 | Date Received:  | 09/15/25 |
| Client Sample ID: | TW-WTS-14                           | SDG No.:        | Q3103    |
| Lab Sample ID:    | Q3103-01                            | Matrix:         | Water    |
| Level (low/med):  | low                                 | % Solid:        | 0        |

| Cas       | Parameter | Conc. | Qua. | DF | MDL   | LOQ / CRQL | Units | Prep Date      | Date Ana.      | Ana Met. | Prep Met. |
|-----------|-----------|-------|------|----|-------|------------|-------|----------------|----------------|----------|-----------|
| 7440-43-9 | Cadmium   | 0.25  | U    | 1  | 0.25  | 3.00       | ug/L  | 09/17/25 10:32 | 09/18/25 13:19 | 6010D    | SW3010    |
| 7440-50-8 | Copper    | 2.30  | U    | 1  | 2.30  | 10.0       | ug/L  | 09/17/25 10:32 | 09/18/25 13:19 | 6010D    | SW3010    |
| 7439-92-1 | Lead      | 1.15  | U    | 1  | 1.15  | 6.00       | ug/L  | 09/17/25 10:32 | 09/18/25 13:19 | 6010D    | SW3010    |
| 7439-97-6 | Mercury   | 0.076 | U    | 1  | 0.076 | 0.20       | ug/L  | 09/17/25 09:20 | 09/17/25 14:42 | 7470A    |           |
| 7440-02-0 | Nickel    | 1.53  | U    | 1  | 1.53  | 20.0       | ug/L  | 09/17/25 10:32 | 09/18/25 13:19 | 6010D    | SW3010    |
| 7440-66-6 | Zinc      | 8.33  | U    | 1  | 8.33  | 20.0       | ug/L  | 09/17/25 10:32 | 09/18/25 13:19 | 6010D    | SW3010    |

|               |           |                 |       |            |
|---------------|-----------|-----------------|-------|------------|
| Color Before: | Colorless | Clarity Before: | Clear | Texture:   |
| Color After:  | Colorless | Clarity After:  | Clear | Artifacts: |
| Comments:     | Mercury   |                 |       |            |

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

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



# METAL CALIBRATION DATA

**Metals**

- 2a -

**INITIAL AND CONTINUING CALIBRATION VERIFICATION**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** PLASMA-PURE

---

| Sample ID | Analyte | Result<br>ug/L | True Value | %<br>Recovery | Acceptance<br>Window (%R) | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|------------|---------------|---------------------------|----|------------------|------------------|---------------|
| ICV34     | Mercury | 4.28           | 4.0        | 107           | 90 - 110                  | CV | 09/17/2025       | 14:21            | LB137213      |

**Metals**

**- 2a -**

**INITIAL AND CONTINUING CALIBRATION VERIFICATION**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** PLASMA-PURE

---

| Sample ID | Analyte | Result<br>ug/L | True Value | %<br>Recovery | Acceptance<br>Window (%R) | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|------------|---------------|---------------------------|----|------------------|------------------|---------------|
| CCV07     | Mercury | 4.96           | 5.0        | 99            | 90 - 110                  | CV | 09/17/2025       | 14:26            | LB137213      |
| CCV08     | Mercury | 4.73           | 5.0        | 95            | 90 - 110                  | CV | 09/17/2025       | 14:55            | LB137213      |
| CCV09     | Mercury | 4.89           | 5.0        | 98            | 90 - 110                  | CV | 09/17/2025       | 15:04            | LB137213      |

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**Metals**

- 2a -

**INITIAL AND CONTINUING CALIBRATION VERIFICATION**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result<br>ug/L | True Value | %<br>Recovery | Acceptance<br>Window (%R) | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|------------|---------------|---------------------------|---|------------------|------------------|---------------|
| ICV01     | Cadmium | 1880           | 2000       | 94            | 90 - 110                  | P | 09/18/2025       | 11:06            | LB137227      |
|           | Copper  | 975            | 1000       | 98            | 90 - 110                  | P | 09/18/2025       | 11:06            | LB137227      |
|           | Lead    | 3720           | 4000       | 93            | 90 - 110                  | P | 09/18/2025       | 11:06            | LB137227      |
|           | Nickel  | 1900           | 2000       | 95            | 90 - 110                  | P | 09/18/2025       | 11:06            | LB137227      |
|           | Zinc    | 1930           | 2000       | 97            | 90 - 110                  | P | 09/18/2025       | 11:06            | LB137227      |

**Metals**

**- 2a -**

**INITIAL AND CONTINUING CALIBRATION VERIFICATION**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result<br>ug/L | True Value | %<br>Recovery | Acceptance<br>Window (%R) | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|------------|---------------|---------------------------|---|------------------|------------------|---------------|
| LLICV01   | Cadmium | 5.82           | 6.0        | 97            | 80 - 120                  | P | 09/18/2025       | 11:15            | LB137227      |
|           | Copper  | 21.9           | 20.0       | 110           | 80 - 120                  | P | 09/18/2025       | 11:15            | LB137227      |
|           | Lead    | 11.1           | 12.0       | 92            | 80 - 120                  | P | 09/18/2025       | 11:15            | LB137227      |
|           | Nickel  | 40.5           | 40.0       | 101           | 80 - 120                  | P | 09/18/2025       | 11:15            | LB137227      |
|           | Zinc    | 45.2           | 40.0       | 113           | 80 - 120                  | P | 09/18/2025       | 11:15            | LB137227      |



**Metals**

- 2a -

**INITIAL AND CONTINUING CALIBRATION VERIFICATION**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result<br>ug/L | True Value | %<br>Recovery | Acceptance<br>Window (%R) | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|------------|---------------|---------------------------|---|------------------|------------------|---------------|
| CCV01     | Cadmium | 2510           | 2500       | 101           | 90 - 110                  | P | 09/18/2025       | 12:01            | LB137227      |
|           | Copper  | 1270           | 1250       | 101           | 90 - 110                  | P | 09/18/2025       | 12:01            | LB137227      |
|           | Lead    | 4980           | 5000       | 100           | 90 - 110                  | P | 09/18/2025       | 12:01            | LB137227      |
|           | Nickel  | 2510           | 2500       | 100           | 90 - 110                  | P | 09/18/2025       | 12:01            | LB137227      |
|           | Zinc    | 2540           | 2500       | 102           | 90 - 110                  | P | 09/18/2025       | 12:01            | LB137227      |
| CCV02     | Cadmium | 2450           | 2500       | 98            | 90 - 110                  | P | 09/18/2025       | 12:58            | LB137227      |
|           | Copper  | 1250           | 1250       | 100           | 90 - 110                  | P | 09/18/2025       | 12:58            | LB137227      |
|           | Lead    | 4900           | 5000       | 98            | 90 - 110                  | P | 09/18/2025       | 12:58            | LB137227      |
|           | Nickel  | 2470           | 2500       | 99            | 90 - 110                  | P | 09/18/2025       | 12:58            | LB137227      |
|           | Zinc    | 2520           | 2500       | 101           | 90 - 110                  | P | 09/18/2025       | 12:58            | LB137227      |
| CCV03     | Cadmium | 2460           | 2500       | 98            | 90 - 110                  | P | 09/18/2025       | 13:49            | LB137227      |
|           | Copper  | 1250           | 1250       | 100           | 90 - 110                  | P | 09/18/2025       | 13:49            | LB137227      |
|           | Lead    | 4900           | 5000       | 98            | 90 - 110                  | P | 09/18/2025       | 13:49            | LB137227      |
|           | Nickel  | 2470           | 2500       | 99            | 90 - 110                  | P | 09/18/2025       | 13:49            | LB137227      |
|           | Zinc    | 2530           | 2500       | 101           | 90 - 110                  | P | 09/18/2025       | 13:49            | LB137227      |
| CCV04     | Cadmium | 2500           | 2500       | 100           | 90 - 110                  | P | 09/18/2025       | 14:52            | LB137227      |
|           | Copper  | 1280           | 1250       | 102           | 90 - 110                  | P | 09/18/2025       | 14:52            | LB137227      |
|           | Lead    | 4970           | 5000       | 99            | 90 - 110                  | P | 09/18/2025       | 14:52            | LB137227      |
|           | Nickel  | 2510           | 2500       | 100           | 90 - 110                  | P | 09/18/2025       | 14:52            | LB137227      |
|           | Zinc    | 2490           | 2500       | 100           | 90 - 110                  | P | 09/18/2025       | 14:52            | LB137227      |
| CCV05     | Cadmium | 2460           | 2500       | 99            | 90 - 110                  | P | 09/18/2025       | 15:29            | LB137227      |
|           | Copper  | 1270           | 1250       | 101           | 90 - 110                  | P | 09/18/2025       | 15:29            | LB137227      |
|           | Lead    | 4920           | 5000       | 98            | 90 - 110                  | P | 09/18/2025       | 15:29            | LB137227      |
|           | Nickel  | 2490           | 2500       | 100           | 90 - 110                  | P | 09/18/2025       | 15:29            | LB137227      |
|           | Zinc    | 2570           | 2500       | 103           | 90 - 110                  | P | 09/18/2025       | 15:29            | LB137227      |
| CCV06     | Cadmium | 2350           | 2500       | 94            | 90 - 110                  | P | 09/18/2025       | 16:05            | LB137227      |
|           | Copper  | 1190           | 1250       | 96            | 90 - 110                  | P | 09/18/2025       | 16:05            | LB137227      |
|           | Lead    | 4670           | 5000       | 93            | 90 - 110                  | P | 09/18/2025       | 16:05            | LB137227      |
|           | Nickel  | 2350           | 2500       | 94            | 90 - 110                  | P | 09/18/2025       | 16:05            | LB137227      |
|           | Zinc    | 2450           | 2500       | 98            | 90 - 110                  | P | 09/18/2025       | 16:05            | LB137227      |



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**Metals**

**- 2b -**

**CRDL STANDARD FOR AA & ICP**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Initial Calibration Source:** \_\_\_\_\_

**Continuing Calibration Source:** \_\_\_\_\_

| Sample ID    | Analyte | Result<br>ug/L | True Value<br>ug/L | %<br>Recovery | Acceptance<br>Window (%R) | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|--------------|---------|----------------|--------------------|---------------|---------------------------|----|------------------|------------------|---------------|
| <b>CRA</b>   | Mercury | 0.19           | 0.2                | 96            | 70 - 130                  | CV | 09/17/2025       | 14:30            | LB137213      |
| <b>CRI01</b> | Cadmium | 5.68           | 6.0                | 95            | 65 - 135                  | P  | 09/18/2025       | 11:28            | LB137227      |
|              | Copper  | 21.3           | 20.0               | 106           | 65 - 135                  | P  | 09/18/2025       | 11:28            | LB137227      |
|              | Lead    | 11.6           | 12.0               | 97            | 65 - 135                  | P  | 09/18/2025       | 11:28            | LB137227      |
|              | Nickel  | 39.8           | 40.0               | 99            | 65 - 135                  | P  | 09/18/2025       | 11:28            | LB137227      |
|              | Zinc    | 44.6           | 40.0               | 111           | 65 - 135                  | P  | 09/18/2025       | 11:28            | LB137227      |



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Fax : 908 789 8922

### Metals

- 3a -

#### INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: ENTACT

SDG No.: Q3103

Contract: ENTA05

Lab Code: ACE

| Sample ID | Analyte | Result<br>ug/L | Acceptance<br>Limit | Conc<br>Qual | CRQL | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|---------------------|--------------|------|----|------------------|------------------|---------------|
| ICB34     | Mercury | 0.076          | +/-0.2              | U            | 0.20 | CV | 09/17/2025       | 14:23            | LB137213      |

**Metals**

**- 3a -**

**INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

| Sample ID | Analyte | Result<br>ug/L | Acceptance<br>Limit | Conc<br>Qual | CRQL | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|---------------------|--------------|------|----|------------------|------------------|---------------|
| CCB07     | Mercury | 0.076          | +/-0.2              | U            | 0.20 | CV | 09/17/2025       | 14:28            | LB137213      |
| CCB08     | Mercury | 0.076          | +/-0.2              | U            | 0.20 | CV | 09/17/2025       | 14:57            | LB137213      |
| CCB09     | Mercury | 0.076          | +/-0.2              | U            | 0.20 | CV | 09/17/2025       | 15:06            | LB137213      |

**Metals**

**- 3a -**

**INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

| Sample ID | Analyte | Result<br>ug/L | Acceptance<br>Limit | Conc<br>Qual | CRQL | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|---------------------|--------------|------|---|------------------|------------------|---------------|
| ICB01     | Cadmium | 0.50           | +/-3                | U            | 6.00 | P | 09/18/2025       | 11:20            | LB137227      |
|           | Copper  | 4.60           | +/-10               | U            | 20.0 | P | 09/18/2025       | 11:20            | LB137227      |
|           | Lead    | 2.30           | +/-6                | U            | 12.0 | P | 09/18/2025       | 11:20            | LB137227      |
|           | Nickel  | 3.06           | +/-20               | U            | 40.0 | P | 09/18/2025       | 11:20            | LB137227      |
|           | Zinc    | 16.7           | +/-20               | U            | 40.0 | P | 09/18/2025       | 11:20            | LB137227      |

# Metals

- 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: ENTACT

SDG No.: Q3103

Contract: ENTA05

Lab Code: ACE

| Sample ID | Analyte | Result<br>ug/L | Acceptance<br>Limit | Conc<br>Qual | CRQL | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|---------------------|--------------|------|---|------------------|------------------|---------------|
| CCB01     | Cadmium | 0.50           | +/-3                | U            | 6.00 | P | 09/18/2025       | 12:08            | LB137227      |
|           | Copper  | 4.60           | +/-10               | U            | 20.0 | P | 09/18/2025       | 12:08            | LB137227      |
|           | Lead    | 2.30           | +/-6                | U            | 12.0 | P | 09/18/2025       | 12:08            | LB137227      |
|           | Nickel  | 3.06           | +/-20               | U            | 40.0 | P | 09/18/2025       | 12:08            | LB137227      |
|           | Zinc    | 16.7           | +/-20               | U            | 40.0 | P | 09/18/2025       | 12:08            | LB137227      |
| CCB02     | Cadmium | 0.50           | +/-3                | U            | 6.00 | P | 09/18/2025       | 13:02            | LB137227      |
|           | Copper  | 4.60           | +/-10               | U            | 20.0 | P | 09/18/2025       | 13:02            | LB137227      |
|           | Lead    | 2.30           | +/-6                | U            | 12.0 | P | 09/18/2025       | 13:02            | LB137227      |
|           | Nickel  | 3.06           | +/-20               | U            | 40.0 | P | 09/18/2025       | 13:02            | LB137227      |
|           | Zinc    | 16.7           | +/-20               | U            | 40.0 | P | 09/18/2025       | 13:02            | LB137227      |
| CCB03     | Cadmium | 0.50           | +/-3                | U            | 6.00 | P | 09/18/2025       | 13:55            | LB137227      |
|           | Copper  | 4.60           | +/-10               | U            | 20.0 | P | 09/18/2025       | 13:55            | LB137227      |
|           | Lead    | 2.30           | +/-6                | U            | 12.0 | P | 09/18/2025       | 13:55            | LB137227      |
|           | Nickel  | 3.06           | +/-20               | U            | 40.0 | P | 09/18/2025       | 13:55            | LB137227      |
|           | Zinc    | 16.7           | +/-20               | U            | 40.0 | P | 09/18/2025       | 13:55            | LB137227      |
| CCB04     | Cadmium | 0.50           | +/-3                | U            | 6.00 | P | 09/18/2025       | 14:56            | LB137227      |
|           | Copper  | 4.60           | +/-10               | U            | 20.0 | P | 09/18/2025       | 14:56            | LB137227      |
|           | Lead    | 2.30           | +/-6                | U            | 12.0 | P | 09/18/2025       | 14:56            | LB137227      |
|           | Nickel  | 3.06           | +/-20               | U            | 40.0 | P | 09/18/2025       | 14:56            | LB137227      |
|           | Zinc    | 16.7           | +/-20               | U            | 40.0 | P | 09/18/2025       | 14:56            | LB137227      |
| CCB05     | Cadmium | 0.50           | +/-3                | U            | 6.00 | P | 09/18/2025       | 15:34            | LB137227      |
|           | Copper  | 4.60           | +/-10               | U            | 20.0 | P | 09/18/2025       | 15:34            | LB137227      |
|           | Lead    | 2.30           | +/-6                | U            | 12.0 | P | 09/18/2025       | 15:34            | LB137227      |
|           | Nickel  | 3.06           | +/-20               | U            | 40.0 | P | 09/18/2025       | 15:34            | LB137227      |
|           | Zinc    | 16.7           | +/-20               | U            | 40.0 | P | 09/18/2025       | 15:34            | LB137227      |
| CCB06     | Cadmium | 0.50           | +/-3                | U            | 6.00 | P | 09/18/2025       | 16:09            | LB137227      |
|           | Copper  | 4.60           | +/-10               | U            | 20.0 | P | 09/18/2025       | 16:09            | LB137227      |
|           | Lead    | 2.30           | +/-6                | U            | 12.0 | P | 09/18/2025       | 16:09            | LB137227      |
|           | Nickel  | 3.06           | +/-20               | U            | 40.0 | P | 09/18/2025       | 16:09            | LB137227      |
|           | Zinc    | 16.7           | +/-20               | U            | 40.0 | P | 09/18/2025       | 16:09            | LB137227      |

**Metals**  
**- 3b -**  
**PREPARATION BLANK SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Instrument:** CV1

| Sample ID         | Analyte | Result<br>(ug/L) | Acceptance<br>Limit | Conc<br>Qual         | CRQL<br>ug/L    | M  | Analysis<br>Date  | Analysis<br>Time  | Run      |
|-------------------|---------|------------------|---------------------|----------------------|-----------------|----|-------------------|-------------------|----------|
| <b>PB169732BL</b> |         | <b>WATER</b>     |                     | <b>Batch Number:</b> | <b>PB169732</b> |    | <b>Prep Date:</b> | <b>09/17/2025</b> |          |
|                   | Mercury | 0.076            | <0.2                | U                    | 0.20            | CV | 09/17/2025        | 14:37             | LB137213 |

**Metals**  
**- 3b -**  
**PREPARATION BLANK SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Instrument:** P4

| Sample ID         | Analyte      | Result<br>(ug/L) | Acceptance<br>Limit | Conc<br>Qual         | CRQL<br>ug/L    | M | Analysis<br>Date  | Analysis<br>Time  | Run      |
|-------------------|--------------|------------------|---------------------|----------------------|-----------------|---|-------------------|-------------------|----------|
| <b>PB169721BL</b> | <b>WATER</b> |                  |                     | <b>Batch Number:</b> | <b>PB169721</b> |   | <b>Prep Date:</b> | <b>09/17/2025</b> |          |
|                   | Cadmium      | 0.25             | <1.5                | U                    | 3.00            | P | 09/18/2025        | 13:11             | LB137227 |
|                   | Copper       | 2.30             | <5                  | U                    | 10.0            | P | 09/18/2025        | 13:11             | LB137227 |
|                   | Lead         | 1.15             | <3                  | U                    | 6.00            | P | 09/18/2025        | 13:11             | LB137227 |
|                   | Nickel       | 1.53             | <10                 | U                    | 20.0            | P | 09/18/2025        | 13:11             | LB137227 |
|                   | Zinc         | 8.33             | <10                 | U                    | 20.0            | P | 09/18/2025        | 13:11             | LB137227 |



**Metals**

- 4 -

**INTERFERENCE CHECK SAMPLE**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**ICS Source:** EPA

**Instrument ID:** P4

| Sample ID      | Analyte | Result<br>ug/L | True Value<br>ug/L | %<br>Recovery | Low<br>Limit<br>(ug/L) | High<br>Limit<br>(ug/L) | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|----------------|---------|----------------|--------------------|---------------|------------------------|-------------------------|------------------|------------------|---------------|
| <b>ICSA01</b>  | Cadmium | -0.069         | 1.0                | 7             | -5                     | 7                       | 09/18/2025       | 11:33            | LB137227      |
|                | Copper  | 19.7           | 2.0                | 985           | -18                    | 22                      | 09/18/2025       | 11:33            | LB137227      |
|                | Lead    | 0.77           |                    |               | -12                    | 12                      | 09/18/2025       | 11:33            | LB137227      |
|                | Nickel  | 7.93           | 2.0                | 396           | -38                    | 42                      | 09/18/2025       | 11:33            | LB137227      |
|                | Zinc    | 3.87           |                    |               | -40                    | 40                      | 09/18/2025       | 11:33            | LB137227      |
| <b>ICSAB01</b> | Cadmium | 1010           | 972                | 104           | 826                    | 1120                    | 09/18/2025       | 11:38            | LB137227      |
|                | Copper  | 515            | 511                | 101           | 434                    | 588                     | 09/18/2025       | 11:38            | LB137227      |
|                | Lead    | 49.1           | 49.0               | 100           | 37                     | 61                      | 09/18/2025       | 11:38            | LB137227      |
|                | Nickel  | 1020           | 954                | 107           | 810                    | 1100                    | 09/18/2025       | 11:38            | LB137227      |
|                | Zinc    | 1060           | 952                | 111           | 809                    | 1095                    | 09/18/2025       | 11:38            | LB137227      |



# METAL QC DATA

**metals**  
**- 5a -**  
**MATRIX SPIKE SUMMARY**

|                                             |                                     |                                                   |
|---------------------------------------------|-------------------------------------|---------------------------------------------------|
| <b>client:</b> <u>ENTACT</u>                | <b>level:</b> <u>low</u>            | <b>sdg no.:</b> <u>Q3103</u>                      |
| <b>contract:</b> <u>ENTA05</u>              |                                     | <b>lab code:</b> <u>ACE</u>                       |
| <b>matrix:</b> <u>Water</u>                 | <b>sample id:</b> <u>Q3103-01</u>   | <b>client id:</b> <u>TW-WTS-14MS</u>              |
| <b>Percent Solids for Sample:</b> <u>NA</u> | <b>Spiked ID:</b> <u>Q3103-01MS</u> | <b>Percent Solids for Spike Sample:</b> <u>NA</u> |

| Analyte | Units | Acceptance<br>Limit %R | Spiked<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M  |
|---------|-------|------------------------|------------------|---|------------------|---|----------------|---------------|------|----|
| Cadmium | ug/L  | 75 - 125               | 96.4             |   | 3.00             | U | 100            | 96            |      | P  |
| Copper  | ug/L  | 75 - 125               | 145              |   | 10.0             | U | 150            | 97            |      | P  |
| Lead    | ug/L  | 75 - 125               | 464              |   | 6.00             | U | 500            | 93            |      | P  |
| Mercury | ug/L  | 75 - 125               | 3.44             |   | 0.20             | U | 4.0            | 86            |      | CV |
| Nickel  | ug/L  | 75 - 125               | 246              |   | 20.0             | U | 250            | 98            |      | P  |
| Zinc    | ug/L  | 75 - 125               | 104              |   | 20.0             | U | 100            | 104           |      | P  |

**metals**  
**- 5a -**  
**MATRIX SPIKE DUPLICATE SUMMARY**

|                                             |                                      |                                                   |
|---------------------------------------------|--------------------------------------|---------------------------------------------------|
| <b>client:</b> <u>ENTACT</u>                | <b>level:</b> <u>low</u>             | <b>sdg no.:</b> <u>Q3103</u>                      |
| <b>contract:</b> <u>ENTA05</u>              |                                      | <b>lab code:</b> <u>ACE</u>                       |
| <b>matrix:</b> <u>Water</u>                 | <b>sample id:</b> <u>Q3103-01</u>    | <b>client id:</b> <u>TW-WTS-14MSD</u>             |
| <b>Percent Solids for Sample:</b> <u>NA</u> | <b>Spiked ID:</b> <u>Q3103-01MSD</u> | <b>Percent Solids for Spike Sample:</b> <u>NA</u> |

| Analyte | Units | Acceptance<br>Limit %R | MSD<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M  |
|---------|-------|------------------------|---------------|---|------------------|---|----------------|---------------|------|----|
| Cadmium | ug/L  | 75 - 125               | 102           |   | 3.00             | U | 100            | 102           |      | P  |
| Copper  | ug/L  | 75 - 125               | 152           |   | 10.0             | U | 150            | 101           |      | P  |
| Lead    | ug/L  | 75 - 125               | 488           |   | 6.00             | U | 500            | 98            |      | P  |
| Mercury | ug/L  | 75 - 125               | 3.81          |   | 0.20             | U | 4.0            | 95            |      | CV |
| Nickel  | ug/L  | 75 - 125               | 259           |   | 20.0             | U | 250            | 104           |      | P  |
| Zinc    | ug/L  | 75 - 125               | 109           |   | 20.0             | U | 100            | 109           |      | P  |

**Metals**

**- 5b -**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Matrix:** \_\_\_\_\_

**Level:** LOW

**Client ID:** \_\_\_\_\_

**Sample ID:** \_\_\_\_\_

**Spiked ID:** \_\_\_\_\_

| Analyte | Units | Acceptance<br>Limit %R | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M |
|---------|-------|------------------------|---|------------------|---|----------------|---------------|------|---|
|---------|-------|------------------------|---|------------------|---|----------------|---------------|------|---|

.....

**Metals**

- 6 -

**DUPLICATE SAMPLE SUMMARY**

|                                   |               |                     |                 |                                         |                     |
|-----------------------------------|---------------|---------------------|-----------------|-----------------------------------------|---------------------|
| <b>Client:</b>                    | <u>ENTACT</u> | <b>Level:</b>       | <u>LOW</u>      | <b>SDG No.:</b>                         | <u>Q3103</u>        |
| <b>Contract:</b>                  | <u>ENTA05</u> |                     |                 | <b>Lab Code:</b>                        | <u>ACE</u>          |
| <b>Matrix:</b>                    | <u>Water</u>  | <b>Sample ID:</b>   | <u>Q3103-01</u> | <b>Client ID:</b>                       | <u>TW-WTS-14DUP</u> |
| <b>Percent Solids for Sample:</b> | NA            | <b>Duplicate ID</b> | Q3103-01DUP     | <b>Percent Solids for Spike Sample:</b> | NA                  |

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M  |
|---------|-------|------------------|---------------|---|------------------|---|-----|------|----|
| Cadmium | ug/L  | 20               | 3.00          | U | 3.00             | U |     |      | P  |
| Copper  | ug/L  | 20               | 10.0          | U | 10.0             | U |     |      | P  |
| Lead    | ug/L  | 20               | 6.00          | U | 6.00             | U |     |      | P  |
| Mercury | ug/L  | 20               | 0.20          | U | 0.20             | U |     |      | CV |
| Nickel  | ug/L  | 20               | 20.0          | U | 20.0             | U |     |      | P  |
| Zinc    | ug/L  | 20               | 20.0          | U | 20.0             | U |     |      | P  |

# Metals

- 6 -

## DUPLICATE SAMPLE SUMMARY

**Client:** ENTACT **Level:** LOW **SDG No.:** Q3103  
**Contract:** ENTA05 **Lab Code:** ACE  
**Matrix:** Water **Sample ID:** Q3103-01MS **Client ID:** TW-WTS-14MSD  
**Percent Solids for Sample:** NA **Duplicate ID** Q3103-01MSD **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M  |
|---------|-------|------------------|---------------|---|------------------|---|-----|------|----|
| Cadmium | ug/L  | 20               | 96.4          |   | 102              |   | 6   |      | P  |
| Copper  | ug/L  | 20               | 145           |   | 152              |   | 5   |      | P  |
| Lead    | ug/L  | 20               | 464           |   | 488              |   | 5   |      | P  |
| Mercury | ug/L  | 20               | 3.44          |   | 3.81             |   | 10  |      | CV |
| Nickel  | ug/L  | 20               | 246           |   | 259              |   | 5   |      | P  |
| Zinc    | ug/L  | 20               | 104           |   | 109              |   | 5   |      | P  |

**Metals**

- 7 -

**LABORATORY CONTROL SAMPLE SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

| Analyte    | Units | True Value | Result | C | %<br>Recovery | Acceptance<br>Limits | M |
|------------|-------|------------|--------|---|---------------|----------------------|---|
| PB169721BS |       |            |        |   |               |                      |   |
| Cadmium    | ug/L  | 100        | 91.7   |   | 92            | 80 - 120             | P |
| Copper     | ug/L  | 150        | 148    |   | 99            | 80 - 120             | P |
| Lead       | ug/L  | 500        | 458    |   | 92            | 80 - 120             | P |
| Nickel     | ug/L  | 250        | 234    |   | 94            | 80 - 120             | P |
| Zinc       | ug/L  | 100        | 97.5   |   | 98            | 80 - 120             | P |



**Metals**

- 7 -

**LABORATORY CONTROL SAMPLE SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

| Analyte               | Units | True Value | Result | C | %<br>Recovery | Acceptance<br>Limits | M  |
|-----------------------|-------|------------|--------|---|---------------|----------------------|----|
| PB169732BS<br>Mercury | ug/L  | 4.0        | 4.33   |   | 108           | 80 - 120             | CV |

**Metals**  
**-9 -**  
**ICP SERIAL DILUTIONS**

SAMPLE NO.

TW-WTS-14L

**Lab Name:** Alliance **Contract:** ENTA05  
**Lab Code:** ACE **Lb No.:** lb137227 **Lab Sample ID :** Q3103-01L **SDG No.:** Q3103  
**Matrix (soil/water):** Water **Level (low/med):** LOW  
**Concentration Units:** ug/L

| Analyte | Initial Sample<br>Result (I) |   |  | Serial Dilution<br>Result (S) |   |  | % Differ-<br>ence | Q | M  |
|---------|------------------------------|---|--|-------------------------------|---|--|-------------------|---|----|
|         | C                            |   |  | C                             |   |  |                   |   |    |
| Cadmium | 3.00                         | U |  | 15.0                          | U |  |                   |   | P  |
| Copper  | 10.0                         | U |  | 50.0                          | U |  |                   |   | P  |
| Lead    | 6.00                         | U |  | 30.0                          | U |  |                   |   | P  |
| Mercury | 0.20                         | U |  | 1.00                          | U |  |                   |   | CV |
| Nickel  | 20.0                         | U |  | 100                           | U |  |                   |   | P  |
| Zinc    | 20.0                         | U |  | 100                           | U |  |                   |   | P  |



# METAL PREPARATION & INSTRUMENT DATA

**Metals**

- 11 -

**ICP INTERELEMENT CORRECTION FACTORS**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Instrument ID:**

**Date:**

**Interelement Correction Factors (apparent ppb analyte/ppm interferent )**

| Analyte | Wave-<br>Length<br>(nm) | ICP Interelement Correction Factors For: |           |           |           |           |
|---------|-------------------------|------------------------------------------|-----------|-----------|-----------|-----------|
|         |                         | Al                                       | Ca        | Fe        | Mg        | Ag        |
| Cadmium | 226.502                 | 0.0000000                                | 0.0000000 | 0.0000930 | 0.0000000 | 0.0000000 |
| Copper  | 224.700                 | 0.0000000                                | 0.0000000 | 0.0007850 | 0.0000000 | 0.0000000 |
| Lead    | 220.353                 | -0.0000920                               | 0.0000000 | 0.0000380 | 0.0000000 | 0.0000000 |
| Nickel  | 231.604                 | 0.0000000                                | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc    | 213.800                 | 0.0000000                                | 0.0000000 | 0.0001050 | 0.0000000 | 0.0000000 |

**Metals**

- 11 -

**ICP INTERELEMENT CORRECTION FACTORS**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Instrument ID:**

**Date:**

**Interement Correction Factors (apparent ppb analyte/ppm interferent )**

| Analyte | Wave-<br>Length<br>(nm) | ICP Interement Correction Factors For: |           |           |           |           |
|---------|-------------------------|----------------------------------------|-----------|-----------|-----------|-----------|
|         |                         | As                                     | Ba        | Be        | Cd        | Co        |
| Cadmium | 226.502                 | 0.0000000                              | 0.0000000 | 0.0000000 | 0.0000000 | 0.0002870 |
| Copper  | 224.700                 | 0.0000000                              | 0.0000000 | 0.0000000 | 0.0000000 | 0.0009530 |
| Lead    | 220.353                 | 0.0000000                              | 0.0003170 | 0.0000000 | 0.0000000 | 0.0000000 |
| Nickel  | 231.604                 | 0.0000000                              | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc    | 213.800                 | 0.0000000                              | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |

**Metals**

- 11 -

**ICP INTERELEMENT CORRECTION FACTORS**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Instrument ID:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Interelement Correction Factors (apparent ppb analyte/ppm interferent )**

| Analyte | Wave-<br>Length<br>(nm) | ICP Interelement Correction Factors For: |           |           |           |            |
|---------|-------------------------|------------------------------------------|-----------|-----------|-----------|------------|
|         |                         | Cr                                       | Cu        | K         | Mn        | Mo         |
| Cadmium | 226.502                 | 0.0000000                                | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000  |
| Copper  | 224.700                 | 0.0000000                                | 0.0000000 | 0.0000000 | 0.0006510 | 0.0020500  |
| Lead    | 220.353                 | 0.0000000                                | 0.0000000 | 0.0000000 | 0.0001400 | -0.0008600 |
| Nickel  | 231.604                 | 0.0000000                                | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000  |
| Zinc    | 213.800                 | 0.0000000                                | 0.0009010 | 0.0000000 | 0.0000000 | 0.0000000  |

**Metals**

- 11 -

**ICP INTERELEMENT CORRECTION FACTORS**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Instrument ID:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Interement Correction Factors (apparent ppb analyte/ppm interferent )**

| Analyte | Wave-<br>Length<br>(nm) | ICP Interement Correction Factors For: |            |           |           |           |
|---------|-------------------------|----------------------------------------|------------|-----------|-----------|-----------|
|         |                         | Na                                     | Ni         | Pb        | Sb        | Se        |
| Cadmium | 226.502                 | 0.0000000                              | 0.0000000  | 0.0000000 | 0.0000000 | 0.0000000 |
| Copper  | 224.700                 | 0.0000000                              | -0.0047000 | 0.0036100 | 0.0000000 | 0.0000000 |
| Lead    | 220.353                 | 0.0000000                              | 0.0006580  | 0.0000000 | 0.0000000 | 0.0001290 |
| Nickel  | 231.604                 | 0.0000000                              | 0.0000000  | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc    | 213.800                 | 0.0000000                              | 0.0067600  | 0.0000000 | 0.0000000 | 0.0000000 |

**Metals**

- 11 -

**ICP INTERELEMENT CORRECTION FACTORS**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Instrument ID:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Interelement Correction Factors (apparent ppb analyte/ppm interferent )**

| Analyte | Wave-<br>Length<br>(nm) | ICP Interelement Correction Factors For: |            |           |           |           |
|---------|-------------------------|------------------------------------------|------------|-----------|-----------|-----------|
|         |                         | Sn                                       | Ti         | Tl        | V         | Zn        |
| Cadmium | 226.502                 | 0.0000000                                | 0.0000630  | 0.0001280 | 0.0000000 | 0.0000000 |
| Copper  | 224.700                 | 0.0000000                                | 0.0003840  | 0.0000000 | 0.0000000 | 0.0000000 |
| Lead    | 220.353                 | 0.0000000                                | -0.0003610 | 0.0000000 | 0.0000000 | 0.0000000 |
| Nickel  | 231.604                 | 0.0000000                                | 0.0000000  | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc    | 213.800                 | 0.0000000                                | 0.0000000  | 0.0000000 | 0.0000000 | 0.0000000 |





# METAL PREPARATION & ANALYICAL SUMMARY

**Metals**

**- 13 -**

**SAMPLE PREPARATION SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Method:**

| Sample ID                     | Client ID    | Sample Type | Matrix | Prep Date  | Initial Sample Size(mL) | Final Sample Volume (mL) | Percent Solids |
|-------------------------------|--------------|-------------|--------|------------|-------------------------|--------------------------|----------------|
| <b>Batch Number: PB169721</b> |              |             |        |            |                         |                          |                |
| PB169721BL                    | PB169721BL   | MB          | WATER  | 09/17/2025 | 50.0                    | 25.0                     |                |
| PB169721BS                    | PB169721BS   | LCS         | WATER  | 09/17/2025 | 50.0                    | 25.0                     |                |
| Q3103-01                      | TW-WTS-14    | SAM         | WATER  | 09/17/2025 | 50.0                    | 25.0                     |                |
| Q3103-01DUP                   | TW-WTS-14DUP | DUP         | WATER  | 09/17/2025 | 50.0                    | 25.0                     |                |
| Q3103-01MS                    | TW-WTS-14MS  | MS          | WATER  | 09/17/2025 | 50.0                    | 25.0                     |                |
| Q3103-01MSD                   | TW-WTS-14MSD | MSD         | WATER  | 09/17/2025 | 50.0                    | 25.0                     |                |

**Metals**

**- 13 -**

**SAMPLE PREPARATION SUMMARY**

**Client:** ENTACT

**SDG No.:** Q3103

**Contract:** ENTA05

**Lab Code:** ACE

**Method:**

---

| Sample ID                     | Client ID    | Sample Type | Matrix | Prep Date  | Initial Sample Size(mL) | Final Sample Volume (mL) | Percent Solids |
|-------------------------------|--------------|-------------|--------|------------|-------------------------|--------------------------|----------------|
| <b>Batch Number: PB169732</b> |              |             |        |            |                         |                          |                |
| PB169732BL                    | PB169732BL   | MB          | WATER  | 09/17/2025 | 30.0                    | 30.0                     |                |
| PB169732BS                    | PB169732BS   | LCS         | WATER  | 09/17/2025 | 30.0                    | 30.0                     |                |
| Q3103-01                      | TW-WTS-14    | SAM         | WATER  | 09/17/2025 | 30.0                    | 30.0                     |                |
| Q3103-01DUP                   | TW-WTS-14DUP | DUP         | WATER  | 09/17/2025 | 30.0                    | 30.0                     |                |
| Q3103-01MS                    | TW-WTS-14MS  | MS          | WATER  | 09/17/2025 | 30.0                    | 30.0                     |                |
| Q3103-01MSD                   | TW-WTS-14MSD | MSD         | WATER  | 09/17/2025 | 30.0                    | 30.0                     |                |

**metals**  
**- 14 -**  
**ANALYSIS RUN LOG**

**Client:** ENTACT

**Contract:** ENTA05

**Lab code:** ACE

**Sdg no.:** Q3103

**Instrument id number:** \_\_\_\_\_

**Method:** \_\_\_\_\_

**Run number:** LB137213

**Start date:** 09/17/2025

**End date:** 09/17/2025

| Lab sample id. | Client Sample Id | d/f | Time | Parameter list |
|----------------|------------------|-----|------|----------------|
| S0             | S0               | 1   | 1357 | HG             |
| S0.2           | S0.2             | 1   | 1400 | HG             |
| S2.5           | S2.5             | 1   | 1402 | HG             |
| S5             | S5               | 1   | 1404 | HG             |
| S7.5           | S7.5             | 1   | 1406 | HG             |
| S10            | S10              | 1   | 1418 | HG             |
| ICV34          | ICV34            | 1   | 1421 | HG             |
| ICB34          | ICB34            | 1   | 1423 | HG             |
| CCV07          | CCV07            | 1   | 1426 | HG             |
| CCB07          | CCB07            | 1   | 1428 | HG             |
| CRA            | CRA              | 1   | 1430 | HG             |
| PB169732BL     | PB169732BL       | 1   | 1437 | HG             |
| PB169732BS     | PB169732BS       | 1   | 1439 | HG             |
| Q3103-01       | TW-WTS-14        | 1   | 1442 | HG             |
| Q3103-01DUP    | TW-WTS-14DUP     | 1   | 1446 | HG             |
| Q3103-01MS     | TW-WTS-14MS      | 1   | 1448 | HG             |
| Q3103-01MSD    | TW-WTS-14MSD     | 1   | 1450 | HG             |
| CCV08          | CCV08            | 1   | 1455 | HG             |
| CCB08          | CCB08            | 1   | 1457 | HG             |
| CCV09          | CCV09            | 1   | 1504 | HG             |
| CCB09          | CCB09            | 1   | 1506 | HG             |

**metals**  
**- 14 -**  
**ANALYSIS RUN LOG**

**Client:** ENTACT

**Contract:** ENTA05

**Lab code:** ACE

**Sdg no.:** Q3103

**Instrument id number:** \_\_\_\_\_

**Method:** \_\_\_\_\_

**Run number:** LB137227

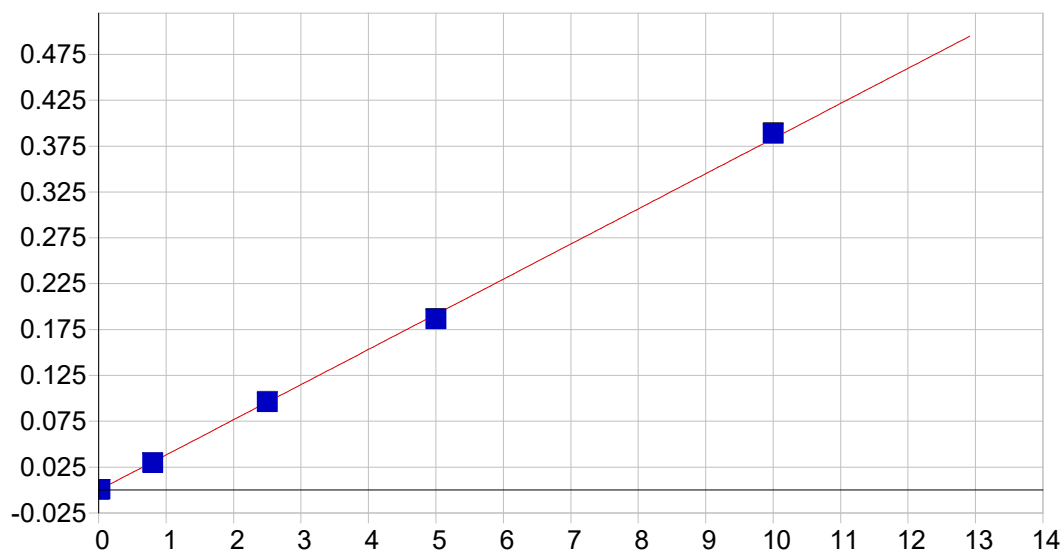
**Start date:** 09/18/2025

**End date:** 09/18/2025

| Lab sample id. | Client Sample Id | d/f | Time | Parameter list |
|----------------|------------------|-----|------|----------------|
| S0             | S0               | 1   | 1041 | Cd,Cu,Ni,Pb,Zn |
| S1             | S1               | 1   | 1046 | Cd,Cu,Ni,Pb,Zn |
| S2             | S2               | 1   | 1050 | Cd,Cu,Ni,Pb,Zn |
| S3             | S3               | 1   | 1054 | Cd,Cu,Ni,Pb,Zn |
| S4             | S4               | 1   | 1058 | Cd,Cu,Ni,Pb,Zn |
| S5             | S5               | 1   | 1102 | Cd,Cu,Ni,Pb,Zn |
| ICV01          | ICV01            | 1   | 1106 | Cd,Cu,Ni,Pb,Zn |
| LLICV01        | LLICV01          | 1   | 1115 | Cd,Cu,Ni,Pb,Zn |
| ICB01          | ICB01            | 1   | 1120 | Cd,Cu,Ni,Pb,Zn |
| CRI01          | CRI01            | 1   | 1128 | Cd,Cu,Ni,Pb,Zn |
| ICSA01         | ICSA01           | 1   | 1133 | Cd,Cu,Ni,Pb,Zn |
| ICSAB01        | ICSAB01          | 1   | 1138 | Cd,Cu,Ni,Pb,Zn |
| CCV01          | CCV01            | 1   | 1201 | Cd,Cu,Ni,Pb,Zn |
| CCB01          | CCB01            | 1   | 1208 | Cd,Cu,Ni,Pb,Zn |
| CCV02          | CCV02            | 1   | 1258 | Cd,Cu,Ni,Pb,Zn |
| CCB02          | CCB02            | 1   | 1302 | Cd,Cu,Ni,Pb,Zn |
| PB169721BL     | PB169721BL       | 1   | 1311 | Cd,Cu,Ni,Pb,Zn |
| PB169721BS     | PB169721BS       | 1   | 1315 | Cd,Cu,Ni,Pb,Zn |
| Q3103-01       | TW-WTS-14        | 1   | 1319 | Cd,Cu,Ni,Pb,Zn |
| Q3103-01DUP    | TW-WTS-14DUP     | 1   | 1324 | Cd,Cu,Ni,Pb,Zn |
| Q3103-01MS     | TW-WTS-14MS      | 1   | 1332 | Cd,Cu,Ni,Pb,Zn |
| Q3103-01MSD    | TW-WTS-14MSD     | 1   | 1337 | Cd,Cu,Ni,Pb,Zn |
| CCV03          | CCV03            | 1   | 1349 | Cd,Cu,Ni,Pb,Zn |
| CCB03          | CCB03            | 1   | 1355 | Cd,Cu,Ni,Pb,Zn |
| CCV04          | CCV04            | 1   | 1452 | Cd,Cu,Ni,Pb,Zn |
| CCB04          | CCB04            | 1   | 1456 | Cd,Cu,Ni,Pb,Zn |
| CCV05          | CCV05            | 1   | 1529 | Cd,Cu,Ni,Pb,Zn |
| CCB05          | CCB05            | 1   | 1534 | Cd,Cu,Ni,Pb,Zn |
| CCV06          | CCV06            | 1   | 1605 | Cd,Cu,Ni,Pb,Zn |
| CCB06          | CCB06            | 1   | 1609 | Cd,Cu,Ni,Pb,Zn |



# METAL RAW DATA

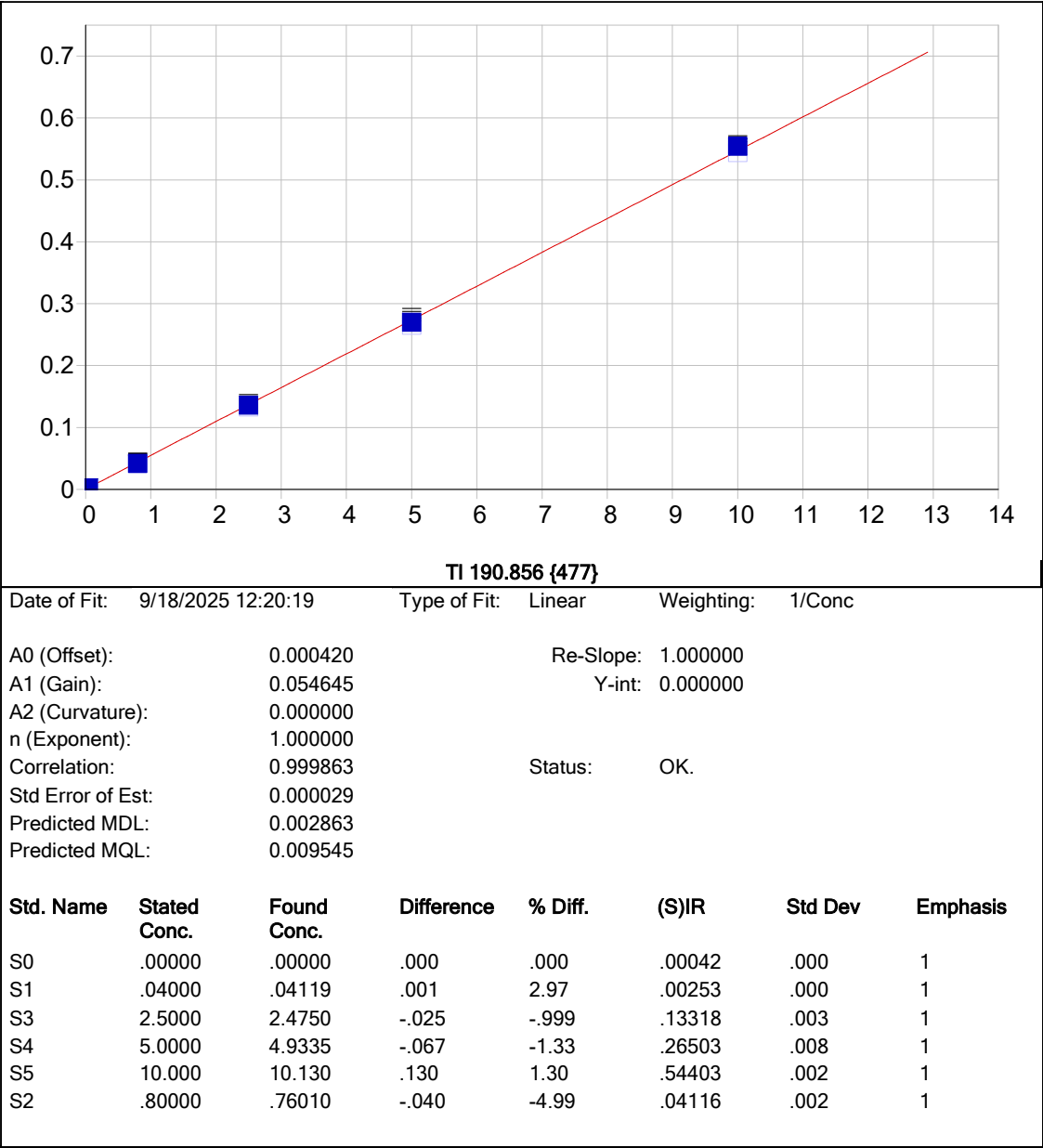


As 189.042 {479}

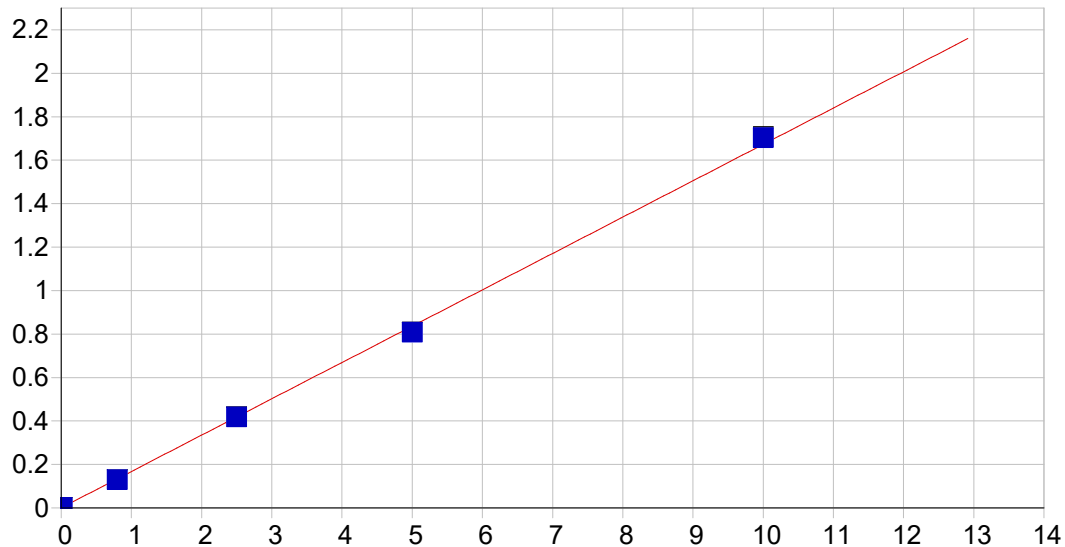
Date of Fit: 9/18/2025 12:20:19 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000008 Re-Slope: 1.000000  
A1 (Gain): 0.038324 Y-int: 0.000000  
A2 (Curvature): 0.000000  
n (Exponent): 1.000000  
Correlation: 0.999820 Status: OK.  
Std Error of Est: 0.000017  
Predicted MDL: 0.002774  
Predicted MQL: 0.009245

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR   | Std Dev | Emphasis |
|-----------|--------------|-------------|------------|---------|---------|---------|----------|
| S0        | .00000       | .00000      | .000       | .000    | -.00001 | .000    | 1        |
| S1        | .02000       | .01871      | -.001      | -6.44   | .00071  | .000    | 1        |
| S3        | 2.5000       | 2.5111      | .011       | .443    | .09613  | .000    | 1        |
| S4        | 5.0000       | 4.8633      | -.137      | -2.73   | .18617  | .000    | 1        |
| S5        | 10.000       | 10.148      | .148       | 1.48    | .38849  | .000    | 1        |
| S2        | .80000       | .77937      | -.021      | -2.58   | .02983  | .000    | 1        |





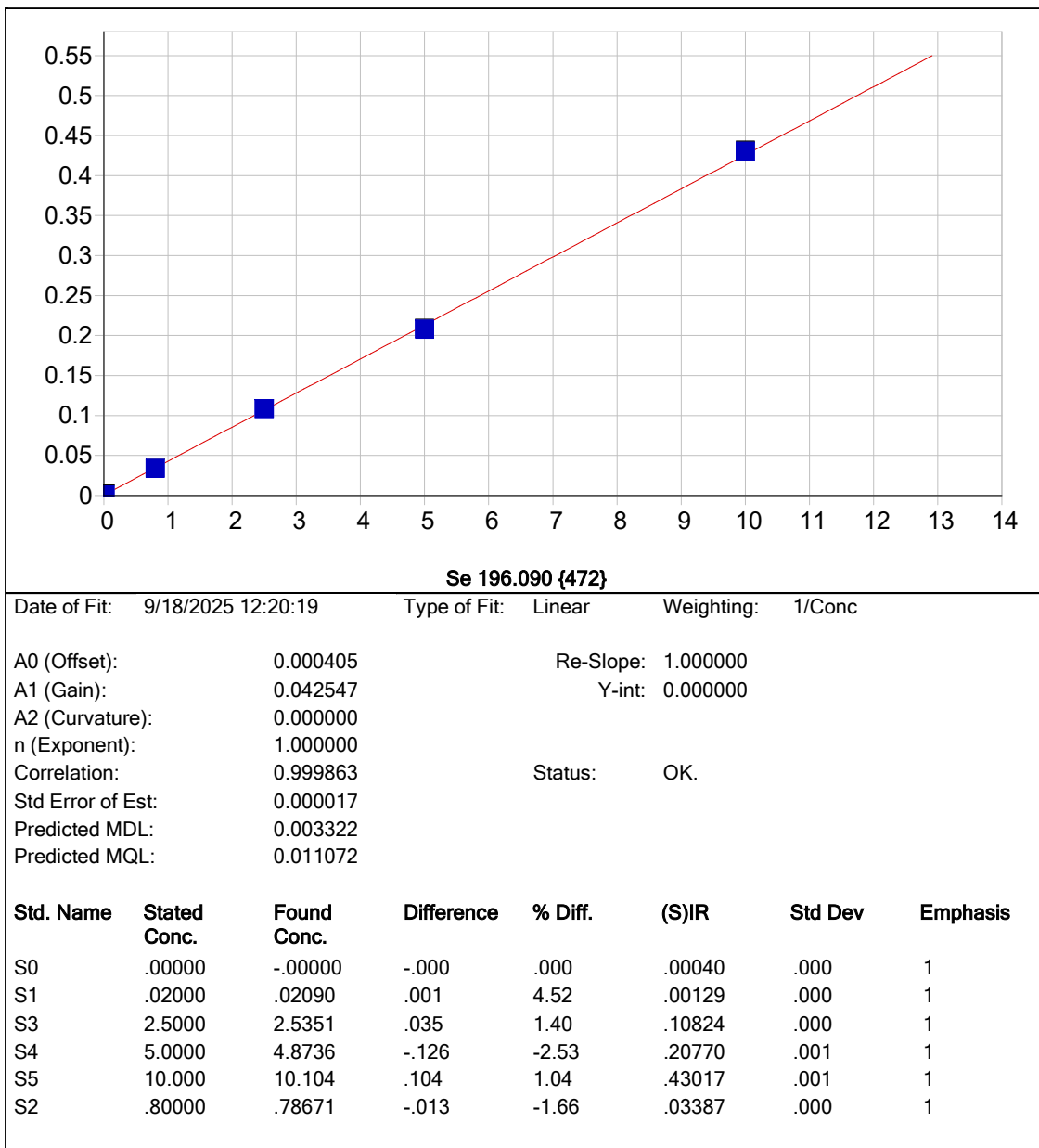


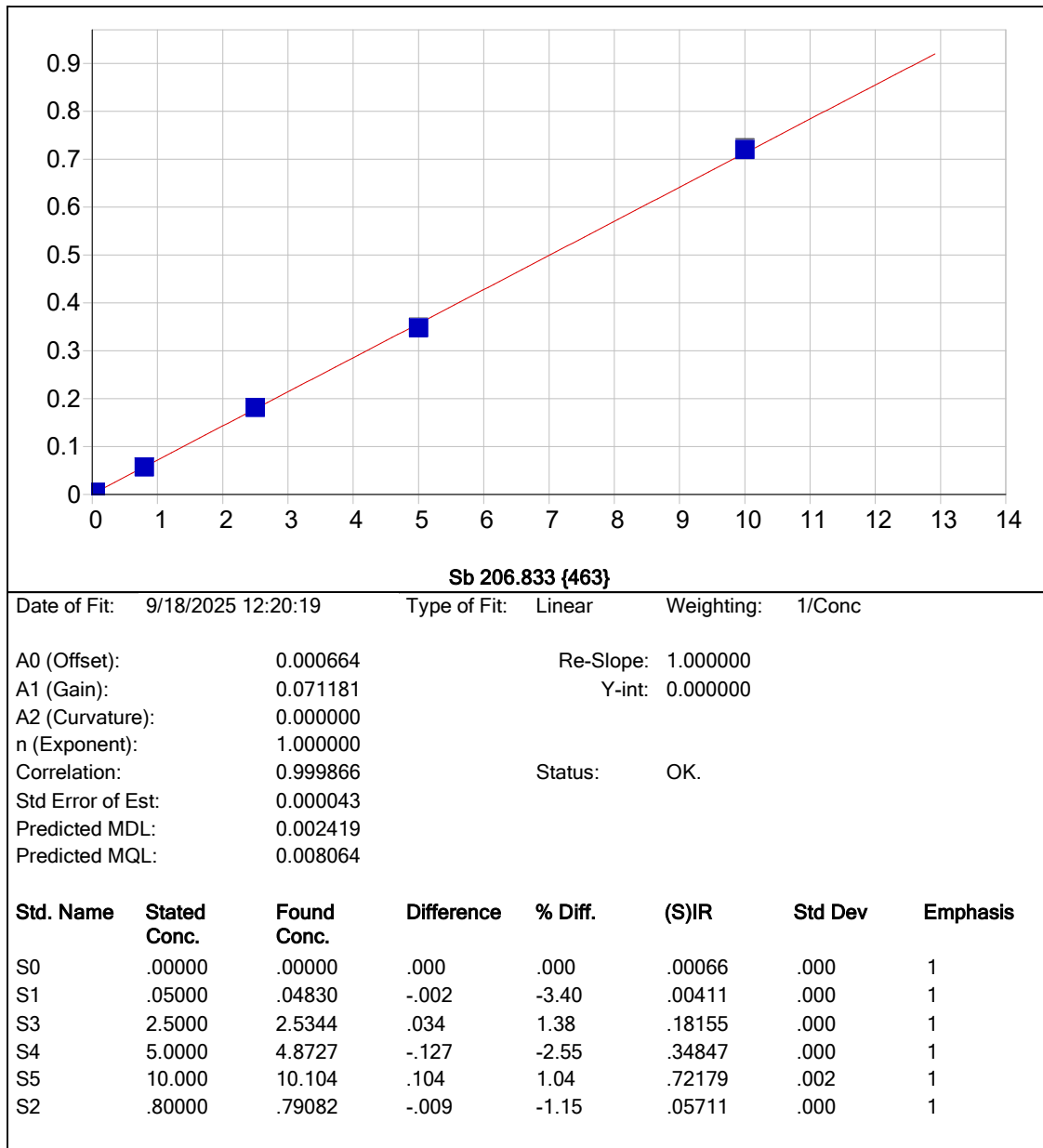
**Pb 220.353 {453}**

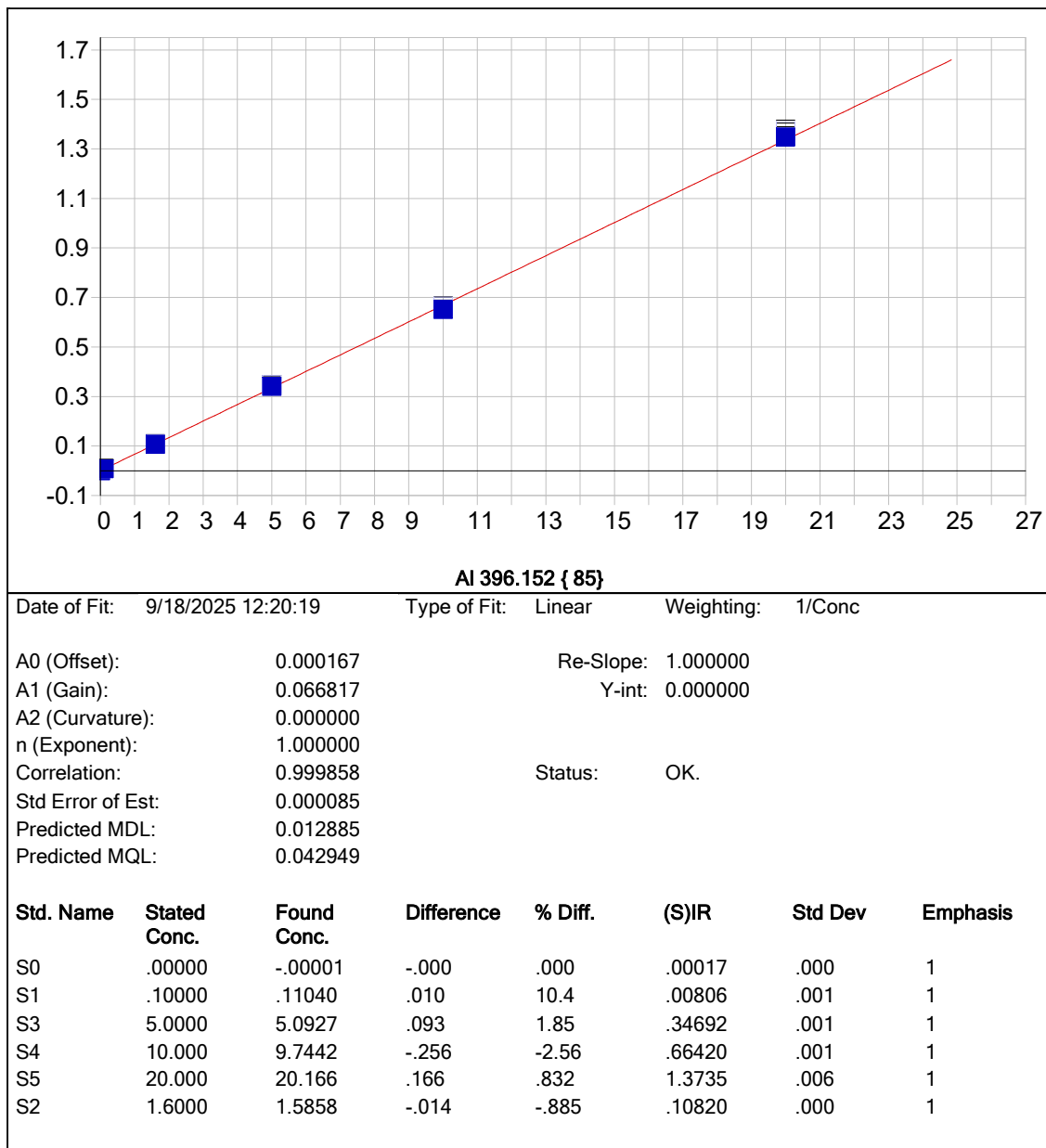
Date of Fit: 9/18/2025 12:20:19 Type of Fit: Linear Weighting: 1/Conc

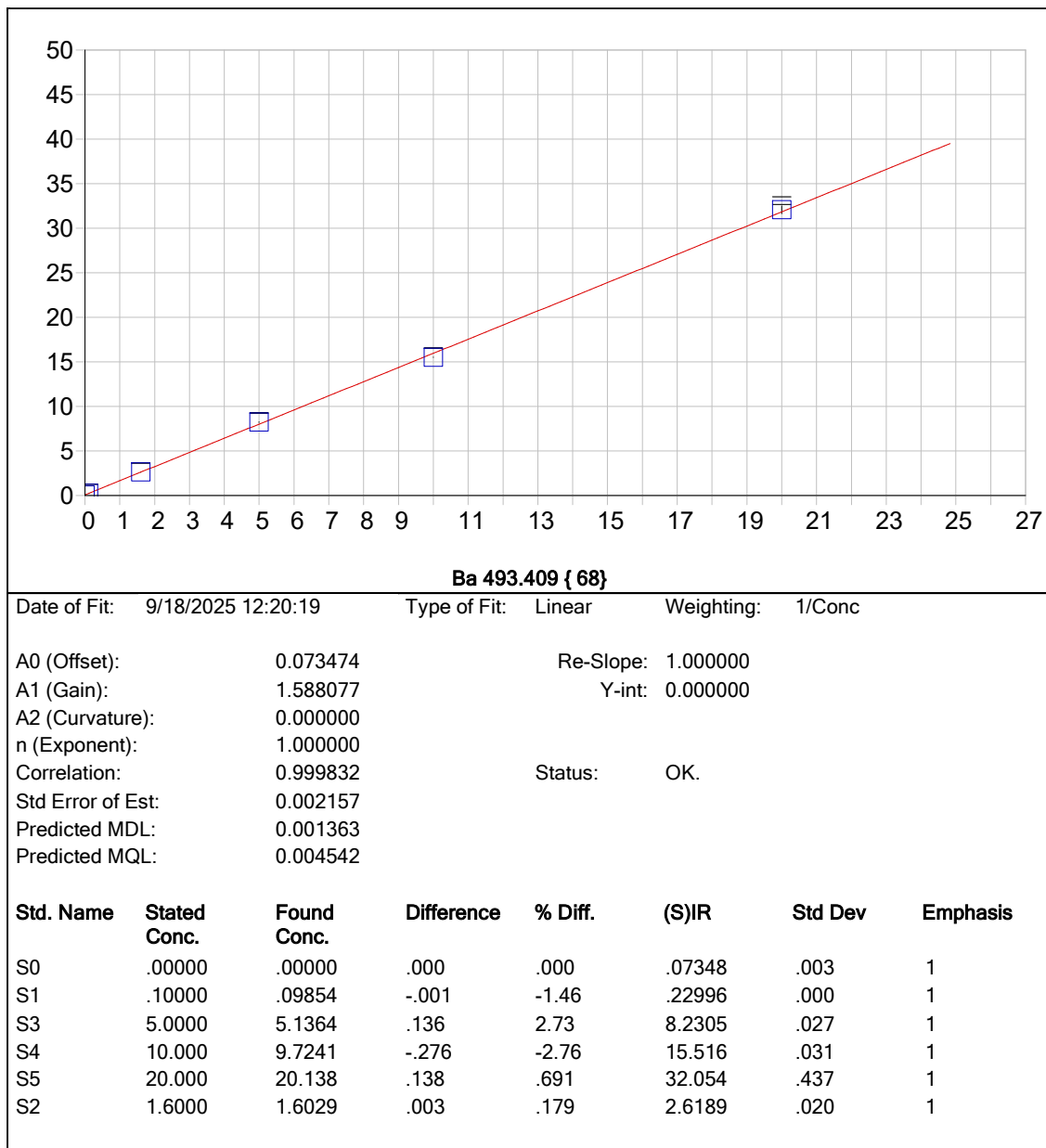
A0 (Offset): 0.000291 Re-Slope: 1.000000  
A1 (Gain): 0.167216 Y-int: 0.000000  
A2 (Curvature): 0.000000  
n (Exponent): 1.000000  
Correlation: 0.999724 Status: OK.  
Std Error of Est: 0.000071  
Predicted MDL: 0.001540  
Predicted MQL: 0.005135

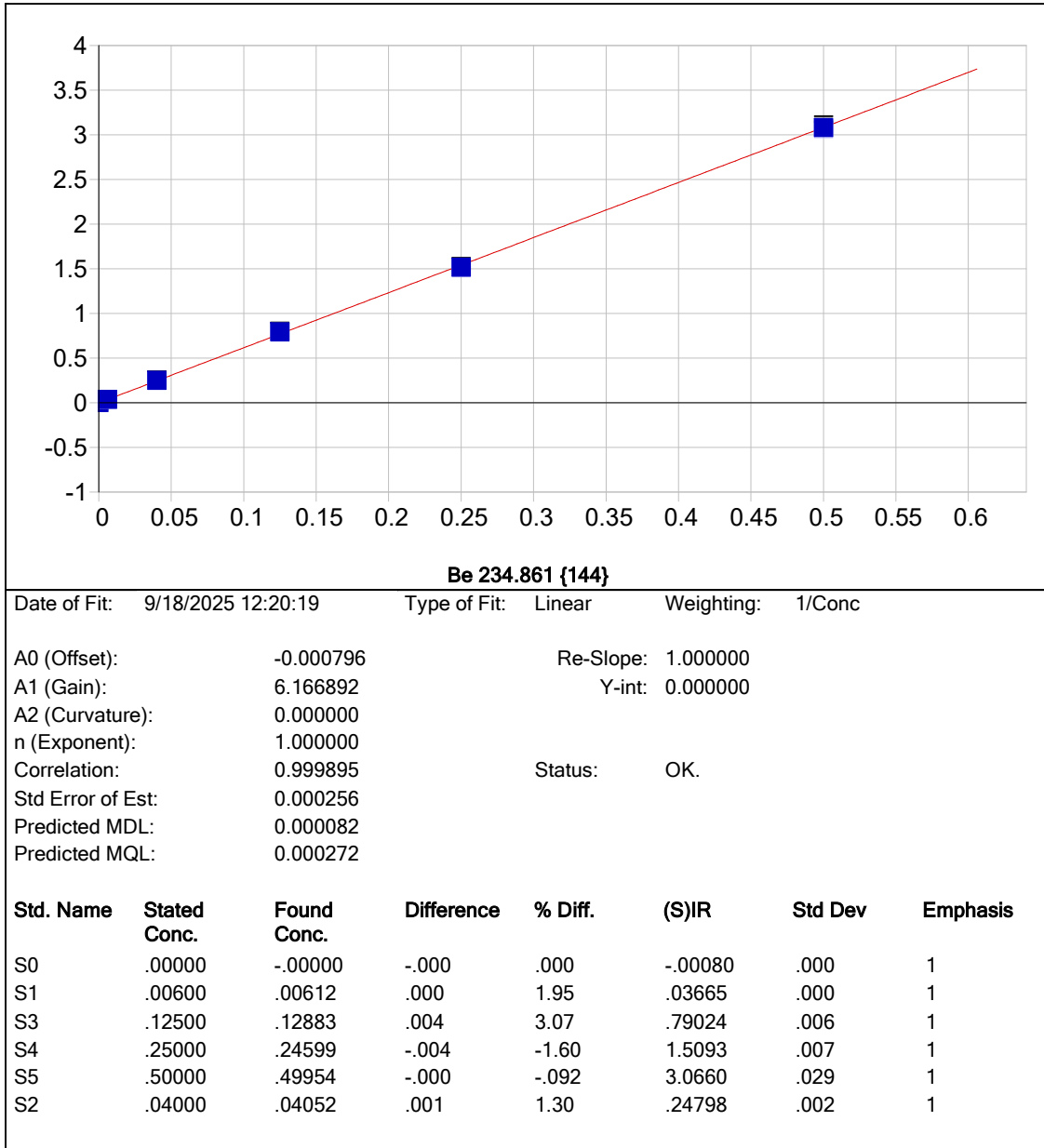
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR  | Std Dev | Emphasis |
|-----------|--------------|-------------|------------|---------|--------|---------|----------|
| S0        | .00000       | .00000      | .000       | .000    | .00029 | .000    | 1        |
| S1        | .01200       | .01122      | -.001      | -6.50   | .00213 | .000    | 1        |
| S3        | 2.5000       | 2.5025      | .002       | .099    | .41828 | .001    | 1        |
| S4        | 5.0000       | 4.8307      | -.169      | -3.39   | .80714 | .001    | 1        |
| S5        | 10.000       | 10.191      | .191       | 1.91    | 1.7025 | .004    | 1        |
| S2        | .80000       | .77700      | -.023      | -2.87   | .13007 | .000    | 1        |

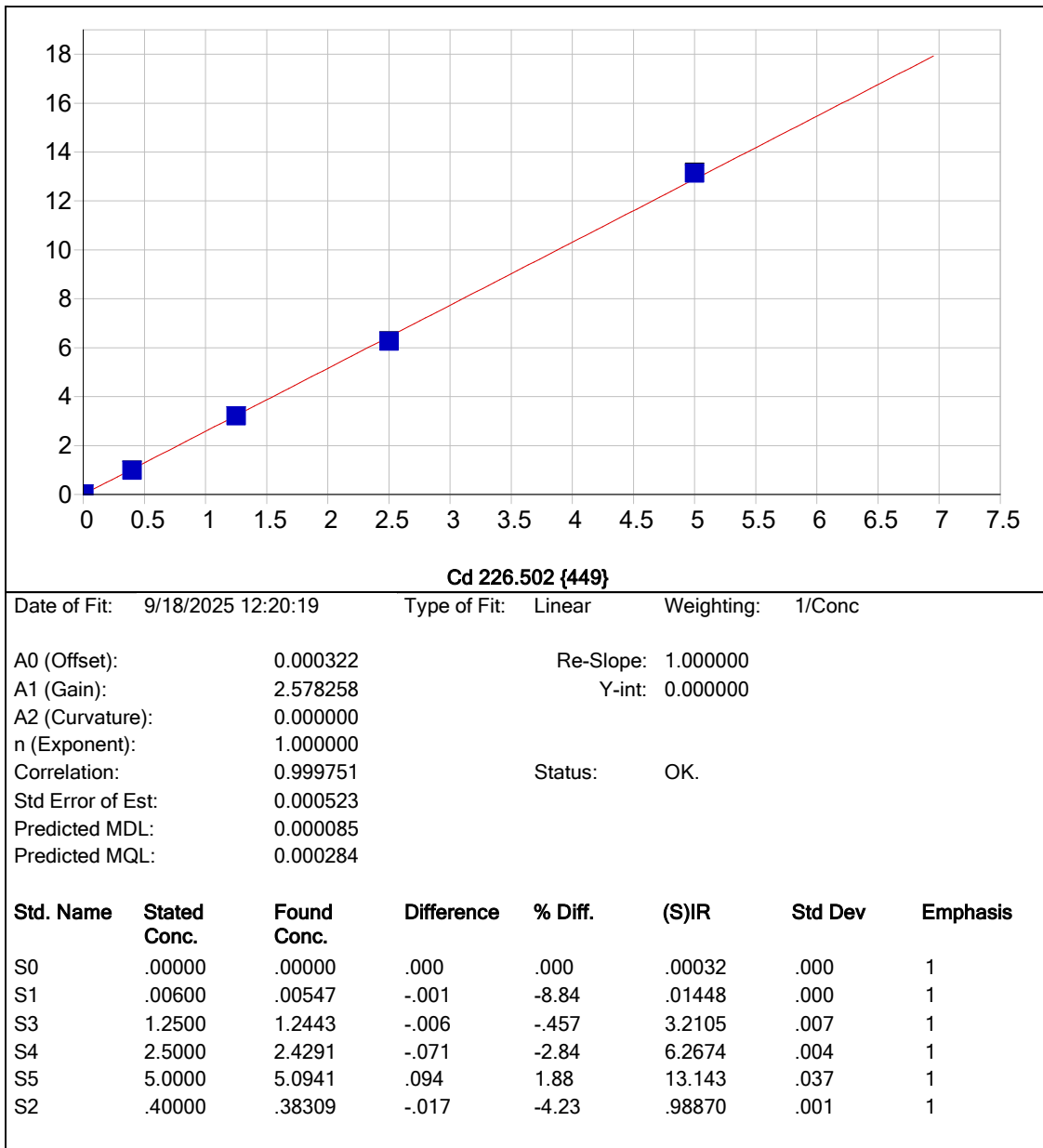


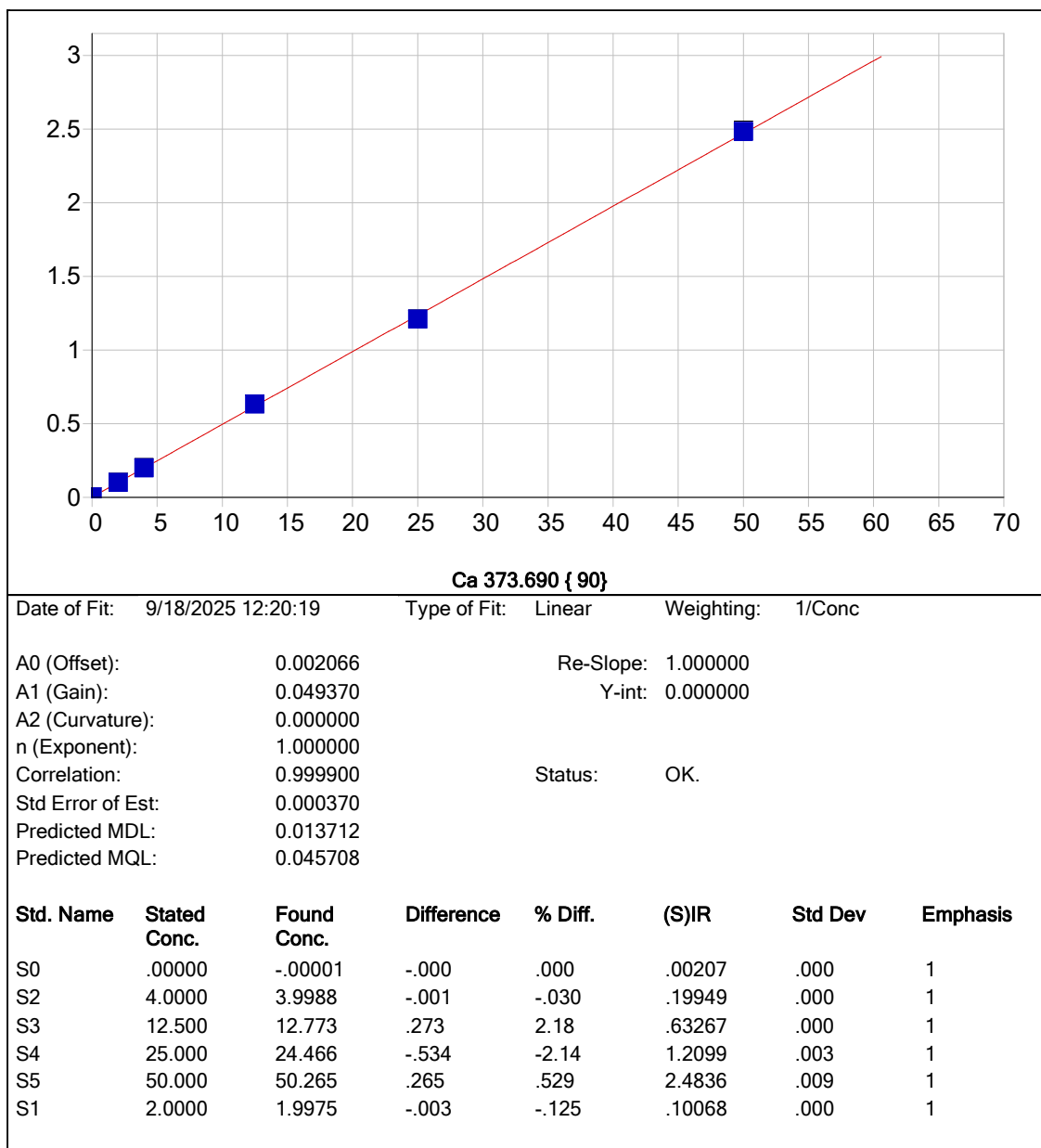




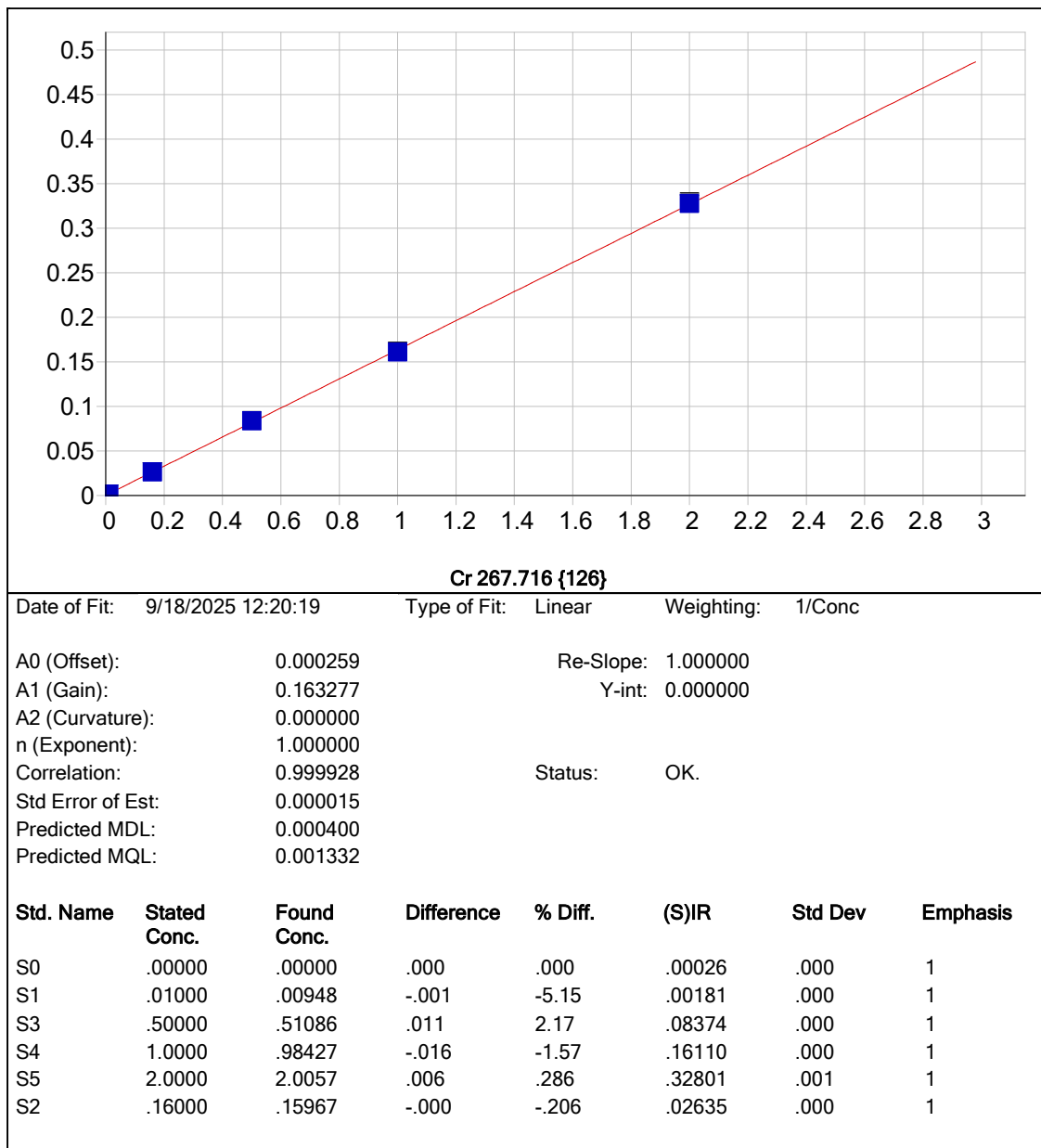


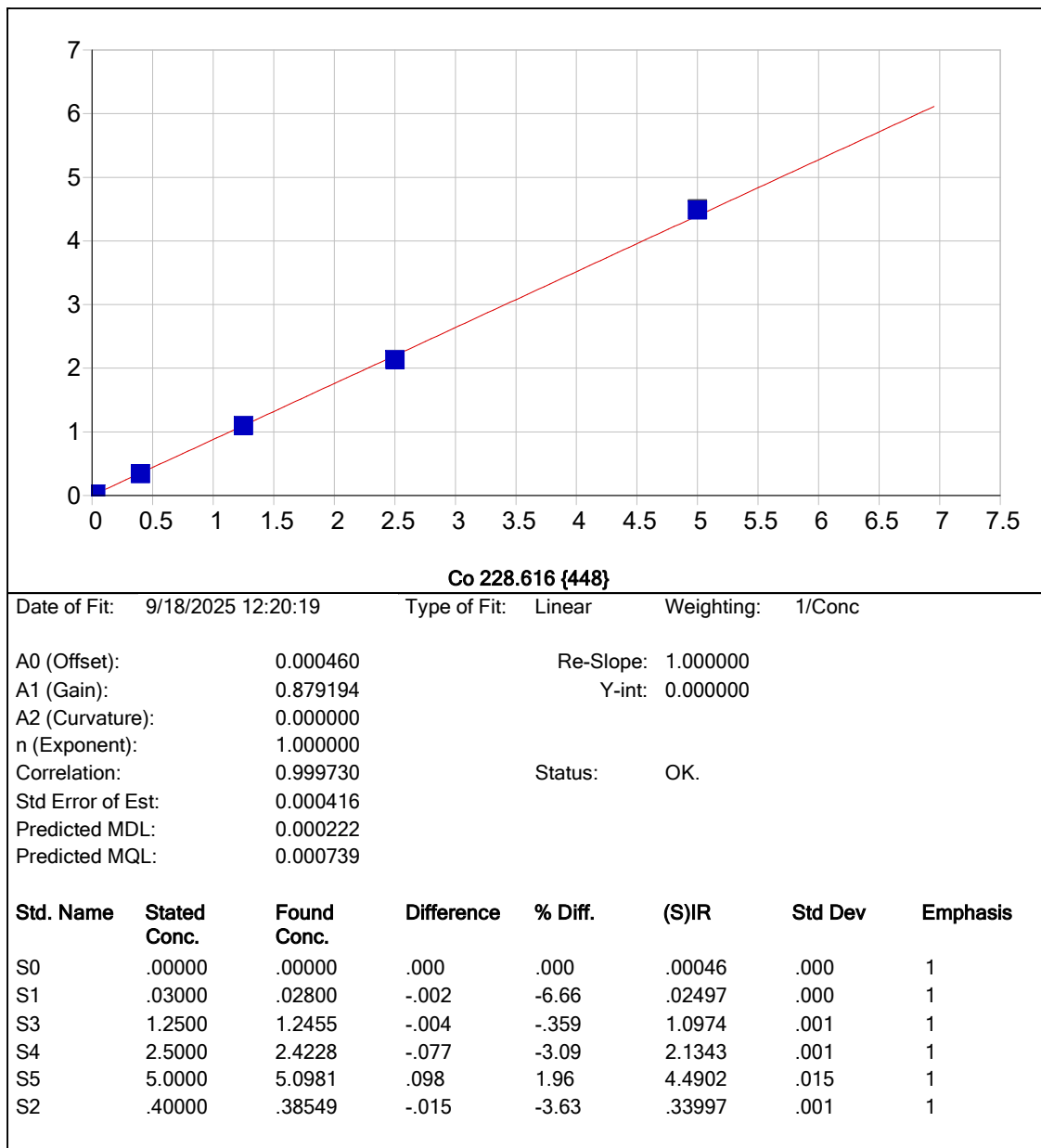


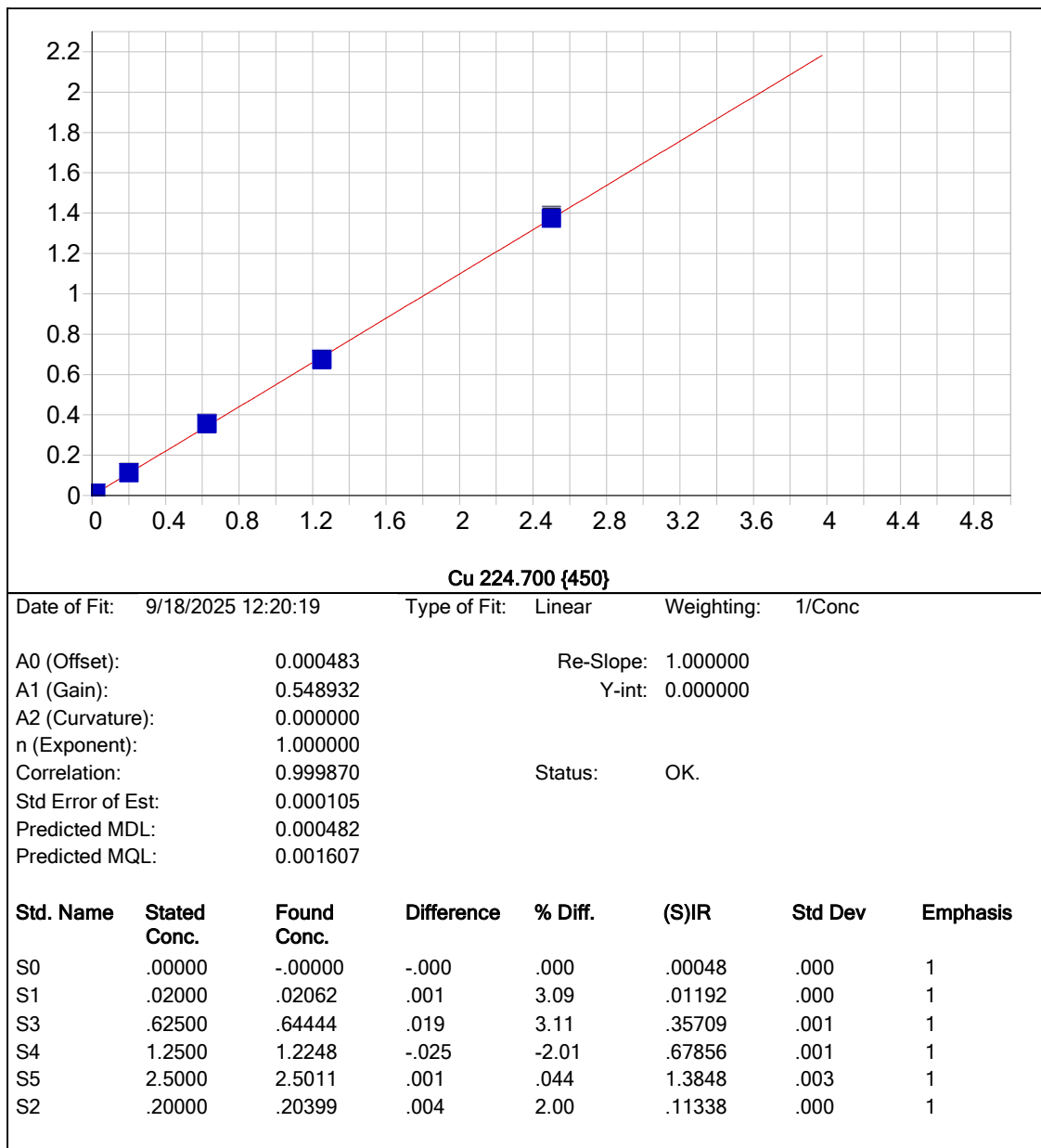


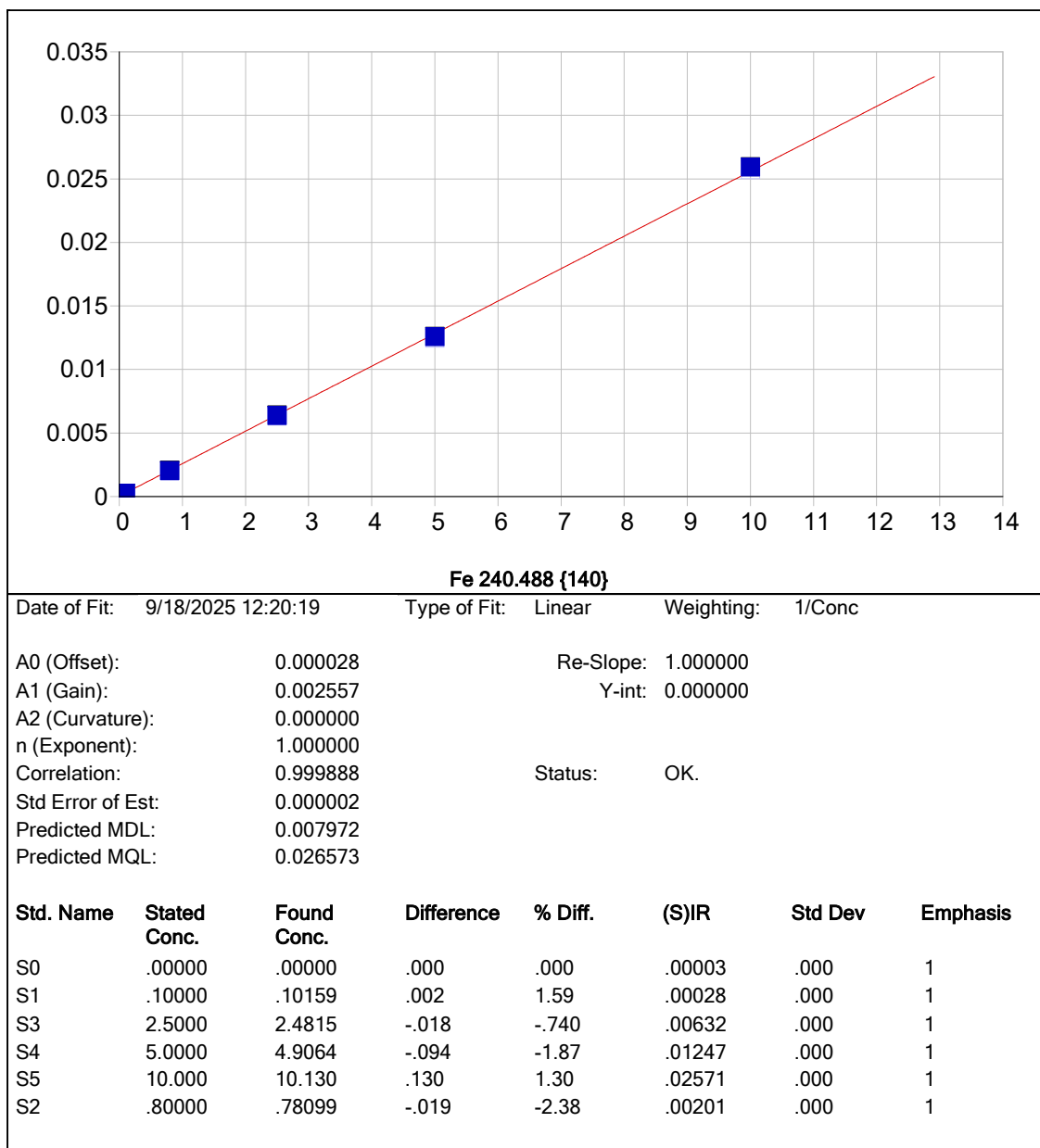


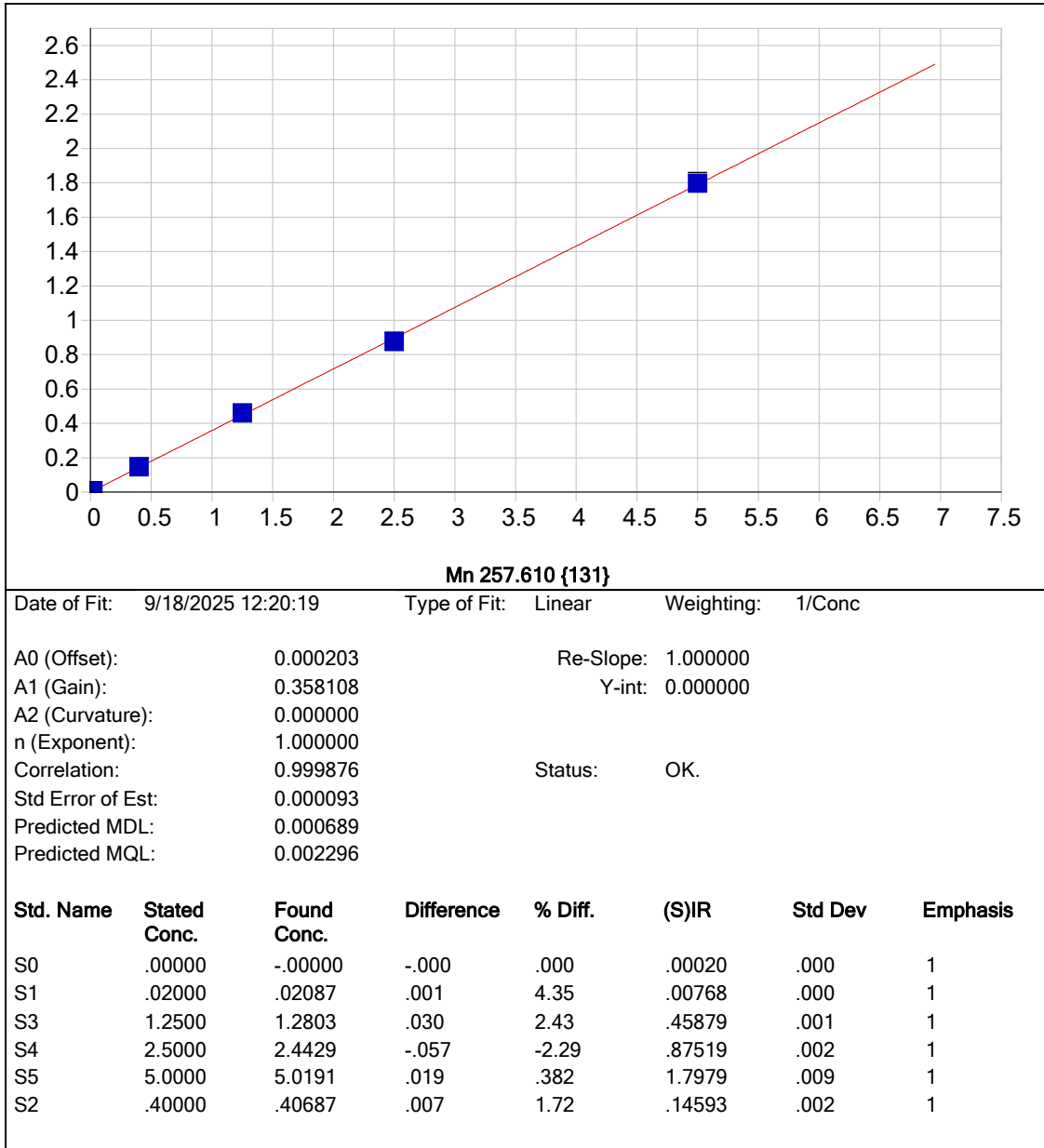






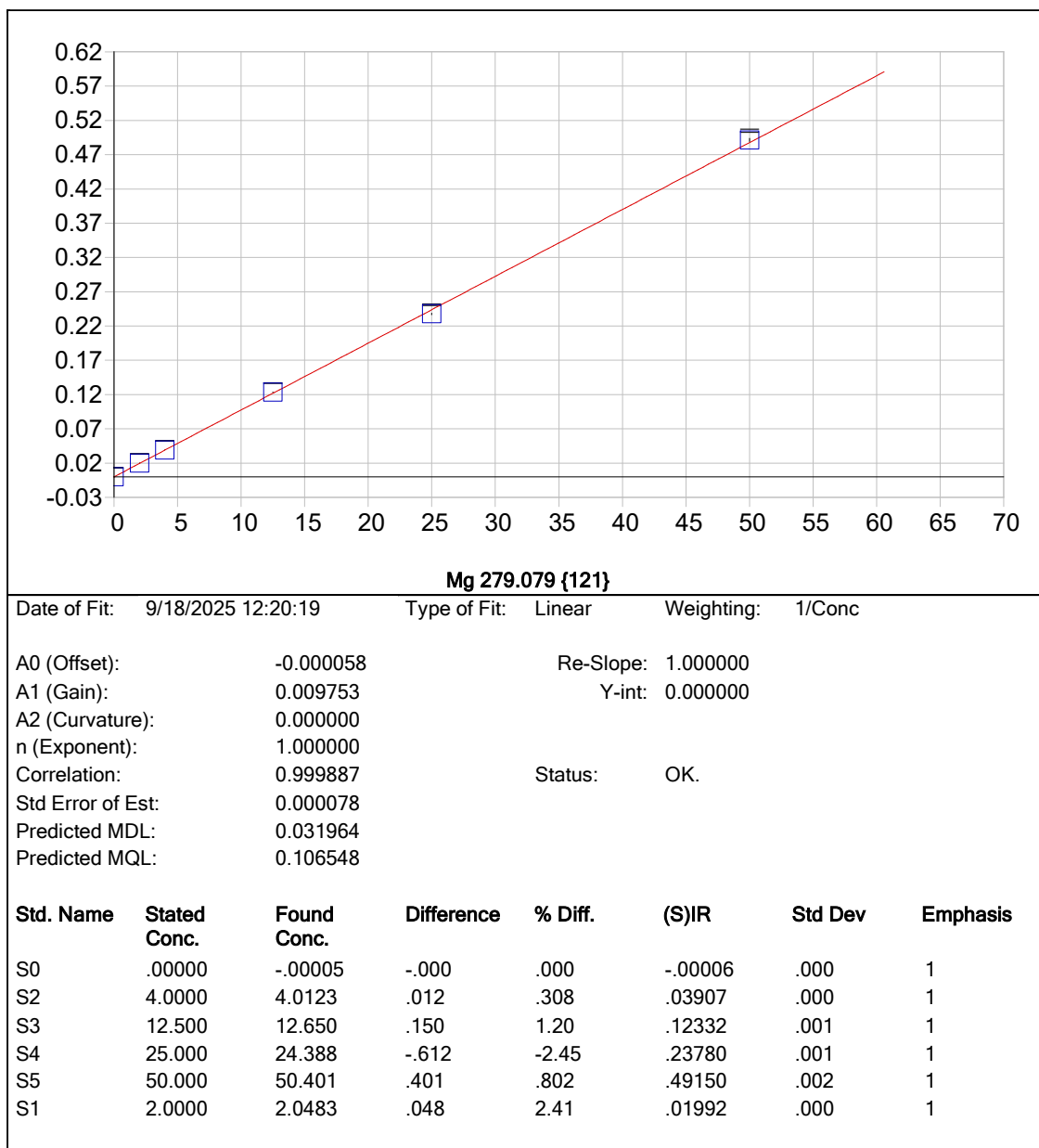


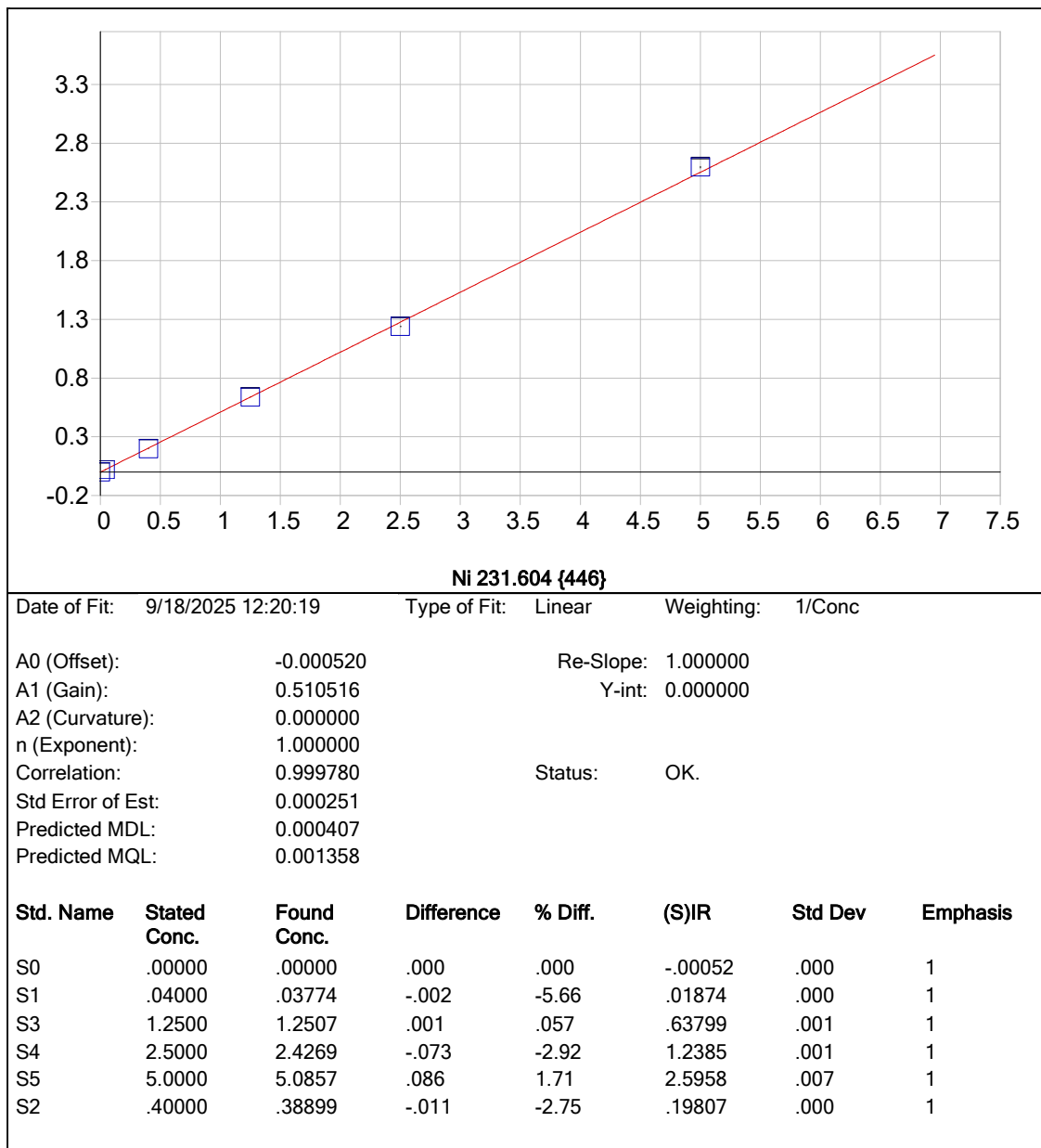


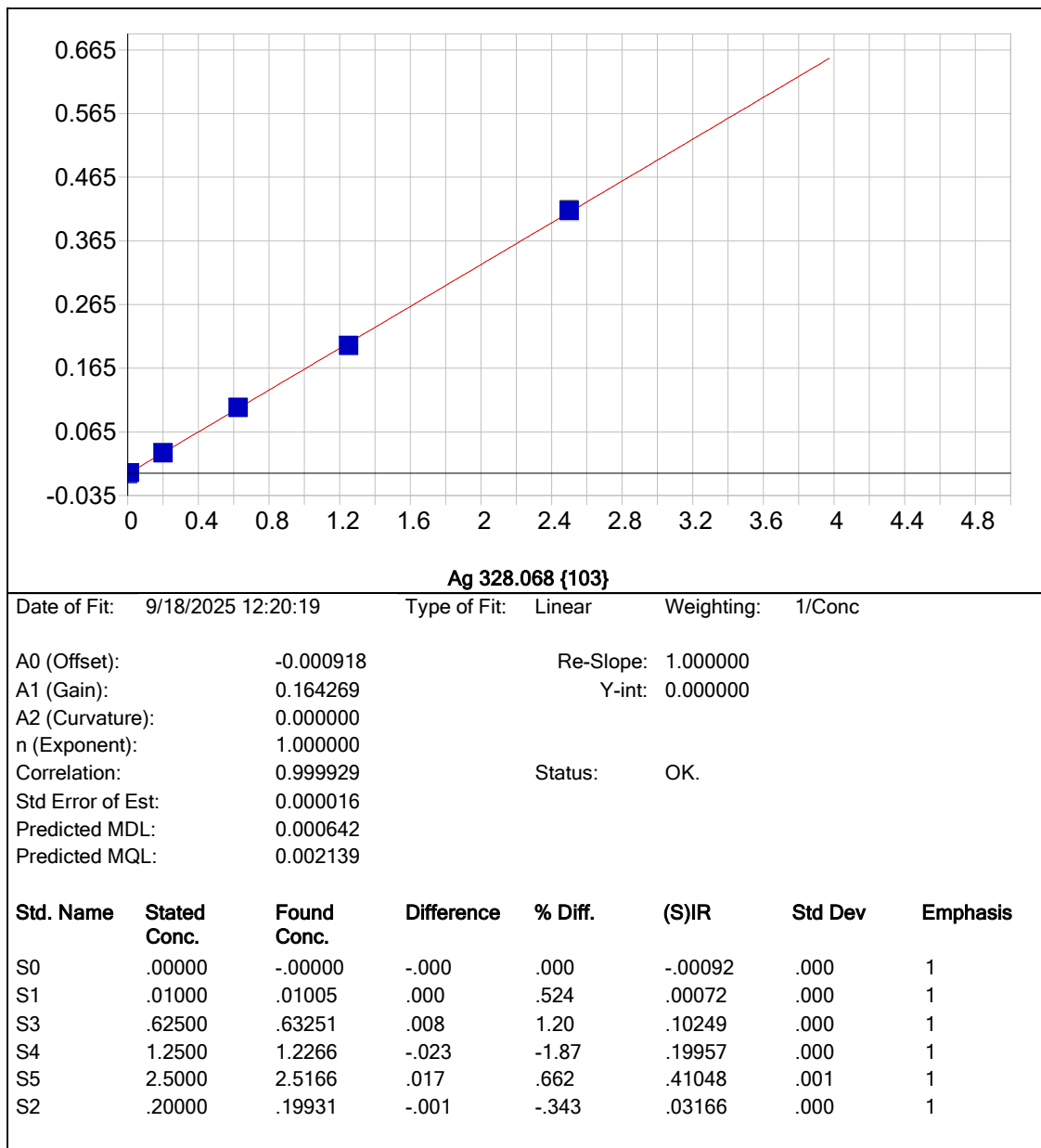


Date of Fit: 9/18/2025 12:20:19      Type of Fit: Linear      Weighting: 1/Conc

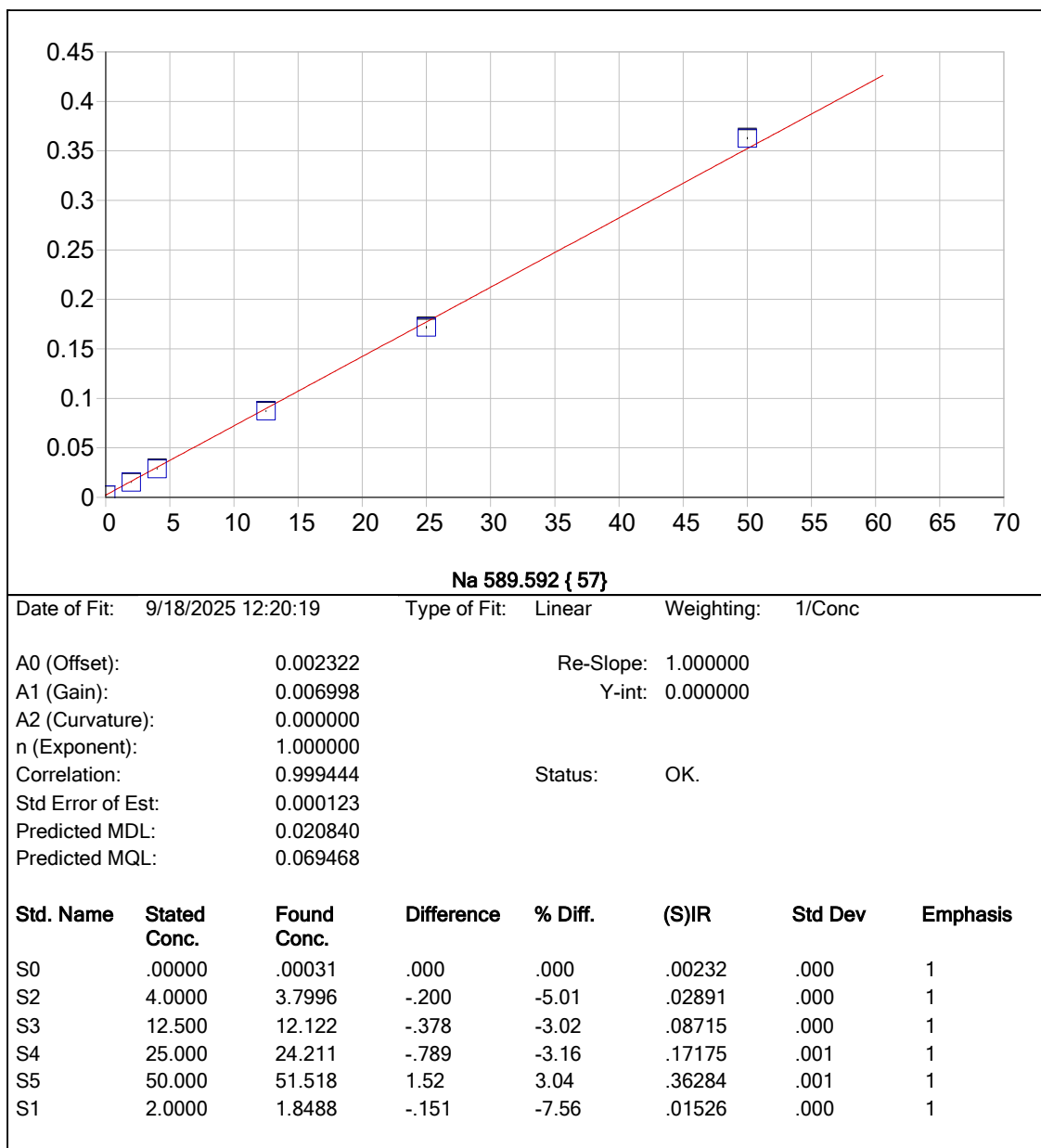
A0 (Offset): 0.000203      Re-Slope: 1.000000  
A1 (Gain): 0.358108      Y-int: 0.000000  
A2 (Curvature): 0.000000  
n (Exponent): 1.000000  
Correlation: 0.999876      Status: OK.  
Std Error of Est: 0.000093  
Predicted MDL: 0.000689  
Predicted MQL: 0.002296

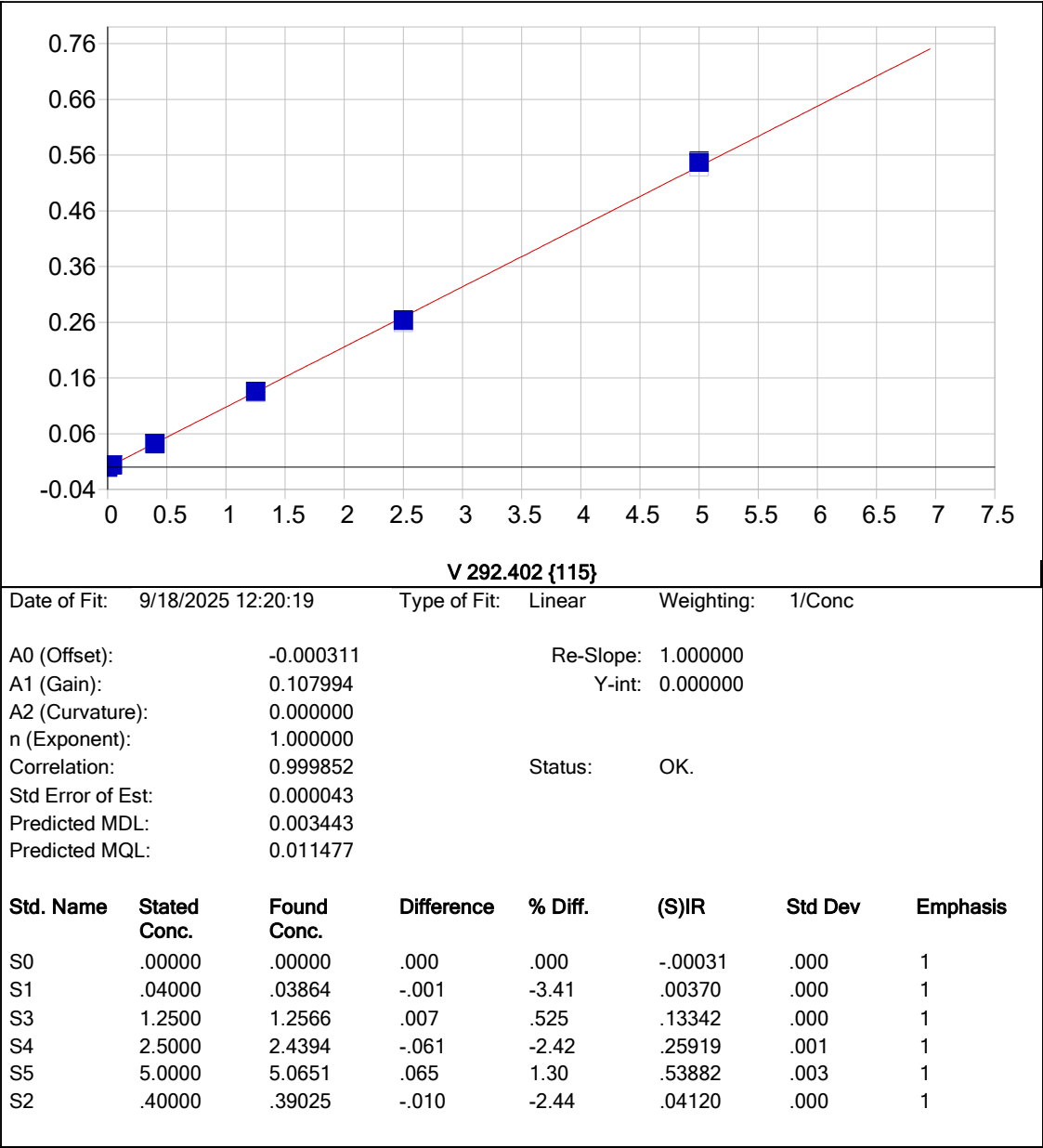


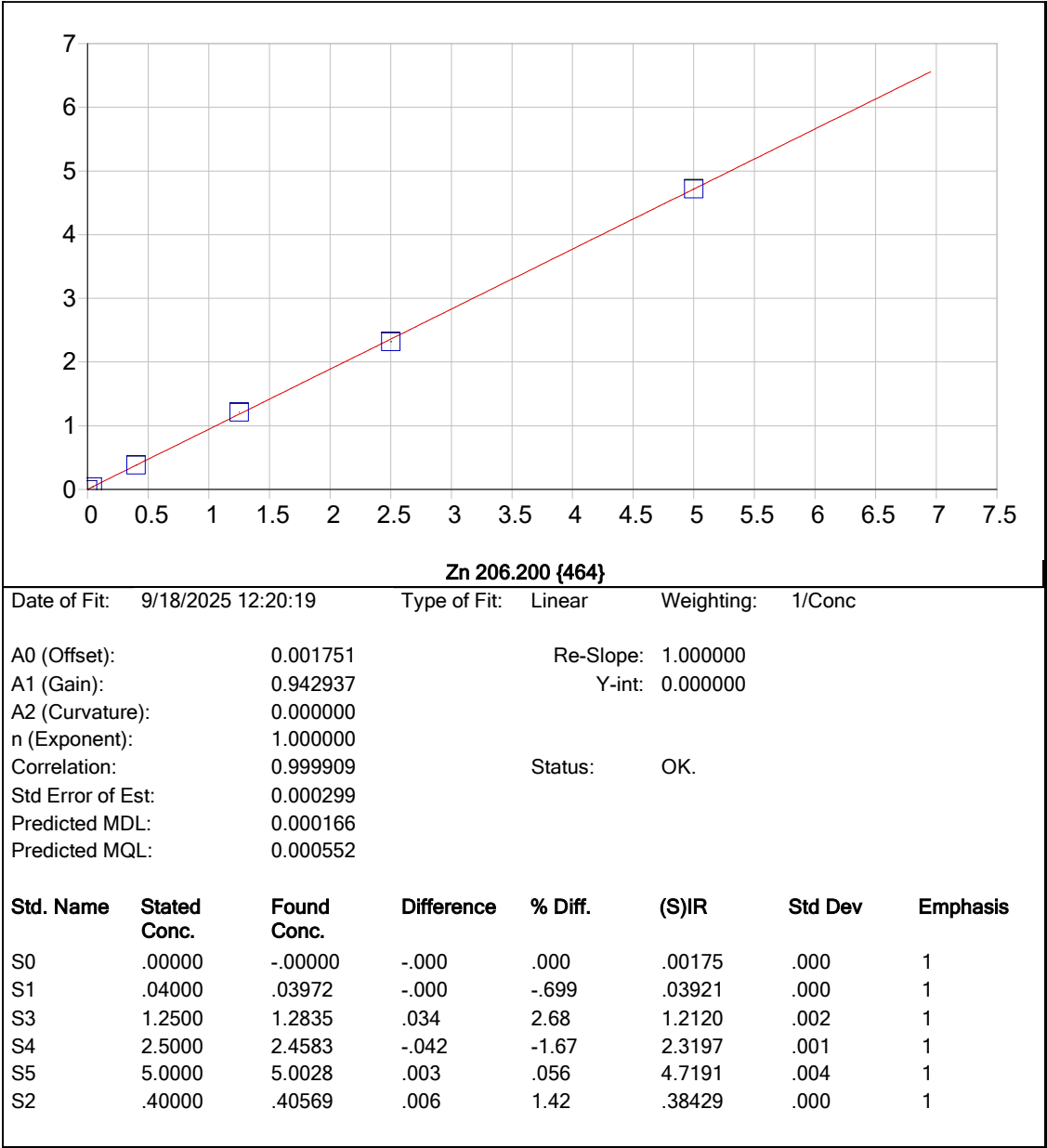


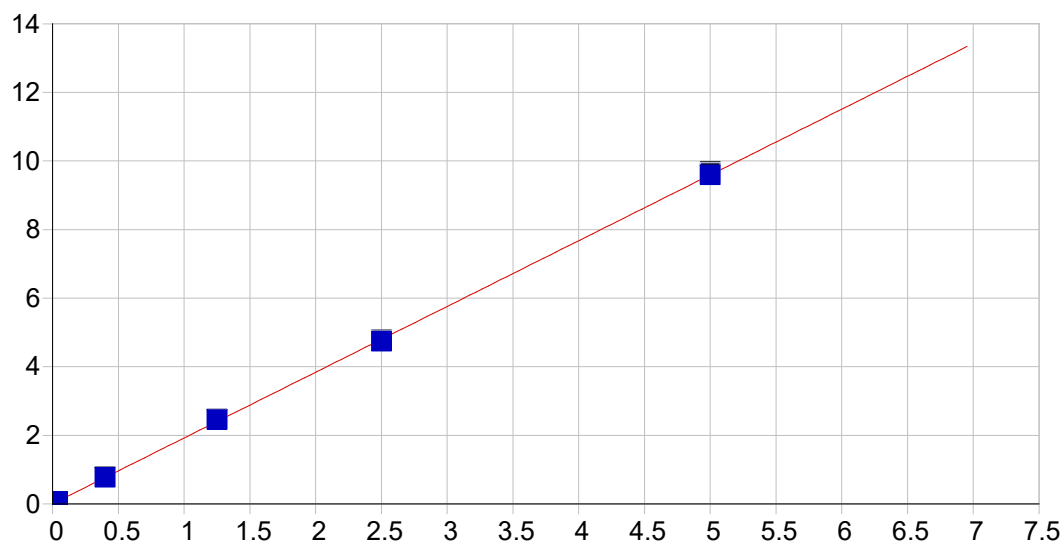










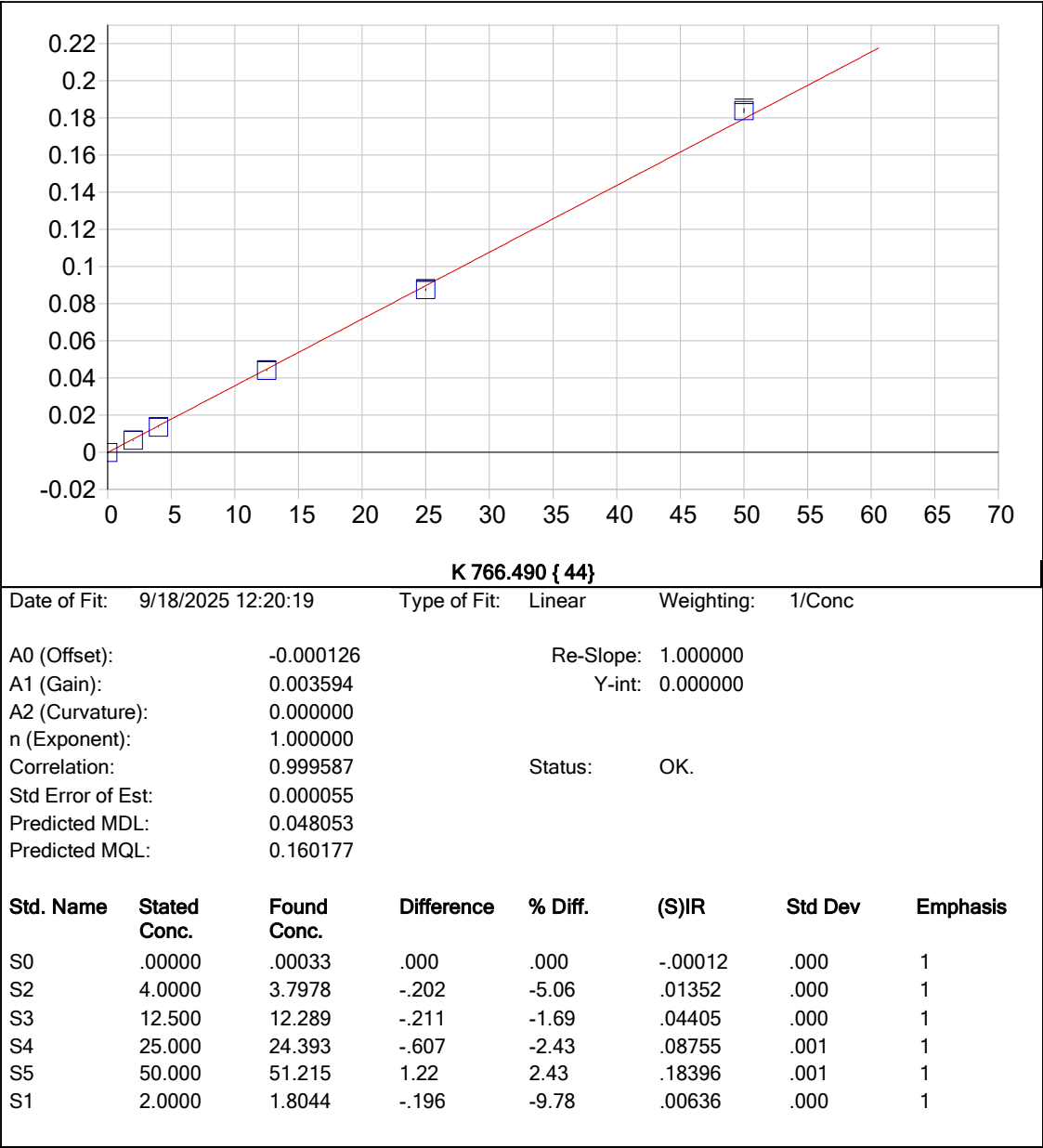


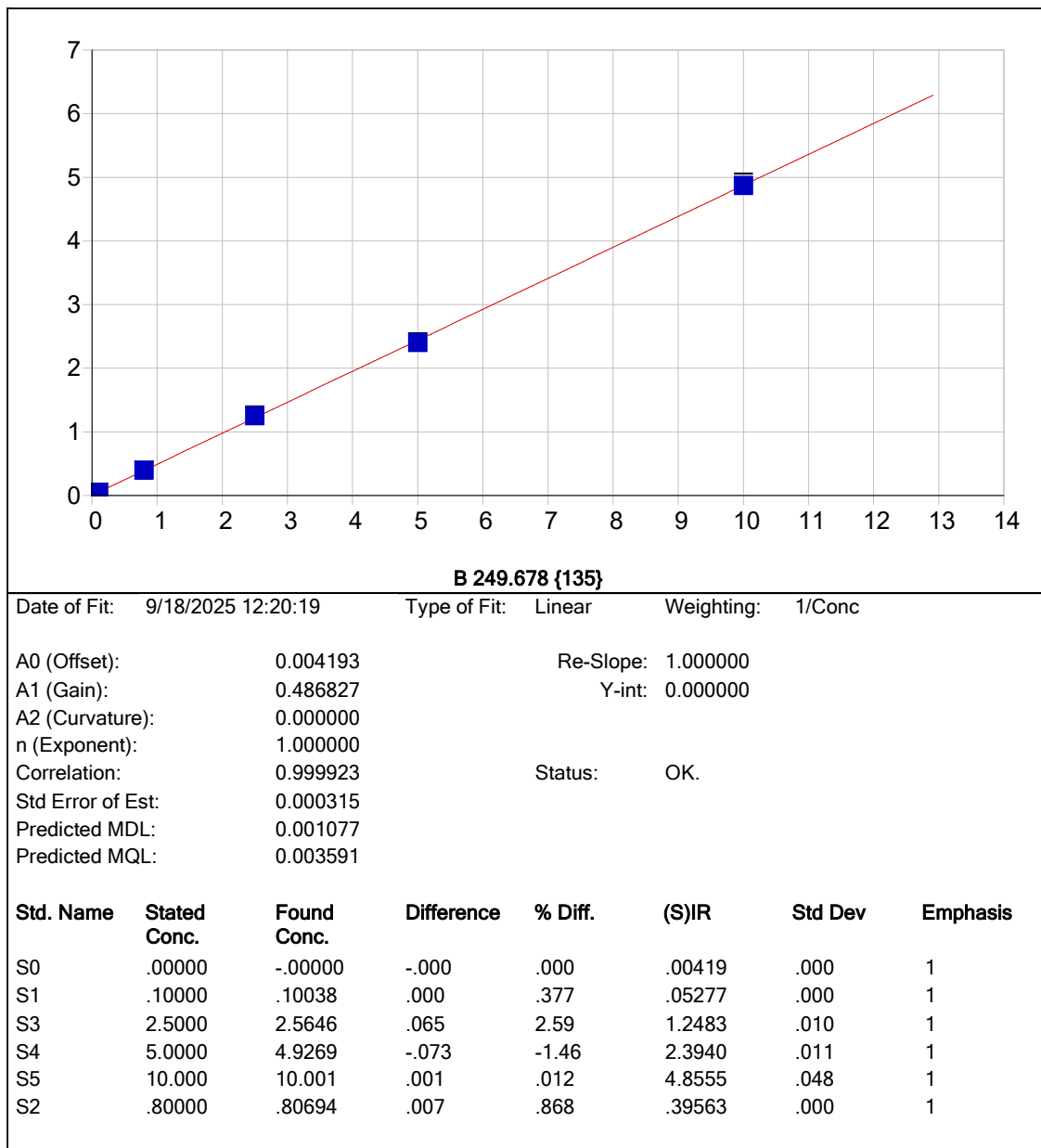
**Zn 213.856 {158}**

Date of Fit: 9/18/2025 12:20:19      Type of Fit: Linear      Weighting: 1/Conc

|                   |          |           |          |
|-------------------|----------|-----------|----------|
| A0 (Offset):      | 0.004311 | Re-Slope: | 1.000000 |
| A1 (Gain):        | 1.917688 | Y-int:    | 0.000000 |
| A2 (Curvature):   | 0.000000 |           |          |
| n (Exponent):     | 1.000000 |           |          |
| Correlation:      | 0.999948 | Status:   | OK.      |
| Std Error of Est: | 0.000460 |           |          |
| Predicted MDL:    | 0.000281 |           |          |
| Predicted MQL:    | 0.000938 |           |          |

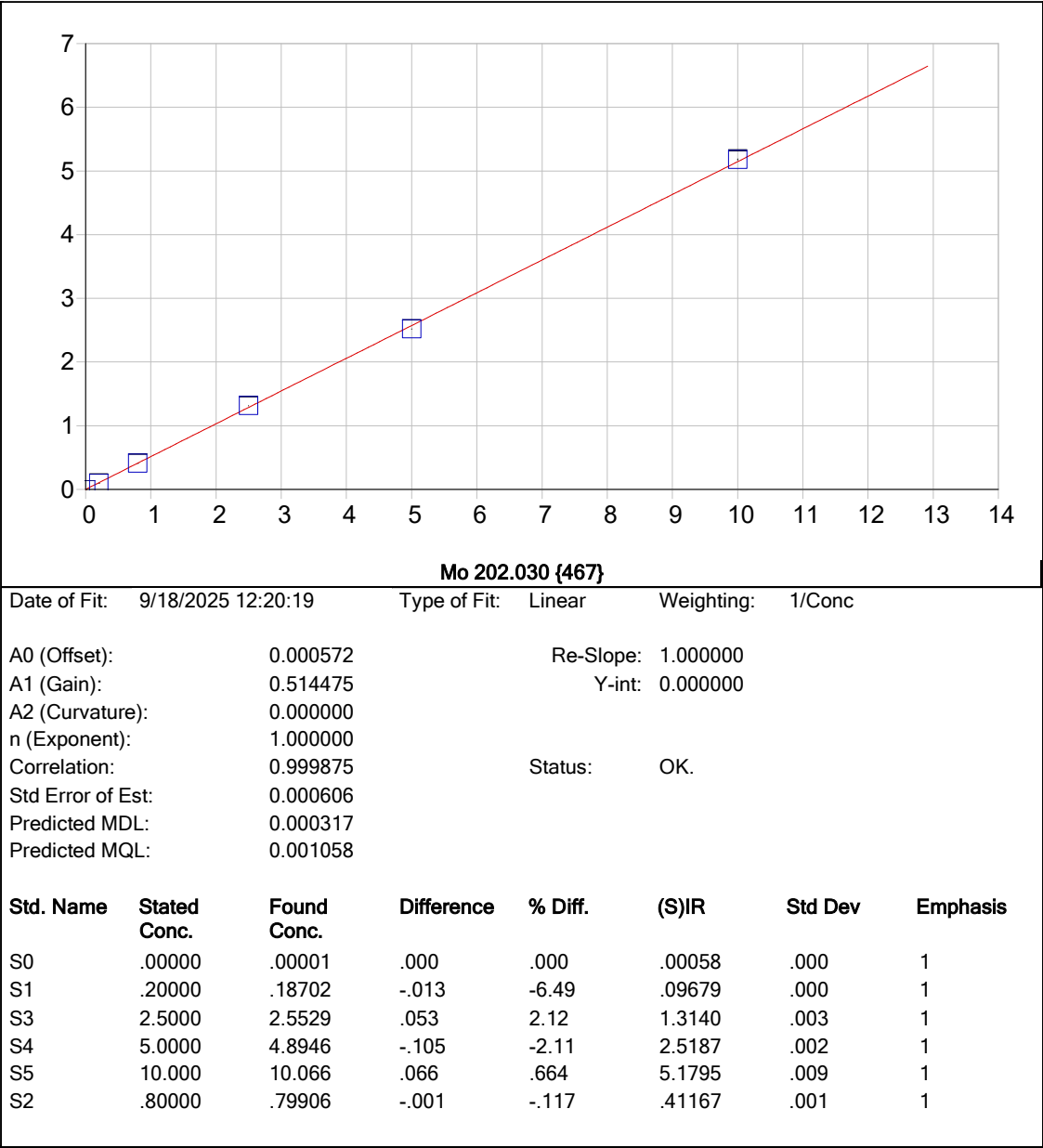
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR  | Std Dev | Emphasis |
|-----------|--------------|-------------|------------|---------|--------|---------|----------|
| S0        | .00000       | -.00000     | -.000      | .000    | .00431 | .001    | 1        |
| S1        | .04000       | .03951      | -.000      | -1.23   | .08062 | .000    | 1        |
| S3        | 1.2500       | 1.2782      | .028       | 2.25    | 2.4721 | .004    | 1        |
| S4        | 2.5000       | 2.4717      | -.028      | -1.13   | 4.7776 | .003    | 1        |
| S5        | 5.0000       | 5.0002      | .000       | .003    | 9.6597 | .021    | 1        |
| S2        | .40000       | .40048      | .000       | .121    | .77765 | .003    | 1        |

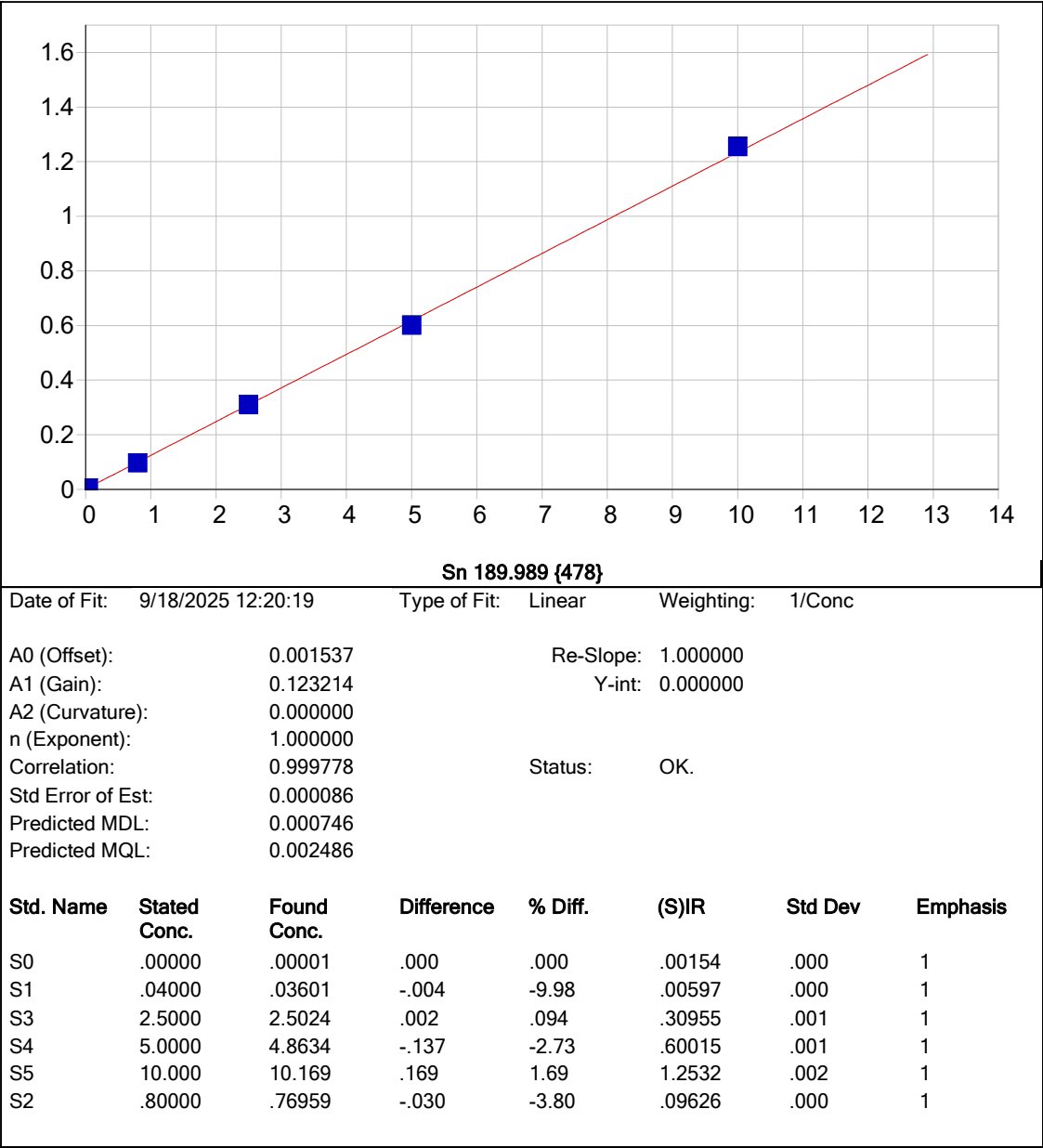




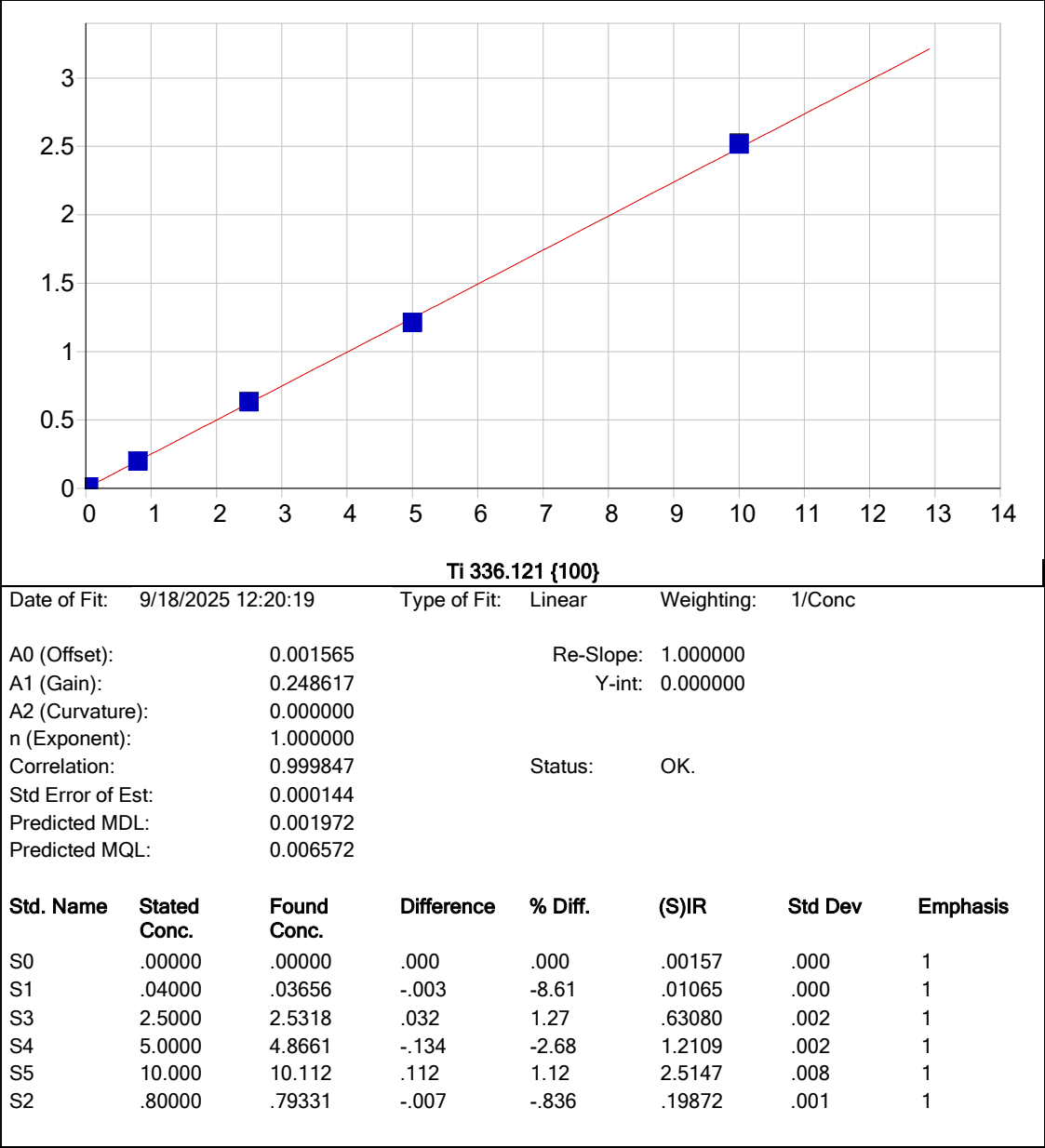
Date of Fit: 9/18/2025 12:20:19      Type of Fit: Linear      Weighting: 1/Conc

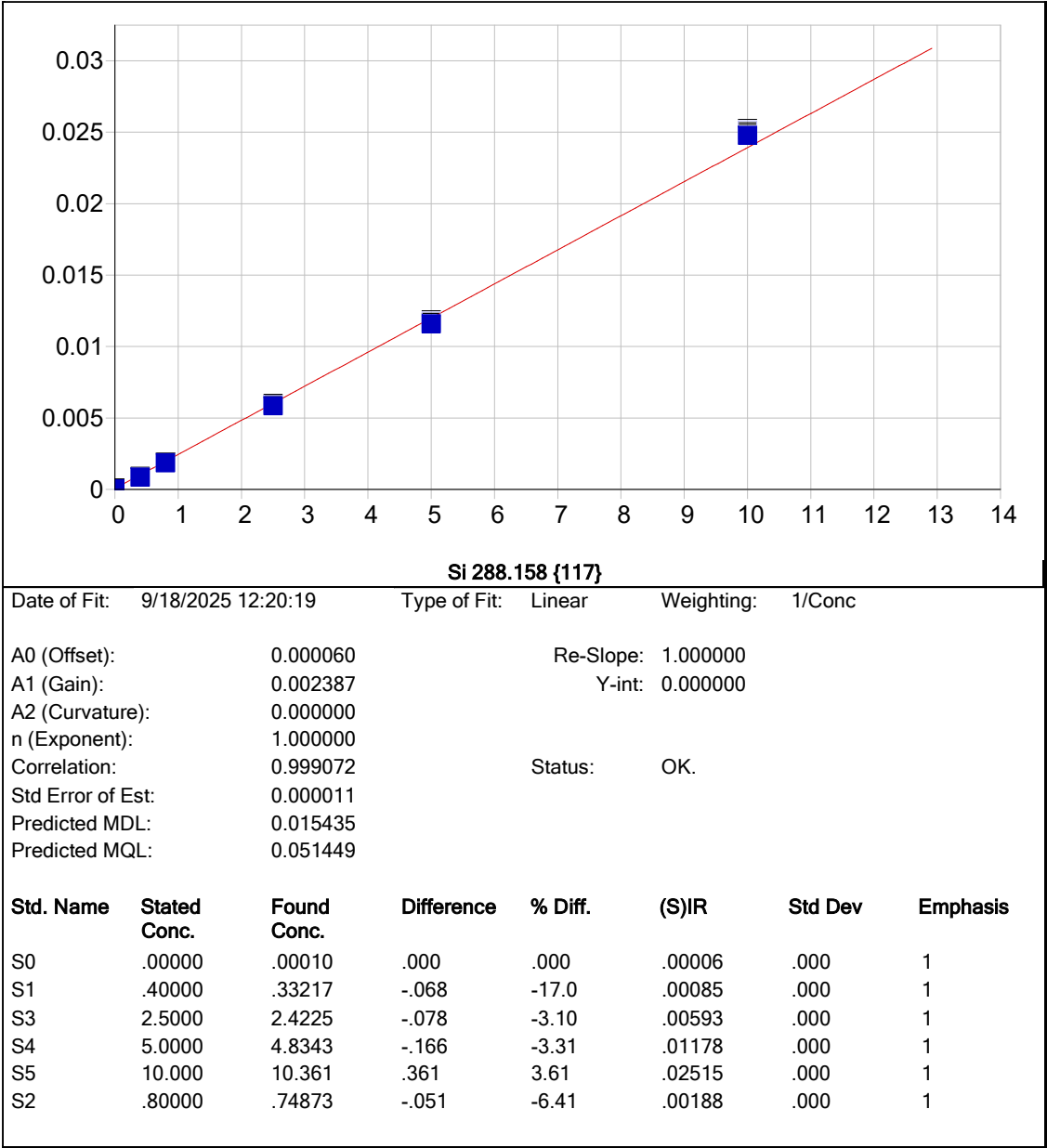
A0 (Offset): 0.004193      Re-Slope: 1.000000  
A1 (Gain): 0.486827      Y-int: 0.000000  
A2 (Curvature): 0.000000  
n (Exponent): 1.000000  
Correlation: 0.999923      Status: OK.  
Std Error of Est: 0.000315  
Predicted MDL: 0.001077  
Predicted MQL: 0.003591

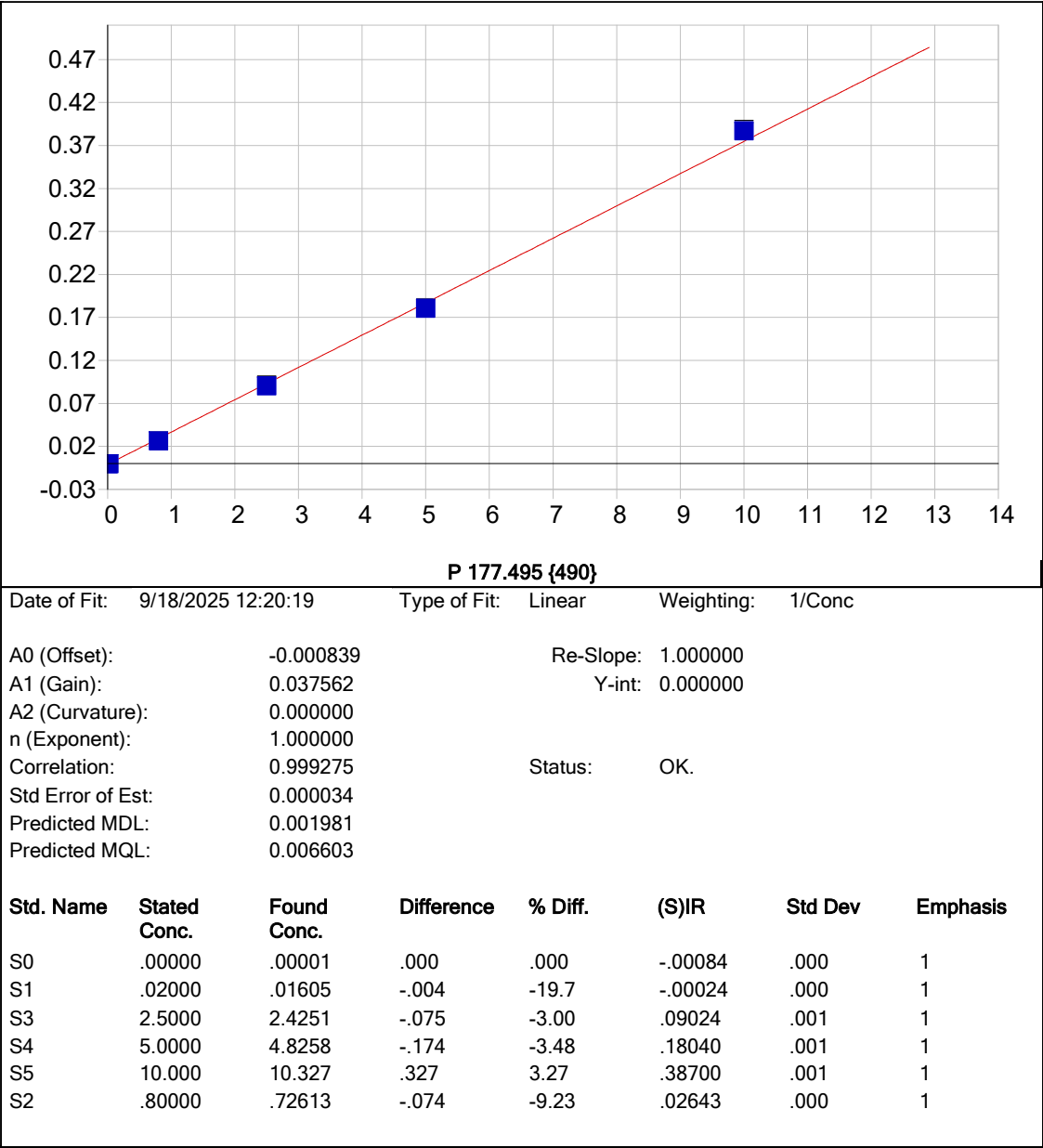


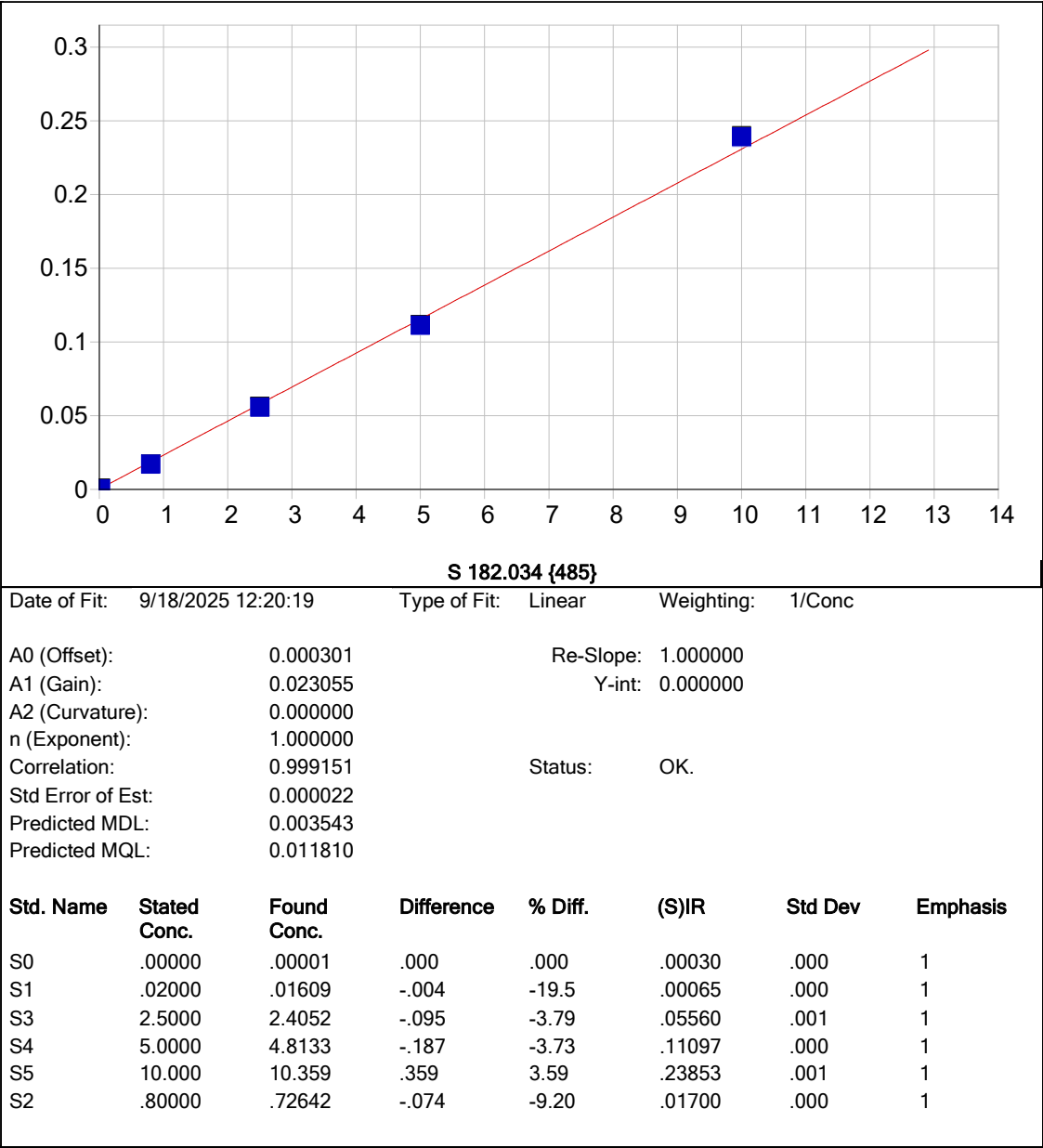


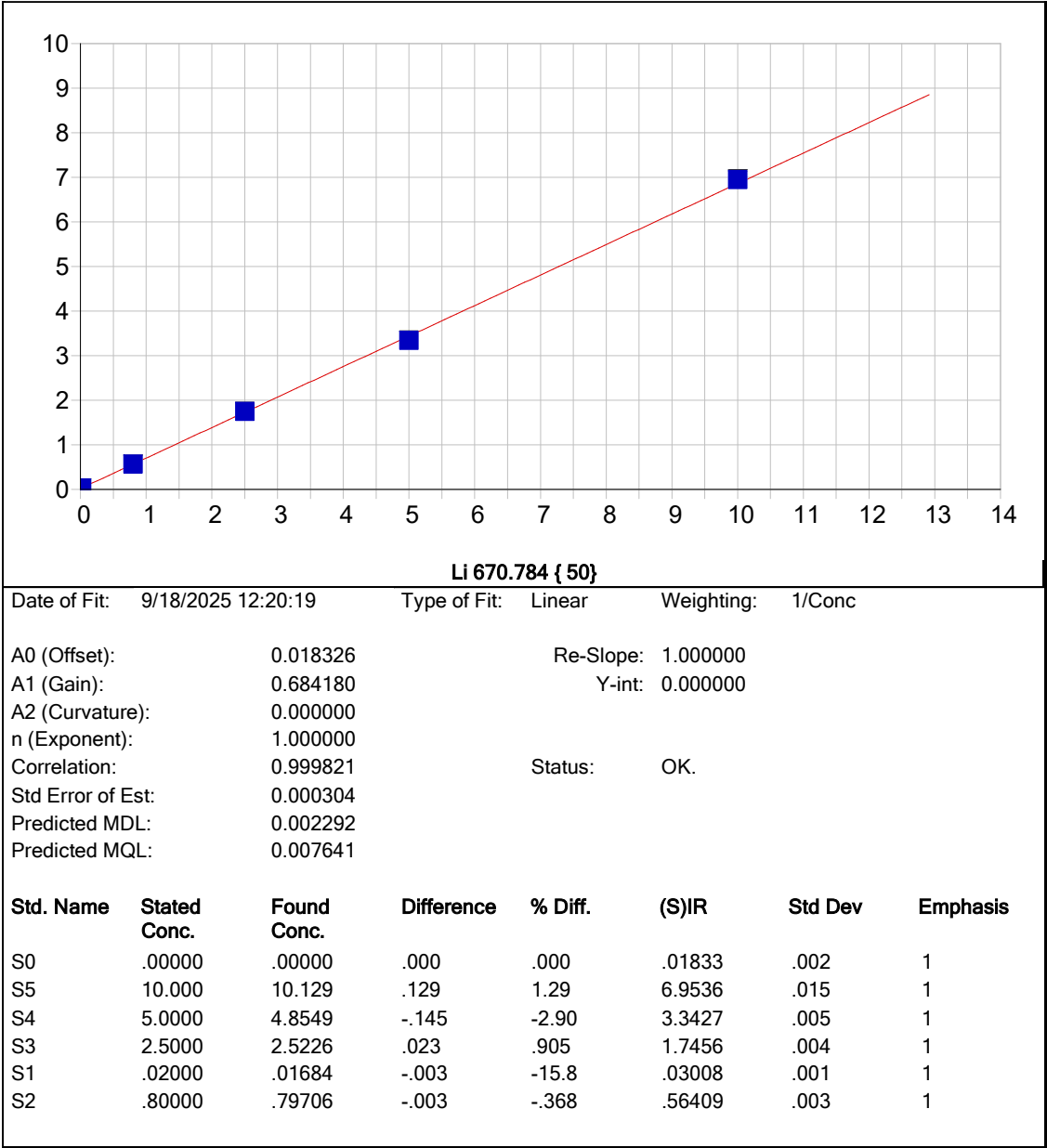


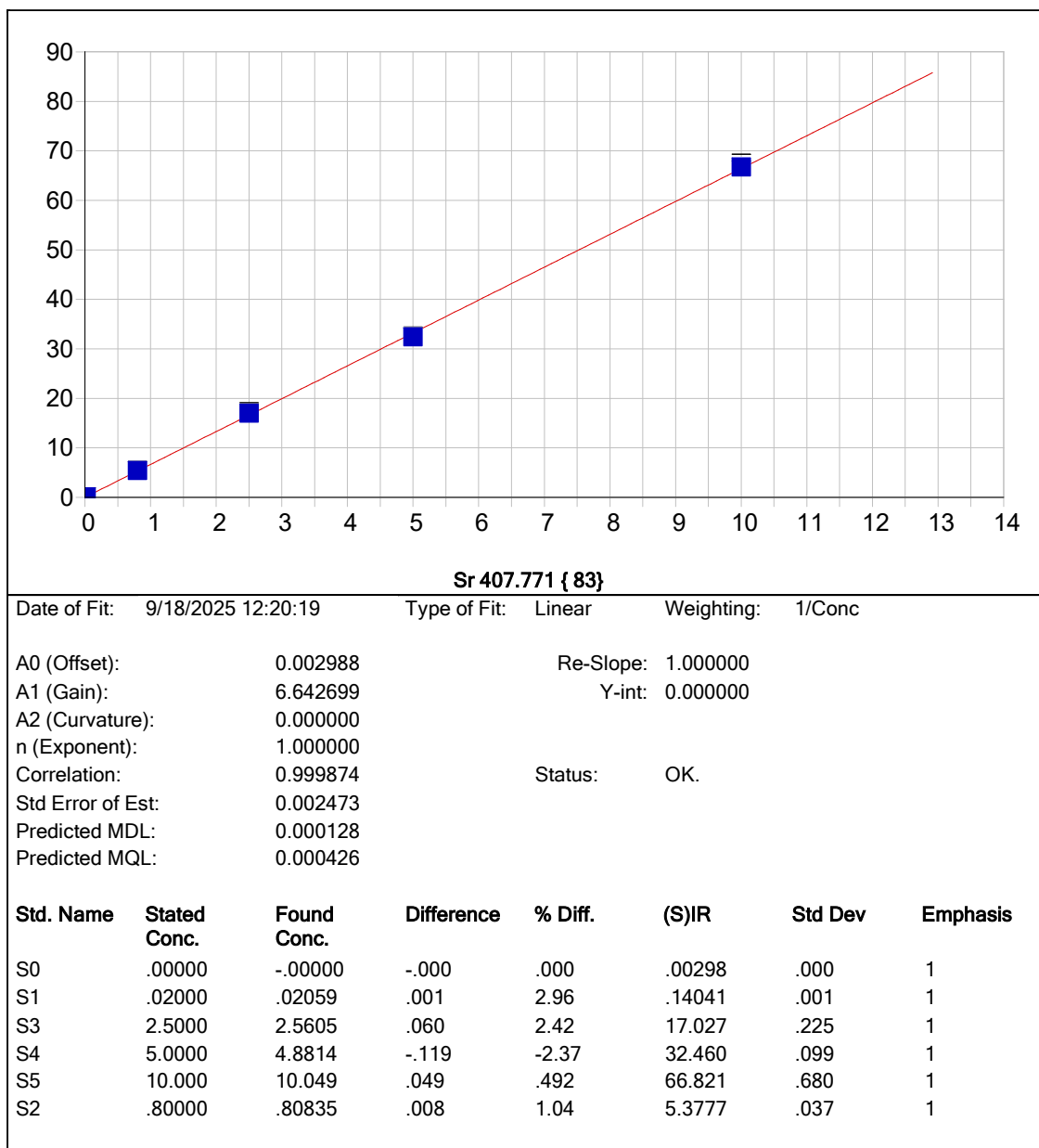


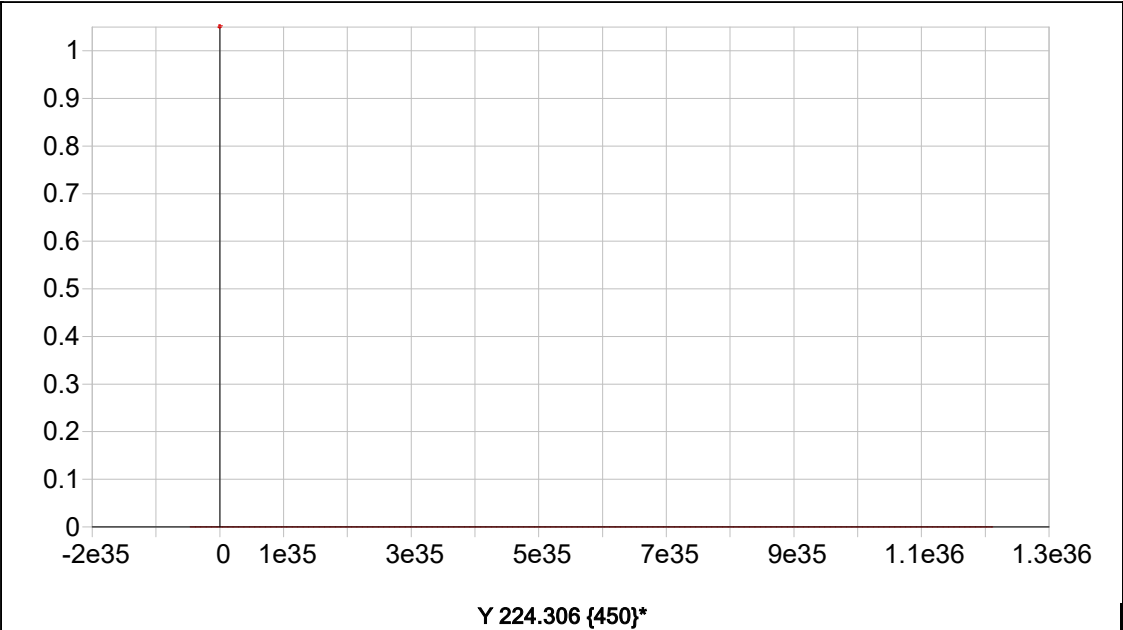






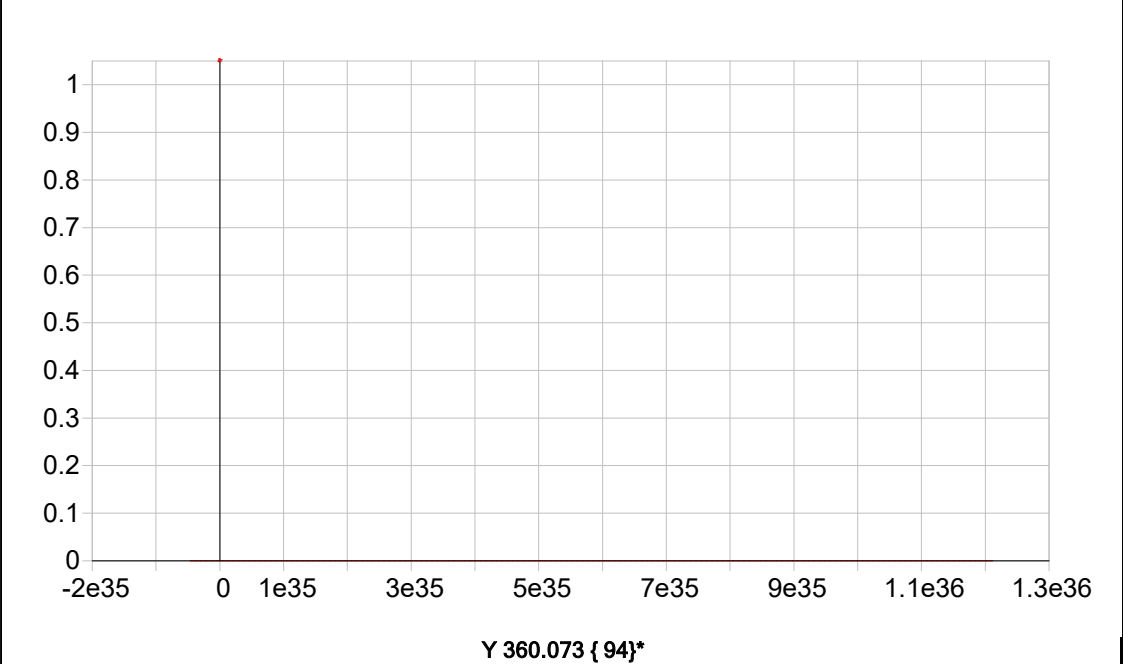






|                   |                    |              |          |            |        |
|-------------------|--------------------|--------------|----------|------------|--------|
| Date of Fit:      | 9/18/2025 12:20:19 | Type of Fit: | Linear   | Weighting: | 1/Conc |
| A0 (Offset):      | 0.000000           | 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 |
|-----------|--------------|-------------|------------|---------|-------|---------|----------|
|-----------|--------------|-------------|------------|---------|-------|---------|----------|



|              |           |              |          |            |        |
|--------------|-----------|--------------|----------|------------|--------|
| 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    |            | Status: | Warning | Zero Gain |          |
| n (Exponent):     |              | 1.000000    |            |         |         |           |          |
| Correlation:      |              | 0.000000    |            |         |         |           |          |
| 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 |

Sample Name: S0      Acquired: 9/18/2025 10:41:40      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                |               |               |               |               |               |               |                |
|--------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Elem   | As1890         | Tl1908        | Pb2203        | Se1960        | Sb2068        | Al3961        | Ba4934        | Be2348         |
| Units  | Cts/S          | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S          |
| Avg    | <b>-.00001</b> | <b>.00042</b> | <b>.00029</b> | <b>.00040</b> | <b>.00066</b> | <b>.00017</b> | <b>.07348</b> | <b>-.00080</b> |
| Stddev | .00008         | .00015        | .00013        | .00004        | .00009        | .00024        | .00317        | .00038         |
| %RSD   | 1125.6         | 34.897        | 44.623        | 10.796        | 14.039        | 141.36        | 4.3204        | 48.125         |

|    |         |        |        |        |        |         |        |         |
|----|---------|--------|--------|--------|--------|---------|--------|---------|
| #1 | .00008  | .00044 | .00039 | .00036 | .00073 | -.00008 | .06981 | -.00124 |
| #2 | -.00001 | .00056 | .00014 | .00045 | .00056 | .00039  | .07535 | -.00064 |
| #3 | -.00009 | .00027 | .00034 | .00041 | .00071 | .00019  | .07527 | -.00052 |

|        |               |               |               |               |               |               |               |                |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Elem   | Cd2265        | Ca3736        | Cr2677        | Co2286        | Cu2247        | Fe2404        | Mn2576        | Mg2790         |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S          |
| Avg    | <b>.00032</b> | <b>.00207</b> | <b>.00026</b> | <b>.00046</b> | <b>.00048</b> | <b>.00003</b> | <b>.00020</b> | <b>-.00006</b> |
| Stddev | .00021        | .00045        | .00011        | .00017        | .00015        | .00002        | .00012        | .00035         |
| %RSD   | 63.479        | 21.901        | 42.248        | 36.856        | 30.297        | 64.557        | 59.568        | 600.41         |

|    |        |        |        |        |        |        |        |         |
|----|--------|--------|--------|--------|--------|--------|--------|---------|
| #1 | .00039 | .00257 | .00030 | .00062 | .00056 | .00001 | .00029 | -.00044 |
| #2 | .00049 | .00170 | .00034 | .00049 | .00031 | .00004 | .00007 | .00024  |
| #3 | .00009 | .00193 | .00013 | .00028 | .00057 | .00003 | .00025 | .00003  |

|        |                |                |               |                |               |                |               |               |
|--------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|---------------|
| Elem   | Ni2316         | Ag3280         | Na5895        | V_2924         | Zn2138        | K_7664         | B_2496        | Mo2020        |
| Units  | Cts/S          | Cts/S          | Cts/S         | Cts/S          | Cts/S         | Cts/S          | Cts/S         | Cts/S         |
| Avg    | <b>-.00052</b> | <b>-.00092</b> | <b>.00232</b> | <b>-.00031</b> | <b>.00431</b> | <b>-.00012</b> | <b>.00419</b> | <b>.00058</b> |
| Stddev | .00005         | .00005         | .00015        | .00018         | .00070        | .00015         | .00049        | .00020        |
| %RSD   | 9.9412         | 5.2867         | 6.4795        | 58.797         | 16.292        | 120.69         | 11.658        | 34.271        |

|    |         |         |        |         |        |         |        |        |
|----|---------|---------|--------|---------|--------|---------|--------|--------|
| #1 | -.00056 | -.00097 | .00218 | -.00014 | .00512 | -.00023 | .00368 | .00038 |
| #2 | -.00053 | -.00091 | .00231 | -.00050 | .00396 | -.00019 | .00465 | .00077 |
| #3 | -.00046 | -.00087 | .00248 | -.00030 | .00386 | .00005  | .00424 | .00059 |

|        |               |               |               |                |               |               |               |  |
|--------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--|
| Elem   | Sn1899        | Ti3361        | Si2881        | P_1774         | S_1820        | Li6707        | Sr4077        |  |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S          | Cts/S         | Cts/S         | Cts/S         |  |
| Avg    | <b>.00154</b> | <b>.00157</b> | <b>.00006</b> | <b>-.00084</b> | <b>.00030</b> | <b>.01833</b> | <b>.00298</b> |  |
| Stddev | .00007        | .00030        | .00003        | .00003         | .00008        | .00155        | .00035        |  |
| %RSD   | 4.3202        | 18.893        | 49.662        | 3.9381         | 27.142        | 8.4600        | 11.720        |  |

|    |        |        |        |         |        |        |        |  |
|----|--------|--------|--------|---------|--------|--------|--------|--|
| #1 | .00159 | .00140 | .00008 | -.00088 | .00021 | .01681 | .00265 |  |
| #2 | .00156 | .00139 | .00003 | -.00083 | .00031 | .01991 | .00295 |  |
| #3 | .00146 | .00191 | .00007 | -.00081 | .00038 | .01826 | .00334 |  |

Sample Name: S0      Acquired: 9/18/2025 10:41:40      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|           |        |         |        |        |        |
|-----------|--------|---------|--------|--------|--------|
| Int. Std. | Y_2243 | Y_3600  | Y_3710 | Y_2243 | In2306 |
| Units     | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  |
| Avg       | 6358.9 | 109960. | 10081. | 5145.6 | 7849.9 |
| Stddev    | 63.7   | 107.    | 294.   | 9.5    | 72.6   |
| %RSD      | 1.0020 | .09703  | 2.9182 | .18377 | .92427 |
| #1        | 6432.3 | 109910. | 10421. | 5138.7 | 7933.2 |
| #2        | 6327.4 | 110080. | 9911.0 | 5156.4 | 7815.5 |
| #3        | 6317.2 | 109890. | 9911.7 | 5141.7 | 7800.9 |

Sample Name: S1      Acquired: 9/18/2025 10:46:03      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |        |        |        |         |        |        |        |        |
|--------|--------|--------|--------|---------|--------|--------|--------|--------|
| Elem   | As1890 | Tl1908 | Pb2203 | Se1960  | Sb2068 | Al3961 | Ba4934 | Be2348 |
| Units  | Cts/S  | Cts/S  | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  | Cts/S  |
| Avg    | .00071 | .00253 | .00213 | .00129  | .00411 | .00806 | .22996 | .03665 |
| Stddev | .00005 | .00009 | .00007 | .00008  | .00010 | .00061 | .00036 | .00006 |
| %RSD   | 7.0486 | 3.4516 | 3.1809 | 6.1602  | 2.3258 | 7.5328 | .15802 | .15034 |
| #1     | .00068 | .00263 | .00206 | .00139  | .00422 | .00813 | .23037 | .03667 |
| #2     | .00068 | .00248 | .00220 | .00126  | .00408 | .00863 | .22970 | .03669 |
| #3     | .00076 | .00248 | .00213 | .00124  | .00403 | .00742 | .22980 | .03659 |
| Elem   | Cd2265 | Ca3736 | Cr2677 | Co2286  | Cu2247 | Fe2404 | Mn2576 | Mg2790 |
| Units  | Cts/S  | Cts/S  | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  | Cts/S  |
| Avg    | .01448 | .10068 | .00181 | .02497  | .01192 | .00028 | .00768 | .01992 |
| Stddev | .00012 | .00032 | .00006 | .00011  | .00009 | .00000 | .00009 | .00017 |
| %RSD   | .83218 | .32135 | 3.1988 | .43845  | .74077 | .66023 | 1.1545 | .83549 |
| #1     | .01455 | .10075 | .00186 | .02493  | .01201 | .00028 | .00759 | .01973 |
| #2     | .01434 | .10096 | .00182 | .02509  | .01194 | .00029 | .00777 | .02001 |
| #3     | .01454 | .10033 | .00175 | .02488  | .01183 | .00028 | .00768 | .02002 |
| Elem   | Ni2316 | Ag3280 | Na5895 | V_2924  | Zn2138 | K_7664 | B_2496 | Mo2020 |
| Units  | Cts/S  | Cts/S  | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  | Cts/S  |
| Avg    | .01874 | .00072 | .01526 | .00370  | .08062 | .00636 | .05277 | .09679 |
| Stddev | .00002 | .00007 | .00018 | .00032  | .00049 | .00011 | .00030 | .00032 |
| %RSD   | .08938 | 9.9909 | 1.1684 | 8.7511  | .61041 | 1.6695 | .56063 | .32546 |
| #1     | .01873 | .00079 | .01546 | .00405  | .08101 | .00630 | .05276 | .09701 |
| #2     | .01875 | .00071 | .01512 | .00342  | .08077 | .00630 | .05248 | .09643 |
| #3     | .01876 | .00065 | .01520 | .00363  | .08006 | .00648 | .05307 | .09693 |
| Elem   | Sn1899 | Ti3361 | Si2881 | P_1774  | S_1820 | Li6707 | Sr4077 |        |
| Units  | Cts/S  | Cts/S  | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  |        |
| Avg    | .00597 | .01065 | .00085 | -.00024 | .00065 | .03008 | .14041 |        |
| Stddev | .00009 | .00026 | .00003 | .00004  | .00004 | .00069 | .00064 |        |
| %RSD   | 1.4398 | 2.4661 | 3.8345 | 17.288  | 6.2657 | 2.3075 | .45354 |        |
| #1     | .00588 | .01042 | .00087 | -.00025 | .00065 | .02939 | .14098 |        |
| #2     | .00598 | .01094 | .00087 | -.00019 | .00061 | .03078 | .14054 |        |
| #3     | .00605 | .01058 | .00082 | -.00027 | .00069 | .03009 | .13972 |        |

Sample Name: S1      Acquired: 9/18/2025 10:46:03      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|           |        |         |        |        |        |
|-----------|--------|---------|--------|--------|--------|
| Int. Std. | Y_2243 | Y_3600  | Y_3710 | Y_2243 | In2306 |
| Units     | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  |
| Avg       | 6609.8 | 113280. | 10229. | 5343.0 | 8075.5 |
| Stddev    | 5.7    | 315.    | 38.    | 27.5   | 1.8    |
| %RSD      | .08633 | .27846  | .37147 | .51496 | .02231 |
| #1        | 6603.4 | 113130. | 10190. | 5311.4 | 8076.0 |
| #2        | 6614.4 | 113060. | 10233. | 5361.9 | 8073.4 |
| #3        | 6611.6 | 113640. | 10266. | 5355.6 | 8076.9 |

Sample Name: S2      Acquired: 9/18/2025 10:50:24      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | As1890        | Tl1908        | Pb2203        | Se1960        | Sb2068        | Al3961        | Ba4934        | Be2348        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.02983</b> | <b>.04116</b> | <b>.13007</b> | <b>.03387</b> | <b>.05711</b> | <b>.10820</b> | <b>2.6189</b> | <b>.24798</b> |
| Stddev | .00008        | .00153        | .00007        | .00031        | .00021        | .00026        | .0202         | .00161        |
| %RSD   | .27908        | 3.7227        | .05052        | .92746        | .36288        | .24374        | .76993        | .64752        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | .02991 | .04242 | .13014 | .03391 | .05733 | .10850 | 2.6383 | .24775 |
| #2 | .02984 | .04160 | .13003 | .03416 | .05692 | .10808 | 2.6205 | .24649 |
| #3 | .02974 | .03945 | .13004 | .03353 | .05708 | .10802 | 2.5980 | .24968 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Cd2265        | Ca3736        | Cr2677        | Co2286        | Cu2247        | Fe2404        | Mn2576        | Mg2790        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.98870</b> | <b>.19949</b> | <b>.02635</b> | <b>.33997</b> | <b>.11338</b> | <b>.00201</b> | <b>.14593</b> | <b>.03907</b> |
| Stddev | .00119        | .00029        | .00005        | .00071        | .00009        | .00002        | .00154        | .00018        |
| %RSD   | .12064        | .14441        | .19949        | .20816        | .08008        | 1.2135        | 1.0547        | .45465        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | .98850 | .19916 | .02638 | .33959 | .11328 | .00203 | .14765 | .03915 |
| #2 | .98762 | .19971 | .02629 | .33954 | .11345 | .00201 | .14547 | .03887 |
| #3 | .98998 | .19959 | .02638 | .34079 | .11340 | .00198 | .14468 | .03921 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Ni2316        | Ag3280        | Na5895        | V_2924        | Zn2138        | K_7664        | B_2496        | Mo2020        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.19807</b> | <b>.03166</b> | <b>.02891</b> | <b>.04120</b> | <b>.77765</b> | <b>.01352</b> | <b>.39563</b> | <b>.41167</b> |
| Stddev | .00038        | .00006        | .00035        | .00010        | .00276        | .00010        | .00040        | .00103        |
| %RSD   | .19238        | .20028        | 1.2177        | .24728        | .35428        | .76717        | .10195        | .25125        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | .19768 | .03174 | .02909 | .04128 | .77448 | .01354 | .39555 | .41259 |
| #2 | .19808 | .03164 | .02914 | .04109 | .77899 | .01362 | .39527 | .41188 |
| #3 | .19844 | .03162 | .02851 | .04124 | .77948 | .01341 | .39607 | .41055 |

|        |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Sn1899        | Ti3361        | Si2881        | P_1774        | S_1820        | Li6707        | Sr4077        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.09626</b> | <b>.19872</b> | <b>.00188</b> | <b>.02643</b> | <b>.01700</b> | <b>.56409</b> | <b>5.3777</b> |
| Stddev | .00037        | .00115        | .00004        | .00038        | .00016        | .00258        | .0365         |
| %RSD   | .38057        | .57844        | 1.9644        | 1.4557        | .91958        | .45739        | .67882        |

|    |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|
| #1 | .09662 | .19984 | .00188 | .02670 | .01711 | .56656 | 5.4150 |
| #2 | .09627 | .19878 | .00191 | .02660 | .01707 | .56430 | 5.3761 |
| #3 | .09589 | .19755 | .00184 | .02599 | .01682 | .56142 | 5.3420 |

Sample Name: S2      Acquired: 9/18/2025 10:50:24      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

| Int. Std. | Y_2243 | Y_3600  | Y_3710 | Y_2243 | In2306 |
|-----------|--------|---------|--------|--------|--------|
| Units     | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  |
| Avg       | 6365.5 | 109380. | 10050. | 5176.5 | 7614.7 |
| Stddev    | 5.0    | 337.    | 22.    | 20.4   | 10.4   |
| %RSD      | .07825 | .30769  | .21996 | .39481 | .13669 |
| #1        | 6371.1 | 109300. | 10027. | 5200.1 | 7615.7 |
| #2        | 6363.8 | 109100. | 10053. | 5166.0 | 7624.6 |
| #3        | 6361.5 | 109760. | 10071. | 5163.5 | 7603.8 |



Sample Name: S3      Acquired: 9/18/2025 10:54:29      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | As1890        | Tl1908        | Pb2203        | Se1960        | Sb2068        | Al3961        | Ba4934        | Be2348        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.09613</b> | <b>.13318</b> | <b>.41828</b> | <b>.10824</b> | <b>.18155</b> | <b>.34692</b> | <b>8.2305</b> | <b>.79024</b> |
| Stddev | .00043        | .00275        | .00074        | .00030        | .00009        | .00082        | .0266         | .00555        |
| %RSD   | .44218        | 2.0632        | .17765        | .27737        | .04772        | .23659        | .32346        | .70256        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | .09566 | .13016 | .41746 | .10799 | .18157 | .34766 | 8.2549 | .79624 |
| #2 | .09622 | .13382 | .41847 | .10815 | .18162 | .34604 | 8.2021 | .78528 |
| #3 | .09650 | .13554 | .41891 | .10857 | .18145 | .34707 | 8.2345 | .78921 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Cd2265        | Ca3736        | Cr2677        | Co2286        | Cu2247        | Fe2404        | Mn2576        | Mg2790        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>3.2105</b> | <b>.63267</b> | <b>.08374</b> | <b>1.0974</b> | <b>.35709</b> | <b>.00632</b> | <b>.45879</b> | <b>.12332</b> |
| Stddev | .0067         | .00036        | .00011        | .0013         | .00055        | .00005        | .00117        | .00055        |
| %RSD   | .20975        | .05626        | .12546        | .11621        | .15424        | .85563        | .25559        | .44622        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | 3.2031 | .63308 | .08375 | 1.0960 | .35653 | .00627 | .45958 | .12387 |
| #2 | 3.2123 | .63246 | .08383 | 1.0975 | .35763 | .00638 | .45744 | .12277 |
| #3 | 3.2162 | .63247 | .08362 | 1.0986 | .35711 | .00630 | .45935 | .12332 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Ni2316        | Ag3280        | Na5895        | V_2924        | Zn2138        | K_7664        | B_2496        | Mo2020        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.63799</b> | <b>.10249</b> | <b>.08715</b> | <b>.13342</b> | <b>2.4721</b> | <b>.04405</b> | <b>1.2483</b> | <b>1.3140</b> |
| Stddev | .00093        | .00008        | .00036        | .00029        | .0045         | .00024        | .0104         | .0031         |
| %RSD   | .14641        | .07687        | .41421        | .22009        | .18091        | .54499        | .83214        | .23271        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | .63693 | .10247 | .08675 | .13361 | 2.4692 | .04378 | 1.2595 | 1.3109 |
| #2 | .63835 | .10257 | .08727 | .13308 | 2.4772 | .04426 | 1.2390 | 1.3140 |
| #3 | .63869 | .10242 | .08744 | .13357 | 2.4698 | .04410 | 1.2465 | 1.3170 |

|        |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Sn1899        | Ti3361        | Si2881        | P_1774        | S_1820        | Li6707        | Sr4077        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.30955</b> | <b>.63080</b> | <b>.00593</b> | <b>.09024</b> | <b>.05560</b> | <b>1.7456</b> | <b>17.027</b> |
| Stddev | .00124        | .00219        | .00009        | .00076        | .00051        | .0040         | .225          |
| %RSD   | .40125        | .34756        | 1.5101        | .84039        | .91740        | .22730        | 1.3213        |

|    |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|
| #1 | .30855 | .63304 | .00583 | .08958 | .05519 | 1.7497 | 17.175 |
| #2 | .30915 | .62866 | .00598 | .09006 | .05544 | 1.7418 | 16.768 |
| #3 | .31094 | .63070 | .00599 | .09107 | .05617 | 1.7453 | 17.139 |

Sample Name: S3      Acquired: 9/18/2025 10:54:29      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

| Int. Std. | Y_2243 | Y_3600  | Y_3710 | Y_2243 | In2306 |
|-----------|--------|---------|--------|--------|--------|
| Units     | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  |
| Avg       | 6192.0 | 105980. | 9840.3 | 4967.9 | 7268.2 |
| Stddev    | 12.6   | 404.    | 54.0   | 12.4   | 19.9   |
| %RSD      | .20354 | .38076  | .54912 | .24990 | .27325 |
| #1        | 6196.5 | 106410. | 9782.0 | 4981.3 | 7264.7 |
| #2        | 6201.7 | 105610. | 9888.8 | 4956.7 | 7289.6 |
| #3        | 6177.7 | 105920. | 9849.9 | 4965.7 | 7250.4 |

Sample Name: S4      Acquired: 9/18/2025 10:58:32      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | As1890        | Tl1908        | Pb2203        | Se1960        | Sb2068        | Al3961        | Ba4934        | Be2348        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.18617</b> | <b>.26503</b> | <b>.80714</b> | <b>.20770</b> | <b>.34847</b> | <b>.66420</b> | <b>15.516</b> | <b>1.5093</b> |
| Stddev | .00030        | .00762        | .00060        | .00099        | .00047        | .00142        | .031          | .0065         |
| %RSD   | .16345        | 2.8756        | .07470        | .47883        | .13449        | .21346        | .19804        | .43308        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | .18583 | .25957 | .80650 | .20662 | .34900 | .66346 | 15.481 | 1.5024 |
| #2 | .18628 | .26179 | .80770 | .20793 | .34831 | .66584 | 15.532 | 1.5154 |
| #3 | .18641 | .27374 | .80720 | .20857 | .34811 | .66331 | 15.535 | 1.5101 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Cd2265        | Ca3736        | Cr2677        | Co2286        | Cu2247        | Fe2404        | Mn2576        | Mg2790        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>6.2674</b> | <b>1.2099</b> | <b>.16110</b> | <b>2.1343</b> | <b>.67856</b> | <b>.01247</b> | <b>.87519</b> | <b>.23780</b> |
| Stddev | .0037         | .0028         | .00042        | .0014         | .00078        | .00003        | .00176        | .00108        |
| %RSD   | .05987        | .22849        | .26309        | .06330        | .11533        | .23156        | .20055        | .45292        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | 6.2638 | 1.2081 | .16072 | 2.1354 | .67852 | .01250 | .87316 | .23725 |
| #2 | 6.2669 | 1.2131 | .16156 | 2.1347 | .67779 | .01245 | .87610 | .23904 |
| #3 | 6.2713 | 1.2086 | .16102 | 2.1328 | .67936 | .01245 | .87630 | .23711 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Ni2316        | Ag3280        | Na5895        | V_2924        | Zn2138        | K_7664        | B_2496        | Mo2020        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>1.2385</b> | <b>.19957</b> | <b>.17175</b> | <b>.25919</b> | <b>4.7776</b> | <b>.08755</b> | <b>2.3940</b> | <b>2.5187</b> |
| Stddev | .0008         | .00010        | .00094        | .00118        | .0027         | .00050        | .0114         | .0018         |
| %RSD   | .06118        | .05089        | .54804        | .45679        | .05554        | .57632        | .47411        | .07175        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | 1.2392 | .19946 | .17281 | .25995 | 4.7805 | .08809 | 2.3809 | 2.5176 |
| #2 | 1.2384 | .19960 | .17143 | .25980 | 4.7771 | .08746 | 2.4018 | 2.5177 |
| #3 | 1.2377 | .19966 | .17101 | .25783 | 4.7752 | .08710 | 2.3992 | 2.5208 |

|        |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Sn1899        | Ti3361        | Si2881        | P_1774        | S_1820        | Li6707        | Sr4077        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.60015</b> | <b>1.2109</b> | <b>.01178</b> | <b>.18040</b> | <b>.11097</b> | <b>3.3427</b> | <b>32.460</b> |
| Stddev | .00116        | .0018         | .00008        | .00070        | .00047        | .0054         | .099          |
| %RSD   | .19316        | .15182        | .69614        | .38867        | .42781        | .16215        | .30522        |

|    |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|
| #1 | .59892 | 1.2108 | .01171 | .17992 | .11051 | 3.3417 | 32.575 |
| #2 | .60030 | 1.2128 | .01176 | .18007 | .11094 | 3.3485 | 32.402 |
| #3 | .60122 | 1.2091 | .01187 | .18121 | .11146 | 3.3378 | 32.405 |

Sample Name: S4      Acquired: 9/18/2025 10:58:32      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

| Int. Std. | Y_2243 | Y_3600  | Y_3710 | Y_2243 | In2306 |
|-----------|--------|---------|--------|--------|--------|
| Units     | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  |
| Avg       | 6271.0 | 105840. | 10048. | 4945.1 | 7207.3 |
| Stddev    | 10.7   | 80.     | 40.    | 15.5   | 3.8    |
| %RSD      | .17047 | .07527  | .39962 | .31383 | .05327 |
| #1        | 6269.1 | 105890. | 10094. | 4932.3 | 7205.8 |
| #2        | 6282.6 | 105750. | 10021. | 4940.7 | 7211.7 |
| #3        | 6261.4 | 105890. | 10029. | 4962.4 | 7204.5 |

Sample Name: S5      Acquired: 9/18/2025 11:02:42      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | As1890        | Tl1908        | Pb2203        | Se1960        | Sb2068        | Al3961        | Ba4934        | Be2348        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>.38849</b> | <b>.54403</b> | <b>1.7025</b> | <b>.43017</b> | <b>.72179</b> | <b>1.3735</b> | <b>32.054</b> | <b>3.0660</b> |
| Stddev | .00048        | .00247        | .0036         | .00130        | .00155        | .0057         | .437          | .0293         |
| %RSD   | .12422        | .45489        | .20953        | .30162        | .21410        | .41758        | 1.3632        | .95424        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | .38801 | .54117 | 1.6987 | .42872 | .72135 | 1.3795 | 32.529 | 3.0868 |
| #2 | .38897 | .54556 | 1.7030 | .43056 | .72052 | 1.3730 | 31.965 | 3.0787 |
| #3 | .38849 | .54535 | 1.7058 | .43123 | .72351 | 1.3681 | 31.669 | 3.0325 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Cd2265        | Ca3736        | Cr2677        | Co2286        | Cu2247        | Fe2404        | Mn2576        | Mg2790        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>13.143</b> | <b>2.4836</b> | <b>.32801</b> | <b>4.4902</b> | <b>1.3848</b> | <b>.02571</b> | <b>1.7979</b> | <b>.49150</b> |
| Stddev | .037          | .0088         | .00117        | .0147         | .0034         | .00002        | .0088         | .00233        |
| %RSD   | .27952        | .35308        | .35618        | .32634        | .24941        | .06558        | .48797        | .47397        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | 13.104 | 2.4933 | .32930 | 4.4766 | 1.3816 | .02570 | 1.7997 | .49417 |
| #2 | 13.148 | 2.4815 | .32770 | 4.4882 | 1.3844 | .02573 | 1.8057 | .48984 |
| #3 | 13.176 | 2.4761 | .32702 | 4.5057 | 1.3885 | .02572 | 1.7884 | .49051 |

|        |               |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Ni2316        | Ag3280        | Na5895        | V_2924        | Zn2138        | K_7664        | B_2496        | Mo2020        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>2.5958</b> | <b>.41048</b> | <b>.36284</b> | <b>.53882</b> | <b>9.6597</b> | <b>.18396</b> | <b>4.8555</b> | <b>5.1795</b> |
| Stddev | .0069         | .00150        | .00076        | .00265        | .0211         | .00121        | .0482         | .0092         |
| %RSD   | .26500        | .36457        | .20839        | .49150        | .21817        | .65622        | .99196        | .17784        |

|    |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|
| #1 | 2.5893 | .41165 | .36226 | .54187 | 9.6797 | .18323 | 4.8855 | 5.1714 |
| #2 | 2.5951 | .41101 | .36258 | .53753 | 9.6617 | .18329 | 4.8810 | 5.1776 |
| #3 | 2.6030 | .40879 | .36370 | .53706 | 9.6377 | .18535 | 4.7999 | 5.1895 |

|        |               |               |               |               |               |               |               |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Elem   | Sn1899        | Ti3361        | Si2881        | P_1774        | S_1820        | Li6707        | Sr4077        |
| Units  | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         | Cts/S         |
| Avg    | <b>1.2532</b> | <b>2.5147</b> | <b>.02515</b> | <b>.38700</b> | <b>.23853</b> | <b>6.9536</b> | <b>66.821</b> |
| Stddev | .0024         | .0081         | .00011        | .00120        | .00095        | .0153         | .680          |
| %RSD   | .19457        | .32044        | .44098        | .30928        | .39718        | .21975        | 1.0183        |

|    |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|
| #1 | 1.2504 | 2.5216 | .02503 | .38567 | .23746 | 6.9625 | 66.836 |
| #2 | 1.2545 | 2.5168 | .02516 | .38737 | .23926 | 6.9624 | 67.493 |
| #3 | 1.2547 | 2.5059 | .02525 | .38798 | .23887 | 6.9360 | 66.132 |

Sample Name: S5      Acquired: 9/18/2025 11:02:42      Type: Cal  
Method: 6010-200.7 NEW(v178)      Mode: IR      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

| Int. Std. | Y_2243 | Y_3600  | Y_3710 | Y_2243 | In2306 |
|-----------|--------|---------|--------|--------|--------|
| Units     | Cts/S  | Cts/S   | Cts/S  | Cts/S  | Cts/S  |
| Avg       | 5986.9 | 102220. | 9763.5 | 4757.8 | 6695.8 |
| Stddev    | 4.5    | 219.    | 78.0   | 12.7   | 9.3    |
| %RSD      | .07479 | .21456  | .79939 | .26672 | .13833 |
| #1        | 5991.5 | 101980. | 9705.9 | 4743.2 | 6702.6 |
| #2        | 5986.6 | 102300. | 9732.4 | 4766.8 | 6699.6 |
| #3        | 5982.5 | 102400. | 9852.4 | 4763.3 | 6685.3 |

Sample Name: ICV01      Acquired: 9/18/2025 11:06:54      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICV01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>3.810637</b> | <b>3.723057</b> | <b>3.715116</b> | <b>3.825867</b> | <b>3.922085</b> | <b>7.716718</b> |
| Stddev | .015130         | .089492         | .004960         | .028635         | .015049         | .018824         |
| %RSD   | .3970389        | 2.403723        | .1335198        | .7484522        | .3836908        | .2439354        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 3.799493 | 3.680772 | 3.714164 | 3.801050 | 3.904757 | 7.738282 |
| #2 | 3.827861 | 3.825857 | 3.720483 | 3.857197 | 3.929626 | 7.703574 |
| #3 | 3.804557 | 3.662544 | 3.710700 | 3.819353 | 3.931873 | 7.708297 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>7.827007</b> | <b>.1966228</b> | <b>1.883959</b> | <b>19.28008</b> | <b>.7884514</b> | <b>1.898822</b> |
| Stddev | .050122         | .0008741        | .004123         | .09275          | .0016120        | .003350         |
| %RSD   | .6403761        | .4445805        | .2188683        | .4810544        | .2044527        | .1764137        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 7.874928 | .1976284 | 1.882770 | 19.38518 | .7865949 | 1.895627 |
| #2 | 7.831153 | .1961959 | 1.888547 | 19.24536 | .7892621 | 1.902307 |
| #3 | 7.774941 | .1960442 | 1.880562 | 19.20970 | .7894970 | 1.898532 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.9748368</b> | <b>3.836696</b> | <b>1.929543</b> | <b>19.27526</b> | <b>1.901413</b> | <b>.9599577</b> |
| Stddev | .0021644        | .023313         | .005681         | .07065          | .002993         | .0021340        |
| %RSD   | .2220277        | .6076350        | .2944172        | .3665297        | .1574178        | .2223050        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .9724337 | 3.814280 | 1.935536 | 19.34535 | 1.898597 | .9598477 |
| #2 | .9766328 | 3.860813 | 1.928858 | 19.20406 | 1.904556 | .9621445 |
| #3 | .9754440 | 3.834994 | 1.924236 | 19.27637 | 1.901084 | .9578807 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>18.80096</b> | <b>1.918911</b> | <b>1.934756</b> | <b>18.89589</b> | <b>3.899530</b> | <b>3.927890</b> |
| Stddev | .06307          | .002958         | .002066         | .10974          | .016725         | .013196         |
| %RSD   | .3354845        | .1541546        | .1067670        | .5807384        | .4288897        | .3359453        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 18.84041 | 1.919469 | 1.932724 | 18.85217 | 3.918842 | 3.915704 |
| #2 | 18.83426 | 1.921550 | 1.936854 | 19.02075 | 3.889741 | 3.941905 |
| #3 | 18.72822 | 1.915714 | 1.934691 | 18.81476 | 3.890008 | 3.926060 |

Sample Name: ICV01      Acquired: 9/18/2025 11:06:54      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICV01      Custom ID2:      Custom ID3:  
Comment:

| Elem   | Sn1899          | Ti3361          | Si2881            | P_1774            | S_1820            | Li6707            |
|--------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|
| Units  | ppm             | ppm             | ppm               | ppm               | ppm               | ppm               |
| Avg    | <b>3.845536</b> | <b>3.915471</b> | <b>F 3.580223</b> | <b>F .0027941</b> | <b>F .0230113</b> | <b>F -.010241</b> |
| Stddev | .015764         | .014165         | .021832           | .0002678          | .0017996          | .001698           |
| %RSD   | .4099386        | .3617683        | .6097810          | 9.586015          | 7.820681          | 16.57676          |
| #1     | 3.843934        | 3.931693        | 3.555660          | .0024854          | .0209762          | -.011231          |
| #2     | 3.862041        | 3.909171        | 3.597416          | .0029317          | .0243929          | -.008280          |
| #3     | 3.830635        | 3.905548        | 3.587592          | .0029652          | .0236646          | -.011210          |

| Elem   | Sr4077            |
|--------|-------------------|
| Units  | ppm               |
| Avg    | <b>F -.003275</b> |
| Stddev | .000289           |
| %RSD   | 8.813686          |
| #1     | -.002991          |
| #2     | -.003264          |
| #3     | -.003568          |

| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6343.572</b> | <b>107430.3</b> | <b>10127.09</b> | <b>5054.580</b> | <b>7393.049</b> |
| Stddev    | 8.002           | 292.7           | 26.44           | 3.935           | 12.229          |
| %RSD      | .1261418        | .2724155        | .2611186        | .0778511        | .1654180        |
| #1        | 6345.007        | 107760.0        | 10096.64        | 5053.633        | 7387.639        |
| #2        | 6334.950        | 107201.1        | 10140.44        | 5051.205        | 7384.458        |
| #3        | 6350.760        | 107330.0        | 10144.21        | 5058.902        | 7407.051        |



Sample Name: LLICV01      Acquired: 9/18/2025 11:15:08      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: LLICV01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0212211</b> | <b>.0398702</b> | <b>.0110610</b> | <b>.0237996</b> | <b>.0526891</b> | <b>.1059185</b> | <b>.1011337</b> |
| Stddev | .0014181        | .0018980        | .0021109        | .0030470        | .0014449        | .0057037        | .0018372        |
| %RSD   | 6.682601        | 4.760377        | 19.08465        | 12.80289        | 2.742367        | 5.384953        | 1.816593        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0224511 | .0395266 | .0093144 | .0261964 | .0510662 | .1115402 | .1007784 |
| #2 | .0215422 | .0381676 | .0104617 | .0248318 | .0531650 | .1001362 | .1031226 |
| #3 | .0196699 | .0419166 | .0134068 | .0203705 | .0538361 | .1060790 | .0995001 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0064139</b> | <b>.0058157</b> | <b>2.087690</b> | <b>.0102601</b> | <b>.0300512</b> | <b>.0219401</b> | <b>.0974631</b> |
| Stddev | .0000820        | .0000181        | .014383         | .0001562        | .0002513        | .0002268        | .0054950        |
| %RSD   | 1.278687        | .3107496        | .6889549        | 1.522152        | .8360578        | 1.033515        | 5.638040        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0063369 | .0058365 | 2.102695 | .0103071 | .0297667 | .0221785 | .1032948 |
| #2 | .0065001 | .0058048 | 2.086354 | .0100858 | .0301440 | .0217271 | .0967124 |
| #3 | .0064047 | .0058057 | 2.074022 | .0103874 | .0302427 | .0219149 | .0923820 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0211843</b> | <b>2.165693</b> | <b>.0404875</b> | <b>.0109170</b> | <b>1.819616</b> | <b>.0395496</b> | <b>.0452185</b> |
| Stddev | .0001985        | .016917         | .0001598        | .0004045        | .025463         | .0018777        | .0001356        |
| %RSD   | .9367752        | .7811560        | .3946024        | 3.705016        | 1.399367        | 4.747720        | .2999323        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0210983 | 2.184631 | .0406577 | .0105274 | 1.793116 | .0373999 | .0451531 |
| #2 | .0210433 | 2.160374 | .0403407 | .0113349 | 1.821836 | .0408689 | .0451279 |
| #3 | .0214112 | 2.152074 | .0404640 | .0108888 | 1.843897 | .0403800 | .0453744 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.821125</b> | <b>.1113307</b> | <b>.2009095</b> | <b>.0386829</b> | <b>.0369600</b> | <b>.3658099</b> | <b>.0172962</b> |
| Stddev | .031283         | .0005988        | .0002217        | .0005795        | .0009842        | .0060439        | .0012288        |
| %RSD   | 1.717784        | .5378648        | .1103561        | 1.498031        | 2.662812        | 1.652196        | 7.104232        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 1.785783 | .1120129 | .2006768 | .0382555 | .0366869 | .3685478 | .0161792 |
| #2 | 1.845264 | .1110872 | .2011184 | .0393424 | .0361412 | .3588816 | .0186124 |
| #3 | 1.832328 | .1108920 | .2009332 | .0384507 | .0380519 | .3700004 | .0170970 |

Sample Name: LLICV01      Acquired: 9/18/2025 11:15:08      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: LLICV01      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |
|--------|----------|----------|----------|
| Elem   | S_1820   | Li6707   | Sr4077   |
| Units  | ppm      | ppm      | ppm      |
| Avg    | .0201589 | .0185394 | .0211869 |
| Stddev | .0018749 | .0009572 | .0000799 |
| %RSD   | 9.300594 | 5.163010 | .3771306 |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | .0190214 | .0178000 | .0211532 |
| #2 | .0191325 | .0196206 | .0211293 |
| #3 | .0223230 | .0181976 | .0212781 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6238.169 | 108271.3 | 10022.43 | 4945.896 | 7609.638 |
| Stddev    | 9.009    | 53.4     | 28.65    | 38.520   | 5.427    |
| %RSD      | .1444222 | .0493524 | .2858115 | .7788218 | .0713176 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6230.873 | 108305.4 | 9990.53  | 4962.583 | 7604.075 |
| #2 | 6235.394 | 108298.9 | 10030.82 | 4973.258 | 7609.921 |
| #3 | 6248.239 | 108209.8 | 10045.95 | 4901.846 | 7614.918 |

Sample Name: ICB01      Acquired: 9/18/2025 11:20:09      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICB01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000699</b> | <b>.0012684</b> | <b>-.001032</b> | <b>-.001093</b> | <b>.0000451</b> | <b>-.002229</b> | <b>.0001972</b> |
| Stddev | .001108         | .0011593        | .000391         | .003542         | .0009706        | .007017         | .0004470        |
| %RSD   | 158.5574        | 91.39932        | 37.86507        | 323.9464        | 2150.175        | 314.8198        | 226.7134        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001840</b> | <b>.0023250</b> | <b>-.001088</b> | <b>.002863</b>  | <b>.0009885</b> | <b>.002866</b>  | <b>.0007132</b> |
| #2 | <b>.000373</b>  | <b>.0014517</b> | <b>-.001391</b> | <b>-.003968</b> | <b>.0000976</b> | <b>.000680</b>  | <b>-.000070</b> |
| #3 | <b>-.000630</b> | <b>.0000283</b> | <b>-.000616</b> | <b>-.002175</b> | <b>-.000951</b> | <b>-.010232</b> | <b>-.000052</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0000304</b> | <b>-.000205</b> | <b>.0085769</b> | <b>.0000020</b> | <b>-.000156</b> | <b>-.000373</b> | <b>-.000462</b> |
| Stddev | .0000094        | .000073         | .0017657        | .0001477        | .000203         | .000329         | .003531         |
| %RSD   | 30.88366        | 35.87924        | 20.58713        | 7273.336        | 129.7912        | 88.37386        | 763.6722        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0000199</b> | <b>-.000259</b> | <b>.0065614</b> | <b>-.000113</b> | <b>-.000367</b> | <b>-.000300</b> | <b>-.001930</b> |
| #2 | <b>.0000379</b> | <b>-.000234</b> | <b>.0093177</b> | <b>.000169</b>  | <b>-.000139</b> | <b>-.000086</b> | <b>.003565</b>  |
| #3 | <b>.0000334</b> | <b>-.000121</b> | <b>.0098514</b> | <b>-.000049</b> | <b>.000037</b>  | <b>-.000732</b> | <b>-.003022</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0003768</b> | <b>.0064380</b> | <b>.0000073</b> | <b>-.000079</b> | <b>-.138270</b> | <b>.0004282</b> | <b>-.000248</b> |
| Stddev | .0003517        | .0129967        | .0002280        | .000488         | .019491         | .0026541        | .000244         |
| %RSD   | 93.35339        | 201.8745        | 3109.851        | 613.7742        | 14.09664        | 619.8658        | 98.25850        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000029</b> | <b>-.005859</b> | <b>-.000178</b> | <b>.000354</b>  | <b>-.151479</b> | <b>.0016824</b> | <b>-.000024</b> |
| #2 | <b>.000582</b>  | <b>.020037</b>  | <b>.000262</b>  | <b>.000015</b>  | <b>-.147448</b> | <b>-.002621</b> | <b>-.000507</b> |
| #3 | <b>.000578</b>  | <b>.005136</b>  | <b>-.000062</b> | <b>-.000608</b> | <b>-.115884</b> | <b>.002223</b>  | <b>-.000212</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.175743</b> | <b>.0046750</b> | <b>-.000361</b> | <b>-.000224</b> | <b>-.000033</b> | <b>.0067854</b> | <b>-.000574</b> |
| Stddev | .068228         | .0001919        | .000021         | .000200         | .000612         | .0121186        | .000322         |
| %RSD   | 38.82260        | 4.105153        | 5.786635        | 89.36531        | 1881.749        | 178.5994        | 56.10759        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.252639</b> | <b>.0045159</b> | <b>-.000347</b> | <b>-.000153</b> | <b>.000639</b>  | <b>-.007194</b> | <b>-.000547</b> |
| #2 | <b>-.152140</b> | <b>.0046210</b> | <b>-.000385</b> | <b>-.000069</b> | <b>-.000559</b> | <b>.014322</b>  | <b>-.000266</b> |
| #3 | <b>-.122451</b> | <b>.0048882</b> | <b>-.000352</b> | <b>-.000450</b> | <b>-.000177</b> | <b>.013228</b>  | <b>-.000909</b> |

Sample Name: ICB01      Acquired: 9/18/2025 11:20:09      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICB01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>-.003946</b> | <b>-.008750</b> | <b>-.000358</b> |
| Stddev | .004108         | .000933         | .000110         |
| %RSD   | 104.1040        | 10.66588        | 30.80648        |

|    |                 |                 |                 |
|----|-----------------|-----------------|-----------------|
| #1 | <b>-.003786</b> | <b>-.009617</b> | <b>-.000255</b> |
| #2 | <b>-.008130</b> | <b>-.007762</b> | <b>-.000346</b> |
| #3 | <b>.000080</b>  | <b>-.008869</b> | <b>-.000475</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6294.864</b> | <b>108667.7</b> | <b>9983.148</b> | <b>4947.704</b> | <b>7830.561</b> |
| Stddev    | 13.645          | 721.9           | 44.121          | 12.321          | 15.477          |
| %RSD      | .2167678        | .6643583        | .4419538        | .2490179        | .1976483        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6292.036</b> | <b>108640.1</b> | <b>10022.69</b> | <b>4958.838</b> | <b>7829.423</b> |
| #2 | <b>6282.855</b> | <b>107959.9</b> | <b>9935.56</b>  | <b>4934.467</b> | <b>7815.685</b> |
| #3 | <b>6309.702</b> | <b>109403.0</b> | <b>9991.19</b>  | <b>4949.806</b> | <b>7846.576</b> |

Sample Name: CRI01      Acquired: 9/18/2025 11:28:45      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CRI01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0205233</b> | <b>.0414546</b> | <b>.0116285</b> | <b>.0204276</b> | <b>.0502552</b> | <b>.0977617</b> |
| Stddev | .0022089        | .0013697        | .0010483        | .0020363        | .0026703        | .0008391        |
| %RSD   | 10.76302        | 3.304156        | 9.014609        | 9.968204        | 5.313425        | .8582577        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0226664 | .0405278 | .0125099 | .0227084 | .0515071 | .0987246 |
| #2 | .0182540 | .0430279 | .0119061 | .0197818 | .0520696 | .0971877 |
| #3 | .0206494 | .0408080 | .0104693 | .0187925 | .0471890 | .0973728 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1013874</b> | <b>.0063666</b> | <b>.0056765</b> | <b>2.072298</b> | <b>.0104897</b> | <b>.0293864</b> |
| Stddev | .0007495        | .0000948        | .0000322        | .011134         | .0002231        | .0000148        |
| %RSD   | .7392120        | 1.488877        | .5679648        | .5372735        | 2.126837        | .0504236        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1022459 | .0064759 | .0057024 | 2.067503 | .0102357 | .0294013 |
| #2 | .1008635 | .0063154 | .0056404 | 2.064366 | .0105795 | .0293717 |
| #3 | .1010529 | .0063083 | .0056867 | 2.085027 | .0106539 | .0293862 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0213064</b> | <b>.0958303</b> | <b>.0206843</b> | <b>2.145324</b> | <b>.0397589</b> | <b>.0103981</b> |
| Stddev | .0001268        | .0032814        | .0000975        | .017050         | .0002330        | .0003648        |
| %RSD   | .5951898        | 3.424124        | .4713122        | .7947305        | .5859937        | 3.507849        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0213873 | .0995787 | .0207947 | 2.162332 | .0397872 | .0108169 |
| #2 | .0213717 | .0934772 | .0206100 | 2.128233 | .0395130 | .0101497 |
| #3 | .0211603 | .0944349 | .0206482 | 2.145407 | .0399764 | .0102279 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.805270</b> | <b>.0383513</b> | <b>.0445707</b> | <b>1.815774</b> | <b>.1035270</b> | <b>.1997375</b> |
| Stddev | .018106         | .0026630        | .0003830        | .008721         | .0002530        | .0001787        |
| %RSD   | 1.002950        | 6.943722        | .8593658        | .4803078        | .2443815        | .0894691        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 1.785884 | .0377675 | .0441287 | 1.824196 | .1034602 | .1996292 |
| #2 | 1.808186 | .0360286 | .0447770 | 1.816346 | .1033141 | .1996395 |
| #3 | 1.821742 | .0412578 | .0448063 | 1.806781 | .1038067 | .1999437 |

Sample Name: CRI01      Acquired: 9/18/2025 11:28:45      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CRI01      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |            |
|--------|----------|----------|----------|----------|----------|------------|
| Elem   | Sn1899   | Ti3361   | Si2881   | P_1774   | S_1820   | Li6707     |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm        |
| Avg    | .0385653 | .0383363 | .3605007 | .0182987 | .0190573 | F .0136143 |
| Stddev | .0001361 | .0012875 | .0130739 | .0004515 | .0028061 | .0007363   |
| %RSD   | .3528749 | 3.358309 | 3.626607 | 2.467480 | 14.72482 | 5.408015   |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0384536 | .0388814 | .3555537 | .0187152 | .0164349 | .0131117 |
| #2 | .0385253 | .0368660 | .3753263 | .0178189 | .0220167 | .0144594 |
| #3 | .0387169 | .0392616 | .3506222 | .0183619 | .0187202 | .0132717 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | .0209551 |
| Stddev | .0000710 |
| %RSD   | .3385733 |

|    |          |
|----|----------|
| #1 | .0208821 |
| #2 | .0210239 |
| #3 | .0209593 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6312.742 | 108474.6 | 10143.90 | 4987.811 | 7779.838 |
| Stddev    | 8.378    | 170.1    | 58.22    | 4.603    | 17.506   |
| %RSD      | .1327133 | .1568553 | .5739716 | .0922778 | .2250180 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6322.365 | 108648.3 | 10077.24 | 4993.124 | 7799.024 |
| #2 | 6308.791 | 108308.3 | 10169.64 | 4985.054 | 7764.733 |
| #3 | 6307.070 | 108467.2 | 10184.81 | 4985.254 | 7775.756 |

Sample Name: ICSA01      Acquired: 9/18/2025 11:33:00      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSA01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0041793</b> | <b>.0065966</b> | <b>.0007703</b> | <b>.0051668</b> | <b>-.003681</b> | <b>284.4133</b> |
| Stddev | .0021944        | .0030526        | .0021838        | .0034883        | .002742         | .4941           |
| %RSD   | 52.50759        | 46.27547        | 283.5128        | 67.51390        | 74.46990        | .1737139        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0054350 | .0030725 | .0025651 | .0086140 | -.006800 | 284.6593 |
| #2 | .0016454 | .0084206 | .0014068 | .0016388 | -.002591 | 284.7361 |
| #3 | .0054574 | .0082967 | -.001661 | .0052476 | -.001653 | 283.8445 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0017795</b> | <b>.0021643</b> | <b>-.000069</b> | <b>268.1435</b> | <b>.0517833</b> | <b>.0018566</b> |
| Stddev | .0005304        | .0000274        | .000047         | .6428           | .0004538        | .0002275        |
| %RSD   | 29.80796        | 1.264013        | 67.62923        | .2397091        | .8764291        | 12.25095        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0023021 | .0021648 | -.000019 | 268.6578 | .0512629 | .0017892 |
| #2 | .0017949 | .0021914 | -.000077 | 268.3499 | .0519901 | .0016704 |
| #3 | .0012416 | .0021367 | -.000110 | 267.4229 | .0520969 | .0021101 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0197285</b> | <b>112.7591</b> | <b>.0084112</b> | <b>285.0391</b> | <b>.0079267</b> | <b>.0018198</b> |
| Stddev | .0010590        | .5080           | .0005870        | .8822           | .0002926        | .0005690        |
| %RSD   | 5.367700        | .4504923        | 6.978252        | .3094908        | 3.691403        | 31.26713        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0202326 | 112.8168 | .0078271 | 285.2140 | .0081773 | .0015192 |
| #2 | .0204412 | 112.2247 | .0084057 | 285.8208 | .0079977 | .0014641 |
| #3 | .0185116 | 113.2358 | .0090009 | 284.0826 | .0076051 | .0024760 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0458826</b> | <b>.0060832</b> | <b>.0038716</b> | <b>.2103916</b> | <b>.0610531</b> | <b>.0020144</b> |
| Stddev | .0103919        | .0003174        | .0002959        | .0212508        | .0020312        | .0003074        |
| %RSD   | 22.64887        | 5.217083        | 7.643768        | 10.10058        | 3.326913        | 15.25755        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0352682 | .0059603 | .0042110 | .2349162 | .0623485 | .0022213 |
| #2 | .0560368 | .0064437 | .0037368 | .1988365 | .0587121 | .0021607 |
| #3 | .0463430 | .0058457 | .0036671 | .1974219 | .0620986 | .0016612 |

Sample Name: ICSA01      Acquired: 9/18/2025 11:33:00      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSA01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                   |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820          | Li6707            |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm               |
| Avg    | <b>-.004211</b> | <b>-.004398</b> | <b>.0382075</b> | <b>.0076197</b> | <b>.0004291</b> | <b>F -.039619</b> |
| Stddev | .000646         | .001540         | .0141739        | .0030467        | .0039613        | .001228           |
| %RSD   | 15.33863        | 35.01427        | 37.09717        | 39.98509        | 923.2045        | 3.099206          |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.004898</b> | <b>-.005204</b> | <b>.0237088</b> | <b>.0048539</b> | <b>-.003217</b> | <b>-.038223</b> |
| #2 | <b>-.004118</b> | <b>-.002622</b> | <b>.0388812</b> | <b>.0071195</b> | <b>.004644</b>  | <b>-.040108</b> |
| #3 | <b>-.003616</b> | <b>-.005367</b> | <b>.0520325</b> | <b>.0108855</b> | <b>-.000139</b> | <b>-.040528</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>.0037840</b> |
| Stddev | .0005471        |
| %RSD   | 14.45886        |

|    |                 |
|----|-----------------|
| #1 | <b>.0041052</b> |
| #2 | <b>.0040944</b> |
| #3 | <b>.0031522</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5882.970</b> | <b>99696.01</b> | <b>10157.77</b> | <b>4645.970</b> | <b>6550.894</b> |
| Stddev    | 9.840           | 383.19          | 36.38           | 16.001          | 3.688           |
| %RSD      | .1672627        | .3843565        | .3581687        | .3444153        | .0562995        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 5892.366 | 99876.95 | 10130.53 | 4629.061 | 6554.989 |
| #2 | 5872.739 | 99955.22 | 10143.69 | 4660.876 | 6547.835 |
| #3 | 5883.807 | 99255.86 | 10199.09 | 4647.973 | 6549.857 |



Sample Name: ICSAB01      Acquired: 9/18/2025 11:38:12      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSAB01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1090577</b> | <b>.1166315</b> | <b>.0491404</b> | <b>.0585625</b> | <b>.6252334</b> | <b>259.5508</b> |
| Stddev | .0021912        | .0084474        | .0009482        | .0074512        | .0036493        | .2829           |
| %RSD   | 2.009195        | 7.242793        | 1.929481        | 12.72347        | .5836708        | .1089870        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1098531 | .1069630 | .0482976 | .0647490 | .6271795 | 259.8775 |
| #2 | .1107401 | .1203486 | .0501670 | .0502909 | .6210235 | 259.3898 |
| #3 | .1065799 | .1225829 | .0489568 | .0606478 | .6274971 | 259.3852 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.5037240</b> | <b>.5141225</b> | <b>1.010694</b> | <b>245.2863</b> | <b>.5668993</b> | <b>.5097973</b> |
| Stddev | .0027776        | .0025042        | .001059         | .3367           | .0043431        | .0013410        |
| %RSD   | .5514068        | .4870733        | .1047800        | .1372613        | .7661106        | .2630369        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .5055905 | .5161326 | 1.009659 | 245.6422 | .5618883 | .5086512 |
| #2 | .5005319 | .5149177 | 1.010648 | 244.9729 | .5695784 | .5094687 |
| #3 | .5050494 | .5113174 | 1.011776 | 245.2439 | .5692311 | .5112721 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.5154439</b> | <b>103.7531</b> | <b>.4968570</b> | <b>260.0572</b> | <b>1.015987</b> | <b>.2185003</b> |
| Stddev | .0003585        | .7846           | .0014832        | .5080           | .001846         | .0007434        |
| %RSD   | .0695430        | .7561972        | .2985229        | .1953454        | .1816974        | .3402396        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .5150304 | 103.2782 | .4961842 | 260.3308 | 1.015029 | .2177347 |
| #2 | .5156671 | 103.3224 | .4958294 | 260.3699 | 1.014817 | .2185469 |
| #3 | .5156342 | 104.6587 | .4985574 | 259.4711 | 1.018115 | .2192194 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.002553</b> | <b>.4907227</b> | <b>1.063718</b> | <b>-.072960</b> | <b>1.013446</b> | <b>1.042009</b> |
| Stddev | .026559         | .0008073        | .003148         | .089488         | .004116         | .003219         |
| %RSD   | 1040.325        | .1645058        | .2959680        | 122.6526        | .4061476        | .3089025        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | -.032916 | .4912401 | 1.063043 | -.123278 | 1.015997 | 1.039195 |
| #2 | .008889  | .4897925 | 1.060962 | .030360  | 1.015644 | 1.041314 |
| #3 | .016368  | .4911356 | 1.067149 | -.125963 | 1.008698 | 1.045519 |

Sample Name: ICSAB01      Acquired: 9/18/2025 11:38:12      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSAB01      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |            |            |            |
|--------|----------|----------|----------|------------|------------|------------|
| Elem   | Sn1899   | Ti3361   | Si2881   | P_1774     | S_1820     | Li6707     |
| Units  | ppm      | ppm      | ppm      | ppm        | ppm        | ppm        |
| Avg    | 1.026843 | .9915662 | 1.038355 | F .0100843 | F .0070469 | F -.039250 |
| Stddev | .003118  | .0038699 | .014778  | .0009815   | .0061462   | .000962    |
| %RSD   | .3036910 | .3902827 | 1.423181 | 9.733338   | 87.21841   | 2.450769   |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 1.026525 | .9917402 | 1.021644 | .0112164 | .0138683 | -.040124 |
| #2 | 1.023896 | .9876123 | 1.049702 | .0095657 | .0053323 | -.039406 |
| #3 | 1.030108 | .9953463 | 1.043717 | .0094708 | .0019401 | -.038219 |

|        |            |
|--------|------------|
| Elem   | Sr4077     |
| Units  | ppm        |
| Avg    | F .0027480 |
| Stddev | .0003287   |
| %RSD   | 11.96166   |

|    |          |
|----|----------|
| #1 | .0031125 |
| #2 | .0026575 |
| #3 | .0024741 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 5663.442 | 96405.74 | 9861.074 | 4501.881 | 6328.938 |
| Stddev    | 3.523    | 263.16   | 47.179   | 32.302   | 1.950    |
| %RSD      | .0622108 | .2729726 | .4784416 | .7175243 | .0308180 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 5666.497 | 96707.55 | 9821.279 | 4527.074 | 6331.163 |
| #2 | 5664.242 | 96285.41 | 9848.751 | 4513.103 | 6327.524 |
| #3 | 5659.588 | 96224.25 | 9913.192 | 4465.464 | 6328.127 |

Sample Name: ICSADLX20      Acquired: 9/18/2025 11:46:03      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSA01DLX20      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000055</b> | <b>.0019048</b> | <b>-.001036</b> | <b>-.000774</b> | <b>-.000718</b> | <b>12.80909</b> | <b>.0009513</b> |
| Stddev | .001537         | .0011870        | .000366         | .002860         | .001287         | .05185          | .0007049        |
| %RSD   | 2809.526        | 62.31541        | 35.33892        | 369.3492        | 179.1154        | .4047667        | 74.10081        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001271</b> | <b>.0018046</b> | <b>-.000717</b> | <b>-.004000</b> | <b>-.001695</b> | <b>12.77221</b> | <b>.0004905</b> |
| #2 | <b>.001672</b>  | <b>.0007711</b> | <b>-.000955</b> | <b>.000230</b>  | <b>.000739</b>  | <b>12.78669</b> | <b>.0006006</b> |
| #3 | <b>-.000566</b> | <b>.0031388</b> | <b>-.001436</b> | <b>.001448</b>  | <b>-.001199</b> | <b>12.86837</b> | <b>.0017628</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0001586</b> | <b>-.000228</b> | <b>12.50430</b> | <b>.0029957</b> | <b>-.000244</b> | <b>.0006857</b> | <b>4.938457</b> |
| Stddev | .0001374        | .000063         | .05653          | .0001412        | .000185         | .0003958        | .041954         |
| %RSD   | 86.64187        | 27.80200        | .4520893        | 4.714249        | 76.05569        | 57.71863        | .8495302        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0000004</b> | <b>-.000182</b> | <b>12.48701</b> | <b>.0029480</b> | <b>-.000124</b> | <b>.0008468</b> | <b>4.892088</b> |
| #2 | <b>.0002266</b> | <b>-.000300</b> | <b>12.45844</b> | <b>.0031546</b> | <b>-.000150</b> | <b>.0009756</b> | <b>4.949496</b> |
| #3 | <b>.0002488</b> | <b>-.000201</b> | <b>12.56746</b> | <b>.0028845</b> | <b>-.000457</b> | <b>.0002348</b> | <b>4.973787</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0000849</b> | <b>13.09906</b> | <b>.0002250</b> | <b>-.000625</b> | <b>-.190035</b> | <b>.0008179</b> | <b>.0001391</b> |
| Stddev | .0008281        | .03397          | .0001520        | .000265         | .021931         | .0031639        | .0001366        |
| %RSD   | 975.0438        | .2592976        | 67.58135        | 42.43019        | 11.54065        | 386.8430        | 98.22791        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0002339</b> | <b>13.08399</b> | <b>.0003161</b> | <b>-.000392</b> | <b>-.214145</b> | <b>-.002604</b> | <b>.0001990</b> |
| #2 | <b>-.000808</b> | <b>13.13795</b> | <b>.0000495</b> | <b>-.000569</b> | <b>-.184690</b> | <b>.001419</b>  | <b>.0002355</b> |
| #3 | <b>.000828</b>  | <b>13.07523</b> | <b>.0003094</b> | <b>-.000913</b> | <b>-.171271</b> | <b>.003638</b>  | <b>-.000017</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.360566</b> | <b>.0005531</b> | <b>-.000271</b> | <b>-.001696</b> | <b>.0006342</b> | <b>.0138426</b> | <b>.0000191</b> |
| Stddev | .005750         | .0004636        | .000425         | .000754         | .0009039        | .0175208        | .0004654        |
| %RSD   | 1.594724        | 83.82651        | 156.6490        | 44.49047        | 142.5300        | 126.5713        | 2438.810        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.367140</b> | <b>.0010465</b> | <b>-.000729</b> | <b>-.002564</b> | <b>-.000312</b> | <b>.0157253</b> | <b>-.000508</b> |
| #2 | <b>-.356473</b> | <b>.0001265</b> | <b>-.000194</b> | <b>-.001318</b> | <b>.000726</b>  | <b>.0303460</b> | <b>.000372</b>  |
| #3 | <b>-.358083</b> | <b>.0004863</b> | <b>.000110</b>  | <b>-.001205</b> | <b>.001489</b>  | <b>-.004543</b> | <b>.000194</b>  |

Sample Name: ICSADLX20      Acquired: 9/18/2025 11:46:03      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSA01DLX20      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>-.001543</b> | <b>-.015273</b> | <b>.0000086</b> |
| Stddev | .003533         | .001653         | .0000377        |
| %RSD   | 229.0189        | 10.82296        | 436.7468        |

|    |                 |                 |                 |
|----|-----------------|-----------------|-----------------|
| #1 | <b>-.004904</b> | <b>-.013966</b> | <b>-.000025</b> |
| #2 | <b>.002141</b>  | <b>-.014722</b> | <b>.000049</b>  |
| #3 | <b>-.001865</b> | <b>-.017131</b> | <b>.000002</b>  |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6242.734</b> | <b>106889.1</b> | <b>10115.62</b> | <b>4896.210</b> | <b>7563.176</b> |
| Stddev    | 8.418           | 668.8           | 41.29           | 41.467          | 2.846           |
| %RSD      | .1348420        | .6256973        | .4082200        | .8469243        | .0376358        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6252.424 | 106500.3 | 10086.51 | 4868.418 | 7566.460 |
| #2 | 6237.225 | 106505.6 | 10097.47 | 4876.338 | 7561.654 |
| #3 | 6238.554 | 107661.4 | 10162.88 | 4943.873 | 7561.415 |

Sample Name: ICSABDLX20      Acquired: 9/18/2025 11:56:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSAB01DLX20      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | As1890   | Tl1908   | Pb2203   | Se1960   | Sb2068   | Al3961   | Ba4934   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0056072 | .0103851 | .0022797 | .0075597 | .0256186 | 11.55022 | .0227624 |
| Stddev | .0005261 | .0014235 | .0011753 | .0018292 | .0013357 | .01800   | .0009707 |
| %RSD   | 9.381927 | 13.70692 | 51.55542 | 24.19698 | 5.213695 | .1558465 | 4.264638 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0051828 | .0087708 | .0036051 | .0072051 | .0243681 | 11.53907 | .0234286 |
| #2 | .0054430 | .0109245 | .0018699 | .0059337 | .0254620 | 11.57098 | .0216486 |
| #3 | .0061958 | .0114601 | .0013642 | .0095403 | .0270257 | 11.54059 | .0232099 |

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | Be2348   | Cd2265   | Ca3736   | Cr2677   | Co2286   | Cu2247   | Fe2404   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0237277 | .0440048 | 11.36514 | .0266721 | .0219903 | .0245812 | 4.496155 |
| Stddev | .0001482 | .0002431 | .03127   | .0001857 | .0002607 | .0000229 | .041087  |
| %RSD   | .6246302 | .5523465 | .2751018 | .6963218 | 1.185336 | .0932481 | .9138302 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0238839 | .0439496 | 11.35907 | .0268841 | .0218674 | .0245861 | 4.449171 |
| #2 | .0237103 | .0437941 | 11.39900 | .0265940 | .0218137 | .0246012 | 4.525351 |
| #3 | .0235890 | .0442707 | 11.33736 | .0265382 | .0222896 | .0245562 | 4.513943 |

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | Mn2576   | Mg2790   | Ni2316   | Ag3280   | Na5895   | V_2924   | Zn2138   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0235675 | 11.89788 | .0449469 | .0087037 | -.182736 | .0226205 | .0485293 |
| Stddev | .0002038 | .04500   | .0001698 | .0003368 | .010992  | .0017067 | .0003356 |
| %RSD   | .8648193 | .3781827 | .3778445 | 3.869721 | 6.015136 | 7.545025 | .6914367 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0238017 | 11.90357 | .0451417 | .0090839 | -.186718 | .0209584 | .0484531 |
| #2 | .0234710 | 11.93976 | .0448302 | .0084427 | -.191182 | .0225344 | .0488964 |
| #3 | .0234300 | 11.85031 | .0448688 | .0085844 | -.170308 | .0243686 | .0482384 |

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | K_7664   | B_2496   | Mo2020   | Sn1899   | Ti3361   | Si2881   | P_1774   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | -.286540 | .0458525 | .0465940 | .0423490 | .0437162 | .0439573 | .0072516 |
| Stddev | .018107  | .0009561 | .0004592 | .0010616 | .0012683 | .0076075 | .0014254 |
| %RSD   | 6.319255 | 2.085185 | .9855786 | 2.506720 | 2.901323 | 17.30652 | 19.65626 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | -.273564 | .0451424 | .0461853 | .0417529 | .0422951 | .0414157 | .0073053 |
| #2 | -.278830 | .0454755 | .0465056 | .0417194 | .0441203 | .0379460 | .0058002 |
| #3 | -.307226 | .0469397 | .0470909 | .0435746 | .0447333 | .0525102 | .0086495 |

Sample Name: ICSABDLX20      Acquired: 9/18/2025 11:56:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: ICSAB01DLX20 Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |
|--------|----------|----------|----------|
| Elem   | S_1820   | Li6707   | Sr4077   |
| Units  | ppm      | ppm      | ppm      |
| Avg    | .0000321 | -.013764 | .0003747 |
| Stddev | .0014067 | .001618  | .0001551 |
| %RSD   | 4378.726 | 11.75205 | 41.38820 |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | -.000753 | -.013105 | .0005538 |
| #2 | .001656  | -.012581 | .0002878 |
| #3 | -.000807 | -.015607 | .0002826 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6457.755 | 111029.7 | 10474.20 | 5091.964 | 7829.737 |
| Stddev    | 33.680   | 378.3    | 43.22    | 18.512   | 32.376   |
| %RSD      | .5215439 | .3407079 | .4126127 | .3635555 | .4134973 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6467.551 | 111318.4 | 10424.71 | 5113.237 | 7831.900 |
| #2 | 6485.451 | 111169.3 | 10504.50 | 5079.512 | 7860.976 |
| #3 | 6420.263 | 110601.5 | 10493.39 | 5083.143 | 7796.333 |

Sample Name: CCV01      Acquired: 9/18/2025 12:01:49      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>5.042515</b> | <b>5.057219</b> | <b>4.981746</b> | <b>5.100341</b> | <b>5.062653</b> | <b>10.10149</b> | <b>9.941593</b> |
| Stddev | .012605         | .090539         | .013624         | .009913         | .022508         | .25298          | .130151         |
| %RSD   | .2499744        | 1.790286        | .2734779        | .1943644        | .4445926        | 2.504368        | 1.309154        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 5.038786 | 5.064588 | 4.974195 | 5.105166 | 5.054333 | 9.92434  | 9.820835 |
| #2 | 5.056564 | 4.963221 | 4.997473 | 5.106918 | 5.088136 | 10.39121 | 10.07945 |
| #3 | 5.032195 | 5.143848 | 4.973568 | 5.088939 | 5.045489 | 9.98892  | 9.92450  |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2498047</b> | <b>2.513829</b> | <b>25.10062</b> | <b>1.023388</b> | <b>2.501513</b> | <b>1.265965</b> | <b>4.992597</b> |
| Stddev | .0032442        | .007750         | .63370          | .017570         | .007165         | .005123         | .036510         |
| %RSD   | 1.298677        | .3083127        | 2.524656        | 1.716832        | .2864072        | .4046386        | .7312787        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .2473099 | 2.509940 | 24.62102 | 1.034181 | 2.497489 | 1.263283 | 4.973618 |
| #2 | .2534722 | 2.522754 | 25.81903 | 1.003114 | 2.509785 | 1.271872 | 4.969486 |
| #3 | .2486322 | 2.508792 | 24.86181 | 1.032869 | 2.497265 | 1.262741 | 5.034687 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.464297</b> | <b>25.13551</b> | <b>2.506781</b> | <b>1.250635</b> | <b>24.37918</b> | <b>2.512734</b> | <b>2.540313</b> |
| Stddev | .060807         | .65225          | .008048         | .024976         | .27552          | .066020         | .056284         |
| %RSD   | 2.467521        | 2.594931        | .3210533        | 1.997094        | 1.130161        | 2.627408        | 2.215648        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 2.419399 | 24.69677 | 2.504646 | 1.271248 | 24.55253 | 2.470263 | 2.586338 |
| #2 | 2.533497 | 25.88503 | 2.515681 | 1.222860 | 24.06147 | 2.588795 | 2.477561 |
| #3 | 2.439996 | 24.82473 | 2.500015 | 1.257797 | 24.52354 | 2.479145 | 2.557040 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>24.80340</b> | <b>4.917178</b> | <b>5.102595</b> | <b>5.041197</b> | <b>4.972717</b> | <b>5.015770</b> | <b>4.991855</b> |
| Stddev | .30813          | .056778         | .018839         | .006963         | .116745         | .023053         | .018134         |
| %RSD   | 1.242290        | 1.154687        | .3692078        | .1381233        | 2.347717        | .4596114        | .3632749        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 24.89759 | 4.880224 | 5.095769 | 5.040219 | 4.887066 | 5.003184 | 4.990637 |
| #2 | 24.45917 | 4.982555 | 5.123895 | 5.048597 | 5.105694 | 5.001749 | 4.974361 |
| #3 | 25.05345 | 4.888756 | 5.088120 | 5.034775 | 4.925390 | 5.042376 | 5.010568 |

Sample Name: CCV01      Acquired: 9/18/2025 12:01:49      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>4.963301</b> | <b>4.902748</b> | <b>4.983105</b> |
| Stddev | .026213         | .105282         | .025368         |
| %RSD   | .5281280        | 2.147409        | .5090887        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 4.969952 | 4.822033 | 4.969205 |
| #2 | 4.934404 | 5.021834 | 5.012385 |
| #3 | 4.985548 | 4.864377 | 4.967724 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6126.578</b> | <b>104992.3</b> | <b>10083.75</b> | <b>4792.509</b> | <b>7069.635</b> |
| Stddev    | 28.111          | 1549.7          | 169.53          | 78.810          | 21.972          |
| %RSD      | .4588376        | 1.476030        | 1.681238        | 1.644444        | .3107985        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6132.255 | 104115.7 | 10216.20 | 4745.304 | 7075.007 |
| #2 | 6096.061 | 106781.6 | 9892.69  | 4883.490 | 7045.474 |
| #3 | 6151.417 | 104079.6 | 10142.37 | 4748.734 | 7088.423 |



Sample Name: CCB01      Acquired: 9/18/2025 12:08:14      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB01      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.002075</b> | <b>.0006454</b> | <b>.0006388</b> | <b>-.000440</b> | <b>.0002368</b> | <b>.0076148</b> |
| Stddev | .001214         | .0022597        | .0003281        | .004898         | .0007497        | .0033927        |
| %RSD   | 58.48832        | 350.1162        | 51.37030        | 1113.835        | 316.5599        | 44.55404        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000777</b> | <b>-.000457</b> | <b>.0008194</b> | <b>.000749</b>  | <b>.0001878</b> | <b>.0103836</b> |
| #2 | <b>-.003181</b> | <b>-.000852</b> | <b>.0008370</b> | <b>.003754</b>  | <b>-.000487</b> | <b>.0038302</b> |
| #3 | <b>-.002267</b> | <b>.003245</b>  | <b>.0002600</b> | <b>-.005823</b> | <b>.001010</b>  | <b>.0086306</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000411</b> | <b>.0000324</b> | <b>-.000194</b> | <b>.0112518</b> | <b>.0001732</b> | <b>-.000281</b> |
| Stddev | .001379         | .0001198        | .000057         | .0064468        | .0003733        | .000193         |
| %RSD   | 335.1945        | 369.9278        | 29.59843        | 57.29606        | 215.5095        | 68.77818        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001785</b> | <b>-.000069</b> | <b>-.000137</b> | <b>.0175994</b> | <b>-.000249</b> | <b>-.000063</b> |
| #2 | <b>.000973</b>  | <b>.000001</b>  | <b>-.000252</b> | <b>.0047101</b> | <b>.000309</b>  | <b>-.000430</b> |
| #3 | <b>-.000423</b> | <b>.000165</b>  | <b>-.000193</b> | <b>.0114458</b> | <b>.000460</b>  | <b>-.000349</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000048</b> | <b>.0004104</b> | <b>.0001867</b> | <b>.0246063</b> | <b>-.000281</b> | <b>.0004328</b> |
| Stddev | .000245         | .0075856        | .0001056        | .0223711        | .000266         | .0005744        |
| %RSD   | 515.8947        | 1848.311        | 56.53863        | 90.91608        | 94.72649        | 132.7326        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000330</b> | <b>-.006776</b> | <b>.0002763</b> | <b>.0081473</b> | <b>-.000480</b> | <b>-.000179</b> |
| #2 | <b>.000112</b>  | <b>-.000333</b> | <b>.0000703</b> | <b>.0155938</b> | <b>.000021</b>  | <b>.000960</b>  |
| #3 | <b>.000076</b>  | <b>.008340</b>  | <b>.0002135</b> | <b>.0500780</b> | <b>-.000385</b> | <b>.000518</b>  |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.173227</b> | <b>.0007926</b> | <b>.0070128</b> | <b>-.335840</b> | <b>.0008259</b> | <b>-.000302</b> |
| Stddev | .012213         | .0010167        | .0002199        | .031558         | .0005186        | .000114         |
| %RSD   | 7.050214        | 128.2707        | 3.135729        | 9.396682        | 62.78788        | 37.69648        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.170600</b> | <b>-.000269</b> | <b>.0070392</b> | <b>-.300422</b> | <b>.0011681</b> | <b>-.000429</b> |
| #2 | <b>-.186539</b> | <b>.000889</b>  | <b>.0072183</b> | <b>-.360968</b> | <b>.0010804</b> | <b>-.000210</b> |
| #3 | <b>-.162541</b> | <b>.001758</b>  | <b>.0067809</b> | <b>-.346131</b> | <b>.0002293</b> | <b>-.000267</b> |

Sample Name: CCB01      Acquired: 9/18/2025 12:08:14      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB01      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |            |
|--------|----------|----------|----------|----------|----------|------------|
| Elem   | Sn1899   | Ti3361   | Si2881   | P_1774   | S_1820   | Li6707     |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm        |
| Avg    | .0000199 | .0003744 | .0080863 | -.001701 | .0009870 | F -.010858 |
| Stddev | .0003470 | .0015101 | .0142778 | .001672  | .0014935 | .002168    |
| %RSD   | 1740.735 | 403.3278 | 176.5680 | 98.34162 | 151.3146 | 19.96745   |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0002836 | -.000686 | .0208199 | -.003535 | -.000713 | -.008868 |
| #2 | .0001494 | -.000294 | .0107885 | -.000261 | .002090  | -.010537 |
| #3 | -.000373 | .002103  | -.007350 | -.001306 | .001583  | -.013168 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | -.000347 |
| Stddev | .000030  |
| %RSD   | 8.664476 |

|    |          |
|----|----------|
| #1 | -.000345 |
| #2 | -.000318 |
| #3 | -.000378 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6416.493 | 109796.5 | 10262.20 | 5098.761 | 7945.871 |
| Stddev    | 11.762   | 170.5    | 43.39    | 11.973   | 8.786    |
| %RSD      | .1833099 | .1552734 | .4228310 | .2348276 | .1105696 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6414.025 | 109901.3 | 10279.99 | 5111.694 | 7950.526 |
| #2 | 6406.161 | 109888.5 | 10293.88 | 5096.528 | 7935.737 |
| #3 | 6429.293 | 109599.8 | 10212.74 | 5088.062 | 7951.349 |

Sample Name: PB169723BL      Acquired: 9/18/2025 12:12:48      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.001072</b> | <b>-.001504</b> | <b>.0002293</b> | <b>-.000190</b> | <b>-.000733</b> | <b>-.001415</b> |
| Stddev | .002028         | .001726         | .0010520        | .002091         | .001314         | .006242         |
| %RSD   | 189.2209        | 114.7476        | 458.7208        | 1098.553        | 179.1616        | 441.1012        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001324</b> | <b>.000480</b>  | <b>-.000578</b> | <b>-.001233</b> | <b>.000600</b>  | <b>-.006452</b> |
| #2 | <b>.001070</b>  | <b>-.002332</b> | <b>.001419</b>  | <b>.002217</b>  | <b>-.000773</b> | <b>.005568</b>  |
| #3 | <b>-.002963</b> | <b>-.002661</b> | <b>-.000153</b> | <b>-.001555</b> | <b>-.002027</b> | <b>-.003360</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000339</b> | <b>-.000032</b> | <b>-.000159</b> | <b>-.002742</b> | <b>-.000001</b> | <b>-.000343</b> |
| Stddev | .001401         | .000049         | .000087         | .011455         | .000221         | .000209         |
| %RSD   | 413.0034        | 150.7069        | 55.13109        | 417.7659        | 18855.82        | 60.87470        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.001090</b>  | <b>-.000052</b> | <b>-.000224</b> | <b>.000510</b>  | <b>-.000189</b> | <b>-.000571</b> |
| #2 | <b>-.000397</b> | <b>.000023</b>  | <b>-.000192</b> | <b>-.015471</b> | <b>-.000056</b> | <b>-.000160</b> |
| #3 | <b>-.001711</b> | <b>-.000069</b> | <b>-.000059</b> | <b>.006736</b>  | <b>.000242</b>  | <b>-.000300</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000183</b> | <b>.0079895</b> | <b>-.000215</b> | <b>.0003276</b> | <b>-.000279</b> | <b>-.000118</b> |
| Stddev | .000352         | .0025475        | .000310         | .0285003        | .000084         | .000356         |
| %RSD   | 192.3477        | 31.88586        | 143.7355        | 8700.931        | 30.00770        | 301.5805        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000483</b> | <b>.0107204</b> | <b>-.000573</b> | <b>-.005926</b> | <b>-.000203</b> | <b>-.000497</b> |
| #2 | <b>-.000272</b> | <b>.0075710</b> | <b>-.000023</b> | <b>.031435</b>  | <b>-.000369</b> | <b>.000210</b>  |
| #3 | <b>.000205</b>  | <b>.0056772</b> | <b>-.000050</b> | <b>-.024527</b> | <b>-.000266</b> | <b>-.000068</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.201989</b> | <b>.0033157</b> | <b>.0001990</b> | <b>-.416231</b> | <b>.0001623</b> | <b>-.000148</b> |
| Stddev | .017802         | .0006119        | .0001095        | .044518         | .0009429        | .000295         |
| %RSD   | 8.813118        | 18.45313        | 55.00636        | 10.69563        | 580.9180        | 199.7112        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.221777</b> | <b>.0030774</b> | <b>.0001041</b> | <b>-.367036</b> | <b>-.000924</b> | <b>-.000145</b> |
| #2 | <b>-.196915</b> | <b>.0040108</b> | <b>.0001742</b> | <b>-.453742</b> | <b>.000766</b>  | <b>-.000444</b> |
| #3 | <b>-.187276</b> | <b>.0028588</b> | <b>.0003188</b> | <b>-.427914</b> | <b>.000645</b>  | <b>.000146</b>  |

Sample Name: PB169723BL      Acquired: 9/18/2025 12:12:48      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                   |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820          | Li6707            |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm               |
| Avg    | <b>-.001680</b> | <b>.0008118</b> | <b>.0056607</b> | <b>-.000250</b> | <b>-.003499</b> | <b>F -.011673</b> |
| Stddev | .000237         | .0020465        | .0093954        | .000695         | .002735         | .001835           |
| %RSD   | 14.07406        | 252.1071        | 165.9752        | 278.3532        | 78.16852        | 15.71928          |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001621</b> | <b>-.001551</b> | <b>.0056887</b> | <b>.000506</b>  | <b>-.000470</b> | <b>-.012627</b> |
| #2 | <b>-.001941</b> | <b>.002030</b>  | <b>-.003749</b> | <b>-.000394</b> | <b>-.005787</b> | <b>-.012835</b> |
| #3 | <b>-.001479</b> | <b>.001956</b>  | <b>.015042</b>  | <b>-.000861</b> | <b>-.004241</b> | <b>-.009558</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000260</b> |
| Stddev | .000046         |
| %RSD   | 17.62956        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000297</b> |
| #2 | <b>-.000209</b> |
| #3 | <b>-.000275</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6324.116</b> | <b>108582.8</b> | <b>10002.33</b> | <b>5013.501</b> | <b>7901.185</b> |
| Stddev    | 13.848          | 188.3           | 32.05           | 14.188          | 19.952          |
| %RSD      | .2189720        | .1733835        | .3204599        | .2829937        | .2525144        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6326.708</b> | <b>108366.0</b> | <b>9965.33</b>  | <b>4997.835</b> | <b>7910.560</b> |
| #2 | <b>6309.155</b> | <b>108678.1</b> | <b>10021.58</b> | <b>5025.485</b> | <b>7878.273</b> |
| #3 | <b>6336.485</b> | <b>108704.4</b> | <b>10020.08</b> | <b>5017.184</b> | <b>7914.723</b> |

Sample Name: PB169723BS      Acquired: 9/18/2025 12:17:08      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7878853</b> | <b>1.930913</b> | <b>.9680864</b> | <b>2.005742</b> | <b>.7915364</b> | <b>2.014421</b> |
| Stddev | .0008885        | .021417         | .0016006        | .003484         | .0026258        | .003894         |
| %RSD   | .1127709        | 1.109190        | .1653398        | .1736825        | .3317304        | .1932947        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7873528 | 1.947963 | .9676280 | 2.009401 | .7933790 | 2.018894 |
| #2 | .7873921 | 1.906874 | .9698663 | 2.002465 | .7927004 | 2.011791 |
| #3 | .7889110 | 1.937902 | .9667650 | 2.005360 | .7885299 | 2.012577 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1989767</b> | <b>.2079586</b> | <b>.1949915</b> | <b>1.012143</b> | <b>.4196853</b> | <b>.1963965</b> |
| Stddev | .0010447        | .0016649        | .0001151        | .010364         | .0011342        | .0003745        |
| %RSD   | .5250159        | .8005758        | .0590442        | 1.023955        | .2702602        | .1906902        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1994608 | .2088555 | .1950176 | 1.024092 | .4186031 | .1968105 |
| #2 | .1977778 | .2060376 | .1948655 | 1.005598 | .4195876 | .1962975 |
| #3 | .1996915 | .2089827 | .1950913 | 1.006739 | .4208652 | .1960814 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.3115805</b> | <b>3.056964</b> | <b>.2030026</b> | <b>1.998670</b> | <b>.4951642</b> | <b>.0782169</b> |
| Stddev | .0004258        | .029857         | .0008329        | .028586         | .0005231        | .0001888        |
| %RSD   | .1366570        | .9767028        | .4103074        | 1.430249        | .1056506        | .2413447        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .3120263 | 3.036692 | .2039470 | 1.979250 | .4955961 | .0780134 |
| #2 | .3111780 | 3.091251 | .2023727 | 1.985265 | .4945825 | .0782512 |
| #3 | .3115372 | 3.042950 | .2026882 | 2.031495 | .4953141 | .0783862 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.773088</b> | <b>.3023176</b> | <b>.2106601</b> | <b>9.678504</b> | <b>.3026566</b> | <b>.4055394</b> |
| Stddev | .026775         | .0006114        | .0001206        | .061717         | .0027308        | .0007998        |
| %RSD   | .9655426        | .2022236        | .0572385        | .6376720        | .9022796        | .1972096        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 2.743699 | .3021510 | .2107729 | 9.652155 | .3055120 | .4059435 |
| #2 | 2.796097 | .3029949 | .2105330 | 9.749022 | .3000703 | .4046182 |
| #3 | 2.779469 | .3018067 | .2106746 | 9.634335 | .3023875 | .4060565 |

Sample Name: PB169723BS      Acquired: 9/18/2025 12:17:08      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |            |          |
|--------|----------|----------|----------|----------|------------|----------|
| Elem   | Sn1899   | Ti3361   | Si2881   | P_1774   | S_1820     | Li6707   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm        | ppm      |
| Avg    | .6790967 | .1926940 | .8996895 | 5.538125 | F -.003228 | .2009032 |
| Stddev | .0014932 | .0025890 | .0128845 | .029382  | .001525    | .0018481 |
| %RSD   | .2198768 | 1.343584 | 1.432107 | .5305484 | 47.24607   | .9199015 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6795976 | .1916404 | .8848169 | 5.562708 | -.003847 | .2001942 |
| #2 | .6774175 | .1907978 | .9074672 | 5.505583 | -.004347 | .2030009 |
| #3 | .6802751 | .1956436 | .9067843 | 5.546083 | -.001491 | .1995147 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | .1970087 |
| Stddev | .0008117 |
| %RSD   | .4120121 |

|    |          |
|----|----------|
| #1 | .1979298 |
| #2 | .1963982 |
| #3 | .1966981 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6413.132 | 106275.2 | 10209.67 | 5006.088 | 7776.570 |
| Stddev    | 10.282   | 325.4    | 67.36    | 6.753    | 9.702    |
| %RSD      | .1603235 | .3061593 | .6597475 | .1348881 | .1247544 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6404.969 | 106636.9 | 10168.01 | 5009.999 | 7765.746 |
| #2 | 6424.679 | 106006.3 | 10287.38 | 4998.291 | 7784.481 |
| #3 | 6409.747 | 106182.4 | 10173.62 | 5009.974 | 7779.485 |

Sample Name: Q3115-01      Acquired: 9/18/2025 12:21:10      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0540563</b> | <b>-.008525</b> | <b>.1592002</b> | <b>.0011009</b> | <b>-.009878</b> | <b>70.52990</b> | <b>.2856350</b> |
| Stddev | .0020119        | .003048         | .0003445        | .0063155        | .001684         | .13695          | .0015971        |
| %RSD   | 3.721855        | 35.75649        | .2163613        | 573.6850        | 17.04356        | .1941723        | .5591261        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0529079 | -.008760 | .1590193 | .0036690 | -.008631 | 70.63313 | .2869606 |
| #2 | .0528816 | -.005366 | .1589838 | -.006094 | -.011793 | 70.58203 | .2860824 |
| #3 | .0563794 | -.011450 | .1595974 | .005728  | -.009209 | 70.37454 | .2838620 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0068527</b> | <b>-.000624</b> | <b>131.6153</b> | <b>.1437879</b> | <b>.0622372</b> | <b>.1832601</b> | <b>153.6481</b> |
| Stddev | .0000857        | .000043         | .5256           | .0006994        | .0003126        | .0006812        | .3963           |
| %RSD   | 1.251054        | 6.859544        | .3993624        | .4864128        | .5022479        | .3717126        | .2579015        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0068168 | -.000579 | 131.9317 | .1440254 | .0621270 | .1828216 | 153.2313 |
| #2 | .0067908 | -.000628 | 131.9057 | .1430007 | .0625900 | .1829138 | 154.0200 |
| #3 | .0069506 | -.000665 | 131.0086 | .1443376 | .0619947 | .1840449 | 153.6929 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.499519</b> | <b>43.41835</b> | <b>.1118551</b> | <b>.0044569</b> | <b>3.446498</b> | <b>.2141505</b> | <b>.6226837</b> |
| Stddev | .007942         | .19027          | .0005924        | .0006565        | .024517         | .0025059        | .0018506        |
| %RSD   | .5296134        | .4382288        | .5296255        | 14.72890        | .7113657        | 1.170167        | .2971929        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 1.506923 | 43.40214 | .1122709 | .0037798 | 3.444773 | .2136833 | .6229737 |
| #2 | 1.500502 | 43.61621 | .1111768 | .0045005 | 3.422889 | .2168571 | .6207052 |
| #3 | 1.491131 | 43.23670 | .1121176 | .0050905 | 3.471832 | .2119110 | .6243721 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>6.855873</b> | <b>.1620766</b> | <b>.0029781</b> | <b>.0060880</b> | <b>1.397580</b> | <b>2.764647</b> | <b>2.283231</b> |
| Stddev | .030524         | .0018130        | .0003805        | .0004965        | .005149         | .026708         | .004319         |
| %RSD   | .4452189        | 1.118581        | 12.77666        | 8.155791        | .3684554        | .9660525        | .1891723        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 6.822186 | .1600346 | .0027258 | .0061480 | 1.401380 | 2.734693 | 2.285583 |
| #2 | 6.881692 | .1634968 | .0027927 | .0065518 | 1.399640 | 2.785979 | 2.278246 |
| #3 | 6.863742 | .1626986 | .0034157 | .0055642 | 1.391719 | 2.773269 | 2.285863 |

Sample Name: Q3115-01      Acquired: 9/18/2025 12:21:10      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>1.867321</b> | <b>.0749663</b> | <b>.1918909</b> |
| Stddev | .007582         | .0029294        | .0020490        |
| %RSD   | .4060318        | 3.907640        | 1.067788        |

|    |                 |                 |                 |
|----|-----------------|-----------------|-----------------|
| #1 | <b>1.863526</b> | <b>.0723532</b> | <b>.1941094</b> |
| #2 | <b>1.876051</b> | <b>.0744128</b> | <b>.1914935</b> |
| #3 | <b>1.862386</b> | <b>.0781330</b> | <b>.1900697</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6287.954</b> | <b>107654.2</b> | <b>10653.23</b> | <b>4974.063</b> | <b>6930.424</b> |
| Stddev    | 1.399           | 417.6           | 38.98           | 21.814          | 4.808           |
| %RSD      | .0222431        | .3879452        | .3659191        | .4385570        | .0693690        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6289.567</b> | <b>108107.9</b> | <b>10624.20</b> | <b>4998.426</b> | <b>6924.875</b> |
| #2 | <b>6287.080</b> | <b>107285.7</b> | <b>10637.96</b> | <b>4967.423</b> | <b>6933.055</b> |
| #3 | <b>6287.215</b> | <b>107569.1</b> | <b>10697.54</b> | <b>4956.340</b> | <b>6933.342</b> |



Sample Name: Q3117-01      Acquired: 9/18/2025 12:25:14      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0606742</b> | <b>-.017063</b> | <b>2.690676</b> | <b>-.000702</b> | <b>-.017742</b> | <b>133.8007</b> |
| Stddev | .0027349        | .001472         | .009119         | .001742         | .003692         | .0785           |
| %RSD   | 4.507501        | 8.628187        | .3388950        | 248.1357        | 20.81055        | .0586984        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0578440 | -.017054 | 2.700688 | -.002327 | -.014445 | 133.8208 |
| #2 | .0633026 | -.018540 | 2.688493 | -.000916 | -.021731 | 133.7140 |
| #3 | .0608758 | -.015596 | 2.682847 | .001137  | -.017048 | 133.8672 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.139408</b> | <b>.0139716</b> | <b>.0167205</b> | <b>329.2106</b> | <b>.3481944</b> | <b>.1919500</b> |
| Stddev | .000219         | .0000816        | .0002719        | .8221           | .0008156        | .0002022        |
| %RSD   | .0192325        | .5837711        | 1.625872        | .2497132        | .2342417        | .1053335        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 1.139409 | .0140141 | .0169079 | 329.7844 | .3482678 | .1921814 |
| #2 | 1.139188 | .0138776 | .0164087 | 328.2688 | .3489708 | .1918072 |
| #3 | 1.139626 | .0140232 | .0168450 | 329.5786 | .3473445 | .1918615 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.311297</b> | <b>350.8547</b> | <b>4.657155</b> | <b>93.20072</b> | <b>.5507574</b> | <b>.0151489</b> |
| Stddev | .003512         | 1.7931          | .009681         | .31329          | .0004949        | .0006461        |
| %RSD   | .2678632        | .5110733        | .2078784        | .3361480        | .0898616        | 4.264821        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 1.314595 | 349.1975 | 4.663240 | 93.41196 | .5513282 | .0147741 |
| #2 | 1.307603 | 352.7583 | 4.645992 | 92.84077 | .5504969 | .0158949 |
| #3 | 1.311691 | 350.6082 | 4.662235 | 93.34944 | .5504472 | .0147777 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>11.33161</b> | <b>.8052599</b> | <b>3.013623</b> | <b>24.48997</b> | <b>.5391421</b> | <b>.0295886</b> |
| Stddev | .06553          | .0002256        | .002736         | .14635          | .0091088        | .0001951        |
| %RSD   | .5782861        | .0280125        | .0907830        | .5975755        | 1.689504        | .6593377        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 11.28511 | .8053825 | 3.010473 | 24.34994 | .5307678 | .0293877 |
| #2 | 11.40655 | .8049996 | 3.014985 | 24.64191 | .5488405 | .0296006 |
| #3 | 11.30316 | .8053976 | 3.015411 | 24.47807 | .5378179 | .0297774 |

Sample Name: Q3117-01      Acquired: 9/18/2025 12:25:14      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |            |            |          |            |          |
|--------|----------|------------|------------|----------|------------|----------|
| Elem   | Sn1899   | Ti3361     | Si2881     | P_1774   | S_1820     | Li6707   |
| Units  | ppm      | ppm        | ppm        | ppm      | ppm        | ppm      |
| Avg    | .1578677 | F 11.07666 | F 13.29346 | 9.974080 | F 17.33358 | .1241277 |
| Stddev | .0016196 | .00630     | .09038     | .079928  | .14248     | .0011949 |
| %RSD   | 1.025920 | .0568953   | .6799049   | .8013609 | .8220135   | .9626183 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1560178 | 11.07068 | 13.26966 | 10.01587 | 17.40333 | .1249441 |
| #2 | .1585552 | 11.07606 | 13.39337 | 10.02445 | 17.42775 | .1246829 |
| #3 | .1590302 | 11.08324 | 13.21736 | 9.88192  | 17.16966 | .1227563 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | .9146922 |
| Stddev | .0019064 |
| %RSD   | .2084228 |

|    |          |
|----|----------|
| #1 | .9152584 |
| #2 | .9125669 |
| #3 | .9162514 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 7037.279 | 119734.3 | 12496.43 | 5546.032 | 6501.161 |
| Stddev    | 14.101   | 285.3    | 55.52    | 29.591   | 13.985   |
| %RSD      | .2003807 | .2383014 | .4442584 | .5335610 | .2151108 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 7024.738 | 119998.2 | 12451.71 | 5580.165 | 6491.044 |
| #2 | 7034.558 | 119431.6 | 12558.57 | 5527.596 | 6495.321 |
| #3 | 7052.543 | 119773.2 | 12479.02 | 5530.336 | 6517.120 |

Sample Name: Q3118-01      Acquired: 9/18/2025 12:29:15      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0537341</b> | <b>-.026907</b> | <b>.2242463</b> | <b>.0076732</b> | <b>-.031573</b> | <b>196.8587</b> |
| Stddev | .0032436        | .002427         | .0023185        | .0016994        | .003224         | 4.6471          |
| %RSD   | 6.036370        | 9.019566        | 1.033927        | 22.14693        | 10.21247        | 2.360634        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0529664 | -.026219 | .2267556 | .0072848 | -.031613 | 191.4928 |
| #2 | .0509432 | -.029604 | .2238001 | .0062017 | -.034777 | 199.5106 |
| #3 | .0572927 | -.024899 | .2221833 | .0095332 | -.028329 | 199.5728 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7493803</b> | <b>.0152575</b> | <b>.0055614</b> | <b>59.45156</b> | <b>.5444493</b> | <b>.2899424</b> |
| Stddev | .0212590        | .0002304        | .0003509        | 1.42221         | .0038878        | .0010681        |
| %RSD   | 2.836872        | 1.509834        | 6.309528        | 2.392218        | .7140798        | .3683921        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7248579 | .0150354 | .0058912 | 57.80985 | .5488678 | .2911267 |
| #2 | .7626066 | .0154953 | .0056003 | 60.30801 | .5429276 | .2890520 |
| #3 | .7606766 | .0152416 | .0051926 | 60.23683 | .5415526 | .2896484 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7177020</b> | <b>456.1347</b> | <b>7.442932</b> | <b>66.84218</b> | <b>.4058503</b> | <b>.0097066</b> |
| Stddev | .0047048        | 2.1395          | .202628         | 1.67234         | .0004227        | .0021291        |
| %RSD   | .6555321        | .4690448        | 2.722421        | 2.501919        | .1041411        | 21.93494        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7206199 | 455.1956 | 7.209214 | 64.91128 | .4055986 | .0075210 |
| #2 | .7202115 | 454.6255 | 7.569288 | 67.78677 | .4063382 | .0098244 |
| #3 | .7122745 | 458.5832 | 7.550293 | 67.82848 | .4056140 | .0117743 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>20.27887</b> | <b>.9410164</b> | <b>.6370313</b> | <b>14.78641</b> | <b>.3070280</b> | <b>.0117442</b> |
| Stddev | .07803          | .0225194        | .0058427        | .11114          | .0319060        | .0001306        |
| %RSD   | .3847959        | 2.393096        | .9171698        | .7516080        | 10.39190        | 1.111851        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 20.22366 | .9153724 | .6437671 | 14.75099 | .3375085 | .0118335 |
| #2 | 20.24482 | .9575682 | .6339939 | 14.69730 | .2738657 | .0115943 |
| #3 | 20.36815 | .9501087 | .6333330 | 14.91094 | .3097099 | .0118047 |

Sample Name: Q3118-01      Acquired: 9/18/2025 12:29:15      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |            |          |          |          |          |
|--------|----------|------------|----------|----------|----------|----------|
| Elem   | Sn1899   | Ti3361     | Si2881   | P_1774   | S_1820   | Li6707   |
| Units  | ppm      | ppm        | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0094938 | F 14.59273 | 3.096914 | 8.436817 | 8.085527 | .1848571 |
| Stddev | .0020245 | .37980     | .028281  | .017635  | .053569  | .0037246 |
| %RSD   | 21.32454 | 2.602665   | .9132038 | .2090300 | .6625345 | 2.014881 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0092239 | 14.15426 | 3.084653 | 8.448471 | 8.121868 | .1806222 |
| #2 | .0076178 | 14.81984 | 3.076832 | 8.445453 | 8.110705 | .1876244 |
| #3 | .0116397 | 14.80408 | 3.129256 | 8.416528 | 8.024007 | .1863247 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | -.237521 |
| Stddev | .005596  |
| %RSD   | 2.355951 |

|    |          |
|----|----------|
| #1 | -.243507 |
| #2 | -.232421 |
| #3 | -.236634 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 7518.630 | 127894.2 | 13358.20 | 5878.212 | 6553.314 |
| Stddev    | 12.269   | 654.3    | 304.14   | 42.670   | 11.137   |
| %RSD      | .1631849 | .5116109 | 2.276824 | .7258990 | .1699407 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 7516.816 | 127138.8 | 13694.85 | 5829.638 | 6551.003 |
| #2 | 7507.368 | 128287.3 | 13103.27 | 5909.651 | 6543.515 |
| #3 | 7531.705 | 128256.3 | 13276.47 | 5895.347 | 6565.425 |

Sample Name: Q3118-01DUP      Acquired: 9/18/2025 12:33:17      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | As1890   | Tl1908   | Pb2203   | Se1960   | Sb2068   | Al3961   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0512717 | -.021121 | .1934907 | .0072393 | -.031011 | 177.1559 |
| Stddev | .0032304 | .005289  | .0012888 | .0041747 | .001544  | .3746    |
| %RSD   | 6.300600 | 25.04096 | .6660519 | 57.66687 | 4.980026 | .2114794 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0547803 | -.026879 | .1940178 | .0106386 | -.029238 | 177.2684 |
| #2 | .0506139 | -.020004 | .1944324 | .0084997 | -.031736 | 176.7379 |
| #3 | .0484207 | -.016479 | .1920220 | .0025797 | -.032059 | 177.4614 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Ba4934   | Be2348   | Cd2265   | Ca3736   | Cr2677   | Co2286   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .7025451 | .0132871 | .0028737 | 73.72652 | .3179891 | .2435073 |
| Stddev | .0027830 | .0002524 | .0003037 | .26460   | .0001216 | .0008839 |
| %RSD   | .3961338 | 1.899306 | 10.56710 | .3588985 | .0382382 | .3629744 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7056278 | .0130005 | .0025231 | 73.84952 | .3180998 | .2425111 |
| #2 | .7002178 | .0134761 | .0030473 | 73.42281 | .3180087 | .2441975 |
| #3 | .7017897 | .0133847 | .0030508 | 73.90724 | .3178589 | .2438133 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Cu2247   | Fe2404   | Mn2576   | Mg2790   | Ni2316   | Ag3280   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .5194918 | 412.2955 | 8.733359 | 66.46000 | .3217135 | .0099816 |
| Stddev | .0029017 | 2.9653   | .057291  | .17548   | .0008736 | .0018589 |
| %RSD   | .5585613 | .7192102 | .6560036 | .2640381 | .2715445 | 18.62290 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .5167696 | 415.6607 | 8.778073 | 66.41964 | .3207231 | .0121148 |
| #2 | .5225447 | 410.0657 | 8.668779 | 66.30822 | .3223743 | .0091212 |
| #3 | .5191610 | 411.1602 | 8.753224 | 66.65215 | .3220432 | .0087088 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Na5895   | V_2924   | Zn2138   | K_7664   | B_2496   | Mo2020   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | 18.66086 | .9385532 | .6059321 | 12.80056 | .2792589 | .0071886 |
| Stddev | .17616   | .0039839 | .0006305 | .09558   | .0087651 | .0002980 |
| %RSD   | .9439899 | .4244768 | .1040525 | .7466615 | 3.138691 | 4.145818 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 18.86427 | .9380925 | .6052123 | 12.90949 | .2888579 | .0074008 |
| #2 | 18.55844 | .9348197 | .6061973 | 12.76142 | .2772380 | .0068478 |
| #3 | 18.55988 | .9427475 | .6063867 | 12.73076 | .2716808 | .0073170 |

Sample Name: Q3118-01DUP      Acquired: 9/18/2025 12:33:17      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |            |          |          |          |          |
|--------|----------|------------|----------|----------|----------|----------|
| Elem   | Sn1899   | Ti3361     | Si2881   | P_1774   | S_1820   | Li6707   |
| Units  | ppm      | ppm        | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0095827 | F 11.00054 | 3.021213 | 7.047979 | 3.534655 | .1860468 |
| Stddev | .0011920 | .04597     | .020926  | .003833  | .017165  | .0020923 |
| %RSD   | 12.43870 | .4178659   | .6926444 | .0543899 | .4856252 | 1.124604 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0108837 | 11.03308 | 3.045360 | 7.050994 | 3.539381 | .1880818 |
| #2 | .0085431 | 10.94795 | 3.008373 | 7.049279 | 3.548962 | .1839016 |
| #3 | .0093213 | 11.02058 | 3.009905 | 7.043665 | 3.515622 | .1861570 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | -.161263 |
| Stddev | .001708  |
| %RSD   | 1.059058 |

|    |          |
|----|----------|
| #1 | -.163234 |
| #2 | -.160340 |
| #3 | -.160215 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 7208.690 | 123690.8 | 12735.16 | 5711.763 | 6704.332 |
| Stddev    | 25.377   | 195.8    | 49.65    | 6.431    | 24.332   |
| %RSD      | .3520366 | .1582947 | .3898545 | .1125949 | .3629262 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 7231.382 | 123474.8 | 12768.11 | 5717.776 | 6730.560 |
| #2 | 7181.288 | 123741.1 | 12759.30 | 5704.983 | 6682.495 |
| #3 | 7213.401 | 123856.6 | 12678.05 | 5712.532 | 6699.940 |

Sample Name: Q3118-01LX5      Acquired: 9/18/2025 12:37:20      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0126360</b> | <b>-.004625</b> | <b>.0483987</b> | <b>.0004096</b> | <b>-.007310</b> | <b>51.50758</b> | <b>.1963340</b> |
| Stddev | .0037469        | .002979         | .0010288        | .0005392        | .001224         | 1.81326         | .0082835        |
| %RSD   | 29.65262        | 64.42704        | 2.125741        | 131.6253        | 16.74522        | 3.520383        | 4.219107        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0148624 | -.001184 | .0494122 | .0007786 | -.006635 | 50.97631 | .1936460 |
| #2 | .0083100 | -.006335 | .0484289 | .0006595 | -.008723 | 50.01929 | .1897283 |
| #3 | .0147355 | -.006355 | .0473551 | -.000209 | -.006573 | 53.52713 | .2056277 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0041879</b> | <b>-.000574</b> | <b>16.06646</b> | <b>.1418641</b> | <b>.0581391</b> | <b>.1949721</b> | <b>114.5099</b> |
| Stddev | .0001462        | .000207         | .56365          | .0007656        | .0007223        | .0031881        | 1.8978          |
| %RSD   | 3.490949        | 36.08577        | 3.508233        | .5396964        | 1.242279        | 1.635172        | 1.657317        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0041097 | -.000595 | 15.92164 | .1425685 | .0583833 | .1962656 | 114.0394 |
| #2 | .0040974 | -.000357 | 15.58935 | .1410492 | .0587076 | .1973102 | 112.8917 |
| #3 | .0043566 | -.000770 | 16.68839 | .1419746 | .0573264 | .1913405 | 116.5988 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.003982</b> | <b>18.08536</b> | <b>.0839753</b> | <b>.0018833</b> | <b>4.604157</b> | <b>.2487003</b> | <b>.1608328</b> |
| Stddev | .068421         | .63517          | .0005993        | .0006719        | .072372         | .0064820        | .0008594        |
| %RSD   | 3.414264        | 3.512065        | .7136212        | 35.67648        | 1.571883        | 2.606342        | .5343294        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 1.991291 | 17.86661 | .0846487 | .0011857 | 4.606405 | .2494865 | .1613892 |
| #2 | 1.942795 | 17.58848 | .0837765 | .0019380 | 4.530688 | .2418611 | .1612661 |
| #3 | 2.077860 | 18.80100 | .0835007 | .0025261 | 4.675379 | .2547534 | .1598430 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>3.216968</b> | <b>.0566268</b> | <b>.0025381</b> | <b>.0012455</b> | <b>3.860203</b> | <b>.7672048</b> | <b>1.709127</b> |
| Stddev | .122800         | .0013165        | .0001696        | .0006264        | .136547         | .0090867        | .012775         |
| %RSD   | 3.817244        | 2.324810        | 6.680941        | 50.28809        | 3.537305        | 1.184392        | .7474730        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 3.184866 | .0559125 | .0026538 | .0005226 | 3.830621 | .7748067 | 1.710461 |
| #2 | 3.113408 | .0558218 | .0026170 | .0015890 | 3.740871 | .7571407 | 1.721183 |
| #3 | 3.352630 | .0581460 | .0023434 | .0016250 | 4.009116 | .7696669 | 1.695737 |

Sample Name: Q3118-01LX5      Acquired: 9/18/2025 12:37:20      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |
|--------|----------|----------|----------|
| Elem   | S_1820   | Li6707   | Sr4077   |
| Units  | ppm      | ppm      | ppm      |
| Avg    | 1.596379 | .0389258 | -.057277 |
| Stddev | .019689  | .0002853 | .000203  |
| %RSD   | 1.233373 | .7329436 | .3537501 |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 1.592005 | .0391884 | -.057044 |
| #2 | 1.617888 | .0386222 | -.057385 |
| #3 | 1.579245 | .0389668 | -.057403 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6546.894 | 111730.0 | 10762.97 | 5180.391 | 7314.595 |
| Stddev    | 27.303   | 345.0    | 223.83   | 15.958   | 34.588   |
| %RSD      | .4170407 | .3088230 | 2.079660 | .3080504 | .4728682 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6526.525 | 112097.5 | 10812.76 | 5168.593 | 7284.115 |
| #2 | 6536.240 | 111679.7 | 10957.71 | 5198.549 | 7307.484 |
| #3 | 6577.918 | 111412.9 | 10518.43 | 5174.033 | 7352.187 |



Sample Name: Q3118-01MS      Acquired: 9/18/2025 12:41:26      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.6719319</b> | <b>1.672607</b> | <b>1.065550</b> | <b>1.521655</b> | <b>.2660747</b> | <b>174.5133</b> |
| Stddev | .0029156        | .039654         | .002178         | .003256         | .0040473        | .7917           |
| %RSD   | .4339168        | 2.370816        | .2044225        | .2139805        | 1.521104        | .4536632        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6752790 | 1.639789 | 1.067910 | 1.524810 | .2658443 | 175.4182 |
| #2 | .6705721 | 1.716669 | 1.065123 | 1.518306 | .2621475 | 174.1733 |
| #3 | .6699445 | 1.661361 | 1.063617 | 1.521848 | .2702322 | 173.9484 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8161530</b> | <b>.1641334</b> | <b>.1854812</b> | <b>59.03217</b> | <b>.5912817</b> | <b>.4038226</b> |
| Stddev | .0022056        | .0002927        | .0001653        | .22082          | .0005100        | .0005418        |
| %RSD   | .2702471        | .1783203        | .0891140        | .3740664        | .0862592        | .1341738        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .8167422 | .1641684 | .1856008 | 59.27172 | .5914371 | .4043754 |
| #2 | .8180041 | .1644070 | .1852926 | 58.98807 | .5916959 | .4032924 |
| #3 | .8137125 | .1638247 | .1855503 | 58.83673 | .5907120 | .4038001 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7015658</b> | <b>364.6748</b> | <b>7.112997</b> | <b>57.57876</b> | <b>.7355746</b> | <b>.0697976</b> |
| Stddev | .0005054        | 1.1902          | .027979         | .10352          | .0010744        | .0009022        |
| %RSD   | .0720349        | .3263865        | .3933471        | .1797857        | .1460615        | 1.292567        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7015211 | 364.5138 | 7.128174 | 57.67229 | .7367202 | .0689660 |
| #2 | .7010842 | 365.9374 | 7.130107 | 57.59645 | .7345894 | .0696700 |
| #3 | .7020920 | 363.5733 | 7.080709 | 57.46754 | .7354143 | .0707567 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>19.98262</b> | <b>1.061915</b> | <b>.7148119</b> | <b>19.25538</b> | <b>.4090056</b> | <b>.3303001</b> |
| Stddev | .07406          | .004057         | .0016249        | .01726          | .0014976        | .0003625        |
| %RSD   | .3706410        | .3820287        | .2273132        | .0896571        | .3661642        | .1097445        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 20.00175 | 1.063345 | .7138811 | 19.27286 | .4074945 | .3306225 |
| #2 | 20.04524 | 1.065064 | .7166881 | 19.25493 | .4104894 | .3303700 |
| #3 | 19.90087 | 1.057337 | .7138664 | 19.23834 | .4090328 | .3299077 |

Sample Name: Q3118-01MS      Acquired: 9/18/2025 12:41:26      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |            |          |          |
|--------|----------|----------|----------|------------|----------|----------|
| Elem   | Sn1899   | Ti3361   | Si2881   | P_1774     | S_1820   | Li6707   |
| Units  | ppm      | ppm      | ppm      | ppm        | ppm      | ppm      |
| Avg    | .6398086 | 9.753111 | 3.721139 | F 12.41838 | 2.186575 | .3237310 |
| Stddev | .0003494 | .036034  | .031401  | .00440     | .002353  | .0014212 |
| %RSD   | .0546063 | .3694610 | .8438464 | .0354090   | .1076232 | .4390077 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6394554 | 9.781728 | 3.757356 | 12.42184 | 2.183968 | .3253638 |
| #2 | .6398163 | 9.764960 | 3.704538 | 12.41987 | 2.188542 | .3230566 |
| #3 | .6401540 | 9.712644 | 3.701523 | 12.41343 | 2.187215 | .3227725 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | .0034586 |
| Stddev | .0014929 |
| %RSD   | 43.16433 |

|    |          |
|----|----------|
| #1 | .0049531 |
| #2 | .0019674 |
| #3 | .0034553 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 7186.438 | 123217.7 | 12436.70 | 5641.949 | 6821.051 |
| Stddev    | 6.307    | 230.7    | 46.16    | 24.855   | 2.321    |
| %RSD      | .0877629 | .1872624 | .3711683 | .4405348 | .0340232 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 7193.094 | 122993.8 | 12391.24 | 5616.919 | 6823.060 |
| #2 | 7180.550 | 123204.5 | 12435.33 | 5642.303 | 6818.511 |
| #3 | 7185.671 | 123454.7 | 12483.53 | 5666.624 | 6821.584 |

Sample Name: Q3118-01MSD      Acquired: 9/18/2025 12:45:23      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.6853822</b> | <b>1.840198</b> | <b>1.152914</b> | <b>1.537963</b> | <b>.2532394</b> | <b>214.1410</b> |
| Stddev | .0041782        | .042419         | .002567         | .003954         | .0014849        | 4.7241          |
| %RSD   | .6096169        | 2.305144        | .2226348        | .2571177        | .5863781        | 2.206074        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6875713 | 1.824133 | 1.155863 | 1.534822 | .2517839 | 219.3795 |
| #2 | .6880110 | 1.888303 | 1.151694 | 1.536663 | .2531822 | 212.8389 |
| #3 | .6805643 | 1.808157 | 1.151185 | 1.542404 | .2547521 | 210.2044 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.003822</b> | <b>.1703288</b> | <b>.2021378</b> | <b>70.91613</b> | <b>.6904919</b> | <b>.4797033</b> |
| Stddev | .021636         | .0028095        | .0003517        | 1.57754         | .0082165        | .0003525        |
| %RSD   | 2.155396        | 1.649477        | .1739639        | 2.224511        | 1.189948        | .0734751        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 1.027147 | .1735673 | .2025308 | 72.62185 | .6810089 | .4800412 |
| #2 | .999912  | .1688756 | .2018528 | 70.61691 | .6954898 | .4797308 |
| #3 | .984408  | .1685434 | .2020299 | 69.50963 | .6949769 | .4793379 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8515842</b> | <b>467.7689</b> | <b>7.887790</b> | <b>76.36339</b> | <b>.8639124</b> | <b>.0733254</b> |
| Stddev | .0030427        | 4.4589          | .175219         | 1.63841         | .0005175        | .0016512        |
| %RSD   | .3572938        | .9532268        | 2.221393        | 2.145544        | .0599029        | 2.251947        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .8521174 | 464.6832 | 8.073275 | 78.15825 | .8640945 | .0736168 |
| #2 | .8483102 | 472.8811 | 7.865036 | 75.98390 | .8633284 | .0748116 |
| #3 | .8543250 | 465.7423 | 7.725060 | 74.94803 | .8643142 | .0715479 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>24.34028</b> | <b>1.292403</b> | <b>.8390623</b> | <b>25.02146</b> | <b>.4444809</b> | <b>.3291134</b> |
| Stddev | .23922          | .029685         | .0066824        | .28609          | .0283467        | .0004085        |
| %RSD   | .9828233        | 2.296847        | .7964078        | 1.143378        | 6.377477        | .1241135        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 24.14146 | 1.323974 | .8318027 | 24.74998 | .4128319 | .3294756 |
| #2 | 24.60577 | 1.288178 | .8404278 | 25.32021 | .4675364 | .3286707 |
| #3 | 24.27362 | 1.265058 | .8449565 | 24.99419 | .4530746 | .3291938 |

Sample Name: Q3118-01MSD      Acquired: 9/18/2025 12:45:23      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                   |                 |                   |                 |                 |
|--------|-----------------|-------------------|-----------------|-------------------|-----------------|-----------------|
| Elem   | Sn1899          | Ti3361            | Si2881          | P_1774            | S_1820          | Li6707          |
| Units  | ppm             | ppm               | ppm             | ppm               | ppm             | ppm             |
| Avg    | <b>.6843495</b> | <b>F 11.74638</b> | <b>3.407138</b> | <b>F 14.48320</b> | <b>3.479952</b> | <b>.3846003</b> |
| Stddev | .0014237        | .25427            | .020154         | .07178            | .006895         | .0066988        |
| %RSD   | .2080311        | 2.164674          | .5915292        | .4956326          | .1981323        | 1.741757        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6855784 | 12.01499 | 3.386584 | 14.40294 | 3.474676 | .3913085 |
| #2 | .6846807 | 11.71474 | 3.426867 | 14.54126 | 3.477426 | .3845815 |
| #3 | .6827895 | 11.50941 | 3.407964 | 14.50540 | 3.487754 | .3779109 |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.041610</b> |
| Stddev | .010658         |
| %RSD   | 25.61486        |

|    |                 |
|----|-----------------|
| #1 | <b>-.029305</b> |
| #2 | <b>-.047562</b> |
| #3 | <b>-.047963</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>7353.275</b> | <b>126068.5</b> | <b>12671.71</b> | <b>5775.072</b> | <b>6524.037</b> |
| Stddev    | 10.126          | 1168.4          | 219.02          | 48.201          | 14.667          |
| %RSD      | .1377063        | .9268199        | 1.728433        | .8346448        | .2248185        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 7343.279 | 127407.3 | 12418.82 | 5822.307 | 6507.893 |
| #2 | 7353.020 | 125544.0 | 12795.34 | 5776.951 | 6527.673 |
| #3 | 7363.526 | 125254.3 | 12800.96 | 5725.959 | 6536.544 |

Sample Name: CCV02      Acquired: 9/18/2025 12:58:27      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV02      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>5.008366</b> | <b>4.836782</b> | <b>4.904444</b> | <b>5.084340</b> | <b>5.076985</b> | <b>9.932592</b> | <b>9.754506</b> |
| Stddev | .020385         | .103889         | .006045         | .023860         | .009762         | .037437         | .018778         |
| %RSD   | .4070223        | 2.147901        | .1232583        | .4692822        | .1922765        | .3769104        | .1925040        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 5.024903 | 4.858310 | 4.902219 | 5.108478 | 5.086144 | 9.936188 | 9.735145 |
| #2 | 5.014605 | 4.928221 | 4.911287 | 5.083775 | 5.066715 | 9.968101 | 9.772641 |
| #3 | 4.985591 | 4.723815 | 4.899827 | 5.060768 | 5.078096 | 9.893487 | 9.755730 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2459154</b> | <b>2.454461</b> | <b>24.73510</b> | <b>1.010600</b> | <b>2.465847</b> | <b>1.250149</b> | <b>5.028602</b> |
| Stddev | .0010392        | .001784         | .07763          | .000777         | .002389         | .001540         | .009179         |
| %RSD   | .4225990        | .0726758        | .3138440        | .0769130        | .0968777        | .1231906        | .1825307        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .2453691 | 2.453832 | 24.78763 | 1.010631 | 2.467852 | 1.251731 | 5.039198 |
| #2 | .2471139 | 2.456475 | 24.77174 | 1.011361 | 2.466486 | 1.250062 | 5.023110 |
| #3 | .2452633 | 2.453078 | 24.64593 | 1.009807 | 2.463204 | 1.248654 | 5.023498 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.435760</b> | <b>24.63050</b> | <b>2.465502</b> | <b>1.252814</b> | <b>24.29392</b> | <b>2.482266</b> | <b>2.521063</b> |
| Stddev | .004232         | .07652          | .001389         | .001538         | .14052          | .005365         | .006588         |
| %RSD   | .1737390        | .3106611        | .0563235        | .1227268        | .5784029        | .2161169        | .2613314        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 2.440516 | 24.66296 | 2.465343 | 1.253042 | 24.39875 | 2.486013 | 2.528670 |
| #2 | 2.434353 | 24.68544 | 2.466964 | 1.254225 | 24.13426 | 2.484663 | 2.517273 |
| #3 | 2.432410 | 24.54310 | 2.464200 | 1.251175 | 24.34877 | 2.476120 | 2.517245 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>24.63043</b> | <b>4.870601</b> | <b>5.042191</b> | <b>4.941725</b> | <b>4.910957</b> | <b>5.030624</b> | <b>4.988288</b> |
| Stddev | .10979          | .025788         | .009471         | .011722         | .007225         | .016343         | .031702         |
| %RSD   | .4457369        | .5294569        | .1878383        | .2372092        | .1471230        | .3248781        | .6355266        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 24.64139 | 4.859779 | 5.052496 | 4.948997 | 4.918536 | 5.011902 | 4.997812 |
| #2 | 24.51558 | 4.900036 | 5.040209 | 4.947976 | 4.904147 | 5.037936 | 5.014136 |
| #3 | 24.73433 | 4.851987 | 5.033867 | 4.928203 | 4.910187 | 5.042035 | 4.952916 |

Sample Name: CCV02      Acquired: 9/18/2025 12:58:27      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV02      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>4.917631</b> | <b>4.794431</b> | <b>4.888407</b> |
| Stddev | .041839         | .004723         | .052303         |
| %RSD   | .8507963        | .0985090        | 1.069942        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 4.939384 | 4.790099 | 4.832662 |
| #2 | 4.944113 | 4.793727 | 4.936404 |
| #3 | 4.869397 | 4.799466 | 4.896155 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6223.757</b> | <b>107216.9</b> | <b>10434.37</b> | <b>4939.246</b> | <b>7218.733</b> |
| Stddev    | 6.574           | 141.0           | 37.32           | 18.263          | 11.465          |
| %RSD      | .1056324        | .1314927        | .3576958        | .3697431        | .1588217        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6228.870 | 107102.2 | 10442.56 | 4918.199 | 7231.958 |
| #2 | 6226.061 | 107374.3 | 10393.63 | 4950.906 | 7211.599 |
| #3 | 6216.341 | 107174.3 | 10466.92 | 4948.632 | 7212.643 |

Sample Name: CCB02      Acquired: 9/18/2025 13:02:38      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB02      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000178</b> | <b>.0023123</b> | <b>-.000844</b> | <b>.0020981</b> | <b>-.000869</b> | <b>.0028334</b> |
| Stddev | .003310         | .0014339        | .000206         | .0030223        | .001396         | .0030315        |
| %RSD   | 1864.322        | 62.01034        | 24.38566        | 144.0476        | 160.7097        | 106.9928        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.002868</b> | <b>.0030993</b> | <b>-.000981</b> | <b>.0038651</b> | <b>-.002022</b> | <b>-.000055</b> |
| #2 | <b>.003518</b>  | <b>.0006573</b> | <b>-.000943</b> | <b>.0038209</b> | <b>-.001267</b> | <b>.002565</b>  |
| #3 | <b>-.001183</b> | <b>.0031804</b> | <b>-.000607</b> | <b>-.001392</b> | <b>.000683</b>  | <b>.005990</b>  |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.002738</b> | <b>.0000728</b> | <b>-.000188</b> | <b>-.006094</b> | <b>-.000006</b> | <b>-.000381</b> |
| Stddev | .000792         | .0000551        | .000041         | .003988         | .000060         | .000083         |
| %RSD   | 28.91795        | 75.72520        | 21.70465        | 65.43820        | 966.5719        | 21.70201        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.003328</b> | <b>.0000975</b> | <b>-.000233</b> | <b>-.006405</b> | <b>.000061</b>  | <b>-.000477</b> |
| #2 | <b>-.003049</b> | <b>.0001113</b> | <b>-.000154</b> | <b>-.001960</b> | <b>-.000054</b> | <b>-.000333</b> |
| #3 | <b>-.001838</b> | <b>.0000097</b> | <b>-.000175</b> | <b>-.009917</b> | <b>-.000025</b> | <b>-.000334</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000388</b> | <b>.0015271</b> | <b>-.000125</b> | <b>-.012190</b> | <b>-.000057</b> | <b>-.000433</b> |
| Stddev | .000484         | .0074887        | .001088         | .020443         | .000350         | .000165         |
| %RSD   | 124.6969        | 490.3733        | 869.2266        | 167.7017        | 615.9404        | 38.05776        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.000154</b>  | <b>.0024095</b> | <b>-.000768</b> | <b>-.028294</b> | <b>.000118</b>  | <b>-.000609</b> |
| #2 | <b>-.000540</b> | <b>.0085356</b> | <b>.001131</b>  | <b>.010808</b>  | <b>.000171</b>  | <b>-.000408</b> |
| #3 | <b>-.000779</b> | <b>-.006364</b> | <b>-.000739</b> | <b>-.019084</b> | <b>-.000460</b> | <b>-.000283</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.148420</b> | <b>.0032051</b> | <b>.0003893</b> | <b>-.228659</b> | <b>.0005181</b> | <b>-.000022</b> |
| Stddev | .006336         | .0015008        | .0000238        | .050994         | .0004185        | .000090         |
| %RSD   | 4.269088        | 46.82453        | 6.103449        | 22.30146        | 80.77490        | 406.9060        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.154447</b> | <b>.0022325</b> | <b>.0003722</b> | <b>-.285474</b> | <b>.0009933</b> | <b>-.000073</b> |
| #2 | <b>-.148999</b> | <b>.0024493</b> | <b>.0004165</b> | <b>-.213647</b> | <b>.0002039</b> | <b>.000082</b>  |
| #3 | <b>-.141815</b> | <b>.0049335</b> | <b>.0003793</b> | <b>-.186856</b> | <b>.0003572</b> | <b>-.000075</b> |

Sample Name: CCB02      Acquired: 9/18/2025 13:02:38      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB02      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                   |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820          | Li6707            |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm               |
| Avg    | <b>-.000534</b> | <b>-.000074</b> | <b>.0160141</b> | <b>-.001594</b> | <b>.0009031</b> | <b>F -.011053</b> |
| Stddev | .000485         | .001604         | .0080989        | .002164         | .0019585        | .001668           |
| %RSD   | 90.75754        | 2156.850        | 50.57372        | 135.7060        | 216.8551        | 15.09317          |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000564</b> | <b>-.001680</b> | <b>.0066951</b> | <b>-.004013</b> | <b>.0009355</b> | <b>-.011375</b> |
| #2 | <b>-.000035</b> | <b>-.000072</b> | <b>.0213518</b> | <b>-.000926</b> | <b>-.001071</b> | <b>-.009247</b> |
| #3 | <b>-.001004</b> | <b>.001529</b>  | <b>.0199954</b> | <b>.000156</b>  | <b>.002845</b>  | <b>-.012537</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000371</b> |
| Stddev | .000023         |
| %RSD   | 6.292877        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000386</b> |
| #2 | <b>-.000383</b> |
| #3 | <b>-.000344</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6450.082</b> | <b>111287.2</b> | <b>10517.65</b> | <b>5050.609</b> | <b>8074.765</b> |
| Stddev    | 12.818          | 240.2           | 172.23          | 1.591           | 10.055          |
| %RSD      | .1987268        | .2158408        | 1.637552        | .0315090        | .1245255        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6447.467</b> | <b>111410.6</b> | <b>10716.41</b> | <b>5051.216</b> | <b>8068.917</b> |
| #2 | <b>6438.774</b> | <b>111440.6</b> | <b>10412.50</b> | <b>5048.803</b> | <b>8069.003</b> |
| #3 | <b>6464.007</b> | <b>111010.3</b> | <b>10424.02</b> | <b>5051.808</b> | <b>8086.376</b> |



Sample Name: Q3101-01      Acquired: 9/18/2025 13:06:57      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.002041</b> | <b>-.003246</b> | <b>-.001413</b> | <b>.0037980</b> | <b>-.002930</b> | <b>-.000261</b> | <b>-.003725</b> |
| Stddev | .002147         | .000624         | .000103         | .0007182        | .001125         | .011127         | .000890         |
| %RSD   | 105.1991        | 19.23859        | 7.285083        | 18.90936        | 38.40438        | 4266.524        | 23.89651        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.003563</b> | <b>-.002532</b> | <b>-.001423</b> | <b>.0030277</b> | <b>-.001643</b> | <b>-.000646</b> | <b>-.004001</b> |
| #2 | <b>-.002973</b> | <b>-.003691</b> | <b>-.001510</b> | <b>.0044492</b> | <b>-.003423</b> | <b>.011053</b>  | <b>-.002730</b> |
| #3 | <b>.000415</b>  | <b>-.003515</b> | <b>-.001305</b> | <b>.0039170</b> | <b>-.003725</b> | <b>-.011190</b> | <b>-.004445</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000118</b> | <b>-.000215</b> | <b>-.006898</b> | <b>.0011443</b> | <b>-.000351</b> | <b>.0013051</b> | <b>.0022667</b> |
| Stddev | .000074         | .000045         | .005329         | .0004223        | .000091         | .0002092        | .0089799        |
| %RSD   | 62.81482        | 21.06049        | 77.25048        | 36.90589        | 25.79789        | 16.03125        | 396.1659        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000143</b> | <b>-.000183</b> | <b>-.013039</b> | <b>.0010696</b> | <b>-.000264</b> | <b>.0012754</b> | <b>.0099667</b> |
| #2 | <b>-.000176</b> | <b>-.000195</b> | <b>-.004153</b> | <b>.0015989</b> | <b>-.000344</b> | <b>.0015276</b> | <b>.0044310</b> |
| #3 | <b>-.000035</b> | <b>-.000267</b> | <b>-.003501</b> | <b>.0007643</b> | <b>-.000445</b> | <b>.0011124</b> | <b>-.007598</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0006735</b> | <b>.0019313</b> | <b>.0011401</b> | <b>-.000235</b> | <b>-.053289</b> | <b>-.001071</b> | <b>.0023760</b> |
| Stddev | .0005014        | .0039872        | .0003242        | .000289         | .017439         | .001871         | .0001272        |
| %RSD   | 74.44774        | 206.4541        | 28.43286        | 122.8379        | 32.72453        | 174.7236        | 5.353163        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0012191</b> | <b>-.002594</b> | <b>.0011658</b> | <b>.000097</b>  | <b>-.052472</b> | <b>-.002387</b> | <b>.0025077</b> |
| #2 | <b>.0005688</b> | <b>.004929</b>  | <b>.0008039</b> | <b>-.000428</b> | <b>-.036274</b> | <b>-.001896</b> | <b>.0022539</b> |
| #3 | <b>.0002327</b> | <b>.003459</b>  | <b>.0014506</b> | <b>-.000375</b> | <b>-.071122</b> | <b>.001071</b>  | <b>.0023664</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.371115</b> | <b>-.001033</b> | <b>-.000066</b> | <b>.1213327</b> | <b>.0018138</b> | <b>.0199471</b> | <b>.0126995</b> |
| Stddev | .015831         | .000134         | .000110         | .0008310        | .0012950        | .0088755        | .0003517        |
| %RSD   | 4.265725        | 12.92584        | 166.8542        | .6848892        | 71.39563        | 44.49502        | 2.769030        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.389068</b> | <b>-.001104</b> | <b>-.000059</b> | <b>.1206058</b> | <b>.0003185</b> | <b>.0115695</b> | <b>.0129601</b> |
| #2 | <b>-.365119</b> | <b>-.000879</b> | <b>.000040</b>  | <b>.1211537</b> | <b>.0025686</b> | <b>.0190235</b> | <b>.0128390</b> |
| #3 | <b>-.359158</b> | <b>-.001117</b> | <b>-.000180</b> | <b>.1222386</b> | <b>.0025542</b> | <b>.0292482</b> | <b>.0122995</b> |

Sample Name: Q3101-01      Acquired: 9/18/2025 13:06:57      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |
|--------|----------|----------|----------|
| Elem   | S_1820   | Li6707   | Sr4077   |
| Units  | ppm      | ppm      | ppm      |
| Avg    | 5.423315 | -.013235 | -.000206 |
| Stddev | .046476  | .002161  | .000077  |
| %RSD   | .8569609 | 16.32843 | 37.59937 |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 5.463957 | -.012873 | -.000287 |
| #2 | 5.372644 | -.015555 | -.000199 |
| #3 | 5.433343 | -.011278 | -.000132 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6500.930 | 114526.3 | 10500.01 | 5105.411 | 8179.116 |
| Stddev    | 14.902   | 578.1    | 54.60    | 22.220   | 21.531   |
| %RSD      | .2292276 | .5048168 | .5200470 | .4352241 | .2632477 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6493.313 | 114476.8 | 10555.83 | 5105.737 | 8161.361 |
| #2 | 6491.377 | 113974.4 | 10497.49 | 5083.030 | 8172.921 |
| #3 | 6518.101 | 115127.6 | 10446.71 | 5127.466 | 8203.065 |

Sample Name: PB169721BL      Acquired: 9/18/2025 13:11:13      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000270</b> | <b>.0018029</b> | <b>-.000479</b> | <b>-.002102</b> | <b>-.001754</b> | <b>-.002577</b> |
| Stddev | .001458         | .0013738        | .000845         | .003639         | .000841         | .003850         |
| %RSD   | 540.1426        | 76.19842        | 176.1647        | 173.0806        | 47.91013        | 149.3935        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .000312  | .0031518 | -.001081 | -.003996 | -.002693 | -.004777 |
| #2 | -.001929 | .0018514 | -.000844 | -.004404 | -.001072 | .001869  |
| #3 | .000807  | .0004055 | .000486  | .002093  | -.001499 | -.004824 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000195</b> | <b>-.000044</b> | <b>-.000103</b> | <b>-.007374</b> | <b>-.000207</b> | <b>-.000227</b> |
| Stddev | .000667         | .000050         | .000029         | .005666         | .000446         | .000031         |
| %RSD   | 342.5186        | 113.0658        | 27.84622        | 76.83146        | 215.8020        | 13.78988        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | -.000771 | -.000035 | -.000070 | -.010410 | -.000580 | -.000241 |
| #2 | -.000349 | .000000  | -.000122 | -.010875 | -.000326 | -.000248 |
| #3 | .000536  | -.000098 | -.000118 | -.000838 | .000287  | -.000191 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000060</b> | <b>-.007822</b> | <b>-.000228</b> | <b>-.016796</b> | <b>-.000170</b> | <b>-.000425</b> |
| Stddev | .000205         | .001654         | .000181         | .009755         | .000136         | .000369         |
| %RSD   | 342.7126        | 21.14218        | 79.06691        | 58.07921        | 80.16272        | 86.89043        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .000034  | -.009112 | -.000260 | -.014543 | -.000325 | -.000054 |
| #2 | .000081  | -.005958 | -.000034 | -.008364 | -.000070 | -.000792 |
| #3 | -.000295 | -.008398 | -.000391 | -.027480 | -.000115 | -.000429 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.162420</b> | <b>-.000570</b> | <b>-.000192</b> | <b>-.329571</b> | <b>-.002090</b> | <b>-.000324</b> |
| Stddev | .008906         | .002269         | .000123         | .039752         | .000924         | .000313         |
| %RSD   | 5.483633        | 397.8390        | 63.90278        | 12.06161        | 44.22490        | 96.52657        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | -.170223 | .002027  | -.000317 | -.374818 | -.001308 | -.000664 |
| #2 | -.152717 | -.002169 | -.000071 | -.300262 | -.003110 | -.000261 |
| #3 | -.164319 | -.001570 | -.000190 | -.313632 | -.001852 | -.000048 |

Sample Name: PB169721BL      Acquired: 9/18/2025 13:11:13      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                   |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820          | Li6707            |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm               |
| Avg    | <b>-.001016</b> | <b>.0009907</b> | <b>.0114500</b> | <b>-.000566</b> | <b>.0014993</b> | <b>F -.012306</b> |
| Stddev | .000501         | .0011885        | .0081524        | .001432         | .0020131        | .001197           |
| %RSD   | 49.35895        | 119.9672        | 71.20018        | 252.7980        | 134.2680        | 9.728042          |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000511</b> | <b>.0020496</b> | <b>.0030987</b> | <b>-.000822</b> | <b>.0036651</b> | <b>-.013209</b> |
| #2 | <b>-.001514</b> | <b>-.000295</b> | <b>.0193879</b> | <b>-.001853</b> | <b>-.000315</b> | <b>-.010948</b> |
| #3 | <b>-.001022</b> | <b>.001217</b>  | <b>.0118635</b> | <b>.000976</b>  | <b>.001148</b>  | <b>-.012762</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000363</b> |
| Stddev | .000008         |
| %RSD   | 2.295877        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000353</b> |
| #2 | <b>-.000368</b> |
| #3 | <b>-.000367</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6372.610</b> | <b>110688.1</b> | <b>10159.23</b> | <b>5035.611</b> | <b>7963.420</b> |
| Stddev    | 3.502           | 446.3           | 153.86          | 27.260          | 8.780           |
| %RSD      | .0549486        | .4031794        | 1.514528        | .5413402        | .1102532        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6372.971</b> | <b>110984.2</b> | <b>10257.47</b> | <b>5054.829</b> | <b>7969.610</b> |
| #2 | <b>6375.916</b> | <b>110174.9</b> | <b>10238.31</b> | <b>5004.412</b> | <b>7967.279</b> |
| #3 | <b>6368.941</b> | <b>110905.3</b> | <b>9981.91</b>  | <b>5047.591</b> | <b>7953.372</b> |

Sample Name: PB169721BS      Acquired: 9/18/2025 13:15:32      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7522593</b> | <b>1.868302</b> | <b>.9166519</b> | <b>1.927977</b> | <b>.7747236</b> | <b>1.945920</b> |
| Stddev | .0019918        | .038282         | .0027888        | .007889         | .0005082        | .004943         |
| %RSD   | .2647798        | 2.049007        | .3042330        | .4091598        | .0655988        | .2540041        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7509600 | 1.873795 | .9145383 | 1.929165 | .7743121 | 1.946794 |
| #2 | .7545525 | 1.827571 | .9156047 | 1.919562 | .7745670 | 1.940598 |
| #3 | .7512653 | 1.903541 | .9198127 | 1.935205 | .7752916 | 1.950367 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1895299</b> | <b>.1989019</b> | <b>.1834136</b> | <b>.9820289</b> | <b>.3865679</b> | <b>.1864245</b> |
| Stddev | .0008493        | .0009366        | .0002066        | .0024370        | .0023251        | .0006959        |
| %RSD   | .4480891        | .4708683        | .1126579        | .2481628        | .6014838        | .3732823        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1895883 | .1997224 | .1831757 | .9825456 | .3841047 | .1857187 |
| #2 | .1886530 | .1978816 | .1835170 | .9793750 | .3868742 | .1864448 |
| #3 | .1903485 | .1991018 | .1835482 | .9841662 | .3887246 | .1871101 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2957814</b> | <b>2.801410</b> | <b>.1933451</b> | <b>1.971495</b> | <b>.4676634</b> | <b>.0721769</b> |
| Stddev | .0003899        | .019807         | .0000613        | .019681         | .0009858        | .0007296        |
| %RSD   | .1318088        | .7070293        | .0317051        | .9982769        | .2107888        | 1.010777        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .2953321 | 2.781383 | .1934132 | 1.978971 | .4671113 | .0714143 |
| #2 | .2959812 | 2.801857 | .1933280 | 1.949171 | .4670774 | .0722481 |
| #3 | .2960309 | 2.820989 | .1932943 | 1.986342 | .4688016 | .0728682 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.485147</b> | <b>.2898714</b> | <b>.1950062</b> | <b>8.765073</b> | <b>.2892501</b> | <b>.3934737</b> |
| Stddev | .035350         | .0031896        | .0016484        | .071250         | .0017752        | .0012233        |
| %RSD   | 1.422451        | 1.100337        | .8452981        | .8128894        | .6137183        | .3109016        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 2.452276 | .2866965 | .1933217 | 8.702841 | .2911453 | .3927137 |
| #2 | 2.480625 | .2898424 | .1950808 | 8.749584 | .2876261 | .3928225 |
| #3 | 2.522540 | .2930754 | .1966160 | 8.842794 | .2889788 | .3948849 |

Sample Name: PB169721BS      Acquired: 9/18/2025 13:15:32      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |            |          |
|--------|----------|----------|----------|----------|------------|----------|
| Elem   | Sn1899   | Ti3361   | Si2881   | P_1774   | S_1820     | Li6707   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm        | ppm      |
| Avg    | .6524311 | .1895167 | .8420554 | 5.283777 | F -.005227 | .1883829 |
| Stddev | .0020002 | .0009955 | .0187179 | .032424  | .001626    | .0013200 |
| %RSD   | .3065764 | .5252866 | 2.222887 | .6136424 | 31.09639   | .7006992 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6506236 | .1886239 | .8218030 | 5.294707 | -.005368 | .1888684 |
| #2 | .6520897 | .1893360 | .8456437 | 5.247302 | -.003536 | .1868889 |
| #3 | .6545800 | .1905901 | .8587194 | 5.309324 | -.006778 | .1893914 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | .1880878 |
| Stddev | .0007204 |
| %RSD   | .3830347 |

|    |          |
|----|----------|
| #1 | .1882067 |
| #2 | .1873153 |
| #3 | .1887414 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6472.787 | 112263.0 | 10314.33 | 5140.133 | 7897.342 |
| Stddev    | 8.017    | 731.3    | 33.31    | 37.699   | 4.103    |
| %RSD      | .1238637 | .6514572 | .3229367 | .7334258 | .0519524 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6465.336 | 113092.7 | 10281.37 | 5183.645 | 7896.971 |
| #2 | 6481.271 | 111984.3 | 10347.98 | 5119.489 | 7901.618 |
| #3 | 6471.753 | 111712.0 | 10313.66 | 5117.265 | 7893.438 |

Sample Name: Q3103-01      Acquired: 9/18/2025 13:19:34      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | As1890   | Tl1908   | Pb2203   | Se1960   | Sb2068   | Al3961   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0028562 | .0018277 | .0000360 | .0040289 | .0039701 | .1917084 |
| Stddev | .0015016 | .0012451 | .0020750 | .0013056 | .0013840 | .0030733 |
| %RSD   | 52.57143 | 68.12141 | 5765.605 | 32.40522 | 34.86098 | 1.603111 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0040278 | .0030237 | -.000004 | .0040956 | .0041742 | .1885943 |
| #2 | .0011635 | .0019207 | -.002019 | .0052998 | .0024953 | .1917918 |
| #3 | .0033773 | .0005388 | .002131  | .0026912 | .0052406 | .1947392 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Ba4934   | Be2348   | Cd2265   | Ca3736   | Cr2677   | Co2286   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .1128344 | -.000088 | -.000256 | 95.98409 | -.000112 | -.000078 |
| Stddev | .0004184 | .000062  | .000040  | .35492   | .000110  | .000179  |
| %RSD   | .3708392 | 70.95261 | 15.49450 | .3697713 | 98.59666 | 230.7342 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1132530 | -.000018 | -.000227 | 96.10384 | -.000007 | -.000106 |
| #2 | .1128339 | -.000108 | -.000301 | 95.58479 | -.000226 | -.000241 |
| #3 | .1124162 | -.000137 | -.000238 | 96.26366 | -.000102 | .000114  |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Cu2247   | Fe2404   | Mn2576   | Mg2790   | Ni2316   | Ag3280   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0001874 | .1252500 | .0027814 | 10.37797 | .0028476 | -.000677 |
| Stddev | .0003874 | .0032788 | .0001909 | .04072   | .0006005 | .000308  |
| %RSD   | 206.7082 | 2.617840 | 6.863727 | .3923489 | 21.08647 | 45.58476 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0001279 | .1223210 | .0027428 | 10.33167 | .0030538 | -.000718 |
| #2 | .0006011 | .1287921 | .0026127 | 10.39402 | .0033179 | -.000962 |
| #3 | -.000167 | .1246369 | .0029886 | 10.40821 | .0021713 | -.000349 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Na5895   | V_2924   | Zn2138   | K_7664   | B_2496   | Mo2020   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | 252.9268 | .0032046 | .0020884 | 116.4172 | .2401699 | .0344803 |
| Stddev | 3.5928   | .0014404 | .0000500 | .4502    | .0022742 | .0001207 |
| %RSD   | 1.420479 | 44.94691 | 2.394551 | .3867103 | .9469206 | .3498988 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 250.3057 | .0047034 | .0021398 | 116.2817 | .2410483 | .0346181 |
| #2 | 251.4525 | .0030797 | .0020857 | 116.9195 | .2375875 | .0343937 |
| #3 | 257.0222 | .0018308 | .0020398 | 116.0502 | .2418739 | .0344292 |

Sample Name: Q3103-01      Acquired: 9/18/2025 13:19:34      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                  |                  |                   |                 |                   |                 |
|--------|------------------|------------------|-------------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899           | Ti3361           | Si2881            | P_1774          | S_1820            | Li6707          |
| Units  | ppm              | ppm              | ppm               | ppm             | ppm               | ppm             |
| Avg    | <b>-0.010785</b> | <b>-0.003755</b> | <b>F 10.94377</b> | <b>.1207820</b> | <b>F 86.80423</b> | <b>.0205949</b> |
| Stddev | .000428          | .002158          | .09287            | .0010228        | .19444            | .0010018        |
| %RSD   | 3.969445         | 57.48193         | .8486436          | .8468514        | .2239999          | 4.864285        |

|    |           |           |          |          |          |          |
|----|-----------|-----------|----------|----------|----------|----------|
| #1 | -0.010998 | -0.006202 | 10.90899 | .1196235 | 86.58409 | .0217033 |
| #2 | -0.011065 | -0.002123 | 11.04902 | .1215604 | 86.87610 | .0203275 |
| #3 | -0.010292 | -0.002939 | 10.87332 | .1211621 | 86.95251 | .0197539 |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>2.270456</b> |
| Stddev | .014507         |
| %RSD   | .6389643        |

|    |                 |
|----|-----------------|
| #1 | <b>2.287064</b> |
| #2 | <b>2.260257</b> |
| #3 | <b>2.264046</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5885.404</b> | <b>100954.4</b> | <b>10184.52</b> | <b>4638.224</b> | <b>6676.811</b> |
| Stddev    | 13.294          | 390.3           | 49.49           | 10.600          | 10.177          |
| %RSD      | .2258828        | .3865741        | .4859676        | .2285272        | .1524254        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 5891.618 | 101013.5 | 10155.84 | 4633.081 | 6681.095 |
| #2 | 5894.453 | 100537.9 | 10241.67 | 4631.176 | 6684.145 |
| #3 | 5870.140 | 101311.7 | 10156.04 | 4650.413 | 6665.192 |



Sample Name: Q3103-01DUP      Acquired: 9/18/2025 13:24:02      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | As1890   | Tl1908   | Pb2203   | Se1960   | Sb2068   | Al3961   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0011860 | .0004523 | -.000363 | .0037518 | .0049685 | .1944224 |
| Stddev | .0017981 | .0020663 | .001389  | .0031052 | .0030987 | .0179712 |
| %RSD   | 151.6016 | 456.8226 | 382.3591 | 82.76338 | 62.36797 | 9.243354 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0030611 | -.001670 | -.000876 | .0037421 | .0080587 | .1984111 |
| #2 | -.000524 | .000570  | .001209  | .0068618 | .0018613 | .2100641 |
| #3 | .001021  | .002457  | -.001423 | .0006516 | .0049854 | .1747920 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Ba4934   | Be2348   | Cd2265   | Ca3736   | Cr2677   | Co2286   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .1057816 | -.000036 | -.000200 | 90.70566 | -.000445 | -.000235 |
| Stddev | .0010576 | .000051  | .000098  | .25705   | .000236  | .000133  |
| %RSD   | .9997726 | 142.5452 | 48.72086 | .2833926 | 53.13155 | 56.55480 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1053882 | -.000053 | -.000281 | 90.57033 | -.000670 | -.000368 |
| #2 | .1069795 | .000022  | -.000228 | 90.54455 | -.000199 | -.000102 |
| #3 | .1049771 | -.000077 | -.000092 | 91.00211 | -.000466 | -.000237 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Cu2247   | Fe2404   | Mn2576   | Mg2790   | Ni2316   | Ag3280   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0006611 | .1299902 | .0068130 | 9.868729 | .0024398 | -.001207 |
| Stddev | .0002873 | .0048657 | .0003194 | .033266  | .0001266 | .000776  |
| %RSD   | 43.45476 | 3.743151 | 4.688154 | .3370866 | 5.187402 | 64.29476 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0005370 | .1251558 | .0065617 | 9.882810 | .0024462 | -.001667 |
| #2 | .0009895 | .1299282 | .0067050 | 9.830738 | .0023101 | -.001642 |
| #3 | .0004567 | .1348867 | .0071725 | 9.892639 | .0025630 | -.000311 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Na5895   | V_2924   | Zn2138   | K_7664   | B_2496   | Mo2020   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | 236.3138 | .0004107 | .0033183 | 107.9386 | .2279378 | .0322393 |
| Stddev | .9412    | .0031720 | .0001829 | .3800    | .0019754 | .0004917 |
| %RSD   | .3982993 | 772.3399 | 5.511968 | .3520399 | .8666555 | 1.525071 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 235.8122 | .0019179 | .0031394 | 107.6596 | .2263977 | .0325982 |
| #2 | 237.3996 | -.003234 | .0035049 | 107.7847 | .2272508 | .0316789 |
| #3 | 235.7296 | .002548  | .0033108 | 108.3714 | .2301650 | .0324408 |

Sample Name: Q3103-01DUP      Acquired: 9/18/2025 13:24:02      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                   |                 |                   |                 |
|--------|-----------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881            | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm               | ppm             | ppm               | ppm             |
| Avg    | <b>-.011806</b> | <b>-.003563</b> | <b>F 10.22809</b> | <b>.1081932</b> | <b>F 81.86433</b> | <b>.0201272</b> |
| Stddev | .000309         | .002791         | .04226            | .0017135        | .29763            | .0016272        |
| %RSD   | 2.614800        | 78.33960        | .4131847          | 1.583769        | .3635700          | 8.084617        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.012161</b> | <b>-.002797</b> | <b>10.23092</b> | <b>.1078082</b> | <b>81.62799</b> | <b>.0195786</b> |
| #2 | <b>-.011653</b> | <b>-.001235</b> | <b>10.26888</b> | <b>.1100665</b> | <b>81.76642</b> | <b>.0219578</b> |
| #3 | <b>-.011604</b> | <b>-.006658</b> | <b>10.18449</b> | <b>.1067049</b> | <b>82.19859</b> | <b>.0188452</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>2.124985</b> |
| Stddev | .020454         |
| %RSD   | .9625647        |

|    |                 |
|----|-----------------|
| #1 | <b>2.105201</b> |
| #2 | <b>2.123705</b> |
| #3 | <b>2.146050</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5926.088</b> | <b>102025.1</b> | <b>10175.02</b> | <b>4676.668</b> | <b>6762.917</b> |
| Stddev    | 6.219           | 364.2           | 56.39           | 48.427          | 10.614          |
| %RSD      | .1049424        | .3569858        | .5541877        | 1.035513        | .1569424        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>5930.573</b> | <b>102243.6</b> | <b>10206.24</b> | <b>4703.481</b> | <b>6772.213</b> |
| #2 | <b>5918.989</b> | <b>102227.1</b> | <b>10208.90</b> | <b>4705.759</b> | <b>6751.352</b> |
| #3 | <b>5928.703</b> | <b>101604.7</b> | <b>10109.93</b> | <b>4620.764</b> | <b>6765.185</b> |

Sample Name: Q3103-01LX5      Acquired: 9/18/2025 13:28:29      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.001266</b> | <b>.0000004</b> | <b>-.001149</b> | <b>-.000002</b> | <b>.0018102</b> | <b>.0377022</b> |
| Stddev | .001563         | .0013227        | .000823         | .001528         | .0012276        | .0104514        |
| %RSD   | 123.4786        | 362338.5        | 71.62151        | 63711.63        | 67.81831        | 27.72086        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000373</b> | <b>.0010328</b> | <b>-.002057</b> | <b>-.001245</b> | <b>.0028528</b> | <b>.0257819</b> |
| #2 | <b>-.000354</b> | <b>-.001491</b> | <b>-.000934</b> | <b>-.000465</b> | <b>.0004571</b> | <b>.0452937</b> |
| #3 | <b>-.003071</b> | <b>.000459</b>  | <b>-.000455</b> | <b>.001703</b>  | <b>.0021207</b> | <b>.0420309</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0267969</b> | <b>.0000068</b> | <b>-.000188</b> | <b>21.71685</b> | <b>-.000198</b> | <b>-.000304</b> |
| Stddev | .0012757        | .0000998        | .000070         | .09581          | .000256         | .000166         |
| %RSD   | 4.760522        | 1463.151        | 36.95882        | .4411674        | 129.5018        | 54.66501        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0269175</b> | <b>-.000071</b> | <b>-.000244</b> | <b>21.65840</b> | <b>-.000435</b> | <b>-.000388</b> |
| #2 | <b>.0254652</b> | <b>-.000028</b> | <b>-.000110</b> | <b>21.66474</b> | <b>-.000231</b> | <b>-.000412</b> |
| #3 | <b>.0280080</b> | <b>.000119</b>  | <b>-.000210</b> | <b>21.82742</b> | <b>.000073</b>  | <b>-.000113</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000006</b> | <b>.0281902</b> | <b>.0005803</b> | <b>2.326113</b> | <b>.0004731</b> | <b>-.000304</b> |
| Stddev | .000425         | .0030398        | .0005715        | .020597         | .0005511        | .000136         |
| %RSD   | 7415.884        | 10.78322        | 98.48205        | .8854739        | 116.4826        | 44.69592        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.000475</b>  | <b>.0309054</b> | <b>-.000077</b> | <b>2.311641</b> | <b>.0004038</b> | <b>-.000325</b> |
| #2 | <b>-.000163</b> | <b>.0287591</b> | <b>.000856</b>  | <b>2.349694</b> | <b>.0010555</b> | <b>-.000427</b> |
| #3 | <b>-.000330</b> | <b>.0249062</b> | <b>.000962</b>  | <b>2.317004</b> | <b>-.000040</b> | <b>-.000158</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>52.45408</b> | <b>-.000815</b> | <b>.0004249</b> | <b>23.98505</b> | <b>.0559323</b> | <b>.0068950</b> |
| Stddev | .51061          | .002797         | .0003316        | .18300          | .0012104        | .0003035        |
| %RSD   | .9734331        | 343.4036        | 78.03867        | .7629748        | 2.163954        | 4.401686        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>52.47216</b> | <b>-.004028</b> | <b>.0000428</b> | <b>23.90850</b> | <b>.0552835</b> | <b>.0071526</b> |
| #2 | <b>52.95541</b> | <b>.000506</b>  | <b>.0005950</b> | <b>24.19389</b> | <b>.0551846</b> | <b>.0065604</b> |
| #3 | <b>51.93468</b> | <b>.001078</b>  | <b>.0006368</b> | <b>23.85275</b> | <b>.0573287</b> | <b>.0069720</b> |

Sample Name: Q3103-01LX5      Acquired: 9/18/2025 13:28:29      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>-.003774</b> | <b>-.001105</b> | <b>2.286476</b> | <b>.0223451</b> | <b>F 18.11710</b> | <b>-.002983</b> |
| Stddev | .000773         | .001193         | .026828         | .0009900        | .05452            | .001157         |
| %RSD   | 20.48163        | 107.9733        | 1.173331        | 4.430716        | .3009220          | 38.77509        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.002947</b> | <b>-.000075</b> | <b>2.267064</b> | <b>.0215041</b> | <b>18.13227</b> | <b>-.003383</b> |
| #2 | <b>-.003896</b> | <b>-.002412</b> | <b>2.317090</b> | <b>.0234362</b> | <b>18.16242</b> | <b>-.001680</b> |
| #3 | <b>-.004478</b> | <b>-.000828</b> | <b>2.275275</b> | <b>.0220950</b> | <b>18.05660</b> | <b>-.003887</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>.5027076</b> |
| Stddev | .0011317        |
| %RSD   | .2251306        |

|    |                 |
|----|-----------------|
| #1 | <b>.5029645</b> |
| #2 | <b>.5014696</b> |
| #3 | <b>.5036889</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6291.033</b> | <b>106277.9</b> | <b>10135.16</b> | <b>4937.471</b> | <b>7443.926</b> |
| Stddev    | 10.283          | 496.2           | 68.09           | 20.369          | 14.920          |
| %RSD      | .1634609        | .4669056        | .6718487        | .4125338        | .2004381        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6284.515</b> | <b>106277.6</b> | <b>10125.13</b> | <b>4914.456</b> | <b>7441.716</b> |
| #2 | <b>6285.696</b> | <b>105781.9</b> | <b>10207.71</b> | <b>4953.176</b> | <b>7430.234</b> |
| #3 | <b>6302.887</b> | <b>106774.4</b> | <b>10072.63</b> | <b>4944.782</b> | <b>7459.828</b> |

Sample Name: Q3103-01MS      Acquired: 9/18/2025 13:32:45      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8125330</b> | <b>1.869545</b> | <b>.9285768</b> | <b>2.004401</b> | <b>.8121492</b> | <b>2.113974</b> |
| Stddev | .0038380        | .022823         | .0032288        | .008212         | .0010848        | .063931         |
| %RSD   | .4723468        | 1.220786        | .3477174        | .4096973        | .1335659        | 3.024210        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .8110825 | 1.892172 | .9323045 | 2.013268 | .8108972 | 2.044113 |
| #2 | .8168848 | 1.846531 | .9267701 | 2.002877 | .8127440 | 2.169563 |
| #3 | .8096316 | 1.869932 | .9266557 | 1.997058 | .8128065 | 2.128248 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2931185</b> | <b>.1904640</b> | <b>.1928914</b> | <b>90.59386</b> | <b>.4050920</b> | <b>.1967689</b> |
| Stddev | .0107280        | .0042877        | .0004098        | 2.44224         | .0008031        | .0003218        |
| %RSD   | 3.659952        | 2.251195        | .2124641        | 2.695812        | .1982395        | .1635464        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .2820052 | .1859010 | .1933095 | 87.96540 | .4044608 | .1970561 |
| #2 | .3034144 | .1944095 | .1924903 | 92.79291 | .4059959 | .1968296 |
| #3 | .2939359 | .1910813 | .1928744 | 91.02328 | .4048194 | .1964211 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2896940</b> | <b>3.169545</b> | <b>.1939840</b> | <b>11.52250</b> | <b>.4915367</b> | <b>.0727210</b> |
| Stddev | .0010301        | .033429         | .0068168        | .30469          | .0007691        | .0005061        |
| %RSD   | .3555655        | 1.054689        | 3.514102        | 2.644295        | .1564617        | .6959289        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .2890804 | 3.139762 | .1873082 | 11.18756 | .4918425 | .0733046 |
| #2 | .2908832 | 3.205702 | .2009336 | 11.78324 | .4906618 | .0724553 |
| #3 | .2891184 | 3.163173 | .1937101 | 11.59668 | .4921059 | .0724031 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>239.9642</b> | <b>.2968806</b> | <b>.2079079</b> | <b>118.6545</b> | <b>.4868517</b> | <b>.4558563</b> |
| Stddev | 2.3110          | .0083626        | .0011917        | 1.3311          | .0071416        | .0009519        |
| %RSD   | .9630671        | 2.816813        | .5731665        | 1.121856        | 1.466898        | .2088135        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 238.5671 | .2872266 | .2089354 | 117.3322 | .4796858 | .4549634 |
| #2 | 238.6936 | .3018895 | .2066016 | 119.9943 | .4939688 | .4557475 |
| #3 | 242.6317 | .3015257 | .2081869 | 118.6371 | .4869004 | .4568579 |

Sample Name: Q3103-01MS      Acquired: 9/18/2025 13:32:45      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

| Elem   | Sn1899          | Ti3361          | Si2881            | P_1774          | S_1820            | Li6707          |
|--------|-----------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| Units  | ppm             | ppm             | ppm               | ppm             | ppm               | ppm             |
| Avg    | <b>.6918762</b> | <b>.1907284</b> | <b>F 11.24320</b> | <b>6.020098</b> | <b>F 81.26447</b> | <b>.2165785</b> |
| Stddev | .0021106        | .0047711        | .10498            | .016280         | .37021            | .0078234        |
| %RSD   | .3050623        | 2.501504        | .9336825          | .2704355        | .4555680          | 3.612273        |
| #1     | .6930196        | .1857426        | 11.12200          | 6.032843        | 81.69013          | .2075590        |
| #2     | .6894406        | .1952509        | 11.30581          | 6.001757        | 81.01751          | .2215259        |
| #3     | .6931685        | .1911918        | 11.30177          | 6.025693        | 81.08576          | .2206507        |

| Elem   | Sr4077          |
|--------|-----------------|
| Units  | ppm             |
| Avg    | <b>2.302973</b> |
| Stddev | .055004         |
| %RSD   | 2.388392        |
| #1     | <b>2.246363</b> |
| #2     | <b>2.356216</b> |
| #3     | <b>2.306340</b> |

| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5929.290</b> | <b>101024.6</b> | <b>10237.51</b> | <b>4672.966</b> | <b>6762.699</b> |
| Stddev    | 10.503          | 363.4           | 238.69          | 21.406          | 12.785          |
| %RSD      | .1771441        | .3597056        | 2.331554        | .4580802        | .1890457        |
| #1        | 5929.965        | 101405.8        | 10494.34        | 4697.471        | 6759.088        |
| #2        | 5939.440        | 100682.1        | 10022.47        | 4663.520        | 6776.900        |
| #3        | 5918.465        | 100985.8        | 10195.74        | 4657.909        | 6752.108        |

Sample Name: Q3103-01MSD      Acquired: 9/18/2025 13:37:10      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8505335</b> | <b>1.983437</b> | <b>.9767991</b> | <b>2.112066</b> | <b>.8412884</b> | <b>2.210863</b> |
| Stddev | .0059567        | .077784         | .0019925        | .010657         | .0044125        | .008132         |
| %RSD   | .7003539        | 3.921656        | .2039808        | .5045683        | .5244875        | .3678402        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .8438816 | 2.033313 | .9763132 | 2.100978 | .8374525 | 2.202408 |
| #2 | .8553750 | 2.023187 | .9750946 | 2.122231 | .8461105 | 2.211552 |
| #3 | .8523439 | 1.893810 | .9789896 | 2.112990 | .8403023 | 2.218629 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.3135666</b> | <b>.1994249</b> | <b>.2031581</b> | <b>97.29277</b> | <b>.4219474</b> | <b>.2067713</b> |
| Stddev | .0010645        | .0016890        | .0001285        | .32351          | .0007046        | .0001287        |
| %RSD   | .3394824        | .8469220        | .0632496        | .3325098        | .1669972        | .0622541        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .3147903 | .2006259 | .2031532 | 97.61677 | .4212273 | .2066234 |
| #2 | .3128539 | .2001552 | .2032891 | 97.29177 | .4219792 | .2068319 |
| #3 | .3130557 | .1974937 | .2030322 | 96.96976 | .4226355 | .2068585 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.3046491</b> | <b>3.295446</b> | <b>.2015271</b> | <b>12.37288</b> | <b>.5174641</b> | <b>.0740412</b> |
| Stddev | .0004699        | .015465         | .0010628        | .08047          | .0007951        | .0003592        |
| %RSD   | .1542512        | .4692790        | .5273605        | .6503741        | .1536618        | .4850963        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .3044633 | 3.278990 | .2018139 | 12.45904 | .5165944 | .0744048 |
| #2 | .3043005 | 3.309680 | .2024170 | 12.29966 | .5176440 | .0736866 |
| #3 | .3051836 | 3.297669 | .2003503 | 12.35995 | .5181538 | .0740320 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>254.5748</b> | <b>.3096110</b> | <b>.2174386</b> | <b>126.5261</b> | <b>.5146653</b> | <b>.4751305</b> |
| Stddev | 3.2296          | .0044817        | .0008700        | .8468           | .0039479        | .0015431        |
| %RSD   | 1.268619        | 1.447536        | .4001329        | .6692755        | .7670750        | .3247677        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 253.9561 | .3051442 | .2165397 | 125.6189 | .5179850 | .4750493 |
| #2 | 251.6993 | .3141076 | .2182766 | 126.6639 | .5157111 | .4767126 |
| #3 | 258.0690 | .3095813 | .2174996 | 127.2956 | .5102999 | .4736297 |

Sample Name: Q3103-01MSD      Acquired: 9/18/2025 13:37:10      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

| Elem   | Sn1899          | Ti3361          | Si2881            | P_1774          | S_1820            | Li6707          |
|--------|-----------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| Units  | ppm             | ppm             | ppm               | ppm             | ppm               | ppm             |
| Avg    | <b>.7220951</b> | <b>.1987155</b> | <b>F 11.90487</b> | <b>6.373326</b> | <b>F 87.50700</b> | <b>.2286386</b> |
| Stddev | .0014042        | .0003917        | .07566            | .054559         | .61394            | .0010314        |
| %RSD   | .1944679        | .1971312        | .6355129          | .8560533        | .7015916          | .4510817        |
| #1     | .7217920        | .1989876        | 11.83426          | 6.423618        | 87.96183          | .2286220        |
| #2     | .7236262        | .1988924        | 11.89563          | 6.381040        | 87.75051          | .2296782        |
| #3     | .7208672        | .1982665        | 11.98473          | 6.315321        | 86.80866          | .2276157        |

| Elem   | Sr4077          |
|--------|-----------------|
| Units  | ppm             |
| Avg    | <b>2.464505</b> |
| Stddev | .013166         |
| %RSD   | .5342254        |
| #1     | <b>2.471333</b> |
| #2     | <b>2.472856</b> |
| #3     | <b>2.449328</b> |

| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5802.310</b> | <b>99480.29</b> | <b>9984.730</b> | <b>4547.514</b> | <b>6594.743</b> |
| Stddev    | 6.935           | 289.40          | 71.553          | 29.010          | 13.625          |
| %RSD      | .1195202        | .2909162        | .7166239        | .6379383        | .2066115        |
| #1        | 5796.607        | 99800.85        | 9929.126        | 4580.989        | 6581.658        |
| #2        | 5800.293        | 99238.25        | 9959.608        | 4531.840        | 6593.720        |
| #3        | 5810.030        | 99401.78        | 10065.46        | 4529.711        | 6608.851        |



Sample Name: Q3103-01A      Acquired: 9/18/2025 13:41:26      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8277729</b> | <b>1.886693</b> | <b>.9550868</b> | <b>2.060884</b> | <b>.8345783</b> | <b>2.224748</b> |
| Stddev | .0078411        | .028219         | .0118330        | .017549         | .0093287        | .013080         |
| %RSD   | .9472492        | 1.495694        | 1.238947        | .8515466        | 1.117772        | .5879413        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .8187347 | 1.908930 | .9414520 | 2.040634 | .8240673 | 2.236889 |
| #2 | .8318280 | 1.896201 | .9626713 | 2.070370 | .8377933 | 2.226458 |
| #3 | .8327560 | 1.854948 | .9611372 | 2.071649 | .8418743 | 2.210897 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.3082710</b> | <b>.2006523</b> | <b>.1985222</b> | <b>95.09789</b> | <b>.4161431</b> | <b>.2019161</b> |
| Stddev | .0027859        | .0009619        | .0024550        | .44625          | .0013414        | .0024547        |
| %RSD   | .9037129        | .4793662        | 1.236614        | .4692534        | .3223446        | 1.215725        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .3085757 | .2014267 | .1957219 | 95.18290 | .4148935 | .1990991 |
| #2 | .3108920 | .2009546 | .1995408 | 95.49552 | .4159753 | .2030528 |
| #3 | .3053453 | .1995756 | .2003039 | 94.61525 | .4175605 | .2035965 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2970283</b> | <b>3.288939</b> | <b>.2031662</b> | <b>12.21202</b> | <b>.5048433</b> | <b>.0748682</b> |
| Stddev | .0030834        | .017495         | .0014648        | .03275          | .0070326        | .0013103        |
| %RSD   | 1.038097        | .5319392        | .7209641        | .2681671        | 1.393026        | 1.750121        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .2934851 | 3.285050 | .2042863 | 12.21546 | .4967386 | .0733731 |
| #2 | .2984963 | 3.308051 | .2037038 | 12.24291 | .5084570 | .0758164 |
| #3 | .2991035 | 3.273715 | .2015087 | 12.17768 | .5093343 | .0754152 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>247.4410</b> | <b>.3088925</b> | <b>.2163548</b> | <b>123.8479</b> | <b>.5125722</b> | <b>.4658165</b> |
| Stddev | 2.0561          | .0041065        | .0011981        | .5693           | .0032060        | .0048858        |
| %RSD   | .8309270        | 1.329442        | .5537500        | .4596901        | .6254767        | 1.048869        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 245.1247 | .3069277 | .2156043 | 123.1949 | .5162130 | .4601765 |
| #2 | 249.0500 | .3136123 | .2157236 | 124.2401 | .5101713 | .4685197 |
| #3 | 248.1485 | .3061373 | .2177365 | 124.1086 | .5113324 | .4687534 |

Sample Name: Q3103-01A      Acquired: 9/18/2025 13:41:26      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |            |          |            |          |
|--------|----------|----------|------------|----------|------------|----------|
| Elem   | Sn1899   | Ti3361   | Si2881     | P_1774   | S_1820     | Li6707   |
| Units  | ppm      | ppm      | ppm        | ppm      | ppm        | ppm      |
| Avg    | .7127982 | .1998012 | F 11.81714 | 6.176628 | F 82.85485 | .2311894 |
| Stddev | .0076971 | .0012507 | .07299     | .059708  | .57086     | .0030775 |
| %RSD   | 1.079851 | .6259855 | .6176938   | .9666693 | .6889910   | 1.331153 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7040291 | .2009452 | 11.73358 | 6.110405 | 82.20283 | .2300347 |
| #2 | .7159287 | .1999926 | 11.84937 | 6.226351 | 83.26475 | .2346773 |
| #3 | .7184369 | .1984658 | 11.86847 | 6.193126 | 83.09696 | .2288563 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | 2.417911 |
| Stddev | .035693  |
| %RSD   | 1.476177 |

|    |          |
|----|----------|
| #1 | 2.448671 |
| #2 | 2.426286 |
| #3 | 2.378775 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 5950.550 | 99774.94 | 10027.86 | 4603.065 | 6768.045 |
| Stddev    | 55.255   | 435.89   | 51.96    | 27.403   | 77.081   |
| %RSD      | .9285648 | .4368733 | .5181208 | .5953300 | 1.138889 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6013.935 | 100272.9 | 10009.21 | 4632.365 | 6856.930 |
| #2 | 5912.547 | 99589.3  | 9987.80  | 4578.066 | 6719.597 |
| #3 | 5925.167 | 99462.6  | 10086.56 | 4598.765 | 6727.609 |

Sample Name: Q3118-01A      Acquired: 9/18/2025 13:45:42      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.6871993</b> | <b>1.759518</b> | <b>1.088654</b> | <b>1.569940</b> | <b>.2718356</b> | <b>175.8178</b> |
| Stddev | .0045022        | .067923         | .002508         | .006352         | .0019258        | .2596           |
| %RSD   | .6551544        | 3.860329        | .2303985        | .4046173        | .7084502        | .1476713        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6859540 | 1.683549 | 1.091183 | 1.566034 | .2738749 | 176.0670 |
| #2 | .6834508 | 1.780617 | 1.086167 | 1.566515 | .2700481 | 175.8377 |
| #3 | .6921930 | 1.814387 | 1.088612 | 1.577269 | .2715837 | 175.5489 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8263045</b> | <b>.1630266</b> | <b>.1890806</b> | <b>59.49455</b> | <b>.5933599</b> | <b>.4129303</b> |
| Stddev | .0064854        | .0006777        | .0003710        | .16822          | .0034114        | .0012281        |
| %RSD   | .7848654        | .4156800        | .1962086        | .2827556        | .5749277        | .2974124        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .8310851 | .1632945 | .1886797 | 59.66880 | .5937816 | .4120415 |
| #2 | .8289062 | .1635295 | .1891502 | 59.48178 | .5897573 | .4124176 |
| #3 | .8189222 | .1622560 | .1894118 | 59.33308 | .5965409 | .4143316 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7192241</b> | <b>373.5925</b> | <b>7.170456</b> | <b>57.84550</b> | <b>.7520770</b> | <b>.0724791</b> |
| Stddev | .0022038        | 1.3923          | .045521         | .11399          | .0022567        | .0003391        |
| %RSD   | .3064078        | .3726699        | .6348466        | .1970638        | .3000579        | .4678413        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7175950 | 373.2855 | 7.205850 | 57.96382 | .7503216 | .0727387 |
| #2 | .7183456 | 372.3793 | 7.186413 | 57.83628 | .7512869 | .0720954 |
| #3 | .7217316 | 375.1126 | 7.119104 | 57.73639 | .7546225 | .0726031 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>20.57137</b> | <b>1.073541</b> | <b>.7257030</b> | <b>19.88571</b> | <b>.4504786</b> | <b>.3398193</b> |
| Stddev | .04321          | .002684         | .0006611        | .06057          | .0084868        | .0000309        |
| %RSD   | .2100594        | .2500315        | .0910966        | .3045674        | 1.883951        | .0090883        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 20.58145 | 1.076160 | .7259123 | 19.85210 | .4529077 | .3398202 |
| #2 | 20.52401 | 1.073666 | .7249626 | 19.84940 | .4410422 | .3397880 |
| #3 | 20.60865 | 1.070796 | .7262341 | 19.95562 | .4574861 | .3398497 |

Sample Name: Q3118-01A      Acquired: 9/18/2025 13:45:42      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                   |                 |                 |
|--------|-----------------|-----------------|-----------------|-------------------|-----------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774            | S_1820          | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm               | ppm             | ppm             |
| Avg    | <b>.6547918</b> | <b>9.851003</b> | <b>3.796911</b> | <b>F 12.82429</b> | <b>2.314040</b> | <b>.3257717</b> |
| Stddev | .0003048        | .041540         | .031975         | .14045            | .023183         | .0005591        |
| %RSD   | .0465438        | .4216866        | .8421273        | 1.095181          | 1.001847        | .1716188        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6547156 | 9.890347 | 3.809358 | 12.66283 | 2.287326 | .3260368 |
| #2 | .6545324 | 9.855093 | 3.760584 | 12.89190 | 2.325909 | .3261488 |
| #3 | .6551274 | 9.807569 | 3.820790 | 12.91816 | 2.328885 | .3251293 |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.001403</b> |
| Stddev | .004024         |
| %RSD   | 286.8731        |

|    |          |
|----|----------|
| #1 | .000422  |
| #2 | .001386  |
| #3 | -.006016 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>7139.066</b> | <b>123816.7</b> | <b>12706.78</b> | <b>5639.264</b> | <b>6763.482</b> |
| Stddev    | 7.580           | 553.4           | 106.49          | 33.212          | 9.963           |
| %RSD      | .1061738        | .4469583        | .8380212        | .5889349        | .1473032        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 7145.926 | 123500.9 | 12595.28 | 5625.449 | 6771.556 |
| #2 | 7140.342 | 124455.7 | 12717.64 | 5677.153 | 6766.541 |
| #3 | 7130.929 | 123493.5 | 12807.42 | 5615.190 | 6752.348 |

Sample Name: CCV03      Acquired: 9/18/2025 13:49:36      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV03      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>4.984754</b> | <b>4.822671</b> | <b>4.895702</b> | <b>5.072539</b> | <b>5.056849</b> | <b>9.818332</b> | <b>9.696637</b> |
| Stddev | .009680         | .104156         | .002289         | .016991         | .004836         | .162546         | .165472         |
| %RSD   | .1941892        | 2.159721        | .0467548        | .3349590        | .0956276        | 1.655537        | 1.706485        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 4.985307 | 4.722364 | 4.895177 | 5.066227 | 5.051277 | 9.841277 | 9.582468 |
| #2 | 4.994145 | 4.930291 | 4.893722 | 5.091782 | 5.059319 | 9.968186 | 9.886405 |
| #3 | 4.974809 | 4.815359 | 4.898209 | 5.059607 | 5.059951 | 9.645532 | 9.621037 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2443122</b> | <b>2.458097</b> | <b>24.48611</b> | <b>1.011227</b> | <b>2.466264</b> | <b>1.249212</b> | <b>5.010114</b> |
| Stddev | .0032665        | .001980         | .41130          | .001027         | .002945         | .001558         | .029110         |
| %RSD   | 1.337034        | .0805614        | 1.679713        | .1015970        | .1193910        | .1246960        | .5810250        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .2433701 | 2.457524 | 24.52974 | 1.011324 | 2.467173 | 1.249996 | 5.043711 |
| #2 | .2479463 | 2.456467 | 24.87385 | 1.012203 | 2.462972 | 1.247418 | 4.994226 |
| #3 | .2416203 | 2.460301 | 24.05474 | 1.010155 | 2.468647 | 1.250223 | 4.992405 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.419645</b> | <b>24.37891</b> | <b>2.465191</b> | <b>1.252226</b> | <b>24.38693</b> | <b>2.449175</b> | <b>2.525198</b> |
| Stddev | .038388         | .43246          | .001468         | .001433         | .20684          | .038431         | .004419         |
| %RSD   | 1.586505        | 1.773921        | .0595367        | .1144751        | .8481658        | 1.569128        | .1749797        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 2.429749 | 24.36381 | 2.465948 | 1.250601 | 24.62081 | 2.454564 | 2.520512 |
| #2 | 2.451969 | 24.81873 | 2.463499 | 1.252769 | 24.22808 | 2.484626 | 2.529289 |
| #3 | 2.377215 | 23.95420 | 2.466126 | 1.253309 | 24.31189 | 2.408334 | 2.525792 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>24.98095</b> | <b>4.817073</b> | <b>5.050543</b> | <b>4.944457</b> | <b>4.865484</b> | <b>5.045814</b> | <b>5.006066</b> |
| Stddev | .11346          | .067651         | .007047         | .012980         | .076601         | .023197         | .049984         |
| %RSD   | .4541979        | 1.404408        | .1395211        | .2625063        | 1.574374        | .4597323        | .9984675        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 25.10076 | 4.799712 | 5.054205 | 4.950115 | 4.878481 | 5.059692 | 5.007118 |
| #2 | 24.87513 | 4.891714 | 5.055006 | 4.953647 | 4.934755 | 5.058717 | 5.055515 |
| #3 | 24.96696 | 4.759795 | 5.042420 | 4.929609 | 4.783216 | 5.019035 | 4.955564 |

Sample Name: CCV03      Acquired: 9/18/2025 13:49:36      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV03      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>4.954066</b> | <b>4.766188</b> | <b>4.901584</b> |
| Stddev | .055942         | .065122         | .062251         |
| %RSD   | 1.129204        | 1.366323        | 1.270014        |

|    |                 |                 |                 |
|----|-----------------|-----------------|-----------------|
| #1 | <b>4.929665</b> | <b>4.780496</b> | <b>4.914377</b> |
| #2 | <b>5.018063</b> | <b>4.822965</b> | <b>4.956444</b> |
| #3 | <b>4.914469</b> | <b>4.695102</b> | <b>4.833930</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6301.853</b> | <b>107476.3</b> | <b>10554.90</b> | <b>4934.495</b> | <b>7304.397</b> |
| Stddev    | 23.958          | 275.6           | 149.74          | 12.683          | 26.948          |
| %RSD      | .3801817        | .2563991        | 1.418649        | .2570218        | .3689247        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6274.188</b> | <b>107176.9</b> | <b>10553.72</b> | <b>4940.562</b> | <b>7273.288</b> |
| #2 | <b>6315.696</b> | <b>107532.5</b> | <b>10405.75</b> | <b>4943.005</b> | <b>7319.375</b> |
| #3 | <b>6315.675</b> | <b>107719.4</b> | <b>10705.22</b> | <b>4919.919</b> | <b>7320.529</b> |

Sample Name: CCB03      Acquired: 9/18/2025 13:55:28      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB03      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.001493</b> | <b>.0006738</b> | <b>.0003468</b> | <b>-.001423</b> | <b>-.000391</b> | <b>-.002192</b> |
| Stddev | .000944         | .0015461        | .0012113        | .002377         | .001473         | .002880         |
| %RSD   | 63.22067        | 229.4684        | 349.3090        | 167.0334        | 376.6478        | 131.4036        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001282</b> | <b>.0018430</b> | <b>.0012436</b> | <b>.001130</b>  | <b>-.000336</b> | <b>-.002536</b> |
| #2 | <b>-.002524</b> | <b>.0012575</b> | <b>-.001031</b> | <b>-.003572</b> | <b>.001054</b>  | <b>.000845</b>  |
| #3 | <b>-.000672</b> | <b>-.001079</b> | <b>.000828</b>  | <b>-.001828</b> | <b>-.001891</b> | <b>-.004884</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.003075</b> | <b>.0000690</b> | <b>-.000182</b> | <b>-.004346</b> | <b>.0001437</b> | <b>-.000225</b> |
| Stddev | .000943         | .0000838        | .000029         | .002798         | .0005817        | .000126         |
| %RSD   | 30.66390        | 121.5328        | 16.13994        | 64.38671        | 404.8197        | 56.05984        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001986</b> | <b>.0000789</b> | <b>-.000179</b> | <b>-.003568</b> | <b>.0008131</b> | <b>-.000126</b> |
| #2 | <b>-.003611</b> | <b>.0001474</b> | <b>-.000154</b> | <b>-.002019</b> | <b>-.000239</b> | <b>-.000366</b> |
| #3 | <b>-.003627</b> | <b>-.000019</b> | <b>-.000212</b> | <b>-.007450</b> | <b>-.000143</b> | <b>-.000182</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000393</b> | <b>.0092410</b> | <b>-.000290</b> | <b>.0005056</b> | <b>-.000158</b> | <b>-.000604</b> |
| Stddev | .000114         | .0072201        | .000376         | .0231172        | .000141         | .000480         |
| %RSD   | 28.94241        | 78.13191        | 129.3922        | 4572.478        | 88.96382        | 79.48465        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000308</b> | <b>.0175684</b> | <b>.000142</b>  | <b>-.020791</b> | <b>-.000318</b> | <b>-.000238</b> |
| #2 | <b>-.000522</b> | <b>.0047299</b> | <b>-.000473</b> | <b>-.002783</b> | <b>-.000050</b> | <b>-.000426</b> |
| #3 | <b>-.000348</b> | <b>.0054246</b> | <b>-.000539</b> | <b>.025091</b>  | <b>-.000107</b> | <b>-.001147</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.035480</b> | <b>.0022279</b> | <b>-.000133</b> | <b>-.029686</b> | <b>-.000768</b> | <b>-.000216</b> |
| Stddev | .012274         | .0006492        | .000136         | .069500         | .000766         | .000217         |
| %RSD   | 34.59422        | 29.13891        | 101.8311        | 234.1135        | 99.61444        | 100.5302        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.049227</b> | <b>.0026271</b> | <b>-.000205</b> | <b>-.109095</b> | <b>-.000015</b> | <b>-.000033</b> |
| #2 | <b>-.031595</b> | <b>.0025778</b> | <b>-.000218</b> | <b>-.000034</b> | <b>-.001546</b> | <b>-.000158</b> |
| #3 | <b>-.025619</b> | <b>.0014788</b> | <b>.000023</b>  | <b>.020069</b>  | <b>-.000744</b> | <b>-.000456</b> |

Sample Name: CCB03      Acquired: 9/18/2025 13:55:28      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB03      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>-.000804</b> | <b>-.000232</b> | <b>.0103017</b> | <b>.0004512</b> | <b>F .0216159</b> | <b>-.008332</b> |
| Stddev | .000522         | .001058         | .0069910        | .0015575        | .0023346          | .001418         |
| %RSD   | 64.90000        | 455.9081        | 67.86223        | 345.1978        | 10.80052          | 17.01770        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000848</b> | <b>.000121</b>  | <b>.0044409</b> | <b>.0003173</b> | <b>.0200100</b> | <b>-.009841</b> |
| #2 | <b>-.000262</b> | <b>.000604</b>  | <b>.0084247</b> | <b>-.001035</b> | <b>.0242940</b> | <b>-.007028</b> |
| #3 | <b>-.001302</b> | <b>-.001421</b> | <b>.0180396</b> | <b>.002071</b>  | <b>.0205436</b> | <b>-.008127</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000375</b> |
| Stddev | .000034         |
| %RSD   | 9.126825        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000377</b> |
| #2 | <b>-.000409</b> |
| #3 | <b>-.000340</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6542.181</b> | <b>112851.5</b> | <b>10628.78</b> | <b>5137.842</b> | <b>8222.518</b> |
| Stddev    | 16.431          | 155.0           | 22.15           | 18.514          | 15.162          |
| %RSD      | .2511535        | .1373583        | .2083557        | .3603529        | .1843963        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6561.111</b> | <b>112751.7</b> | <b>10635.14</b> | <b>5144.195</b> | <b>8238.728</b> |
| #2 | <b>6533.818</b> | <b>113030.0</b> | <b>10604.15</b> | <b>5152.343</b> | <b>8208.684</b> |
| #3 | <b>6531.615</b> | <b>112772.6</b> | <b>10647.05</b> | <b>5116.987</b> | <b>8220.142</b> |



Sample Name: LR-1      Acquired: 9/18/2025 14:10:33      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.005771</b> | <b>.0107834</b> | <b>.0173603</b> | <b>-.029777</b> | <b>.0210895</b> | <b>.2109024</b> | <b>-.011788</b> |
| Stddev | .004379         | .0051047        | .0038956        | .003946         | .0067006        | .0348864        | .000702         |
| %RSD   | 75.88360        | 47.33825        | 22.43992        | 13.25027        | 31.77234        | 16.54150        | 5.953301        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.010720</b> | <b>.0049057</b> | <b>.0218014</b> | <b>-.029077</b> | <b>.0266103</b> | <b>.2499088</b> | <b>-.012071</b> |
| #2 | <b>-.002396</b> | <b>.0141062</b> | <b>.0145208</b> | <b>-.026228</b> | <b>.0136345</b> | <b>.1826850</b> | <b>-.010989</b> |
| #3 | <b>-.004198</b> | <b>.0133383</b> | <b>.0157586</b> | <b>-.034026</b> | <b>.0230236</b> | <b>.2001133</b> | <b>-.012304</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0002433</b> | <b>.0005349</b> | <b>2487.353</b> | <b>.0275995</b> | <b>.0003676</b> | <b>.0030380</b> | <b>.5211452</b> |
| Stddev | .0000982        | .0000776        | 27.033          | .0002583        | .0002805        | .0004932        | .0116019        |
| %RSD   | 40.38148        | 14.51245        | 1.086799        | .9360470        | 76.31240        | 16.23416        | 2.226230        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0002616</b> | <b>.0004728</b> | <b>2462.569</b> | <b>.0276263</b> | <b>.0006910</b> | <b>.0029622</b> | <b>.5101231</b> |
| #2 | <b>.0001372</b> | <b>.0005099</b> | <b>2516.179</b> | <b>.0278434</b> | <b>.0002222</b> | <b>.0025871</b> | <b>.5200616</b> |
| #3 | <b>.0003311</b> | <b>.0006219</b> | <b>2483.311</b> | <b>.0273288</b> | <b>.0001896</b> | <b>.0035646</b> | <b>.5332509</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0171235</b> | <b>2259.285</b> | <b>.0177021</b> | <b>-.001597</b> | <b>2520.357</b> | <b>.0050194</b> | <b>.0591678</b> |
| Stddev | .0006280        | 24.890          | .0009877        | .000089         | 14.359          | .0071639        | .0005993        |
| %RSD   | 3.667422        | 1.101665        | 5.579274        | 5.597915        | .5697338        | 142.7250        | 1.012889        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0166210</b> | <b>2263.378</b> | <b>.0188345</b> | <b>-.001668</b> | <b>2523.966</b> | <b>.0051004</b> | <b>.0591909</b> |
| #2 | <b>.0169220</b> | <b>2281.875</b> | <b>.0170194</b> | <b>-.001627</b> | <b>2504.537</b> | <b>-.002185</b> | <b>.0597551</b> |
| #3 | <b>.0178275</b> | <b>2232.603</b> | <b>.0172522</b> | <b>-.001497</b> | <b>2532.568</b> | <b>.012142</b>  | <b>.0585572</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>6.150651</b> | <b>.0079327</b> | <b>.0056113</b> | <b>-.012132</b> | <b>-.111111</b> | <b>-.008730</b> | <b>.0145899</b> |
| Stddev | 1.057429        | .0010607        | .0005518        | .000815         | .002304         | .013318         | .0039739        |
| %RSD   | 17.19214        | 13.37141        | 9.833927        | 6.717564        | 2.073748        | 152.5603        | 27.23734        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>5.072922</b> | <b>.0081434</b> | <b>.0057541</b> | <b>-.012466</b> | <b>-.108882</b> | <b>-.006863</b> | <b>.0167035</b> |
| #2 | <b>6.192496</b> | <b>.0088723</b> | <b>.0060776</b> | <b>-.011203</b> | <b>-.110968</b> | <b>.003556</b>  | <b>.0170604</b> |
| #3 | <b>7.186537</b> | <b>.0067825</b> | <b>.0050021</b> | <b>-.012726</b> | <b>-.113484</b> | <b>-.022883</b> | <b>.0100059</b> |

Sample Name: LR-1      Acquired: 9/18/2025 14:10:33      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>.2534910</b> | <b>-.397259</b> | <b>.0621467</b> |
| Stddev | .0124029        | .004047         | .0000896        |
| %RSD   | 4.892845        | 1.018857        | .1441992        |

|    |                 |                 |                 |
|----|-----------------|-----------------|-----------------|
| #1 | <b>.2504324</b> | <b>-.393476</b> | <b>.0622493</b> |
| #2 | <b>.2671370</b> | <b>-.401527</b> | <b>.0620838</b> |
| #3 | <b>.2429035</b> | <b>-.396773</b> | <b>.0621070</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>4183.013</b> | <b>74570.57</b> | <b>9188.156</b> | <b>3294.138</b> | <b>4407.396</b> |
| Stddev    | .263            | 168.57          | 100.105         | 3.155           | 1.485           |
| %RSD      | .0062797        | .2260586        | 1.089502        | .0957706        | .0337010        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>4182.770</b> | <b>74478.13</b> | <b>9268.943</b> | <b>3295.224</b> | <b>4407.756</b> |
| #2 | <b>4182.976</b> | <b>74765.14</b> | <b>9076.165</b> | <b>3290.584</b> | <b>4405.764</b> |
| #3 | <b>4183.292</b> | <b>74468.44</b> | <b>9219.359</b> | <b>3296.607</b> | <b>4408.668</b> |

Sample Name: LR-2      Acquired: 9/18/2025 14:16:02      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | As1890   | Tl1908   | Pb2203   | Se1960   | Sb2068   | Al3961   | Ba4934   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .1062390 | -.111219 | .0865729 | .0635618 | -.184782 | 1867.954 | .0187954 |
| Stddev | .0008500 | .001133  | .0126403 | .0244724 | .006095  | 23.580   | .0016616 |
| %RSD   | .8000391 | 1.018752 | 14.60075 | 38.50171 | 3.298386 | 1.262328 | 8.840519 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .1071335 | -.110331 | .0918202 | .0412329 | -.186435 | 1890.689 | .0189627 |
| #2 | .1061415 | -.110832 | .0957444 | .0597275 | -.189879 | 1869.563 | .0170565 |
| #3 | .1054419 | -.112495 | .0721540 | .0897250 | -.178030 | 1843.611 | .0203671 |

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | Be2348   | Cd2265   | Ca3736   | Cr2677   | Co2286   | Cu2247   | Fe2404   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0454495 | .0018602 | 7.852878 | -.249076 | .0707650 | .4493883 | 2688.162 |
| Stddev | .0001397 | .0013775 | .127906  | .001197  | .0001547 | .0068214 | 10.244   |
| %RSD   | .3074413 | 74.04976 | 1.628785 | .4807198 | .2186591 | 1.517935 | .3810866 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0453896 | .0032881 | 7.707234 | -.247703 | .0705866 | .4571901 | 2679.585 |
| #2 | .0456092 | .0017533 | 7.946937 | -.249620 | .0708459 | .4464259 | 2685.395 |
| #3 | .0453497 | .0005393 | 7.904462 | -.249904 | .0708626 | .4445489 | 2699.505 |

|        |          |          |          |         |          |          |          |
|--------|----------|----------|----------|---------|----------|----------|----------|
| Elem   | Mn2576   | Mg2790   | Ni2316   | Ag3280  | Na5895   | V_2924   | Zn2138   |
| Units  | ppm      | ppm      | ppm      | ppm     | ppm      | ppm      | ppm      |
| Avg    | -.230061 | 1.347035 | .0567895 | ^ ***** | 5.057128 | .0595946 | .0599262 |
| Stddev | .003537  | .032717  | .0016841 | -----   | .054112  | .0025430 | .0013156 |
| %RSD   | 1.537319 | 2.428796 | 2.965468 | -----   | 1.070024 | 4.267228 | 2.195319 |

|    |          |          |          |         |          |          |          |
|----|----------|----------|----------|---------|----------|----------|----------|
| #1 | -.234023 | 1.379780 | .0562978 | ^ ----- | 5.085502 | .0570405 | .0595871 |
| #2 | -.227221 | 1.346980 | .0554060 | ^ ----- | 5.091153 | .0596168 | .0613781 |
| #3 | -.228940 | 1.314346 | .0586647 | ^ ----- | 4.994729 | .0621264 | .0588133 |

|        |          |         |          |          |          |          |          |
|--------|----------|---------|----------|----------|----------|----------|----------|
| Elem   | K_7664   | B_2496  | Mo2020   | Sn1899   | Ti3361   | Si2881   | P_1774   |
| Units  | ppm      | ppm     | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | 1735.535 | ^ ***** | -.015214 | .0243679 | .0041789 | .5179020 | .0932501 |
| Stddev | 5.485    | -----   | .001412  | .0007761 | .0006542 | .0120217 | .0047983 |
| %RSD   | .3160595 | -----   | 9.281578 | 3.184811 | 15.65343 | 2.321228 | 5.145585 |

|    |          |         |          |          |          |          |          |
|----|----------|---------|----------|----------|----------|----------|----------|
| #1 | 1741.685 | ^ ----- | -.013612 | .0240211 | .0034289 | .5049020 | .0964233 |
| #2 | 1733.774 | ^ ----- | -.015752 | .0252569 | .0044768 | .5201863 | .0955968 |
| #3 | 1731.147 | ^ ----- | -.016278 | .0238257 | .0046312 | .5286176 | .0877301 |

Sample Name: LR-2      Acquired: 9/18/2025 14:16:02      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                |                 |                 |
|--------|----------------|-----------------|-----------------|
| Elem   | S_1820         | Li6707          | Sr4077          |
| Units  | ppm            | ppm             | ppm             |
| Avg    | <b>-400207</b> | <b>.2568368</b> | <b>-2.57759</b> |
| Stddev | .011001        | .0020224        | .00982          |
| %RSD   | 2.748811       | .7874112        | .3811103        |

|    |                 |                 |                 |
|----|-----------------|-----------------|-----------------|
| #1 | <b>-.394667</b> | <b>.2545028</b> | <b>-2.56933</b> |
| #2 | <b>-.412876</b> | <b>.2579381</b> | <b>-2.57500</b> |
| #3 | <b>-.393077</b> | <b>.2580693</b> | <b>-2.58845</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5234.296</b> | <b>86664.82</b> | <b>10012.07</b> | <b>4043.933</b> | <b>4881.373</b> |
| Stddev    | 1.525           | 120.88          | 43.40           | 15.424          | 3.722           |
| %RSD      | .0291371        | .1394797        | .4335250        | .3814152        | .0762514        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>5234.975</b> | <b>86700.40</b> | <b>9979.76</b>  | <b>4036.059</b> | <b>4884.304</b> |
| #2 | <b>5232.550</b> | <b>86530.14</b> | <b>10061.41</b> | <b>4034.034</b> | <b>4882.628</b> |
| #3 | <b>5235.364</b> | <b>86763.91</b> | <b>9995.05</b>  | <b>4061.705</b> | <b>4877.185</b> |

Sample Name: Q3117-02      Acquired: 9/18/2025 14:38:47      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.005211</b> | <b>-.002266</b> | <b>.0049195</b> | <b>.0029220</b> | <b>.0020778</b> | <b>.0388151</b> | <b>.1133986</b> |
| Stddev | .001854         | .002874         | .0005094        | .0011644        | .0011523        | .0206061        | .0008901        |
| %RSD   | 35.58697        | 126.8394        | 10.35438        | 39.85078        | 55.45595        | 53.08793        | .7849398        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.003418</b> | <b>-.005574</b> | <b>.0047326</b> | <b>.0032939</b> | <b>.0011095</b> | <b>.0571105</b> | <b>.1124244</b> |
| #2 | <b>-.005095</b> | <b>-.000832</b> | <b>.0045299</b> | <b>.0038551</b> | <b>.0017718</b> | <b>.0428422</b> | <b>.1141695</b> |
| #3 | <b>-.007121</b> | <b>-.000390</b> | <b>.0054959</b> | <b>.0016171</b> | <b>.0033522</b> | <b>.0164927</b> | <b>.1136018</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000111</b> | <b>.0011001</b> | <b>171.8949</b> | <b>.0034672</b> | <b>.0019471</b> | <b>.0201746</b> | <b>.0013064</b> |
| Stddev | .000024         | .0000493        | .9561           | .0001166        | .0000743        | .0003617        | .0069362        |
| %RSD   | 21.88169        | 4.478501        | .5562156        | 3.362721        | 3.816629        | 1.792631        | 530.9440        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000085</b> | <b>.0011343</b> | <b>170.7915</b> | <b>.0035542</b> | <b>.0019698</b> | <b>.0197647</b> | <b>-.006283</b> |
| #2 | <b>-.000133</b> | <b>.0010436</b> | <b>172.4782</b> | <b>.0033347</b> | <b>.0020075</b> | <b>.0204487</b> | <b>.002883</b>  |
| #3 | <b>-.000113</b> | <b>.0011224</b> | <b>172.4150</b> | <b>.0035126</b> | <b>.0018642</b> | <b>.0203104</b> | <b>.007318</b>  |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.4354392</b> | <b>3.663040</b> | <b>.0085137</b> | <b>-.000401</b> | <b>295.4492</b> | <b>.0011082</b> | <b>.1284655</b> |
| Stddev | .0040681        | .035179         | .0001753        | .000289         | 1.0069          | .0025487        | .0002405        |
| %RSD   | .9342609        | .9603727        | 2.058810        | 72.13185        | .3408115        | 229.9800        | .1872148        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.4311407</b> | <b>3.634333</b> | <b>.0086911</b> | <b>-.000493</b> | <b>296.0510</b> | <b>.0000412</b> | <b>.1283199</b> |
| #2 | <b>.4359480</b> | <b>3.702283</b> | <b>.0085094</b> | <b>-.000077</b> | <b>296.0099</b> | <b>.0040170</b> | <b>.1283336</b> |
| #3 | <b>.4392291</b> | <b>3.652503</b> | <b>.0083406</b> | <b>-.000632</b> | <b>294.2867</b> | <b>-.000734</b> | <b>.1287432</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>8.254958</b> | <b>.0217699</b> | <b>.0029767</b> | <b>-.011289</b> | <b>-.007330</b> | <b>5.226100</b> | <b>.0112065</b> |
| Stddev | .055397         | .0002385        | .0002041        | .000536         | .001952         | .020770         | .0004544        |
| %RSD   | .6710747        | 1.095482        | 6.855434        | 4.752225        | 26.62421        | .3974243        | 4.054375        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>8.313768</b> | <b>.0218394</b> | <b>.0029359</b> | <b>-.011658</b> | <b>-.005688</b> | <b>5.220436</b> | <b>.0116983</b> |
| #2 | <b>8.203762</b> | <b>.0215043</b> | <b>.0027961</b> | <b>-.011536</b> | <b>-.006815</b> | <b>5.208750</b> | <b>.0108024</b> |
| #3 | <b>8.247342</b> | <b>.0219658</b> | <b>.0031980</b> | <b>-.010674</b> | <b>-.009488</b> | <b>5.249114</b> | <b>.0111188</b> |

Sample Name: Q3117-02      Acquired: 9/18/2025 14:38:47      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>4.823351</b> | <b>-.042053</b> | <b>.6929443</b> |
| Stddev | .025316         | .001547         | .0028515        |
| %RSD   | .5248648        | 3.677955        | .4115013        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 4.820868 | -.041551 | .6897735 |
| #2 | 4.849816 | -.043788 | .6937612 |
| #3 | 4.799367 | -.040819 | .6952981 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6206.738</b> | <b>105784.6</b> | <b>11054.72</b> | <b>4778.281</b> | <b>7088.080</b> |
| Stddev    | 46.273          | 205.8           | 92.53           | 7.692           | 51.768          |
| %RSD      | .7455308        | .1945424        | .8369877        | .1609768        | .7303565        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6256.255 | 106021.1 | 11140.19 | 4784.658 | 7141.009 |
| #2 | 6164.594 | 105686.8 | 10956.47 | 4769.739 | 7037.557 |
| #3 | 6199.364 | 105646.1 | 11067.49 | 4780.447 | 7085.674 |

Sample Name: Q3122-01      Acquired: 9/18/2025 14:43:08      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | As1890   | Tl1908   | Pb2203   | Se1960   | Sb2068   | Al3961   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0317487 | .0006737 | .0409178 | .0073556 | .0405314 | .3568822 |
| Stddev | .0028251 | .0038542 | .0006887 | .0005722 | .0019893 | .0054414 |
| %RSD   | 8.898244 | 572.0613 | 1.683094 | 7.778611 | 4.907976 | 1.524717 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0287074 | .0047951 | .0403126 | .0068407 | .0401144 | .3589726 |
| #2 | .0322475 | .0000674 | .0407735 | .0079716 | .0387838 | .3507055 |
| #3 | .0342911 | -.002841 | .0416671 | .0072545 | .0426962 | .3609684 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Ba4934   | Be2348   | Cd2265   | Ca3736   | Cr2677   | Co2286   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .2742791 | -.000147 | .2295262 | 6.038321 | 7.912394 | .0279611 |
| Stddev | .0011481 | .000056  | .0011006 | .008762  | .022756  | .0003227 |
| %RSD   | .4185718 | 38.17232 | .4795270 | .1451129 | .2875942 | 1.154251 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .2752629 | -.000162 | .2289110 | 6.029681 | 7.887076 | .0276353 |
| #2 | .2730177 | -.000085 | .2288706 | 6.038081 | 7.931142 | .0279671 |
| #3 | .2745568 | -.000194 | .2307969 | 6.047201 | 7.918963 | .0282807 |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Cu2247   | Fe2404   | Mn2576   | Mg2790   | Ni2316   | Ag3280   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0915417 | .2885891 | .2539187 | 1.574908 | .0143459 | -.000317 |
| Stddev | .0003699 | .0101370 | .0016002 | .021514  | .0002584 | .000401  |
| %RSD   | .4040588 | 3.512593 | .6301858 | 1.366054 | 1.801382 | 126.4607 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .0911146 | .2773159 | .2544550 | 1.590927 | .0140876 | -.000379 |
| #2 | .0917566 | .2969542 | .2521193 | 1.550454 | .0146045 | -.000683 |
| #3 | .0917538 | .2914972 | .2551819 | 1.583342 | .0143455 | .000111  |

|        |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|
| Elem   | Na5895   | V_2924   | Zn2138   | K_7664   | B_2496   | Mo2020   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | 373.9575 | .0002144 | 23.92065 | 7.789719 | .4234731 | -.011614 |
| Stddev | 4.7122   | .0015430 | .09410   | .098473  | .0032973 | .000095  |
| %RSD   | 1.260086 | 719.8310 | .3934029 | 1.264134 | .7786239 | .8146181 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 373.9167 | .0010245 | 23.81796 | 7.899833 | .4214618 | -.011656 |
| #2 | 378.6900 | -.001565 | 24.00277 | 7.759220 | .4216792 | -.011505 |
| #3 | 369.2659 | .001184  | 23.94121 | 7.710104 | .4272784 | -.011679 |

Sample Name: Q3122-01      Acquired: 9/18/2025 14:43:08      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>-.010023</b> | <b>.0079443</b> | <b>1.297397</b> | <b>.0083832</b> | <b>F 630.3033</b> | <b>-.017541</b> |
| Stddev | .000409         | .0010313        | .018817         | .0012602        | 5.9490            | .001607         |
| %RSD   | 4.085164        | 12.98214        | 1.450339        | 15.03222        | .9438273          | 9.160678        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.010492</b> | <b>.0078974</b> | <b>1.318930</b> | <b>.0069358</b> | <b>624.2055</b> | <b>-.015909</b> |
| #2 | <b>-.009737</b> | <b>.0069372</b> | <b>1.289141</b> | <b>.0092368</b> | <b>630.6130</b> | <b>-.017594</b> |
| #3 | <b>-.009840</b> | <b>.0089983</b> | <b>1.284119</b> | <b>.0089770</b> | <b>636.0913</b> | <b>-.019121</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>.0500177</b> |
| Stddev | .0002688        |
| %RSD   | .5374335        |

|    |                 |
|----|-----------------|
| #1 | <b>.0503133</b> |
| #2 | <b>.0499519</b> |
| #3 | <b>.0497879</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6083.574</b> | <b>106938.5</b> | <b>11223.21</b> | <b>4749.773</b> | <b>7170.344</b> |
| Stddev    | 17.215          | 74.8            | 90.11           | 12.178          | 22.185          |
| %RSD      | .2829756        | .0699691        | .8029298        | .2563974        | .3094056        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6077.186</b> | <b>107015.3</b> | <b>11299.44</b> | <b>4754.946</b> | <b>7171.958</b> |
| #2 | <b>6103.070</b> | <b>106934.4</b> | <b>11246.44</b> | <b>4735.862</b> | <b>7191.678</b> |
| #3 | <b>6070.467</b> | <b>106865.8</b> | <b>11123.76</b> | <b>4758.510</b> | <b>7147.396</b> |



Sample Name: PB169731TB      Acquired: 9/18/2025 14:47:34      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.003961</b> | <b>-.002469</b> | <b>-.000711</b> | <b>.0002084</b> | <b>-.002046</b> | <b>-.002234</b> | <b>-.006230</b> |
| Stddev | .001644         | .001732         | .001080         | .0051751        | .000161         | .006989         | .001253         |
| %RSD   | 41.52051        | 70.17739        | 151.9396        | 2483.011        | 7.885166        | 312.9089        | 20.11061        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.002306</b> | <b>-.000742</b> | <b>-.001294</b> | <b>.0049452</b> | <b>-.001920</b> | <b>-.007868</b> | <b>-.005193</b> |
| #2 | <b>-.003980</b> | <b>-.002458</b> | <b>-.001374</b> | <b>.0009950</b> | <b>-.002228</b> | <b>-.004421</b> | <b>-.005876</b> |
| #3 | <b>-.005595</b> | <b>-.004206</b> | <b>.000536</b>  | <b>-.005315</b> | <b>-.001991</b> | <b>.005588</b>  | <b>-.007622</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000107</b> | <b>-.000196</b> | <b>.0075538</b> | <b>-.000246</b> | <b>-.000506</b> | <b>-.000160</b> | <b>.0057642</b> |
| Stddev | .000015         | .000050         | .0168465        | .000443         | .000030         | .000196         | .0065545        |
| %RSD   | 13.74848        | 25.66935        | 223.0211        | 180.5874        | 5.898126        | 122.1704        | 113.7111        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000115</b> | <b>-.000181</b> | <b>.0187928</b> | <b>.000265</b>  | <b>-.000522</b> | <b>-.000293</b> | <b>.0066924</b> |
| #2 | <b>-.000116</b> | <b>-.000155</b> | <b>.0156846</b> | <b>-.000532</b> | <b>-.000472</b> | <b>.000065</b>  | <b>-.001205</b> |
| #3 | <b>-.000090</b> | <b>-.000252</b> | <b>-.011816</b> | <b>-.000470</b> | <b>-.000525</b> | <b>-.000252</b> | <b>.011805</b>  |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0025993</b> | <b>-.006140</b> | <b>.0002626</b> | <b>-.000158</b> | <b>316.1330</b> | <b>-.000351</b> | <b>.0013319</b> |
| Stddev | .0006029        | .007184         | .0001566        | .000930         | .4322           | .002045         | .0003769        |
| %RSD   | 23.19597        | 117.0091        | 59.63357        | 587.1328        | .1367055        | 582.4306        | 28.29819        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0020917</b> | <b>.001447</b>  | <b>.0002200</b> | <b>-.001232</b> | <b>316.1561</b> | <b>-.001064</b> | <b>.0010528</b> |
| #2 | <b>.0024405</b> | <b>-.007028</b> | <b>.0004361</b> | <b>.000373</b>  | <b>316.5532</b> | <b>.001955</b>  | <b>.0017606</b> |
| #3 | <b>.0032658</b> | <b>-.012838</b> | <b>.0001317</b> | <b>.000384</b>  | <b>315.6898</b> | <b>-.001945</b> | <b>.0011823</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.371226</b> | <b>-.000863</b> | <b>-.000267</b> | <b>-.010690</b> | <b>.0001562</b> | <b>.0387204</b> | <b>.0046755</b> |
| Stddev | .018485         | .000333         | .000105         | .000533         | .0020319        | .0188005        | .0019889        |
| %RSD   | 4.979436        | 38.54802        | 39.33188        | 4.988516        | 1301.098        | 48.55454        | 42.53853        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.392278</b> | <b>-.000820</b> | <b>-.000364</b> | <b>-.010927</b> | <b>.0022212</b> | <b>.0581671</b> | <b>.0058650</b> |
| #2 | <b>-.363748</b> | <b>-.000554</b> | <b>-.000281</b> | <b>-.010079</b> | <b>.0000884</b> | <b>.0206407</b> | <b>.0057821</b> |
| #3 | <b>-.357652</b> | <b>-.001215</b> | <b>-.000155</b> | <b>-.011064</b> | <b>-.001841</b> | <b>.0373534</b> | <b>.0023794</b> |

Sample Name: PB169731TB      Acquired: 9/18/2025 14:47:34      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |
|--------|----------|----------|----------|
| Elem   | S_1820   | Li6707   | Sr4077   |
| Units  | ppm      | ppm      | ppm      |
| Avg    | 1.100885 | -.018802 | -.000301 |
| Stddev | .177048  | .001440  | .000052  |
| %RSD   | 16.08238 | 7.659050 | 17.40667 |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 1.289533 | -.017525 | -.000329 |
| #2 | 1.074789 | -.020363 | -.000240 |
| #3 | .938332  | -.018517 | -.000333 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6228.489 | 106674.9 | 11028.40 | 4879.941 | 7203.193 |
| Stddev    | 57.544   | 558.9    | 88.88    | 37.684   | 55.108   |
| %RSD      | .9238839 | .5239344 | .8059564 | .7722123 | .7650510 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6172.945 | 107269.4 | 10928.96 | 4923.320 | 7145.987 |
| #2 | 6224.677 | 106595.1 | 11100.12 | 4861.206 | 7207.659 |
| #3 | 6287.844 | 106160.1 | 11056.12 | 4855.296 | 7255.932 |

Sample Name: CCV04      Acquired: 9/18/2025 14:52:02      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV04      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>5.164417</b> | <b>4.994054</b> | <b>4.965907</b> | <b>5.280397</b> | <b>5.249737</b> | <b>9.820689</b> |
| Stddev | .028742         | .056541         | .004556         | .014713         | .009873         | .041130         |
| %RSD   | .5565380        | 1.132168        | .0917495        | .2786323        | .1880628        | .4188083        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 5.132314 | 4.930520 | 4.960648 | 5.265158 | 5.239184 | 9.855522 |
| #2 | 5.173178 | 5.012801 | 4.968667 | 5.281512 | 5.251279 | 9.831230 |
| #3 | 5.187759 | 5.038839 | 4.968406 | 5.294520 | 5.258748 | 9.775314 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>9.857297</b> | <b>.2397556</b> | <b>2.498417</b> | <b>24.45183</b> | <b>.9985238</b> | <b>2.510992</b> |
| Stddev | .038480         | .0011042        | .003428         | .07251          | .0092973        | .003532         |
| %RSD   | .3903686        | .4605365        | .1372188        | .2965321        | .9310996        | .1406782        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 9.865114 | .2392690 | 2.495421 | 24.47847 | .9879462 | 2.507800 |
| #2 | 9.815509 | .2410195 | 2.497674 | 24.50726 | 1.002224 | 2.510389 |
| #3 | 9.891268 | .2389784 | 2.502155 | 24.36978 | 1.005402 | 2.514787 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.279573</b> | <b>5.084739</b> | <b>2.413831</b> | <b>24.11427</b> | <b>2.511343</b> | <b>1.261973</b> |
| Stddev | .003445         | .014206         | .010430         | .07203          | .005207         | .011281         |
| %RSD   | .2692464        | .2793885        | .4320756        | .2986971        | .2073487        | .8938781        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 1.277483 | 5.068376 | 2.419296 | 24.17354 | 2.505662 | 1.249130 |
| #2 | 1.277687 | 5.093921 | 2.420393 | 24.13516 | 2.512476 | 1.266512 |
| #3 | 1.283550 | 5.091920 | 2.401805 | 24.03410 | 2.515890 | 1.270277 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>25.07397</b> | <b>2.467431</b> | <b>2.487053</b> | <b>25.84289</b> | <b>4.791327</b> | <b>5.171437</b> |
| Stddev | .06390          | .007189         | .015348         | .27951          | .023865         | .007480         |
| %RSD   | .2548612        | .2913432        | .6171331        | 1.081591        | .4980977        | .1446478        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 25.00830 | 2.475731 | 2.470192 | 25.56950 | 4.775373 | 5.163685 |
| #2 | 25.07766 | 2.463364 | 2.490756 | 25.83102 | 4.818764 | 5.172016 |
| #3 | 25.13594 | 2.463198 | 2.500211 | 26.12815 | 4.779846 | 5.178612 |

Sample Name: CCV04      Acquired: 9/18/2025 14:52:02      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV04      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>5.026329</b> | <b>4.896810</b> | <b>5.087741</b> | <b>5.119461</b> | <b>F 5.662550</b> | <b>4.743391</b> |
| Stddev | .009225         | .022158         | .055682         | .011930         | .004834           | .011918         |
| %RSD   | .1835313        | .4524914        | 1.094432        | .2330232        | .0853615          | .2512641        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 5.019864 | 4.914258 | 5.048135 | 5.105721 | 5.657277 | 4.751737 |
| #2 | 5.022231 | 4.904293 | 5.063682 | 5.127187 | 5.663602 | 4.748695 |
| #3 | 5.036893 | 4.871880 | 5.151408 | 5.125473 | 5.666770 | 4.729741 |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>4.947412</b> |
| Stddev | .031229         |
| %RSD   | .6312111        |

|    |          |
|----|----------|
| #1 | 4.930081 |
| #2 | 4.983463 |
| #3 | 4.928692 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6292.617</b> | <b>111491.7</b> | <b>11152.98</b> | <b>5021.054</b> | <b>7304.017</b> |
| Stddev    | 12.099          | 625.9           | 67.46           | 17.328          | 12.355          |
| %RSD      | .1922686        | .5613840        | .6048491        | .3451037        | .1691486        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6284.221 | 112213.7 | 11130.56 | 5028.730 | 7296.036 |
| #2 | 6306.485 | 111101.7 | 11099.58 | 5001.214 | 7318.248 |
| #3 | 6287.145 | 111159.8 | 11228.79 | 5033.218 | 7297.767 |

Sample Name: CCB04      Acquired: 9/18/2025 14:56:13      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB04      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.001395</b> | <b>.0005405</b> | <b>-.000302</b> | <b>-.001104</b> | <b>-.001417</b> | <b>-.006578</b> |
| Stddev | .001632         | .0005023        | .000549         | .001725         | .001820         | .005969         |
| %RSD   | 116.9599        | 92.92834        | 181.5272        | 156.3341        | 128.5029        | 90.73322        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.003233</b> | <b>.0001189</b> | <b>-.000836</b> | <b>.000625</b>  | <b>-.000528</b> | <b>-.008480</b> |
| #2 | <b>-.000837</b> | <b>.0004063</b> | <b>.000260</b>  | <b>-.002826</b> | <b>-.000211</b> | <b>-.011365</b> |
| #3 | <b>-.000116</b> | <b>.0010963</b> | <b>-.000331</b> | <b>-.001110</b> | <b>-.003510</b> | <b>.000110</b>  |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.005731</b> | <b>.0000132</b> | <b>-.000141</b> | <b>-.011115</b> | <b>-.000361</b> | <b>-.000307</b> |
| Stddev | .001361         | .0000687        | .000041         | .004201         | .000015         | .000154         |
| %RSD   | 23.74396        | 521.7525        | 29.10808        | 37.79034        | 4.163457        | 50.11089        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.006577</b> | <b>-.000062</b> | <b>-.000179</b> | <b>-.007524</b> | <b>-.000349</b> | <b>-.000477</b> |
| #2 | <b>-.004161</b> | <b>.000029</b>  | <b>-.000147</b> | <b>-.010087</b> | <b>-.000355</b> | <b>-.000179</b> |
| #3 | <b>-.006454</b> | <b>.000072</b>  | <b>-.000097</b> | <b>-.015735</b> | <b>-.000378</b> | <b>-.000264</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000281</b> | <b>-.004201</b> | <b>-.000223</b> | <b>-.000242</b> | <b>.0000583</b> | <b>.0000936</b> |
| Stddev | .000196         | .001314         | .000210         | .017935         | .0001700        | .0003009        |
| %RSD   | 69.68082        | 31.27414        | 93.95385        | 7400.720        | 291.7209        | 321.3793        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000159</b> | <b>-.002964</b> | <b>-.000044</b> | <b>.003481</b>  | <b>-.000033</b> | <b>.0004351</b> |
| #2 | <b>-.000177</b> | <b>-.004060</b> | <b>-.000172</b> | <b>.015538</b>  | <b>.000254</b>  | <b>-.000133</b> |
| #3 | <b>-.000507</b> | <b>-.005580</b> | <b>-.000454</b> | <b>-.019746</b> | <b>-.000046</b> | <b>-.000022</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2418814</b> | <b>.0022570</b> | <b>-.000168</b> | <b>.6205638</b> | <b>-.001797</b> | <b>-.000221</b> |
| Stddev | .0104744        | .0018873        | .000089         | .0584059        | .000420         | .000504         |
| %RSD   | 4.330388        | 83.62004        | 52.90883        | 9.411741        | 23.39305        | 228.5880        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.2297931</b> | <b>.0038592</b> | <b>-.000178</b> | <b>.5613011</b> | <b>-.001641</b> | <b>.000002</b>  |
| #2 | <b>.2475816</b> | <b>.0001766</b> | <b>-.000251</b> | <b>.6780733</b> | <b>-.002273</b> | <b>.000134</b>  |
| #3 | <b>.2482695</b> | <b>.0027350</b> | <b>-.000074</b> | <b>.6223170</b> | <b>-.001477</b> | <b>-.000798</b> |

Sample Name: CCB04      Acquired: 9/18/2025 14:56:13      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB04      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>-.000790</b> | <b>.0006356</b> | <b>.0092028</b> | <b>-.000045</b> | <b>F .3077925</b> | <b>-.006665</b> |
| Stddev | .000544         | .0008993        | .0036036        | .001679         | .0027207          | .001433         |
| %RSD   | 68.78821        | 141.4995        | 39.15702        | 3730.752        | .8839257          | 21.49720        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000520</b> | <b>-.000078</b> | <b>.0063987</b> | <b>-.001983</b> | <b>.3090489</b> | <b>-.006958</b> |
| #2 | <b>-.001416</b> | <b>.001646</b>  | <b>.0132673</b> | <b>.000878</b>  | <b>.3096579</b> | <b>-.005108</b> |
| #3 | <b>-.000435</b> | <b>.000340</b>  | <b>.0079425</b> | <b>.000969</b>  | <b>.3046707</b> | <b>-.007928</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000219</b> |
| Stddev | .000030         |
| %RSD   | 13.81927        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000247</b> |
| #2 | <b>-.000187</b> |
| #3 | <b>-.000223</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6688.610</b> | <b>115745.0</b> | <b>11708.07</b> | <b>5179.124</b> | <b>8363.262</b> |
| Stddev    | 14.052          | 1211.3          | 122.74          | 54.191          | 18.670          |
| %RSD      | .2100815        | 1.046540        | 1.048318        | 1.046331        | .2232389        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6694.362</b> | <b>114349.6</b> | <b>11614.96</b> | <b>5116.734</b> | <b>8381.616</b> |
| #2 | <b>6672.596</b> | <b>116358.2</b> | <b>11662.10</b> | <b>5214.474</b> | <b>8344.291</b> |
| #3 | <b>6698.874</b> | <b>116527.0</b> | <b>11847.16</b> | <b>5206.164</b> | <b>8363.880</b> |

Sample Name: PB169739BL      Acquired: 9/18/2025 15:00:33      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.001690</b> | <b>.0008301</b> | <b>-.000232</b> | <b>.0000023</b> | <b>-.000429</b> | <b>.0023019</b> |
| Stddev | .002325         | .0008406        | .001367         | .0038065        | .003088         | .0018253        |
| %RSD   | 137.5980        | 101.2570        | 589.3121        | 163036.7        | 719.2792        | 79.29691        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001607</b> | <b>-.000119</b> | <b>.000727</b>  | <b>-.004198</b> | <b>-.003966</b> | <b>.0003592</b> |
| #2 | <b>-.004055</b> | <b>.001129</b>  | <b>.000375</b>  | <b>.000980</b>  | <b>.001730</b>  | <b>.0025651</b> |
| #3 | <b>.000593</b>  | <b>.001480</b>  | <b>-.001798</b> | <b>.003225</b>  | <b>.000948</b>  | <b>.0039812</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.005866</b> | <b>-.000018</b> | <b>-.000185</b> | <b>-.006240</b> | <b>-.000431</b> | <b>-.000519</b> |
| Stddev | .000505         | .000058         | .000049         | .009879         | .000239         | .000116         |
| %RSD   | 8.606413        | 316.8284        | 26.47680        | 158.3205        | 55.45827        | 22.38369        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.005559</b> | <b>.000010</b>  | <b>-.000130</b> | <b>-.014623</b> | <b>-.000331</b> | <b>-.000386</b> |
| #2 | <b>-.005589</b> | <b>.000020</b>  | <b>-.000223</b> | <b>-.008748</b> | <b>-.000704</b> | <b>-.000569</b> |
| #3 | <b>-.006448</b> | <b>-.000085</b> | <b>-.000202</b> | <b>.004652</b>  | <b>-.000258</b> | <b>-.000602</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000406</b> | <b>-.007008</b> | <b>-.000076</b> | <b>-.000590</b> | <b>-.000073</b> | <b>-.000157</b> |
| Stddev | .000374         | .004229         | .000581         | .021414         | .000205         | .000603         |
| %RSD   | 92.01327        | 60.33903        | 764.3958        | 3627.178        | 281.7099        | 384.4663        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000256</b> | <b>-.002927</b> | <b>.000397</b>  | <b>-.009496</b> | <b>-.000012</b> | <b>.000425</b>  |
| #2 | <b>-.000832</b> | <b>-.006727</b> | <b>-.000724</b> | <b>-.016115</b> | <b>-.000301</b> | <b>-.000116</b> |
| #3 | <b>-.000131</b> | <b>-.011370</b> | <b>.000100</b>  | <b>.023840</b>  | <b>.000095</b>  | <b>-.000779</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1322624</b> | <b>.0017953</b> | <b>-.000074</b> | <b>.4767350</b> | <b>-.002740</b> | <b>-.000386</b> |
| Stddev | .0330475        | .0028617        | .000176         | .0763781        | .000908         | .000190         |
| %RSD   | 24.98633        | 159.3969        | 236.9133        | 16.02108        | 33.14479        | 49.22834        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.1042105</b> | <b>.0047600</b> | <b>-.000142</b> | <b>.3893589</b> | <b>-.002019</b> | <b>-.000356</b> |
| #2 | <b>.1238840</b> | <b>.0015769</b> | <b>-.000206</b> | <b>.5307997</b> | <b>-.002442</b> | <b>-.000212</b> |
| #3 | <b>.1686927</b> | <b>-.000951</b> | <b>.000126</b>  | <b>.5100464</b> | <b>-.003760</b> | <b>-.000588</b> |

Sample Name: PB169739BL      Acquired: 9/18/2025 15:00:33      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>-.000805</b> | <b>.0001951</b> | <b>.0129565</b> | <b>-.000100</b> | <b>F .2308743</b> | <b>-.008247</b> |
| Stddev | .000357         | .0011717        | .0001329        | .000148         | .0011850          | .001677         |
| %RSD   | 44.28788        | 600.6458        | 1.025632        | 147.8774        | .5132790          | 20.33186        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000955</b> | <b>-.000912</b> | <b>.0129504</b> | <b>-.000242</b> | <b>.2322187</b> | <b>-.006609</b> |
| #2 | <b>-.001063</b> | <b>.000076</b>  | <b>.0130924</b> | <b>-.000110</b> | <b>.2304231</b> | <b>-.008173</b> |
| #3 | <b>-.000398</b> | <b>.001422</b>  | <b>.0128268</b> | <b>.000053</b>  | <b>.2299811</b> | <b>-.009960</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000292</b> |
| Stddev | .000071         |
| %RSD   | 24.50723        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000233</b> |
| #2 | <b>-.000371</b> |
| #3 | <b>-.000271</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6717.637</b> | <b>118404.4</b> | <b>11364.89</b> | <b>5308.554</b> | <b>8419.699</b> |
| Stddev    | 6.042           | 750.0           | 42.03           | 36.076          | 10.558          |
| %RSD      | .0899447        | .6333879        | .3698249        | .6795803        | .1253982        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6719.279</b> | <b>118104.8</b> | <b>11316.36</b> | <b>5285.071</b> | <b>8420.107</b> |
| #2 | <b>6722.687</b> | <b>119257.9</b> | <b>11388.50</b> | <b>5350.093</b> | <b>8430.048</b> |
| #3 | <b>6710.943</b> | <b>117850.6</b> | <b>11389.81</b> | <b>5290.498</b> | <b>8408.943</b> |



Sample Name: PB169739BS      Acquired: 9/18/2025 15:04:51      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7812352</b> | <b>1.970095</b> | <b>.9333552</b> | <b>2.018728</b> | <b>.8096454</b> | <b>1.932510</b> |
| Stddev | .0050552        | .018089         | .0040379        | .004560         | .0060610        | .022713         |
| %RSD   | .6470823        | .9181815        | .4326181        | .2258917        | .7486038        | 1.175289        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .7776281 | 1.950441 | .9310058 | 2.013670 | .8077650 | 1.954973 |
| #2 | .7790642 | 1.986046 | .9310421 | 2.019991 | .8047475 | 1.909556 |
| #3 | .7870133 | 1.973797 | .9380177 | 2.022524 | .8164238 | 1.933000 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1881466</b> | <b>.1941598</b> | <b>.1873239</b> | <b>.9743331</b> | <b>.3893847</b> | <b>.1907649</b> |
| Stddev | .0019602        | .0014338        | .0004737        | .0074038        | .0019721        | .0003444        |
| %RSD   | 1.041848        | .7384777        | .2529007        | .7598816        | .5064760        | .1805298        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1899653 | .1945615 | .1868278 | .9772786 | .3915987 | .1904971 |
| #2 | .1860703 | .1925680 | .1873721 | .9659099 | .3878162 | .1906443 |
| #3 | .1884041 | .1953500 | .1877717 | .9798108 | .3887393 | .1911534 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.3040668</b> | <b>2.916970</b> | <b>.1930806</b> | <b>1.914729</b> | <b>.4789192</b> | <b>.0747292</b> |
| Stddev | .0012760        | .032005         | .0021724        | .013809         | .0014038        | .0006290        |
| %RSD   | .4196441        | 1.097216        | 1.125139        | .7212005        | .2931129        | .8417465        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .3040638 | 2.952297 | .1952692 | 1.925155 | .4779316 | .0754454 |
| #2 | .3027924 | 2.889906 | .1909247 | 1.899068 | .4782998 | .0744753 |
| #3 | .3053444 | 2.908707 | .1930478 | 1.919964 | .4805261 | .0742667 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.821335</b> | <b>.2905651</b> | <b>.1998073</b> | <b>9.733224</b> | <b>.2878304</b> | <b>.4054039</b> |
| Stddev | .018188         | .0028831        | .0011812        | .073430         | .0015980        | .0008452        |
| %RSD   | .6446757        | .9922263        | .5911793        | .7544278        | .5551742        | .2084761        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | 2.829765 | .2908542 | .2009406 | 9.812049 | .2879041 | .4045779 |
| #2 | 2.800461 | .2932928 | .1998980 | 9.666757 | .2861969 | .4062670 |
| #3 | 2.833779 | .2875484 | .1985834 | 9.720866 | .2893903 | .4053668 |

Sample Name: PB169739BS      Acquired: 9/18/2025 15:04:51      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |            |          |
|--------|----------|----------|----------|----------|------------|----------|
| Elem   | Sn1899   | Ti3361   | Si2881   | P_1774   | S_1820     | Li6707   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm        | ppm      |
| Avg    | .6659644 | .1906192 | .8766922 | 5.471037 | F .1880128 | .1886212 |
| Stddev | .0018500 | .0020530 | .0123175 | .020335  | .0024832   | .0023169 |
| %RSD   | .2777984 | 1.077006 | 1.405001 | .3716897 | 1.320768   | 1.228337 |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .6638283 | .1903061 | .8908059 | 5.451327 | .1860675 | .1878855 |
| #2 | .6670099 | .1887408 | .8711601 | 5.491945 | .1908098 | .1867615 |
| #3 | .6670550 | .1928108 | .8681107 | 5.469840 | .1871610 | .1912166 |

|        |          |
|--------|----------|
| Elem   | Sr4077   |
| Units  | ppm      |
| Avg    | .1901783 |
| Stddev | .0024291 |
| %RSD   | 1.277271 |

|    |          |
|----|----------|
| #1 | .1918891 |
| #2 | .1873980 |
| #3 | .1912478 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6541.855 | 115445.7 | 11144.65 | 5193.709 | 7984.159 |
| Stddev    | 9.925    | 475.6    | 78.47    | 23.809   | 3.349    |
| %RSD      | .1517173 | .4119920 | .7041059 | .4584208 | .0419489 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6533.604 | 114913.2 | 11105.86 | 5171.883 | 7984.417 |
| #2 | 6552.869 | 115595.5 | 11234.96 | 5190.144 | 7987.371 |
| #3 | 6539.091 | 115828.4 | 11093.13 | 5219.100 | 7980.688 |

Sample Name: Q3117-02DUP      Acquired: 9/18/2025 15:08:53      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.003174</b> | <b>.0017065</b> | <b>.0044355</b> | <b>-.002711</b> | <b>.0026928</b> | <b>.0611304</b> | <b>.1274007</b> |
| Stddev | .001414         | .0016293        | .0000584        | .003260         | .0012246        | .0118022        | .0006078        |
| %RSD   | 44.53888        | 95.47876        | 1.316660        | 120.2763        | 45.47559        | 19.30651        | .4770891        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001842</b> | <b>.0006582</b> | <b>.0045029</b> | <b>-.005848</b> | <b>.0040710</b> | <b>.0710560</b> | <b>.1276378</b> |
| #2 | <b>-.003023</b> | <b>.0035836</b> | <b>.0044022</b> | <b>.000660</b>  | <b>.0017300</b> | <b>.0480804</b> | <b>.1278542</b> |
| #3 | <b>-.004657</b> | <b>.0008776</b> | <b>.0044013</b> | <b>-.002944</b> | <b>.0022773</b> | <b>.0642548</b> | <b>.1267101</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000134</b> | <b>.0013380</b> | <b>190.4701</b> | <b>.0029230</b> | <b>.0023042</b> | <b>.0226980</b> | <b>.0045638</b> |
| Stddev | .000079         | .0000581        | .2131           | .0003046        | .0002055        | .0006689        | .0036846        |
| %RSD   | 59.10897        | 4.344703        | .1118657        | 10.41968        | 8.916312        | 2.946947        | 80.73659        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000163</b> | <b>.0013007</b> | <b>190.3450</b> | <b>.0031079</b> | <b>.0023126</b> | <b>.0233172</b> | <b>.0020909</b> |
| #2 | <b>-.000194</b> | <b>.0014050</b> | <b>190.7161</b> | <b>.0030897</b> | <b>.0025054</b> | <b>.0227882</b> | <b>.0087986</b> |
| #3 | <b>-.000044</b> | <b>.0013084</b> | <b>190.3492</b> | <b>.0025715</b> | <b>.0020947</b> | <b>.0219886</b> | <b>.0028019</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.4838987</b> | <b>4.032296</b> | <b>.0102061</b> | <b>-.000705</b> | <b>334.1203</b> | <b>.0019127</b> | <b>.1448916</b> |
| Stddev | .0010850        | .015264         | .0003500        | .000450         | 12.4147         | .0004560        | .0095078        |
| %RSD   | .2242099        | .3785478        | 3.429461        | 63.86581        | 3.715627        | 23.83994        | 6.561990        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.4846291</b> | <b>4.024121</b> | <b>.0098856</b> | <b>-.001193</b> | <b>326.0836</b> | <b>.0013862</b> | <b>.1370418</b> |
| #2 | <b>.4844150</b> | <b>4.022860</b> | <b>.0101530</b> | <b>-.000305</b> | <b>348.4189</b> | <b>.0021840</b> | <b>.1554635</b> |
| #3 | <b>.4826521</b> | <b>4.049906</b> | <b>.0105796</b> | <b>-.000618</b> | <b>327.8584</b> | <b>.0021679</b> | <b>.1421693</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>9.606882</b> | <b>.0243942</b> | <b>.0034767</b> | <b>-.012430</b> | <b>-.006346</b> | <b>5.870734</b> | <b>.0129429</b> |
| Stddev | .435869         | .0003838        | .0002892        | .000701         | .001357         | .290162         | .0023302        |
| %RSD   | 4.537045        | 1.573356        | 8.318077        | 5.638886        | 21.38753        | 4.942514        | 18.00385        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>9.280474</b> | <b>.0239813</b> | <b>.0031504</b> | <b>-.012263</b> | <b>-.007913</b> | <b>5.632735</b> | <b>.0148499</b> |
| #2 | <b>10.10186</b> | <b>.0247402</b> | <b>.0035782</b> | <b>-.013199</b> | <b>-.005547</b> | <b>6.193967</b> | <b>.0103455</b> |
| #3 | <b>9.43831</b>  | <b>.0244611</b> | <b>.0037014</b> | <b>-.011827</b> | <b>-.005577</b> | <b>5.785501</b> | <b>.0136332</b> |

Sample Name: Q3117-02DUP      Acquired: 9/18/2025 15:08:53      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>5.567585</b> | <b>-.044609</b> | <b>.7776076</b> |
| Stddev | .025472         | .001114         | .0030594        |
| %RSD   | .4575122        | 2.497169        | .3934400        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 5.596496 | -.045687 | .7776653 |
| #2 | 5.548444 | -.043462 | .7806378 |
| #3 | 5.557816 | -.044677 | .7745197 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6055.033</b> | <b>104519.9</b> | <b>11117.08</b> | <b>4667.716</b> | <b>6925.702</b> |
| Stddev    | 7.949           | 4864.4          | 64.01           | 225.581         | 7.713           |
| %RSD      | .1312751        | 4.654011        | .5757943        | 4.832791        | .1113747        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6061.943 | 108390.3 | 11135.27 | 4841.326 | 6918.770 |
| #2 | 6046.346 | 99059.5  | 11045.94 | 4412.740 | 6924.324 |
| #3 | 6056.809 | 106109.9 | 11170.02 | 4749.081 | 6934.012 |

Sample Name: Q3117-02LX5      Acquired: 9/18/2025 15:13:15      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000221</b> | <b>-.000594</b> | <b>-.001352</b> | <b>-.002396</b> | <b>-.001101</b> | <b>.0049266</b> | <b>.0207768</b> |
| Stddev | .001852         | .002186         | .001584         | .000388         | .001118         | .0021467        | .0020562        |
| %RSD   | 836.5786        | 367.9925        | 117.1473        | 16.17540        | 101.6137        | 43.57438        | 9.896604        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001455</b> | <b>.001468</b>  | <b>-.001621</b> | <b>-.002838</b> | <b>-.002215</b> | <b>.0044281</b> | <b>.0221104</b> |
| #2 | <b>-.001118</b> | <b>-.000365</b> | <b>-.002784</b> | <b>-.002235</b> | <b>.000022</b>  | <b>.0072787</b> | <b>.0184088</b> |
| #3 | <b>.001909</b>  | <b>-.002885</b> | <b>.000349</b>  | <b>-.002114</b> | <b>-.001109</b> | <b>.0030730</b> | <b>.0218112</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0000167</b> | <b>.0001527</b> | <b>38.18989</b> | <b>.0005530</b> | <b>.0001107</b> | <b>.0043829</b> | <b>.0019076</b> |
| Stddev | .0000967        | .0000574        | .06643          | .0002242        | .0001383        | .0002531        | .0009123        |
| %RSD   | 580.3615        | 37.58901        | .1739341        | 40.53860        | 124.9603        | 5.774824        | 47.82594        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0000513</b> | <b>.0001712</b> | <b>38.19854</b> | <b>.0003243</b> | <b>.0002659</b> | <b>.0045295</b> | <b>.0010362</b> |
| #2 | <b>.0000913</b> | <b>.0000884</b> | <b>38.25157</b> | <b>.0005624</b> | <b>.0000655</b> | <b>.0040906</b> | <b>.0018307</b> |
| #3 | <b>-.000093</b> | <b>.0001987</b> | <b>38.11956</b> | <b>.0007723</b> | <b>.0000006</b> | <b>.0045285</b> | <b>.0028560</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0972362</b> | <b>.8174243</b> | <b>.0019559</b> | <b>-.000469</b> | <b>61.27204</b> | <b>.0004500</b> | <b>.0273206</b> |
| Stddev | .0012455        | .0187643        | .0002716        | .000159         | .06942          | .0028110        | .0001534        |
| %RSD   | 1.280883        | 2.295542        | 13.88456        | 34.01967        | .1132967        | 624.7230        | .5616543        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>.0986230</b> | <b>.8230362</b> | <b>.0022692</b> | <b>-.000468</b> | <b>61.33218</b> | <b>-.001506</b> | <b>.0271908</b> |
| #2 | <b>.0962130</b> | <b>.8327423</b> | <b>.0018105</b> | <b>-.000309</b> | <b>61.19607</b> | <b>-.000815</b> | <b>.0274900</b> |
| #3 | <b>.0968726</b> | <b>.7964943</b> | <b>.0017879</b> | <b>-.000628</b> | <b>61.28787</b> | <b>.003671</b>  | <b>.0272812</b> |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>1.990026</b> | <b>.0028083</b> | <b>.0005956</b> | <b>-.003090</b> | <b>-.001309</b> | <b>1.097731</b> | <b>.0025434</b> |
| Stddev | .059511         | .0004241        | .0001120        | .000385         | .001329         | .012978         | .0012209        |
| %RSD   | 2.990479        | 15.10122        | 18.80150        | 12.44728        | 101.5032        | 1.182260        | 47.99982        |

|    |                 |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>1.943791</b> | <b>.0025395</b> | <b>.0007198</b> | <b>-.002806</b> | <b>-.002331</b> | <b>1.100452</b> | <b>.0013250</b> |
| #2 | <b>1.969118</b> | <b>.0032972</b> | <b>.0005025</b> | <b>-.003528</b> | <b>-.001790</b> | <b>1.109133</b> | <b>.0037667</b> |
| #3 | <b>2.057170</b> | <b>.0025883</b> | <b>.0005643</b> | <b>-.002937</b> | <b>.000193</b>  | <b>1.083608</b> | <b>.0025385</b> |

Sample Name: Q3117-02LX5      Acquired: 9/18/2025 15:13:15      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>1.172381</b> | <b>-.016560</b> | <b>.1522597</b> |
| Stddev | .008141         | .001081         | .0004703        |
| %RSD   | .6943815        | 6.529891        | .3088512        |

|    |                 |                 |                 |
|----|-----------------|-----------------|-----------------|
| #1 | <b>1.181773</b> | <b>-.016094</b> | <b>.1525593</b> |
| #2 | <b>1.167341</b> | <b>-.017796</b> | <b>.1517177</b> |
| #3 | <b>1.168029</b> | <b>-.015789</b> | <b>.1525021</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6493.352</b> | <b>113474.7</b> | <b>11363.94</b> | <b>5108.056</b> | <b>7683.830</b> |
| Stddev    | 9.106           | 375.1           | 42.49           | 19.347          | 13.157          |
| %RSD      | .1402421        | .3305609        | .3738832        | .3787610        | .1712315        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6503.838</b> | <b>113676.2</b> | <b>11341.98</b> | <b>5093.433</b> | <b>7698.748</b> |
| #2 | <b>6488.787</b> | <b>113706.0</b> | <b>11412.91</b> | <b>5129.995</b> | <b>7673.880</b> |
| #3 | <b>6487.432</b> | <b>113041.9</b> | <b>11336.93</b> | <b>5100.741</b> | <b>7678.863</b> |

Sample Name: Q3117-02MS      Acquired: 9/18/2025 15:17:32      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8068082</b> | <b>1.854229</b> | <b>.9159844</b> | <b>2.059432</b> | <b>.8139162</b> | <b>1.919315</b> | <b>.3228565</b> |
| Stddev | .0019211        | .045015         | .0033331        | .004149         | .0026625        | .011093         | .0016341        |
| %RSD   | .2381060        | 2.427686        | .3638822        | .2014547        | .3271227        | .5779627        | .5061225        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .8090243 | 1.840756 | .9137609 | 2.062450 | .8112749 | 1.931870 | .3246837 |
| #2 | .8057832 | 1.817489 | .9143755 | 2.054701 | .8165994 | 1.910839 | .3223507 |
| #3 | .8056170 | 1.904442 | .9198167 | 2.061146 | .8138743 | 1.915237 | .3215352 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1815136</b> | <b>.1918520</b> | <b>200.2584</b> | <b>.3935485</b> | <b>.1953413</b> | <b>.3077863</b> | <b>3.063367</b> |
| Stddev | .0008447        | .0003948        | .8020           | .0007329        | .0006274        | .0007799        | .010787         |
| %RSD   | .4653643        | .2057779        | .4004863        | .1862358        | .3211896        | .2534040        | .3521306        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .1813459 | .1919867 | 201.0769 | .3943594 | .1950173 | .3084151 | 3.063642 |
| #2 | .1824296 | .1914075 | 200.2245 | .3933527 | .1949422 | .3069136 | 3.052445 |
| #3 | .1807653 | .1921618 | 199.4739 | .3929334 | .1960645 | .3080304 | 3.074014 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.6911358</b> | <b>6.020895</b> | <b>.4889076</b> | <b>.0738483</b> | <b>341.1056</b> | <b>.2880990</b> | <b>.3528086</b> |
| Stddev | .0022365        | .079058         | .0011696        | .0004691        | 1.3135          | .0001581        | .0010373        |
| %RSD   | .3236027        | 1.313060        | .2392249        | .6352320        | .3850616        | .0548852        | .2940237        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .6937176 | 6.096291 | .4890217 | .0743844 | 342.6216 | .2882810 | .3517805 |
| #2 | .6898986 | 6.027772 | .4876852 | .0735133 | 340.3091 | .2879962 | .3538549 |
| #3 | .6897912 | 5.938624 | .4900160 | .0736471 | 340.3862 | .2880197 | .3527904 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>20.17217</b> | <b>.2750504</b> | <b>.4210197</b> | <b>.6753790</b> | <b>.1807523</b> | <b>6.952514</b> | <b>5.943108</b> |
| Stddev | .15072          | .0027133        | .0013894        | .0020175        | .0005280        | .036390         | .037460         |
| %RSD   | .7471540        | .9864562        | .3299995        | .2987247        | .2921225        | .5234010        | .6303066        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 20.31102 | .2720538 | .4207174 | .6768465 | .1803761 | 6.986259 | 5.946595 |
| #2 | 20.01188 | .2773406 | .4198064 | .6730783 | .1813559 | 6.913958 | 5.904027 |
| #3 | 20.19359 | .2757568 | .4225353 | .6762121 | .1805248 | 6.957326 | 5.978702 |

Sample Name: Q3117-02MS      Acquired: 9/18/2025 15:17:32      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>5.910593</b> | <b>.1516859</b> | <b>.9952664</b> |
| Stddev | .042838         | .0011286        | .0017253        |
| %RSD   | .7247698        | .7440568        | .1733490        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 5.914490 | .1528801 | .9972565 |
| #2 | 5.865940 | .1515409 | .9943500 |
| #3 | 5.951350 | .1506368 | .9941926 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5889.190</b> | <b>103105.5</b> | <b>10690.62</b> | <b>4650.751</b> | <b>6698.222</b> |
| Stddev    | 19.906          | 414.1           | 58.31           | 20.241          | 20.948          |
| %RSD      | .3380171        | .4016221        | .5454556        | .4352114        | .3127446        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 5910.155 | 102659.3 | 10679.46 | 4627.402 | 6719.680 |
| #2 | 5886.867 | 103179.6 | 10638.70 | 4661.544 | 6697.162 |
| #3 | 5870.546 | 103477.5 | 10753.71 | 4663.309 | 6677.823 |



Sample Name: Q3117-02MSD      Acquired: 9/18/2025 15:21:39      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8550712</b> | <b>1.904596</b> | <b>.9706588</b> | <b>2.195432</b> | <b>.8716695</b> | <b>1.989102</b> | <b>.3533030</b> |
| Stddev | .0031323        | .049650         | .0025477        | .001682         | .0031151        | .009490         | .0020998        |
| %RSD   | .3663191        | 2.606841        | .2624679        | .0766204        | .3573674        | .4770821        | .5943310        |
| #1     | .8526268        | 1.931512        | .9683042        | 2.197369        | .8681901        | 1.995034        | .3552071        |
| #2     | .8539846        | 1.847300        | .9733633        | 2.194333        | .8741992        | 1.994116        | .3536509        |
| #3     | .8586021        | 1.934975        | .9703088        | 2.194595        | .8726193        | 1.978158        | .3510510        |
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1870584</b> | <b>.2041551</b> | <b>238.4507</b> | <b>.4081247</b> | <b>.2081325</b> | <b>.3296060</b> | <b>3.149783</b> |
| Stddev | .0013791        | .0003667        | 1.5498          | .0035592        | .0001801        | .0002921        | .043755         |
| %RSD   | .7372476        | .1796376        | .6499252        | .8720868        | .0865496        | .0886085        | 1.389151        |
| #1     | .1866308        | .2037694        | 240.1312        | .4056690        | .2080140        | .3292709        | 3.168979        |
| #2     | .1886007        | .2044994        | 238.1432        | .4064987        | .2083398        | .3297410        | 3.099711        |
| #3     | .1859438        | .2041963        | 237.0778        | .4122066        | .2080438        | .3298062        | 3.180660        |
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.7933780</b> | <b>6.885372</b> | <b>.5212520</b> | <b>.0767102</b> | <b>414.7910</b> | <b>.2962864</b> | <b>.3910690</b> |
| Stddev | .0084641        | .045906         | .0013321        | .0012174        | 6.3473          | .0022961        | .0043538        |
| %RSD   | 1.066847        | .6667163        | .2555525        | 1.587081        | 1.530237        | .7749653        | 1.113311        |
| #1     | .8029280        | 6.931672        | .5200340        | .0754578        | 418.0611        | .2967935        | .3888049        |
| #2     | .7904027        | 6.884574        | .5226745        | .0767832        | 407.4754        | .2937792        | .3883138        |
| #3     | .7868032        | 6.839871        | .5210475        | .0778894        | 418.8364        | .2982866        | .3960884        |
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>22.85112</b> | <b>.2872450</b> | <b>.4480426</b> | <b>.7213381</b> | <b>.1843605</b> | <b>8.278674</b> | <b>6.368846</b> |
| Stddev | .30332          | .0025357        | .0014066        | .0016509        | .0009748        | .113430         | .048791         |
| %RSD   | 1.327382        | .8827724        | .3139342        | .2288625        | .5287318        | 1.370144        | .7660918        |
| #1     | 23.01230        | .2855591        | .4469858        | .7196755        | .1854811        | 8.312008        | 6.374157        |
| #2     | 22.50123        | .2901611        | .4475029        | .7213619        | .1838924        | 8.152312        | 6.317617        |
| #3     | 23.03982        | .2860146        | .4496391        | .7229770        | .1837081        | 8.371701        | 6.414765        |

Sample Name: Q3117-02MSD      Acquired: 9/18/2025 15:21:39      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>7.482433</b> | <b>.1497917</b> | <b>1.156892</b> |
| Stddev | .054381         | .0015469        | .008691         |
| %RSD   | .7267792        | 1.032688        | .7512587        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 7.496759 | .1514942 | 1.166887 |
| #2 | 7.422323 | .1484725 | 1.152678 |
| #3 | 7.528216 | .1494084 | 1.151111 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5760.194</b> | <b>102417.6</b> | <b>10788.28</b> | <b>4649.259</b> | <b>6494.289</b> |
| Stddev    | 19.766          | 746.9           | 78.93           | 23.727          | 18.925          |
| %RSD      | .3431467        | .7293074        | .7316408        | .5103437        | .2914150        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 5782.940 | 102336.2 | 10752.98 | 4662.787 | 6516.117 |
| #2 | 5747.191 | 103201.8 | 10733.15 | 4663.127 | 6482.473 |
| #3 | 5750.451 | 101714.6 | 10878.70 | 4621.862 | 6484.277 |

Sample Name: Q3117-02A      Acquired: 9/18/2025 15:25:46      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.8834125</b> | <b>1.985652</b> | <b>.9994103</b> | <b>2.262958</b> | <b>.8922241</b> | <b>2.063039</b> | <b>.3249613</b> |
| Stddev | .0051958        | .056132         | .0065321        | .020012         | .0098022        | .023590         | .0051211        |
| %RSD   | .5881497        | 2.826875        | .6535941        | .8843349        | 1.098630        | 1.143472        | 1.575907        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .8792552 | 1.959129 | .9918762 | 2.240052 | .8816569 | 2.053529 | .3192085 |
| #2 | .8892374 | 2.050130 | 1.003489 | 2.277052 | .9010197 | 2.045687 | .3266527 |
| #3 | .8817450 | 1.947696 | 1.002866 | 2.271770 | .8939959 | 2.089899 | .3290228 |

| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.1948239</b> | <b>.2088372</b> | <b>185.5981</b> | <b>.4180720</b> | <b>.2126897</b> | <b>.3339971</b> | <b>3.255820</b> |
| Stddev | .0016728        | .0013365        | 1.9952          | .0035094        | .0013304        | .0024270        | .035382         |
| %RSD   | .8586366        | .6399557        | 1.074986        | .8394140        | .6255279        | .7266629        | 1.086730        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .1930846 | .2073114 | 183.3397 | .4141454 | .2111536 | .3312063 | 3.214966 |
| #2 | .1949659 | .2093997 | 186.3330 | .4209022 | .2134780 | .3356138 | 3.276493 |
| #3 | .1964212 | .2098004 | 187.1216 | .4191686 | .2134375 | .3351712 | 3.276003 |

| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.6654209</b> | <b>5.824668</b> | <b>.5333285</b> | <b>.0798604</b> | <b>323.9584</b> | <b>.3078738</b> | <b>.3619490</b> |
| Stddev | .0068442        | .032791         | .0031597        | .0006722        | 6.7757          | .0061868        | .0029391        |
| %RSD   | 1.028549        | .5629658        | .5924390        | .8416765        | 2.091546        | 2.009515        | .8120214        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .6575731 | 5.794612 | .5297341 | .0791349 | 316.4211 | .3016967 | .3587841 |
| #2 | .6701519 | 5.859639 | .5345840 | .0804620 | 329.5444 | .3078543 | .3645925 |
| #3 | .6685378 | 5.819753 | .5356675 | .0799843 | 325.9096 | .3140702 | .3624704 |

| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>20.31426</b> | <b>.2952680</b> | <b>.4594427</b> | <b>.7344216</b> | <b>.1942623</b> | <b>6.666735</b> | <b>6.482455</b> |
| Stddev | .18543          | .0036978        | .0040038        | .0048924        | .0021746        | .085408         | .055319         |
| %RSD   | .9127961        | 1.252343        | .8714466        | .6661548        | 1.119400        | 1.281107        | .8533619        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 20.10023 | .2913010 | .4548221 | .7295199 | .1917521 | 6.571353 | 6.419297 |
| #2 | 20.41599 | .2958838 | .4618864 | .7393046 | .1954609 | 6.736136 | 6.522309 |
| #3 | 20.42655 | .2986192 | .4616197 | .7344402 | .1955737 | 6.692713 | 6.505760 |

Sample Name: Q3117-02A      Acquired: 9/18/2025 15:25:46      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>5.507994</b> | <b>.1659446</b> | <b>.9537891</b> |
| Stddev | .043517         | .0011147        | .0076115        |
| %RSD   | .7900614        | .6717084        | .7980274        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 5.464426 | .1653717 | .9450920 |
| #2 | 5.551459 | .1672292 | .9570402 |
| #3 | 5.508097 | .1652329 | .9592353 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>5768.951</b> | <b>102803.5</b> | <b>10753.92</b> | <b>4595.214</b> | <b>6577.820</b> |
| Stddev    | 51.119          | 1000.6          | 74.64           | 32.221          | 55.129          |
| %RSD      | .8861114        | .9732918        | .6941063        | .7011804        | .8381001        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 5825.899 | 103864.5 | 10840.07 | 4630.459 | 6639.840 |
| #2 | 5727.029 | 101876.9 | 10713.05 | 4567.270 | 6534.388 |
| #3 | 5753.924 | 102669.0 | 10708.63 | 4587.913 | 6559.231 |

Sample Name: CCV05      Acquired: 9/18/2025 15:29:52      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV05      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>5.137458</b> | <b>4.993243</b> | <b>4.915949</b> | <b>5.283460</b> | <b>5.253569</b> | <b>9.928353</b> | <b>9.865808</b> |
| Stddev | .012950         | .087401         | .011296         | .030889         | .019581         | .149142         | .088084         |
| %RSD   | .2520720        | 1.750394        | .2297827        | .5846314        | .3727122        | 1.502184        | .8928247        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 5.141321 | 5.068301 | 4.928952 | 5.306081 | 5.270418 | 9.756547 | 9.785996 |
| #2 | 5.123017 | 4.897286 | 4.910336 | 5.248268 | 5.232088 | 10.02453 | 9.960316 |
| #3 | 5.148038 | 5.014140 | 4.908558 | 5.296031 | 5.258201 | 10.00398 | 9.851113 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2419093</b> | <b>2.464442</b> | <b>24.68802</b> | <b>1.024240</b> | <b>2.490884</b> | <b>1.268028</b> | <b>5.164444</b> |
| Stddev | .0035632        | .005452         | .32636          | .001021         | .005885         | .002143         | .021633         |
| %RSD   | 1.472946        | .2212358        | 1.321955        | .0996917        | .2362437        | .1689734        | .4188787        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .2378264 | 2.470213 | 24.31213 | 1.023088 | 2.496994 | 1.270028 | 5.184009 |
| #2 | .2435099 | 2.459378 | 24.89933 | 1.025033 | 2.485254 | 1.265767 | 5.168110 |
| #3 | .2443914 | 2.463734 | 24.85259 | 1.024599 | 2.490404 | 1.268289 | 5.141212 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.423191</b> | <b>24.43201</b> | <b>2.486932</b> | <b>1.276533</b> | <b>25.16124</b> | <b>2.497416</b> | <b>2.574588</b> |
| Stddev | .029936         | .32221          | .005207         | .000175         | .21914          | .039474         | .005053         |
| %RSD   | 1.235393        | 1.318790        | .2093661        | .0137137        | .8709334        | 1.580578        | .1962589        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 2.388657 | 24.06028 | 2.491538 | 1.276418 | 25.36728 | 2.452825 | 2.569857 |
| #2 | 2.441765 | 24.60439 | 2.481283 | 1.276447 | 25.18542 | 2.527893 | 2.579911 |
| #3 | 2.439151 | 24.63135 | 2.487975 | 1.276735 | 24.93101 | 2.511529 | 2.573998 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>26.20932</b> | <b>4.794359</b> | <b>5.163894</b> | <b>4.983963</b> | <b>4.938109</b> | <b>5.172320</b> | <b>5.135074</b> |
| Stddev | .06451          | .074247         | .010427         | .012965         | .061208         | .032234         | .029511         |
| %RSD   | .2461423        | 1.548636        | .2019151        | .2601409        | 1.239506        | .6231975        | .5746887        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 26.23567 | 4.709426 | 5.174084 | 4.998027 | 4.867801 | 5.175476 | 5.152636 |
| #2 | 26.25649 | 4.826709 | 5.153246 | 4.972487 | 4.979512 | 5.202859 | 5.101003 |
| #3 | 26.13580 | 4.846943 | 5.164353 | 4.981376 | 4.967014 | 5.138624 | 5.151582 |

Sample Name: CCV05      Acquired: 9/18/2025 15:29:52      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV05      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|
| Elem   | S_1820          | Li6707          | Sr4077          |
| Units  | ppm             | ppm             | ppm             |
| Avg    | <b>5.188626</b> | <b>4.786755</b> | <b>4.946480</b> |
| Stddev | .031813         | .060878         | .082092         |
| %RSD   | .6131377        | 1.271807        | 1.659606        |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 5.201812 | 4.716633 | 4.858856 |
| #2 | 5.152339 | 4.826105 | 5.021607 |
| #3 | 5.211726 | 4.817526 | 4.958978 |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6276.125</b> | <b>109269.2</b> | <b>11039.35</b> | <b>4881.770</b> | <b>7329.204</b> |
| Stddev    | 6.097           | 175.2           | 151.05          | 3.115           | 11.147          |
| %RSD      | .0971401        | .1603259        | 1.368321        | .0638175        | .1520924        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6269.758 | 109073.2 | 11211.84 | 4885.222 | 7316.633 |
| #2 | 6281.910 | 109323.8 | 10975.54 | 4880.922 | 7337.887 |
| #3 | 6276.707 | 109410.5 | 10930.68 | 4879.166 | 7333.091 |

Sample Name: CCB05      Acquired: 9/18/2025 15:34:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB05      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000338</b> | <b>.0005810</b> | <b>-.001353</b> | <b>.0004186</b> | <b>-.001819</b> | <b>-.005439</b> |
| Stddev | .002760         | .0008345        | .000986         | .0005915        | .001154         | .009805         |
| %RSD   | 817.2464        | 143.6286        | 72.88282        | 141.2892        | 63.45305        | 180.2729        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .001885  | .0010799 | -.002272 | .0010886 | -.003024 | -.013344 |
| #2 | -.003427 | -.000382 | -.000312 | .0001985 | -.000724 | -.008506 |
| #3 | .000529  | .001046  | -.001475 | -.000031 | -.001709 | .005533  |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.004864</b> | <b>.0000805</b> | <b>-.000124</b> | <b>-.000234</b> | <b>-.000329</b> | <b>-.000316</b> |
| Stddev | .001010         | .0000676        | .000024         | .002346         | .000250         | .000105         |
| %RSD   | 20.76128        | 84.07069        | 19.71263        | 1002.677        | 76.08952        | 33.30153        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | -.003725 | .0001020 | -.000144 | -.002430 | -.000314 | -.000340 |
| #2 | -.005214 | .0000047 | -.000097 | -.000509 | -.000586 | -.000407 |
| #3 | -.005652 | .0001347 | -.000131 | .002237  | -.000086 | -.000201 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000029</b> | <b>.0006285</b> | <b>-.000091</b> | <b>-.006067</b> | <b>-.000117</b> | <b>.0000193</b> |
| Stddev | .000456         | .0051262        | .000243         | .012031         | .000239         | .0006474        |
| %RSD   | 1596.482        | 815.5598        | 266.8610        | 198.3054        | 203.6118        | 3347.700        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | -.000333 | .0053206 | .000039  | .006130  | -.000204 | -.000483 |
| #2 | .000496  | -.004843 | -.000371 | -.006406 | .000153  | .000750  |
| #3 | -.000248 | .001408  | .000059  | -.017924 | -.000300 | -.000208 |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2225828</b> | <b>.0007144</b> | <b>-.000294</b> | <b>.6309159</b> | <b>.0001536</b> | <b>.0001038</b> |
| Stddev | .0390449        | .0020256        | .000127         | .0800905        | .0004440        | .0002402        |
| %RSD   | 17.54174        | 283.5189        | 43.42168        | 12.69433        | 288.9827        | 231.4501        |

|    |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|
| #1 | .1940914 | -.000796 | -.000321 | .5405974 | .0004270 | .0002924 |
| #2 | .2065682 | .003016  | -.000405 | .6588581 | -.000359 | .0001855 |
| #3 | .2670888 | -.000077 | -.000155 | .6932921 | .000393  | -.000167 |

Sample Name: CCB05      Acquired: 9/18/2025 15:34:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB05      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>-.001369</b> | <b>-.000780</b> | <b>.0089207</b> | <b>-.001051</b> | <b>F .0688766</b> | <b>-.006093</b> |
| Stddev | .000122         | .001142         | .0047399        | .000952         | .0007425          | .001268         |
| %RSD   | 8.908540        | 146.3774        | 53.13328        | 90.59166        | 1.078004          | 20.81541        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.001257</b> | <b>-.002058</b> | <b>.0143895</b> | <b>-.001055</b> | <b>.0696045</b> | <b>-.005095</b> |
| #2 | <b>-.001353</b> | <b>-.000425</b> | <b>.0059973</b> | <b>-.000097</b> | <b>.0681203</b> | <b>-.005664</b> |
| #3 | <b>-.001499</b> | <b>.000142</b>  | <b>.0063753</b> | <b>-.002002</b> | <b>.0689052</b> | <b>-.007520</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000252</b> |
| Stddev | .000050         |
| %RSD   | 20.03373        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000240</b> |
| #2 | <b>-.000307</b> |
| #3 | <b>-.000208</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6791.642</b> | <b>117858.9</b> | <b>11396.96</b> | <b>5337.975</b> | <b>8578.417</b> |
| Stddev    | 11.923          | 572.9           | 92.96           | 17.936          | 9.071           |
| %RSD      | .1755513        | .4861294        | .8156648        | .3360083        | .1057432        |

|    |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>6793.520</b> | <b>118501.5</b> | <b>11291.51</b> | <b>5358.620</b> | <b>8584.349</b> |
| #2 | <b>6778.892</b> | <b>117673.9</b> | <b>11432.33</b> | <b>5326.224</b> | <b>8567.975</b> |
| #3 | <b>6802.515</b> | <b>117401.4</b> | <b>11467.05</b> | <b>5329.081</b> | <b>8582.927</b> |



Sample Name: LR-3      Acquired: 9/18/2025 15:51:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | As1890   | Tl1908   | Pb2203   | Se1960   | Sb2068   | Al3961   | Ba4934   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .0942955 | .0323053 | 215.0464 | .0023937 | .1716512 | .0503625 | -.003365 |
| Stddev | .0009675 | .0016700 | 1.1581   | .0036886 | .0059139 | .0107600 | .000487  |
| %RSD   | 1.026015 | 5.169538 | .5385378 | 154.0967 | 3.445282 | 21.36512 | 14.47076 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0938686 | .0340933 | 216.1267 | .0014643 | .1781670 | .0379763 | -.002873 |
| #2 | .0954030 | .0320368 | 215.1888 | .0064580 | .1701630 | .0574007 | -.003374 |
| #3 | .0936148 | .0307857 | 213.8236 | -.000741 | .1666236 | .0557106 | -.003847 |

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | Be2348   | Cd2265   | Ca3736   | Cr2677   | Co2286   | Cu2247   | Fe2404   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | -.005755 | -.001360 | .1730761 | 25.70225 | .0061592 | 50.59675 | .0411604 |
| Stddev | .000135  | .000046  | .0071395 | .25435   | .0002859 | .29775   | .0041782 |
| %RSD   | 2.342132 | 3.384277 | 4.125093 | .9896158 | 4.642049 | .5884768 | 10.15112 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | -.005848 | -.001345 | .1654972 | 25.41107 | .0064418 | 50.93988 | .0367330 |
| #2 | -.005600 | -.001324 | .1740561 | 25.81456 | .0061657 | 50.44393 | .0417140 |
| #3 | -.005815 | -.001412 | .1796751 | 25.88111 | .0058700 | 50.40644 | .0450343 |

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | Mn2576   | Mg2790   | Ni2316   | Ag3280   | Na5895   | V_2924   | Zn2138   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | 49.82586 | -.221043 | 25.51185 | .0042529 | .0357568 | -.036071 | 31.25875 |
| Stddev | .53192   | .007099  | .13978   | .0003291 | .0182211 | .003124  | .25387   |
| %RSD   | 1.067555 | 3.211472 | .5479108 | 7.737029 | 50.95831 | 8.661311 | .8121461 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 50.43936 | -.224063 | 25.67167 | .0042469 | .0157010 | -.035599 | 31.54311 |
| #2 | 49.49364 | -.212933 | 25.45150 | .0045848 | .0512920 | -.033210 | 31.17826 |
| #3 | 49.54459 | -.226132 | 25.41238 | .0039268 | .0402775 | -.039404 | 31.05489 |

|        |          |          |          |          |          |          |          |
|--------|----------|----------|----------|----------|----------|----------|----------|
| Elem   | K_7664   | B_2496   | Mo2020   | Sn1899   | Ti3361   | Si2881   | P_1774   |
| Units  | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      | ppm      |
| Avg    | .1484054 | -.000541 | -.016828 | -.007098 | -.044088 | -.150738 | .2133476 |
| Stddev | .0695910 | .000200  | .000382  | .000878  | .000941  | .008338  | .0017586 |
| %RSD   | 46.89247 | 37.05362 | 2.270556 | 12.36840 | 2.134809 | 5.531430 | .8242662 |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .0705853 | -.000714 | -.017158 | -.006204 | -.043500 | -.159097 | .2153618 |
| #2 | .1699683 | -.000587 | -.016916 | -.007131 | -.043591 | -.142422 | .2121176 |
| #3 | .2046626 | -.000322 | -.016409 | -.007959 | -.045174 | -.150694 | .2125633 |

Sample Name: LR-3      Acquired: 9/18/2025 15:51:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1:      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |
|--------|----------|----------|----------|
| Elem   | S_1820   | Li6707   | Sr4077   |
| Units  | ppm      | ppm      | ppm      |
| Avg    | .1512373 | -.010840 | .0003044 |
| Stddev | .0019250 | .002154  | .0000506 |
| %RSD   | 1.272861 | 19.87362 | 16.63430 |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | .1496383 | -.012639 | .0003573 |
| #2 | .1533740 | -.011427 | .0002563 |
| #3 | .1506997 | -.008453 | .0002996 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6270.259 | 117436.9 | 11531.12 | 5061.093 | 8040.650 |
| Stddev    | 27.265   | 683.8    | 69.22    | 3.995    | 33.349   |
| %RSD      | .4348343 | .5822558 | .6003209 | .0789382 | .4147493 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6240.789 | 118157.3 | 11460.51 | 5064.476 | 8004.568 |
| #2 | 6275.401 | 117356.7 | 11598.87 | 5062.118 | 8047.040 |
| #3 | 6294.588 | 116796.8 | 11533.99 | 5056.686 | 8070.340 |

Sample Name: CCV06      Acquired: 9/18/2025 16:05:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV06      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          | Ba4934          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>4.850455</b> | <b>5.434122</b> | <b>4.666405</b> | <b>4.981426</b> | <b>4.880117</b> | <b>9.602575</b> | <b>9.383754</b> |
| Stddev | .103599         | .056900         | .105833         | .098602         | .109052         | .043710         | .128524         |
| %RSD   | 2.135859        | 1.047092        | 2.267979        | 1.979399        | 2.234614        | .4551856        | 1.369643        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 4.933075 | 5.485475 | 4.751014 | 5.060912 | 4.962228 | 9.645030 | 9.527544 |
| #2 | 4.884068 | 5.443938 | 4.700466 | 5.012280 | 4.921740 | 9.604984 | 9.343667 |
| #3 | 4.734224 | 5.372952 | 4.547736 | 4.871087 | 4.756384 | 9.557711 | 9.280051 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          | Cu2247          | Fe2404          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.2386397</b> | <b>2.351819</b> | <b>23.83731</b> | <b>.9814374</b> | <b>2.346722</b> | <b>1.194986</b> | <b>4.812162</b> |
| Stddev | .0026266        | .049850         | .10393          | .0040651        | .050315         | .023556         | .064358         |
| %RSD   | 1.100676        | 2.119636        | .4359868        | .4142007        | 2.144051        | 1.971241        | 1.337407        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | .2414406 | 2.390272 | 23.95729 | .9774285 | 2.384233 | 1.213075 | 4.778566 |
| #2 | .2382469 | 2.369688 | 23.77525 | .9813272 | 2.366389 | 1.203534 | 4.771553 |
| #3 | .2362316 | 2.295497 | 23.77938 | .9855565 | 2.289544 | 1.168350 | 4.886366 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Mn2576          | Mg2790          | Ni2316          | Ag3280          | Na5895          | V_2924          | Zn2138          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>2.332259</b> | <b>23.64476</b> | <b>2.345895</b> | <b>1.226059</b> | <b>23.36365</b> | <b>2.402342</b> | <b>2.445959</b> |
| Stddev | .009584         | .18016          | .050805         | .002504         | .37252          | .008483         | .002300         |
| %RSD   | .4109537        | .7619510        | 2.165705        | .2042148        | 1.594462        | .3530940        | .0940494        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 2.339179 | 23.84893 | 2.384540 | 1.223489 | 23.04355 | 2.411732 | 2.443383 |
| #2 | 2.321319 | 23.57724 | 2.364797 | 1.226195 | 23.27486 | 2.400064 | 2.446689 |
| #3 | 2.336278 | 23.50811 | 2.288349 | 1.228491 | 23.77255 | 2.395232 | 2.447807 |

|        |                 |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | K_7664          | B_2496          | Mo2020          | Sn1899          | Ti3361          | Si2881          | P_1774          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>24.24606</b> | <b>4.743514</b> | <b>4.880563</b> | <b>4.760941</b> | <b>4.727150</b> | <b>4.917166</b> | <b>4.828952</b> |
| Stddev | .39186          | .048070         | .106101         | .102519         | .012655         | .059623         | .094085         |
| %RSD   | 1.616184        | 1.013388        | 2.173959        | 2.153334        | .2676992        | 1.212548        | 1.948348        |

|    |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|
| #1 | 23.87849 | 4.795724 | 4.961361 | 4.841209 | 4.739152 | 4.852240 | 4.891922 |
| #2 | 24.20133 | 4.733731 | 4.919922 | 4.796158 | 4.713931 | 4.929794 | 4.874135 |
| #3 | 24.65837 | 4.701089 | 4.760407 | 4.645455 | 4.728367 | 4.969462 | 4.720798 |

Sample Name: CCV06      Acquired: 9/18/2025 16:05:04      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCV06      Custom ID2:      Custom ID3:  
Comment:

|        |          |          |          |
|--------|----------|----------|----------|
| Elem   | S_1820   | Li6707   | Sr4077   |
| Units  | ppm      | ppm      | ppm      |
| Avg    | 4.946255 | 4.596035 | 4.713026 |
| Stddev | .095952  | .015804  | .040781  |
| %RSD   | 1.939889 | .3438582 | .8652848 |

|    |          |          |          |
|----|----------|----------|----------|
| #1 | 5.017477 | 4.594148 | 4.755972 |
| #2 | 4.984145 | 4.581259 | 4.674824 |
| #3 | 4.837143 | 4.612698 | 4.708283 |

|           |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|
| Int. Std. | Y_2243   | Y_3600   | Y_3710   | Y_2243   | In2306   |
| Units     | Cts/S    | Cts/S    | Cts/S    | Cts/S    | Cts/S    |
| Avg       | 6477.184 | 110427.4 | 10841.20 | 4957.500 | 7536.554 |
| Stddev    | 124.582  | 161.8    | 135.03   | 17.946   | 147.578  |
| %RSD      | 1.923393 | .1465235 | 1.245511 | .3620017 | 1.958167 |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6380.874 | 110533.8 | 10696.89 | 4948.039 | 7422.793 |
| #2 | 6432.796 | 110507.2 | 10862.22 | 4946.264 | 7483.556 |
| #3 | 6617.880 | 110241.2 | 10964.48 | 4978.197 | 7703.312 |

Sample Name: CCB06      Acquired: 9/18/2025 16:09:16      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB06      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | As1890          | Tl1908          | Pb2203          | Se1960          | Sb2068          | Al3961          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.002054</b> | <b>.0006886</b> | <b>-.000732</b> | <b>-.003446</b> | <b>-.002840</b> | <b>-.001343</b> |
| Stddev | .001308         | .0009467        | .000718         | .001117         | .000275         | .009902         |
| %RSD   | 63.67458        | 137.4713        | 98.11861        | 32.40338        | 9.671742        | 737.0930        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.003507</b> | <b>-.000286</b> | <b>-.000086</b> | <b>-.003452</b> | <b>-.002940</b> | <b>.007848</b>  |
| #2 | <b>-.001683</b> | <b>.001604</b>  | <b>-.000605</b> | <b>-.004560</b> | <b>-.002529</b> | <b>-.011828</b> |
| #3 | <b>-.000971</b> | <b>.000748</b>  | <b>-.001504</b> | <b>-.002327</b> | <b>-.003050</b> | <b>-.000050</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Ba4934          | Be2348          | Cd2265          | Ca3736          | Cr2677          | Co2286          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.002485</b> | <b>.0000502</b> | <b>-.000145</b> | <b>-.003800</b> | <b>-.000193</b> | <b>-.000227</b> |
| Stddev | .001095         | .0000313        | .000024         | .006965         | .000237         | .000051         |
| %RSD   | 44.05239        | 62.35188        | 16.54930        | 183.2875        | 122.9109        | 22.60991        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.003086</b> | <b>.0000441</b> | <b>-.000125</b> | <b>-.007050</b> | <b>-.000411</b> | <b>-.000248</b> |
| #2 | <b>-.003148</b> | <b>.0000224</b> | <b>-.000139</b> | <b>-.008546</b> | <b>.000060</b>  | <b>-.000168</b> |
| #3 | <b>-.001222</b> | <b>.0000841</b> | <b>-.000172</b> | <b>.004196</b>  | <b>-.000228</b> | <b>-.000264</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Cu2247          | Fe2404          | Mn2576          | Mg2790          | Ni2316          | Ag3280          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>-.000001</b> | <b>-.006193</b> | <b>.0001650</b> | <b>.0066004</b> | <b>.0002861</b> | <b>.0001888</b> |
| Stddev | .000251         | .004575         | .0003035        | .0300318        | .0002601        | .0000211        |
| %RSD   | 21826.61        | 73.87517        | 184.0069        | 454.9968        | 90.90299        | 11.16237        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000128</b> | <b>-.000920</b> | <b>-.000104</b> | <b>.0271954</b> | <b>.0005835</b> | <b>.0002087</b> |
| #2 | <b>.000288</b>  | <b>-.009106</b> | <b>.000105</b>  | <b>-.027859</b> | <b>.0001739</b> | <b>.0001910</b> |
| #3 | <b>-.000163</b> | <b>-.008553</b> | <b>.000494</b>  | <b>.020465</b>  | <b>.0001010</b> | <b>.0001667</b> |

|        |                 |                 |                 |                 |                 |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Elem   | Na5895          | V_2924          | Zn2138          | K_7664          | B_2496          | Mo2020          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm             | ppm             |
| Avg    | <b>.0139697</b> | <b>.0015723</b> | <b>-.000315</b> | <b>.2829465</b> | <b>.0012925</b> | <b>-.000199</b> |
| Stddev | .0194198        | .0018711        | .000302         | .0203743        | .0008625        | .000375         |
| %RSD   | 139.0140        | 119.0015        | 95.69164        | 7.200768        | 66.72641        | 188.1098        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000331</b> | <b>-.000550</b> | <b>-.000664</b> | <b>.2614622</b> | <b>.0015017</b> | <b>.000148</b>  |
| #2 | <b>.006162</b>  | <b>.002985</b>  | <b>-.000137</b> | <b>.2853862</b> | <b>.0020312</b> | <b>-.000597</b> |
| #3 | <b>.036078</b>  | <b>.002282</b>  | <b>-.000145</b> | <b>.3019911</b> | <b>.0003447</b> | <b>-.000149</b> |

Sample Name: CCB06      Acquired: 9/18/2025 16:09:16      Type: Unk  
Method: 6010-200.7 NEW(v178)      Mode: CONC      Corr. Factor: 1.000000  
User: Jaswal      Custom ID1: CCB06      Custom ID2:      Custom ID3:  
Comment:

|        |                 |                 |                 |                 |                   |                 |
|--------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| Elem   | Sn1899          | Ti3361          | Si2881          | P_1774          | S_1820            | Li6707          |
| Units  | ppm             | ppm             | ppm             | ppm             | ppm               | ppm             |
| Avg    | <b>-.001022</b> | <b>.0009413</b> | <b>.0114568</b> | <b>-.000590</b> | <b>F .0389482</b> | <b>-.009899</b> |
| Stddev | .000347         | .0014864        | .0051455        | .000437         | .0011002          | .002793         |
| %RSD   | 34.00944        | 157.9009        | 44.91213        | 74.02071        | 2.824754          | 28.21910        |

|    |                 |                 |                 |                 |                 |                 |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| #1 | <b>-.000865</b> | <b>.0001689</b> | <b>.0103334</b> | <b>-.001018</b> | <b>.0393182</b> | <b>-.006730</b> |
| #2 | <b>-.000780</b> | <b>.0026549</b> | <b>.0170712</b> | <b>-.000609</b> | <b>.0377106</b> | <b>-.012003</b> |
| #3 | <b>-.001420</b> | <b>.0000002</b> | <b>.0069658</b> | <b>-.000144</b> | <b>.0398156</b> | <b>-.010964</b> |

|        |                 |
|--------|-----------------|
| Elem   | Sr4077          |
| Units  | ppm             |
| Avg    | <b>-.000213</b> |
| Stddev | .000086         |
| %RSD   | 40.20951        |

|    |                 |
|----|-----------------|
| #1 | <b>-.000158</b> |
| #2 | <b>-.000169</b> |
| #3 | <b>-.000312</b> |

|           |                 |                 |                 |                 |                 |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Int. Std. | Y_2243          | Y_3600          | Y_3710          | Y_2243          | In2306          |
| Units     | Cts/S           | Cts/S           | Cts/S           | Cts/S           | Cts/S           |
| Avg       | <b>6797.022</b> | <b>117818.9</b> | <b>11211.27</b> | <b>5271.572</b> | <b>8560.414</b> |
| Stddev    | 8.270           | 124.0           | 15.42           | 14.510          | 6.627           |
| %RSD      | .1216715        | .1052294        | .1375493        | .2752427        | .0774155        |

|    |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|
| #1 | 6789.451 | 117905.1 | 11193.98 | 5265.906 | 8558.988 |
| #2 | 6805.848 | 117874.9 | 11216.23 | 5260.751 | 8567.639 |
| #3 | 6795.767 | 117676.8 | 11223.60 | 5288.060 | 8554.617 |

# LB137213 INSTRUMENT ID: CV1

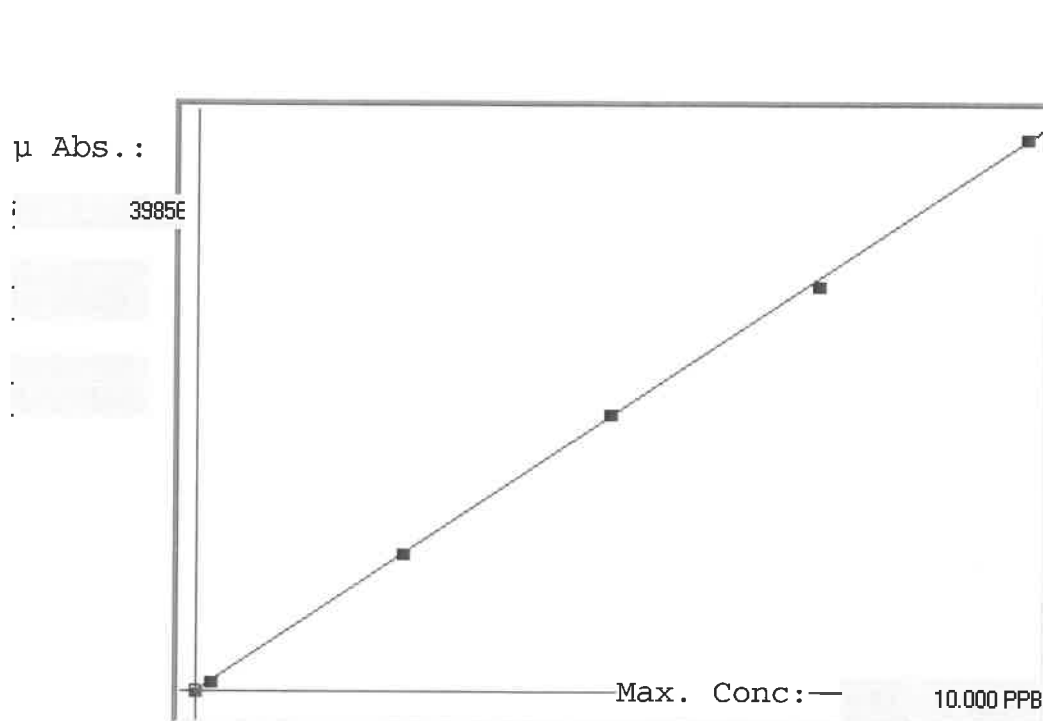
Method: 7470A Operator: Admin Date of Analysis: 17 Sep 2025 13:56:20

| Type | Sample ID       | Extended ID  | Conc.   | μ Abs. | Units | Type | Std Conc | Method | Date                 |
|------|-----------------|--------------|---------|--------|-------|------|----------|--------|----------------------|
| S    | 0.0 - 1         | 50           | -       | 19     | PPB   | Std  | 0.0000   | 7470A  | 17 Sep 2025 13:57:46 |
| S    | 0.2 - 1         | 50.2         | -       | 740    | PPB   | Std  | 0.2000   | 7470A  | 17 Sep 2025 14:00:03 |
| S    | 2.5 - 1         | 52.5         | -       | 9931   | PPB   | Std  | 2.5000   | 7470A  | 17 Sep 2025 14:02:20 |
| S    | 5.0 - 1         | 55.0         | -       | 20028  | PPB   | Std  | 5.0000   | 7470A  | 17 Sep 2025 14:04:37 |
| S    | 7.5 - 1         | 57.5         | -       | 29255  | PPB   | Std  | 7.5000   | 7470A  | 17 Sep 2025 14:06:56 |
| S    | 10.0 - 1        | 510.0        | -       | 39856  | PPB   | Std  | 10.0000  | 7470A  | 17 Sep 2025 14:18:36 |
| U    | ICV34 - 1       | ICV34        | 4.2787  | 16950  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:21:36 |
| U    | ICB34 - 1       | ICB34        | -0.0222 | -100   | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:23:53 |
| U    | CCV07 - 1       | CCV07        | 4.9577  | 19642  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:26:11 |
| U    | CCB07 - 1       | CCB07        | -0.0285 | -125   | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:28:26 |
| U    | CRA - 1         | CRA          | 0.1920  | 749    | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:30:45 |
| U    | HighStd - 1     | HighStd      | 9.8672  | 39105  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:33:00 |
| U    | ChkStd - 1      | ChkStd       | 7.3009  | 28931  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:35:16 |
| U    | PB169732BL - 1  | PBW          | -0.0449 | -190   | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:37:36 |
| U    | PB169732BS - 1  | LCSW         | 4.3266  | 17140  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:39:55 |
| U    | Q3103-01 - 1    | TW-WTS-14    | -0.0184 | -85    | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:42:11 |
| U    | Q3103-01DUP - 1 | TW-WTS-14DUP | 0.0116  | 34     | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:46:11 |
| U    | Q3103-01MS - 1  | TW-WTS-14MS  | 3.4389  | 13621  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:48:27 |
| U    | Q3103-01MSD - 1 | TW-WTS-14MSD | 3.8087  | 15087  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:50:44 |
| U    | Q3113-01 - 1    | TRE-25-0101  | 0.2028  | 792    | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:53:02 |
| U    | CCV08 - 1       | CCV08        | 4.7292  | 18736  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:55:20 |
| U    | CCB08 - 1       | CCB08        | 0.0015  | -6     | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:57:37 |
| U    | Q3103-01LX5 - 1 |              | 0.0356  | 129    | PPB   | SMPL | -7470A   |        | 17 Sep 2025 14:59:55 |
| U    | Q3103-01A - 1   |              | 4.1490  | 16436  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 15:02:10 |
| U    | CCV09 - 1       | CCV09        | 4.8941  | 19390  | PPB   | SMPL | -7470A   |        | 17 Sep 2025 15:04:25 |
| U    | CCB09 - 1       | CCB09        | -0.0371 | -159   | PPB   | SMPL | -7470A   |        | 17 Sep 2025 15:06:44 |

LB137213  
INSTRUMENT ID: CV1

Reviewed By: jaswal  
On: 9/18/2025 9:40:45 AM  
Inst Id: CV1  
LB: LB137213

7470A



Linear

A= 0.0000e+000

B= 2.5225e-004

C= 3.0420e-003

Rho= 0.9998760

Accept=Accepted

| Std ID | Conc.  | Calc.  | Dev.   | Mean  | SD or %RSD | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | % D |
|--------|--------|--------|--------|-------|------------|-------|-------|-------|-------|-------|-----|
| 0.0    | 0.000  | 0.008  | 0.008  | 19    | 0.000      | 19    | 0     |       |       |       | -5  |
| 0.2    | 0.200  | 0.190  | -0.010 | 740   | 0.0 %      | 740   | 0     |       |       |       | 0   |
| 2.5    | 2.500  | 2.508  | 0.008  | 9931  | 0.0 %      | 9931  | 0     |       |       |       | +1  |
| 5.0    | 5.000  | 5.055  | 0.055  | 20028 | 0.0 %      | 20028 |       |       |       |       | -2  |
| 7.5    | 7.500  | 7.383  | -0.117 | 29255 | 0.0 %      | 29255 |       |       |       |       | 1   |
| 10.0   | 10.000 | 10.057 | 0.057  | 39856 | 0.0 %      | 39856 |       |       |       |       |     |



SOP ID : M3010A-Digestion-17

SDG No : N/A

Matrix : WATER

Pipette ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

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

Start Digest Date: 09/17/2025 Time : 10:32 Temp : 96 °C

End Digest Date: 09/17/2025 Time : 13:35 Temp : 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: *SKJ*

Supervisor Signature: *[Signature]*

Temp : 1. 96°C 2. N/A

| Standardized Name | MLS USED | STD REF. # FROM LOG |
|-------------------|----------|---------------------|
| LFS-1             | 0.25     | M6180               |
| LFS-2             | 0.25     | M6181               |
| N/A               | N/A      | N/A                 |
| N/A               | N/A      | N/A                 |
| N/A               | N/A      | N/A                 |

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

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96C

| Date / Time    | Prepped Sample Relinquished By/Location | Received By/Location        |
|----------------|-----------------------------------------|-----------------------------|
| 09/17/25 14:35 | <i>SKJ metdig</i>                       | <i>[Signature] (metdig)</i> |
|                | Preparation Group                       | Analysis Group              |

| Lab Sample ID | Client Sample ID | pH | Initial Vol (ml) | Final Vol (ml) | Color Before | Color After | Clarity Before | Clarity After | Comment     | Prep Pos |
|---------------|------------------|----|------------------|----------------|--------------|-------------|----------------|---------------|-------------|----------|
| PB169721BL    | PBW721           | <2 | 50               | 25             | Colorless    | Colorless   | Clear          | Clear         | N/A         | 1        |
| PB169721BS    | LCS721           | <2 | 50               | 25             | Colorless    | Colorless   | Clear          | Clear         | M6180,M6181 | 2        |
| Q3103-01MS    | TW-WTS-14MS      | <2 | 50               | 25             | Colorless    | Colorless   | Clear          | Clear         | M6180,M6181 | 5        |
| Q3103-01MSD   | TW-WTS-14MSD     | <2 | 50               | 25             | Colorless    | Colorless   | Clear          | Clear         | M6180,M6181 | 6        |
| Q3103-01DUP   | TW-WTS-14DUP     | <2 | 50               | 25             | Colorless    | Colorless   | Clear          | Clear         | N/A         | 4        |
| Q3103-01      | TW-WTS-14        | <2 | 50               | 25             | Colorless    | Colorless   | Clear          | Clear         | N/A         | 3        |

# WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB169721      WorkList ID : 191918      Department : Digestion      Date : 09-17-2025 09:46:53

| Sample   | Customer Sample | Matrix | Test          | Preservative       | Customer | Raw Sample Storage Location | Collect Date | Method |
|----------|-----------------|--------|---------------|--------------------|----------|-----------------------------|--------------|--------|
| Q3103-01 | TW-WTS-14       | Water  | Metals Group4 | 1:1 HNO3 to pH < 2 | ENTAO5   | J22                         | 09/15/2025   | 6010D  |

Date/Time 09124125 10:10  
 Raw Sample Received by: SLG met d's  
 Raw Sample Relinquished by: CPCCWJ

Date/Time 09124125 11:10  
 Raw Sample Received by: CPCCWJ  
 Raw Sample Relinquished by: SLG met d's

SOP ID : M7470A-Mercury-20

SDG No : N/A

Matrix : WATER

Pipette ID: HG A

Balance ID : N/A

Filter paper ID : N/A

pH Strlp ID : M6069

Hood ID : #1

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

Start Digest Date: 09/17/2025 Time : 09:20 Temp : 95 °C

End Digest Date: 09/17/2025 Time : 11:21 Temp : 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature:

Supervisor Signature: 

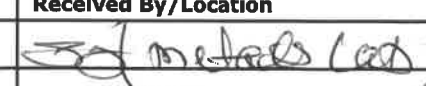
Temp : 1. 95°C 2. N/A

| Standard Name | MLS USED | STD REF. # FROM LOG |
|---------------|----------|---------------------|
| ICV           | 30mL     | MP87241             |
| CCV           | 30mL     | MP87243             |
| CRA           | 30mL     | MP87245             |
| Blank Spike   | 0.48mL   | MP87234             |
| Matrix Spike  | 0.48mL   | MP87234             |

| Chemical Used           | ML/SAMPLE USED | Lot Number |
|-------------------------|----------------|------------|
| HNO3/H2SO4(1:2)         | 2.25mL         | MP85892    |
| KMnO4 (5%)              | 4.5mL          | MP85893    |
| K2S2O8 (5%)             | 2.4mL          | MP85894    |
| Hydroxylamine HCL (12%) | 2.0mL          | MP85895    |
| N/A                     | N/A            | N/A        |
| N/A                     | N/A            | N/A        |
| N/A                     | N/A            | N/A        |
| N/A                     | N/A            | N/A        |
| N/A                     | N/A            | N/A        |
| N/A                     | N/A            | N/A        |

| LAB SAMPLE ID | CLIENT SAMPLE ID | Wt(g)/Vol(ml) | Comment |
|---------------|------------------|---------------|---------|
| 0.0 ppb       | S0               | 30MI          | MP87235 |
| 0.05 ppb      | S0.05            | N/A           | N/A     |
| 0.2 ppb       | S0.2             | 30MI          | MP87236 |
| 2.5 ppb       | S2.5             | 30MI          | MP87237 |
| 5.0 ppb       | S5.0             | 30MI          | MP87238 |
| 7.5 ppb       | S7.5             | 30MI          | MP87239 |
| 10.0 ppb      | S10.0            | 30MI          | MP87240 |
| ICV           | ICV              | 30MI          | MP87241 |
| ICB           | ICB              | 30MI          | MP87242 |
| CCV           | CCV              | 30MI          | MP87243 |
| CCB           | CCB              | 30MI          | MP87244 |
| CRI           | CRI              | 30MI          | MP87245 |
| CHK STD       | CHK STD          | 30MI          | MP87246 |

Extraction Conformance/Non-Conformance Comments:

| N/A         |                                         |                                                                                       |
|-------------|-----------------------------------------|---------------------------------------------------------------------------------------|
| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location                                                                  |
|             |                                         |  |
|             | Preparation Group                       | Analysis Group                                                                        |

| Lab Sample ID | Client Sample ID | Initial Vol (ml) | Final Vol (ml) | pH | Comment | Prep Pos |
|---------------|------------------|------------------|----------------|----|---------|----------|
| PB169732BL    | PBW732           | 30               | 30             | <2 | N/A     | 3-19     |
| PB169732BS    | LCS732           | 30               | 30             | <2 | MP87234 | 20       |
| Q3103-01DUP   | TW-WTS-14DUP     | 30               | 30             | <2 | N/A     | 22       |
| Q3103-01MS    | TW-WTS-14MS      | 30               | 30             | <2 | MP87234 | 23       |
| Q3103-01MSD   | TW-WTS-14MSD     | 30               | 30             | <2 | MP87234 | 24       |
| Q3103-01      | TW-WTS-14        | 30               | 30             | <2 | N/A     | 21       |
| Q3113-01      | TRE-25-0101      | 30               | 30             | <2 | N/A     | 25       |

# WORKLIST(Hardcopy Internal Chain)

WorkList Name : 091725\_7470

WorkList ID : 191906

Department : Digestion

Date : 09-17-2025 08:37:36

| Sample   | Customer Sample | Matrix | Test    | Preservative       | Customer | Raw Sample<br>Storage<br>Location | Collect Date | Method |
|----------|-----------------|--------|---------|--------------------|----------|-----------------------------------|--------------|--------|
| Q3103-01 | TW-WTS-14       | Water  | Mercury | 1:1 HNO3 to pH < 2 | ENTTA05  | J22                               | 09/15/2025   | 7470A  |
| Q3113-01 | TRE-25-0101     | Water  | Mercury | 1:1 HNO3 to pH < 2 | PSEG03   | D31                               | 09/16/2025   | 7470A  |

Date/Time 09117125 09:09:03

Raw Sample Received by: SP5met d.g

Raw Sample Relinquished by: PCen

Date/Time 09117125 10:05

Raw Sample Received by: PCen

Raw Sample Relinquished by: SP5met d.g

**Instrument ID:** CV1

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137213**

|              |        |              |                      |
|--------------|--------|--------------|----------------------|
| Review By    | mohan  | Review On    | 9/18/2025 8:39:52 AM |
| Supervise By | jaswal | Supervise On | 9/18/2025 9:40:45 AM |

| STD. NAME     | STD REF.#                                       |
|---------------|-------------------------------------------------|
| ICAL Standard | MP87235,MP87236,MP87237,MP87238,MP87239,MP87240 |
| ICV Standard  | MP87241                                         |
| CCV Standard  | MP87243                                         |
| ICSA Standard |                                                 |
| CRI Standard  | MP87245                                         |
| LCS Standard  |                                                 |
| Chk Standard  | MP87242,MP87244,MP87246,MP87248                 |

| Sr# | SampleId    | ClientID     | QcType   | Date           | Comment | Operator | Status |
|-----|-------------|--------------|----------|----------------|---------|----------|--------|
| 1   | S0          | S0           | CAL1     | 09/17/25 13:57 |         | mohan    | OK     |
| 2   | S0.2        | S0.2         | CAL2     | 09/17/25 14:00 |         | mohan    | OK     |
| 3   | S2.5        | S2.5         | CAL3     | 09/17/25 14:02 |         | mohan    | OK     |
| 4   | S5          | S5           | CAL4     | 09/17/25 14:04 |         | mohan    | OK     |
| 5   | S7.5        | S7.5         | CAL5     | 09/17/25 14:06 |         | mohan    | OK     |
| 6   | S10         | S10          | CAL6     | 09/17/25 14:18 |         | mohan    | OK     |
| 7   | ICV34       | ICV34        | ICV      | 09/17/25 14:21 |         | mohan    | OK     |
| 8   | ICB34       | ICB34        | ICB      | 09/17/25 14:23 |         | mohan    | OK     |
| 9   | CCV07       | CCV07        | CCV      | 09/17/25 14:26 |         | mohan    | OK     |
| 10  | CCB07       | CCB07        | CCB      | 09/17/25 14:28 |         | mohan    | OK     |
| 11  | CRA         | CRA          | CRDL     | 09/17/25 14:30 |         | mohan    | OK     |
| 12  | HighStd     | HighStd      | HIGH STD | 09/17/25 14:33 |         | mohan    | OK     |
| 13  | ChkStd      | ChkStd       | SAM      | 09/17/25 14:35 |         | mohan    | OK     |
| 14  | PB169732BL  | PB169732BL   | MB       | 09/17/25 14:37 |         | mohan    | OK     |
| 15  | PB169732BS  | PB169732BS   | LCS      | 09/17/25 14:39 |         | mohan    | OK     |
| 16  | Q3103-01    | TW-WTS-14    | SAM      | 09/17/25 14:42 |         | mohan    | OK     |
| 17  | Q3103-01DUP | TW-WTS-14DUP | DUP      | 09/17/25 14:46 |         | mohan    | OK     |
| 18  | Q3103-01MS  | TW-WTS-14MS  | MS       | 09/17/25 14:48 |         | mohan    | OK     |

Instrument ID: CV1

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137213**

|                  |                                                 |              |                      |
|------------------|-------------------------------------------------|--------------|----------------------|
| Review By        | mohan                                           | Review On    | 9/18/2025 8:39:52 AM |
| Supervise By     | jaswal                                          | Supervise On | 9/18/2025 9:40:45 AM |
| <b>STD. NAME</b> | <b>STD REF.#</b>                                |              |                      |
| ICAL Standard    | MP87235,MP87236,MP87237,MP87238,MP87239,MP87240 |              |                      |
| ICV Standard     | MP87241                                         |              |                      |
| CCV Standard     | MP87243                                         |              |                      |
| ICSA Standard    |                                                 |              |                      |
| CRI Standard     | MP87245                                         |              |                      |
| LCS Standard     |                                                 |              |                      |
| Chk Standard     | MP87242,MP87244,MP87246,MP87248                 |              |                      |

|    |             |              |     |                |  |       |    |
|----|-------------|--------------|-----|----------------|--|-------|----|
| 19 | Q3103-01MSD | TW-WTS-14MSD | MSD | 09/17/25 14:50 |  | mohan | OK |
| 20 | Q3113-01    | TRE-25-0101  | SAM | 09/17/25 14:53 |  | mohan | OK |
| 21 | CCV08       | CCV08        | CCV | 09/17/25 14:55 |  | mohan | OK |
| 22 | CCB08       | CCB08        | CCB | 09/17/25 14:57 |  | mohan | OK |
| 23 | Q3103-01L   | TW-WTS-14L   | SD  | 09/17/25 14:59 |  | mohan | OK |
| 24 | Q3103-01A   | TW-WTS-14A   | PS  | 09/17/25 15:02 |  | mohan | OK |
| 25 | CCV09       | CCV09        | CCV | 09/17/25 15:04 |  | mohan | OK |
| 26 | CCB09       | CCB09        | CCB | 09/17/25 15:06 |  | mohan | OK |



**Instrument ID:** P4

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137227**

|              |        |              |                      |
|--------------|--------|--------------|----------------------|
| Review By    | jaswal | Review On    | 9/19/2025 1:24:28 PM |
| Supervise By | JANVI  | Supervise On | 9/19/2025 1:32:33 PM |

| STD. NAME     | STD REF.#                                       |
|---------------|-------------------------------------------------|
| ICAL Standard | MP87031,MP87038,MP87035,MP87034,MP87033,MP87032 |
| ICV Standard  | MP87039,MP87035                                 |
| CCV Standard  | MP87042                                         |
| ICSA Standard | MP87040,MP87048                                 |
| CRI Standard  | MP87035                                         |
| LCS Standard  |                                                 |
| Chk Standard  | MP87043,MP87044,MP87045,MP87046,MP87049         |

| Sr# | SampleId   | ClientID   | QcType | Date           | Comment | Operator | Status |
|-----|------------|------------|--------|----------------|---------|----------|--------|
| 1   | S0         | S0         | CAL1   | 09/18/25 10:41 |         | Jaswal   | OK     |
| 2   | S1         | S1         | CAL2   | 09/18/25 10:46 |         | Jaswal   | OK     |
| 3   | S2         | S2         | CAL3   | 09/18/25 10:50 |         | Jaswal   | OK     |
| 4   | S3         | S3         | CAL4   | 09/18/25 10:54 |         | Jaswal   | OK     |
| 5   | S4         | S4         | CAL5   | 09/18/25 10:58 |         | Jaswal   | OK     |
| 6   | S5         | S5         | CAL6   | 09/18/25 11:02 |         | Jaswal   | OK     |
| 7   | ICV01      | ICV01      | ICV    | 09/18/25 11:06 |         | Jaswal   | OK     |
| 8   | LLICV01    | LLICV01    | LLICV  | 09/18/25 11:15 |         | Jaswal   | OK     |
| 9   | ICB01      | ICB01      | ICB    | 09/18/25 11:20 |         | Jaswal   | OK     |
| 10  | CRI01      | CRI01      | CRDL   | 09/18/25 11:28 |         | Jaswal   | OK     |
| 11  | ICSA01     | ICSA01     | ICSA   | 09/18/25 11:33 |         | Jaswal   | OK     |
| 12  | ICSAB01    | ICSAB01    | ICSAB  | 09/18/25 11:38 |         | Jaswal   | OK     |
| 13  | ICSADL     | ICSADL     | ICSA   | 09/18/25 11:46 |         | Jaswal   | OK     |
| 14  | ICSABDL    | ICSABDL    | ICSAB  | 09/18/25 11:56 |         | Jaswal   | OK     |
| 15  | CCV01      | CCV01      | CCV    | 09/18/25 12:01 |         | Jaswal   | OK     |
| 16  | CCB01      | CCB01      | CCB    | 09/18/25 12:08 |         | Jaswal   | OK     |
| 17  | PB169723BL | PB169723BL | MB     | 09/18/25 12:12 |         | Jaswal   | OK     |
| 18  | PB169723BS | PB169723BS | LCS    | 09/18/25 12:17 |         | Jaswal   | OK     |

Instrument ID: P4

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137227**

|                  |                                                 |              |                      |
|------------------|-------------------------------------------------|--------------|----------------------|
| Review By        | jaswal                                          | Review On    | 9/19/2025 1:24:28 PM |
| Supervise By     | JANVI                                           | Supervise On | 9/19/2025 1:32:33 PM |
| <b>STD. NAME</b> | <b>STD REF.#</b>                                |              |                      |
| ICAL Standard    | MP87031,MP87038,MP87035,MP87034,MP87033,MP87032 |              |                      |
| ICV Standard     | MP87039,MP87035                                 |              |                      |
| CCV Standard     | MP87042                                         |              |                      |
| ICSA Standard    | MP87040,MP87048                                 |              |                      |
| CRI Standard     | MP87035                                         |              |                      |
| LCS Standard     |                                                 |              |                      |
| Chk Standard     | MP87043,MP87044,MP87045,MP87046,MP87049         |              |                      |

|    |             |                 |     |                |                                                |        |        |
|----|-------------|-----------------|-----|----------------|------------------------------------------------|--------|--------|
| 19 | Q3115-01    | TR-05-09162025  | SAM | 09/18/25 12:21 |                                                | Jaswal | OK     |
| 20 | Q3117-01    | 7211986-357     | SAM | 09/18/25 12:25 |                                                | Jaswal | OK     |
| 21 | Q3118-01    | EO-01-091625    | SAM | 09/18/25 12:29 |                                                | Jaswal | OK     |
| 22 | Q3118-01DUP | EO-01-091625DUP | DUP | 09/18/25 12:33 |                                                | Jaswal | OK     |
| 23 | Q3118-01L   | EO-01-091625L   | SD  | 09/18/25 12:37 |                                                | Jaswal | OK     |
| 24 | Q3118-01MS  | EO-01-091625MS  | MS  | 09/18/25 12:41 |                                                | Jaswal | OK     |
| 25 | Q3118-01MSD | EO-01-091625MSD | MSD | 09/18/25 12:45 |                                                | Jaswal | OK     |
| 26 | CCV02       | CCV02           | CCV | 09/18/25 12:58 |                                                | Jaswal | OK     |
| 27 | CCB02       | CCB02           | CCB | 09/18/25 13:02 |                                                | Jaswal | OK     |
| 28 | Q3101-01    | Lot#S:091/15    | SAM | 09/18/25 13:06 | Not used, report from previous run, confirmed) | Jaswal | Not Ok |
| 29 | PB169721BL  | PB169721BL      | MB  | 09/18/25 13:11 |                                                | Jaswal | OK     |
| 30 | PB169721BS  | PB169721BS      | LCS | 09/18/25 13:15 |                                                | Jaswal | OK     |
| 31 | Q3103-01    | TW-WTS-14       | SAM | 09/18/25 13:19 |                                                | Jaswal | OK     |
| 32 | Q3103-01DUP | TW-WTS-14DUP    | DUP | 09/18/25 13:24 |                                                | Jaswal | OK     |
| 33 | Q3103-01L   | TW-WTS-14L      | SD  | 09/18/25 13:28 |                                                | Jaswal | OK     |
| 34 | Q3103-01MS  | TW-WTS-14MS     | MS  | 09/18/25 13:32 |                                                | Jaswal | OK     |
| 35 | Q3103-01MSD | TW-WTS-14MSD    | MSD | 09/18/25 13:37 |                                                | Jaswal | OK     |
| 36 | Q3103-01A   | TW-WTS-14A      | PS  | 09/18/25 13:41 | 0.1ML M6008,M6017-10ML SAMPLE                  | Jaswal | OK     |
| 37 | Q3118-01A   | EO-01-091625A   | PS  | 09/18/25 13:45 | 0.1ML M6008,M6017-10ML SAMPLE                  | Jaswal | OK     |

Instrument ID: P4

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137227**

|                  |                                                 |              |                      |
|------------------|-------------------------------------------------|--------------|----------------------|
| Review By        | jaswal                                          | Review On    | 9/19/2025 1:24:28 PM |
| Supervise By     | JANVI                                           | Supervise On | 9/19/2025 1:32:33 PM |
| <b>STD. NAME</b> | <b>STD REF.#</b>                                |              |                      |
| ICAL Standard    | MP87031,MP87038,MP87035,MP87034,MP87033,MP87032 |              |                      |
| ICV Standard     | MP87039,MP87035                                 |              |                      |
| CCV Standard     | MP87042                                         |              |                      |
| ICSA Standard    | MP87040,MP87048                                 |              |                      |
| CRI Standard     | MP87035                                         |              |                      |
| LCS Standard     |                                                 |              |                      |
| Chk Standard     | MP87043,MP87044,MP87045,MP87046,MP87049         |              |                      |

|    |             |                |          |                |                                  |        |    |
|----|-------------|----------------|----------|----------------|----------------------------------|--------|----|
| 38 | CCV03       | CCV03          | CCV      | 09/18/25 13:49 |                                  | Jaswal | OK |
| 39 | CCB03       | CCB03          | CCB      | 09/18/25 13:55 |                                  | Jaswal | OK |
| 40 | LR-1        | LR-1           | HIGH STD | 09/18/25 14:10 |                                  | Jaswal | OK |
| 41 | LR-2        | LR-2           | HIGH STD | 09/18/25 14:16 |                                  | Jaswal | OK |
| 42 | Q3117-02    | 7211986-357    | SAM      | 09/18/25 14:38 |                                  | Jaswal | OK |
| 43 | Q3122-01    | FOTP915        | SAM      | 09/18/25 14:43 |                                  | Jaswal | OK |
| 44 | PB169731TB  | PB169731TB     | MB       | 09/18/25 14:47 |                                  | Jaswal | OK |
| 45 | CCV04       | CCV04          | CCV      | 09/18/25 14:52 |                                  | Jaswal | OK |
| 46 | CCB04       | CCB04          | CCB      | 09/18/25 14:56 |                                  | Jaswal | OK |
| 47 | PB169739BL  | PB169739BL     | MB       | 09/18/25 15:00 |                                  | Jaswal | OK |
| 48 | PB169739BS  | PB169739BS     | LCS      | 09/18/25 15:04 |                                  | Jaswal | OK |
| 49 | Q3117-02DUP | 7211986-357DUP | DUP      | 09/18/25 15:08 |                                  | Jaswal | OK |
| 50 | Q3117-02L   | 7211986-357L   | SD       | 09/18/25 15:13 |                                  | Jaswal | OK |
| 51 | Q3117-02MS  | 7211986-357MS  | MS       | 09/18/25 15:17 |                                  | Jaswal | OK |
| 52 | Q3117-02MSD | 7211986-357MSD | MSD      | 09/18/25 15:21 |                                  | Jaswal | OK |
| 53 | Q3117-02A   | 7211986-357A   | PS       | 09/18/25 15:25 | 0.1ML M6008,M6017-10ML<br>SAMPLE | Jaswal | OK |
| 54 | CCV05       | CCV05          | CCV      | 09/18/25 15:29 |                                  | Jaswal | OK |
| 55 | CCB05       | CCB05          | CCB      | 09/18/25 15:34 |                                  | Jaswal | OK |
| 56 | LR-3        | LR-3           | HIGH STD | 09/18/25 15:51 |                                  | Jaswal | OK |

Instrument ID: P4

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137227**

|              |        |              |                      |
|--------------|--------|--------------|----------------------|
| Review By    | jaswal | Review On    | 9/19/2025 1:24:28 PM |
| Supervise By | JANVI  | Supervise On | 9/19/2025 1:32:33 PM |

| STD. NAME     | STD REF.#                                       |
|---------------|-------------------------------------------------|
| ICAL Standard | MP87031,MP87038,MP87035,MP87034,MP87033,MP87032 |
| ICV Standard  | MP87039,MP87035                                 |
| CCV Standard  | MP87042                                         |
| ICSA Standard | MP87040,MP87048                                 |
| CRI Standard  | MP87035                                         |
| LCS Standard  |                                                 |
| Chk Standard  | MP87043,MP87044,MP87045,MP87046,MP87049         |

|    |       |       |     |                |  |        |    |
|----|-------|-------|-----|----------------|--|--------|----|
| 57 | CCV06 | CCV06 | CCV | 09/18/25 16:05 |  | Jaswal | OK |
| 58 | CCB06 | CCB06 | CCB | 09/18/25 16:09 |  | Jaswal | OK |

## Prep Standard - Chemical Standard Summary

**Order ID :** Q3103

**Test :** Mercury, Metals Group4

**Prepbatch ID :** PB169721, PB169732,

**Sequence ID/Qc Batch ID:** LB137213, LB137227,

**Standard ID :**

MP85156, MP85892, MP85893, MP85894, MP85895, MP87031, MP87032, MP87033, MP87034, MP87035, MP87036, MP87038, MP87039, MP87040, MP87042, MP87043, MP87044, MP87045, MP87046, MP87048, MP87049, MP87234, MP87235, MP87236, MP87237, MP87238, MP87239, MP87240, MP87241, MP87242, MP87243, MP87244, MP87245, MP87246, MP87248,

**Chemical ID :**

M4371, M4465, M4916, M5062, M5467, M5658, M5748, M5751, M5798, M5799, M5800, M5801, M5814, M5820, M5882, M5884, M5962, M5969, M5971, M5979, M5985, M5998, M6021, M6023, M6026, M6027, M6028, M6030, M6032, M6041, M6076, M6077, M6128, M6137, M6138, M6140, M6142, M6144, M6145, M6151, M6158, M6159, M6160, M6161, M6162, M6163, M6164, M6165, M6171, M6174, M6176, M6177, M6178, M6179, M6180, M6181, M6182, M6184, M6187, M6200, W 3112,

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u> | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|-------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 170              | 1:1HCL      | <a href="#">MP85156</a> | 04/07/2025       | 10/08/2025             | Kareem Khairalla   | None           | None             | Sarabjit Jaswal      |
|                  |             |                         |                  |                        |                    |                |                  | 04/07/2025           |

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

| <u>Recipe ID</u> | <u>NAME</u>      | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3965             | 2:1 H2SO4 : HNO3 | <a href="#">MP85892</a> | 06/05/2025       | 11/27/2025             | Mohan Bera         | None           | None             | Sarabjit Jaswal      |
|                  |                  |                         |                  |                        |                    |                |                  | 06/14/2025           |

**FROM** 1600.00000ml of M6041 + 800.00000ml of M6162 = Final Quantity: 3200.000 ml

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>                         | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>          | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|-------------------------------------|-------------------------|------------------|------------------------|--------------------|-------------------------|------------------|----------------------|
| 65               | POTASSIUM PERMANGANATE SOLUTION 5 % | <a href="#">MP85893</a> | 06/05/2025       | 12/05/2025             | Mohan Bera         | METALS_SCALE_3 (M SC-3) | None             | Sarabjit Jaswal      |
| 06/14/2025       |                                     |                         |                  |                        |                    |                         |                  |                      |

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

| <u>Recipe ID</u> | <u>NAME</u>                       | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>          | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|-----------------------------------|-------------------------|------------------|------------------------|--------------------|-------------------------|------------------|----------------------|
| 66               | POTASSIUM PERSULFATE SOLUTION 5 % | <a href="#">MP85894</a> | 06/05/2025       | 09/30/2025             | Mohan Bera         | METALS_SCALE_3 (M SC-3) | None             | Sarabjit Jaswal      |
| 06/14/2025       |                                   |                         |                  |                        |                    |                         |                  |                      |

**FROM** 100.00000ml of M4465 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml



| <u>Recipe ID</u>                                                                                                  | <u>NAME</u>                                   | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>          | <u>PipetteID</u> | <u>Supervised By</u> |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------|------------------|------------------------|--------------------|-------------------------|------------------|----------------------|
| 67                                                                                                                | SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION | <a href="#">MP85895</a> | 06/05/2025       | 09/30/2025             | Mohan Bera         | METALS_SCALE_3 (M SC-3) | None             | Sarabjit Jaswal      |
| <b>FROM</b> 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 ml |                                               |                         |                  |                        |                    |                         |                  |                      |

| <u>Recipe ID</u>                                                                                                    | <u>NAME</u>                   | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 902                                                                                                                 | ICP AES CAL BLK ( SO/ICB/CCB) | <a href="#">MP87031</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel          |
| <b><u>FROM</u></b> 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6187 = Final Quantity: 2500.000 ml |                               |                         |                  |                        |                    |                |                  |                      |





| <u>Recipe ID</u> | <u>NAME</u>                                                                                                                                                                                                                                      | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>      |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|---------------------------|
| 907              | ICP AES STD S ( S5 )                                                                                                                                                                                                                             | <a href="#">MP87032</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel<br>09/04/2025 |
| <u>FROM</u>      | 5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5971 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6160 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP87031 = Final Quantity: 500.000 ml |                         |                  |                        |                    |                |                  |                           |

| <u>Recipe ID</u>                                                                              | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>      |
|-----------------------------------------------------------------------------------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|---------------------------|
| 910                                                                                           | ICP AES STD S4 | <a href="#">MP87033</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel<br>09/04/2025 |
| <b><u>FROM</u></b> 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml |                |                         |                  |                        |                    |                |                  |                           |

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u>      |
|------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|---------------------------|
| 909              | ICP AES STD S3 | <a href="#">MP87034</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | METALS_PIPETTE_3 (A) | Janvi Patel<br>09/04/2025 |

**FROM** 25.00000ml of MP87032 + 75.00000ml of MP87031 = Final Quantity: 100.000 ml

| <u>Recipe ID</u> | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u>      |
|------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|---------------------------|
| 3913             | ICP AES STD S2 | <a href="#">MP87035</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | METALS_PIPETTE_3 (A) | Janvi Patel<br>09/04/2025 |

**FROM** 16.00000ml of MP87032 + 184.00000ml of MP87031 = Final Quantity: 200.000 ml

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>              | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|--------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 2950             | ICP AES S1/CRI STOCK STD | <a href="#">MP87036</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel          |
|                  |                          |                         |                  |                        |                    |                |                  | 09/04/2025           |

**FROM** 0.03000ml of M5798 + 0.03000ml of M6028 + 0.04000ml of M6137 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5971 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6160 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5979 + 1.00000ml of M6138 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M5969 + 88.29000ml of MP87031 = Final Quantity: 100.000 ml

| <u>Recipe ID</u> | <u>NAME</u>             | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u> |
|------------------|-------------------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|----------------------|
| 2951             | ICP AES S1/CRI WORK STD | <a href="#">MP87038</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | METALS_PIPETTE_3 (A) | Janvi Patel          |
|                  |                         |                         |                  |                        |                    |                |                      | 09/04/2025           |

**FROM** 2.00000ml of MP87036 + 98.00000ml of MP87031 = Final Quantity: 100.000 ml

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u>      |
|------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|---------------------------|
| 4163             | NEW ICV-060925 | <a href="#">MP87039</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | METALS_PIPETTE_3 (A) | Janvi Patel<br>09/04/2025 |

**FROM** 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.80000ml of MP87031 = Final Quantity: 50.000 ml

| <u>Recipe ID</u> | <u>NAME</u>       | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u>      |
|------------------|-------------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|---------------------------|
| 904              | ICP AES ICSA SOLN | <a href="#">MP87040</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | METALS_PIPETTE_3 (A) | Janvi Patel<br>09/04/2025 |

**FROM** 25.00000ml of M6182 + 225.00000ml of MP87031 = Final Quantity: 250.000 ml

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>      | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 911              | ICP AES CCV SOLN | <a href="#">MP87042</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel          |
|                  |                  |                         |                  |                        |                    |                |                  | 09/04/2025           |

**FROM** 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml

| <u>Recipe ID</u> | <u>NAME</u>          | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|----------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 919              | ICP AES INTERNAL STD | <a href="#">MP87043</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel          |
|                  |                      |                         |                  |                        |                    |                |                  | 09/04/2025           |

**FROM** 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6187 = Final Quantity: 2000.000 ml

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>        | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|--------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 903              | ICP AES RINSE SOLN | <a href="#">MP87044</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel          |
|                  |                    |                         |                  |                        |                    |                |                  | 09/04/2025           |

**FROM** 200.00000ml of M6187 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

| <u>Recipe ID</u> | <u>NAME</u> | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u> |
|------------------|-------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|----------------------|
| 4225             | LR-1        | <a href="#">MP87045</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | METALS_PIPETTE_3 (A) | Janvi Patel          |
|                  |             |                         |                  |                        |                    |                |                      | 09/04/2025           |

**FROM** 11.50000ml of M6138 + 11.50000ml of M6144 + 11.50000ml of M6171 + 15.50000ml of MP87031 = Final Quantity: 50.000 ml

## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u> | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u>      |
|------------------|-------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|---------------------------|
| 4226             | LR-2        | <a href="#">MP87046</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | METALS_PIPETTE_3 (A) | Janvi Patel<br>09/04/2025 |

**FROM** 13.50000ml of M6140 + 9.00000ml of M6142 + 9.50000ml of M6159 + 18.00000ml of MP87031 = Final Quantity: 50.000 ml

| <u>Recipe ID</u> | <u>NAME</u>          | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>         | <u>Supervised By</u>          |
|------------------|----------------------|-------------------------|------------------|------------------------|--------------------|----------------|--------------------------|-------------------------------|
| 3494             | ICP AES ICSAB SOLN-1 | <a href="#">MP87048</a> | 09/02/2025       | 10/03/2025             | Janvi Patel        | None           | METALS_PIPETTE_1 (ICP A) | Sarabjit Jaswal<br>09/04/2025 |

**FROM** 0.05000ml of M6076 + 5.00000ml of M6182 + 5.00000ml of M6184 + 39.95000ml of MP87031 = Final Quantity: 100.000 ml



| <u>Recipe ID</u> | <u>NAME</u>                                                                                                                                                                     | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>      |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|---------------------------|
| 4227             | LR-3                                                                                                                                                                            | <a href="#">MP87049</a> | 09/02/2025       | 10/03/2025             | Sarabjit Jaswal    | None           | None             | Janvi Patel<br>09/04/2025 |
| <u>FROM</u>      | 1.15000ml of M6026 + 1.25000ml of M5658 + 1.25000ml of M5748 + 1.50000ml of M6145 + 2.50000ml of M5751 + 2.50000ml of M6128 + 39.85000ml of MP87031 = Final Quantity: 50.000 ml |                         |                  |                        |                    |                |                  |                           |

| <u>Recipe ID</u>                                                                                              | <u>NAME</u>                                   | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>       | <u>Supervised By</u>              |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------------|-----------------------------------|
| 871                                                                                                           | MERCURY INTERMEDIATE B<br>250PPB WORKING STD. | <a href="#">MP87234</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HGA) | Sarabjit Jaswal<br><br>09/18/2025 |
| <b><u>FROM</u></b> 1.00000ml of M6187 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml |                                               |                         |                  |                        |                    |                |                        |                                   |



## Metals STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>     | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u> |
|------------------|-----------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|----------------------|
| 1340             | Hg 0.00 PPB STD | <a href="#">MP87235</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG | Sarabjit Jaswal      |

A)

**FROM** 2.50000ml of M6187 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

| <u>Recipe ID</u> | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u> |
|------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|----------------------|
| 1341             | Hg 0.2 PPB STD | <a href="#">MP87236</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG | Sarabjit Jaswal      |

A)

**FROM** 2.50000ml of M6187 + 247.30000ml of W3112 + 0.20000ml of MP87234 = Final Quantity: 250.000 ml



| <u>Recipe ID</u>                                                                                              | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>      | <u>Supervised By</u>          |
|---------------------------------------------------------------------------------------------------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|-----------------------|-------------------------------|
| 1342                                                                                                          | Hg 2.5 PPB STD | <a href="#">MP87237</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG) | Sarabjit Jaswal<br>09/18/2025 |
| <b>FROM</b> 2.50000ml of M6187 + 245.00000ml of W3112 + 2.50000ml of MP87234 = Final Quantity: 250.000 ml<br> |                |                         |                  |                        |                    |                |                       |                               |

| <u>Recipe ID</u>                                                                                                 | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>      | <u>Supervised By</u> |
|------------------------------------------------------------------------------------------------------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|-----------------------|----------------------|
| 1343                                                                                                             | Hg 5.0 PPB STD | <a href="#">MP87238</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG) | Sarabjit Jaswal      |
| <p><b>FROM</b> 2.50000ml of M6187 + 242.50000ml of W3112 + 5.00000ml of MP87234 = Final Quantity: 250.000 ml</p> |                |                         |                  |                        |                    |                |                       |                      |



| <u>Recipe ID</u>                                                                                                           | <u>NAME</u>    | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>      | <u>Supervised By</u> |
|----------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------|------------------|------------------------|--------------------|----------------|-----------------------|----------------------|
| 1344                                                                                                                       | Hg 7.5 PPB STD | <a href="#">MP87239</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG) | Sarabjit Jaswal      |
| <p>A)</p> <p><b>FROM</b> 2.50000ml of M6187 + 240.00000ml of W3112 + 7.50000ml of MP87234 = Final Quantity: 250.000 ml</p> |                |                         |                  |                        |                    |                |                       |                      |

| <u>Recipe ID</u>                                                                                                  | <u>NAME</u>     | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>      | <u>Supervised By</u> |
|-------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|------------------|------------------------|--------------------|----------------|-----------------------|----------------------|
| 1345                                                                                                              | Hg 10.0 PPB STD | <a href="#">MP87240</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG) | Sarabjit Jaswal      |
| <p><b>FROM</b> 2.50000ml of M6187 + 237.50000ml of W3112 + 10.00000ml of MP87234 = Final Quantity: 250.000 ml</p> |                 |                         |                  |                        |                    |                |                       |                      |



| <u>Recipe ID</u>                                                                                            | <u>NAME</u>     | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>      | <u>Supervised By</u>          |
|-------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|------------------|------------------------|--------------------|----------------|-----------------------|-------------------------------|
| 1346                                                                                                        | Hg ICV SOLUTION | <a href="#">MP87241</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG) | Sarabjit Jaswal<br>09/18/2025 |
| <b>FROM</b> 2.50000ml of M6161 + 2.50000ml of M6187 + 245.00000ml of W3112 = Final Quantity: 250.000 ml<br> |                 |                         |                  |                        |                    |                |                       |                               |

| <u>Recipe ID</u> | <u>NAME</u>                                                            | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>       | <u>Supervised By</u>          |
|------------------|------------------------------------------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------------|-------------------------------|
| 1351             | ICB (Hg 0.00 PPB SOLUTION)                                             | <a href="#">MP87242</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HGA) | Sarabjit Jaswal<br>09/18/2025 |
| <u>FROM</u>      | 2.50000ml of M6187 + 247.50000ml of W3112 = Final Quantity: 250.000 ml |                         |                  |                        |                    |                |                        |                               |



| <u>Recipe ID</u>                                                                                               | <u>NAME</u>               | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>      | <u>Supervised By</u>          |
|----------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------|------------------|------------------------|--------------------|----------------|-----------------------|-------------------------------|
| 1358                                                                                                           | CCV (Hg 5.0 PPB SOLUTION) | <a href="#">MP87243</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG) | Sarabjit Jaswal<br>09/18/2025 |
| <b>FROM</b> 485.00000ml of W3112 + 5.00000ml of M6187 + 10.00000ml of MP87234 = Final Quantity: 500.000 ml<br> |                           |                         |                  |                        |                    |                |                       |                               |

| <u>Recipe ID</u>                                                                                    | <u>NAME</u>                | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>     | <u>Supervised By</u> |
|-----------------------------------------------------------------------------------------------------|----------------------------|-------------------------|------------------|------------------------|--------------------|----------------|----------------------|----------------------|
| 1352                                                                                                | CCB (Hg 0.00 PPB SOLUTION) | <a href="#">MP87244</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG | Sarabjit Jaswal      |
| <p>A)</p> <p><b>FROM</b> 495.00000ml of W3112 + 5.00000ml of M6187 = Final Quantity: 500.000 ml</p> |                            |                         |                  |                        |                    |                |                      |                      |



| <u>Recipe ID</u>   | <u>NAME</u>                                                                                   | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>        | <u>Supervised By</u>          |
|--------------------|-----------------------------------------------------------------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|-------------------------|-------------------------------|
| 1349               | CRA/CRI (Hg 0.2 PPB SOLUTION)                                                                 | <a href="#">MP87245</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal<br>09/18/2025 |
| <b><u>FROM</u></b> | 2.50000ml of M6187 + 247.30000ml of W3112 + 0.20000ml of MP87234 = Final Quantity: 250.000 ml |                         |                  |                        |                    |                |                         |                               |

| <u>Recipe ID</u>                                                                                          | <u>NAME</u>                   | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>       | <u>Supervised By</u>          |
|-----------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------------|-------------------------------|
| 1350                                                                                                      | CHK STD (Hg 7.0 PPB SOLUTION) | <a href="#">MP87246</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | None           | METALS_PIPETTE_5 (HGA) | Sarabjit Jaswal<br>09/18/2025 |
| <b>FROM</b> 2.50000ml of M6187 + 240.50000ml of W3112 + 7.00000ml of MP87234 = Final Quantity: 250.000 ml |                               |                         |                  |                        |                    |                |                        |                               |



| <u>Recipe ID</u>                                                                                                   | <u>NAME</u>                | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>          | <u>PipetteID</u> | <u>Supervised By</u>          |
|--------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------|------------------|------------------------|--------------------|-------------------------|------------------|-------------------------------|
| 68                                                                                                                 | STANNOUS CHLORIDE SOLUTION | <a href="#">MP87248</a> | 09/17/2025       | 09/18/2025             | Mohan Bera         | METALS_SCALE_3 (M SC-3) | None             | Sarabjit Jaswal<br>09/18/2025 |
| <b><u>FROM</u></b> 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6200 = Final Quantity: 500.000 ml |                            |                         |                  |                        |                    |                         |                  |                               |

## CHEMICAL RECEIPT LOG BOOK

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

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

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

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

| Supplier                 | ItemCode / ItemName            | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|--------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 57058 / Cerium, 1000PPM, 100ML | 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. | 58024 / Chromium, Cr, 500 ml, 1000 PPM | 060523 | 06/05/2026      | 08/28/2023 / jaswal     | 08/25/2023 / jaswal         | M5658          |



## CHEMICAL RECEIPT LOG BOOK

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

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

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

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

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

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

## CHEMICAL RECEIPT LOG BOOK

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

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

| 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 # |
|--------------------------|------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 57034 / Se, 1000 PPM, 125 ml | 060624 | 06/06/2027      | 07/02/2024 / Jaswal     | 06/14/2024 / Jaswal         | M5962          |

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

## CHEMICAL RECEIPT LOG BOOK

| Supplier                 | ItemCode / ItemName          | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 57003 / Li, 1000 PPM, 125 ml | 061224 | 06/21/2027      | 06/06/2025 / Janvi      | 07/01/2024 / Jaswal         | M5971          |

| Supplier           | ItemCode / ItemName                | Lot #       | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|------------------------------------|-------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | CGT11-1 / TITANIUM 125mL 1000ug/mL | T2-TI719972 | 08/05/2026      | 08/06/2025 / Janvi      | 02/22/2024 / Jaswal         | M5979          |

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

| Supplier           | ItemCode / ItemName                     | Lot #        | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|-----------------------------------------|--------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL | T2-MEB727800 | 07/30/2026      | 07/30/2025 / Janvi      | 02/22/2024 / kareem         | M5998          |

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

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

## CHEMICAL RECEIPT LOG BOOK

| 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 | 110923 | 11/09/2026      | 12/05/2024 / janvi      | 08/05/2024 / Jaswal         | M6026          |

| 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 | 062024 | 06/20/2027      | 06/04/2025 / Janvi      | 08/05/2024 / Jaswal         | M6027          |

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

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

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

| Supplier         | ItemCode / ItemName                                     | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|---------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L) | 23D2462010 | 03/20/2028      | 08/16/2024 / mohan      | 08/16/2024 / mohan          | M6041          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier           | ItemCode / ItemName         | Lot #        | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|-----------------------------|--------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | Z9651Q /<br>CHEM-CLP-4/.25L | V2-MEB746762 | 01/01/2026      | 01/01/2025 /<br>kareem  | 09/19/2024 /<br>kareem      | M6076          |

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

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

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

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

| Supplier                 | ItemCode / ItemName              | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|----------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 58126 / Fe, 10000 PPM,<br>500 ml | 011025 | 01/10/2028      | 06/25/2025 /<br>Janvi   | 01/13/2025 /<br>Jaswal      | M6140          |

## CHEMICAL RECEIPT LOG BOOK

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

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

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

| Supplier         | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 22G2862015 | 02/17/2026      | 02/18/2025 / Sagar      | 01/15/2025 / Sagar          | M6151          |

| Supplier         | ItemCode / ItemName                                   | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L) | 24D1062002 | 10/09/2025      | 03/10/2025 / Eman       | 02/02/2025 / Sagar          | M6158          |

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

## CHEMICAL RECEIPT LOG BOOK

| Supplier                 | ItemCode / ItemName          | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 57051 / Sb, 1000 PPM, 125 ml | 071724 | 07/17/2027      | 03/24/2025 / kareem     | 10/18/2024 / kareem         | M6160          |

| Supplier | ItemCode / ItemName           | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|-------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| EPA      | ICV-5 / ICV ( HG ) STOCK SOLN | ICV 5 0415 | 12/31/2025      | 05/01/2025 / mohan      | 03/30/2024 / mohan          | M6161          |

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

| Supplier           | ItemCode / ItemName                                   | Lot #        | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|-------------------------------------------------------|--------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | QCP-CICV-1-125ML / EPA CLP ICP Verification Standard1 | V2-MEB744107 | 06/08/2026      | 06/09/2025 / jaswal     | 06/06/2025 / jaswal         | M6163          |

| Supplier           | ItemCode / ItemName                                   | Lot #        | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|-------------------------------------------------------|--------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | QCP-CICV-2-125ML / EPA CLP ICP Verification Standard2 | U2-MEB733713 | 06/08/2026      | 06/09/2025 / jaswal     | 06/09/2025 / jaswal         | M6164          |

| Supplier           | ItemCode / ItemName                                   | Lot #        | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|-------------------------------------------------------|--------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | QCP-CICV-3-125ML / EPA CLP ICP Verification Standard3 | V2-MEB749572 | 06/08/2026      | 06/09/2025 / jaswal     | 06/09/2025 / jaswal         | M6165          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                 | ItemCode / ItemName           | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|-------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 58112 / Mg, 10000 PPM, 500 ml | 011525 | 01/15/2028      | 07/15/2025 /            | 02/13/2025 / Janvi          | M6171          |

| 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 | V2-MEB742428 | 07/31/2026      | 07/31/2025 / Janvi      | 05/05/2025 / Janvi          | M6174          |

| 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 | 092724 | 09/27/2027      | 08/06/2025 / Janvi      | 08/06/2025 / Janvi          | M6176          |

| Supplier                 | ItemCode / ItemName | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|---------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | / Lead (Pb) 1000PPM | 031525 | 03/15/2028      | 08/06/2025 / Janvi      | 08/06/2025 / Janvi          | M6177          |

| Supplier                 | ItemCode / ItemName          | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 57042 / Mo, 1000 PPM, 125 ml | 080528 | 08/05/2028      | 08/06/2025 / Janvi      | 08/06/2025 / Janvi          | M6178          |

| 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 | 08/05/2026      | 08/06/2025 / Janvi      | 06/02/2024 / Janvi          | M6179          |



## CHEMICAL RECEIPT LOG BOOK

| Supplier           | ItemCode / ItemName                                      | Lot #        | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|----------------------------------------------------------|--------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml | W2-MEB752149 | 02/05/2026      | 08/06/2025 / Janvi      | 07/22/2025 / Janvi          | M6180          |

| Supplier           | ItemCode / ItemName                                      | Lot #         | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|----------------------------------------------------------|---------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml | V2-MEB7433480 | 02/05/2026      | 08/06/2025 / Janvi      | 07/22/2025 / Janvi          | M6181          |

| Supplier | ItemCode / ItemName              | Lot #     | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|----------------------------------|-----------|-----------------|-------------------------|-----------------------------|----------------|
| EPA      | PART A / ICSA ( ICP ) STOCK SOLN | ICSA-1211 | 02/05/2026      | 08/06/2025 / Janvi      | 03/06/2024 / Janvi          | M6182          |

| 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 | 02/05/2026      | 08/06/2025 / Janvi      | 03/06/2024 / Janvi          | M6184          |

| Supplier         | ItemCode / ItemName                                   | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L) | 24H0162012 | 01/28/2026      | 08/29/2025 / Sagar      | 08/08/2025 / Sagar          | M6187          |

| 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) | 24D1562005 | 02/10/2026      | 09/11/2025 / Sagar      | 08/25/2025 / Sagar          | M6200          |

### **CHEMICAL RECEIPT LOG BOOK**

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

M5882  
 M3

## Certificate of Analysis

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

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

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

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

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



Harout Sahagian - Quality Control Supervisor - Fair Lawn

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

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

\*Based on suggested storage condition.

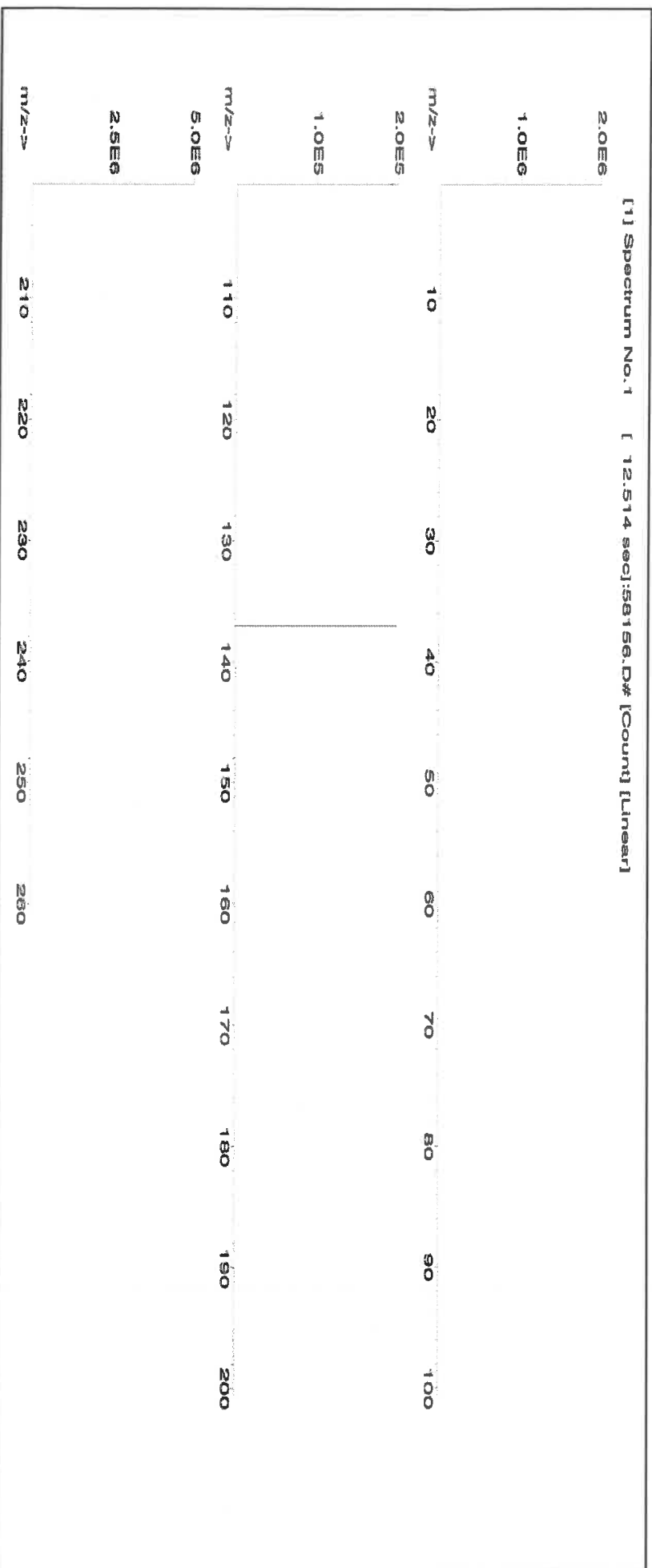
**CERTIFIED WEIGHT REPORT:**

|                |                   |        |
|----------------|-------------------|--------|
| Formulated By: | Giovanni Esposito | 010924 |
| Reviewed By:   | Pedro L. Rentas   | 010924 |

## SDS information

[illegible]

|                        |       |            |      |        |      |      |         |         |        |     |            |           |                   |       |
|------------------------|-------|------------|------|--------|------|------|---------|---------|--------|-----|------------|-----------|-------------------|-------|
| 1. Barium nitrate (Ba) | IN023 | BAD02019A1 | 1000 | 99.999 | 0.10 | 52.3 | 3.82417 | 3.82441 | 1000.1 | 2.0 | 10022-31-8 | 0.5 mg/m3 | ort-rat 355 mg/kg | 3104a |
|------------------------|-------|------------|------|--------|------|------|---------|---------|--------|-----|------------|-----------|-------------------|-------|





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

**Part Number:**  
**Lot Number:**  
**Description:**

57048  
070124  
Cadmium (Cd)

**Solvent:** 24002546 Nitric Acid

**Lot #**

2% 40.0 Nitric Acid (mL)

**Expiration Date:** 070127

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

**Nominal Concentration (µg/mL):** 1000

**NIST Test Number:** 6UTB

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

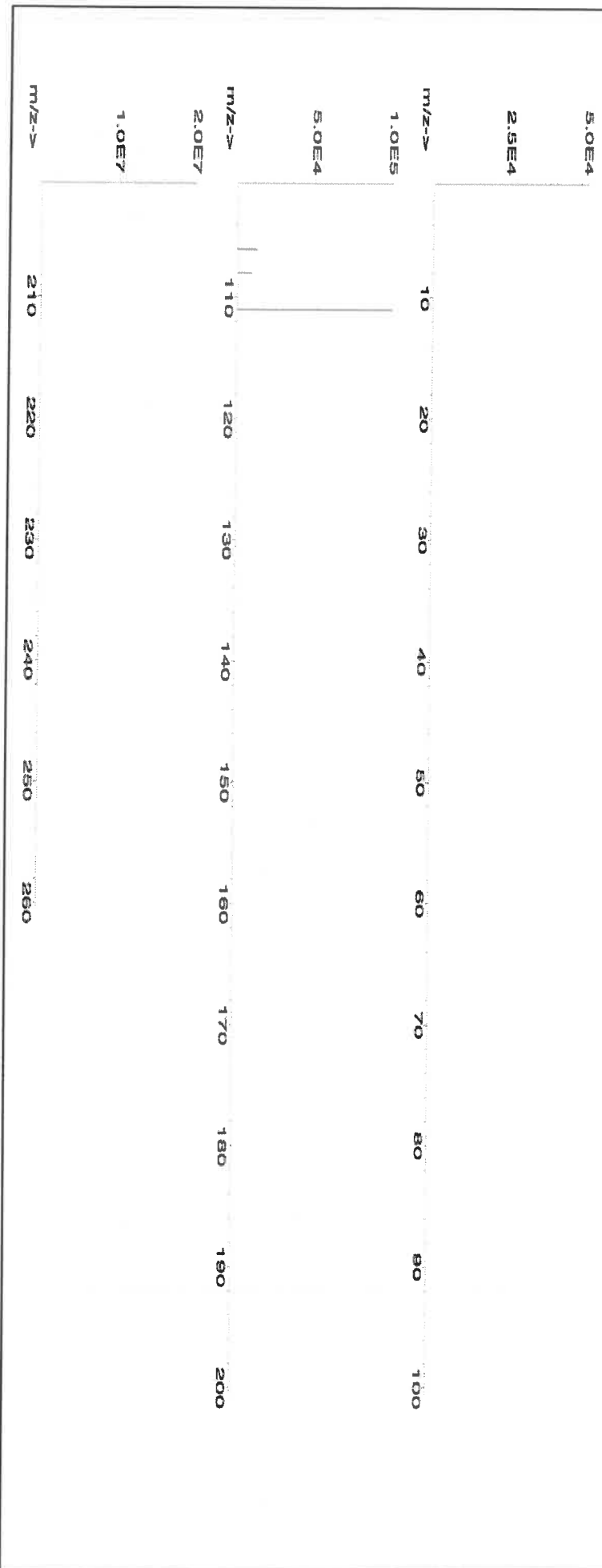
|                        |                 |
|------------------------|-----------------|
| <i>Aleah O'Brady</i>   |                 |
| Formulated By:         | Aleah O'Brady   |
|                        | 070124          |
| <i>Pedro L. Rentas</i> |                 |
| Reviewed By:           | Pedro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

**Compound**

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

|                                      |                  |      |        |      |      |        |        |        |     |            |            |                       |
|--------------------------------------|------------------|------|--------|------|------|--------|--------|--------|-----|------------|------------|-----------------------|
| 1. Cadmium nitrate tetrahydrate (Cd) | INO24 CDM09221A1 | 1000 | 99.999 | 0.10 | 36.5 | 5.4797 | 5.4804 | 1000.1 | 2.0 | 10022-68-1 | 0.01 mg/m3 | or-rat 60.2mg/kg 3108 |
|--------------------------------------|------------------|------|--------|------|------|--------|--------|--------|-----|------------|------------|-----------------------|

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





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

Part Number: **57182**  
Lot Number: **110923**  
Description: **Lead (Pb)**

Solvent: **24002546 Nitric Acid**

R: 8/5/24

Lot #

Expiration Date: **110926**  
Recommended Storage: **Ambient (20 °C)**  
Nominal Concentration (µg/mL): **10000**  
NIST Test Number: **6UTB**

2% 40.0 (mL) Nitric Acid

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

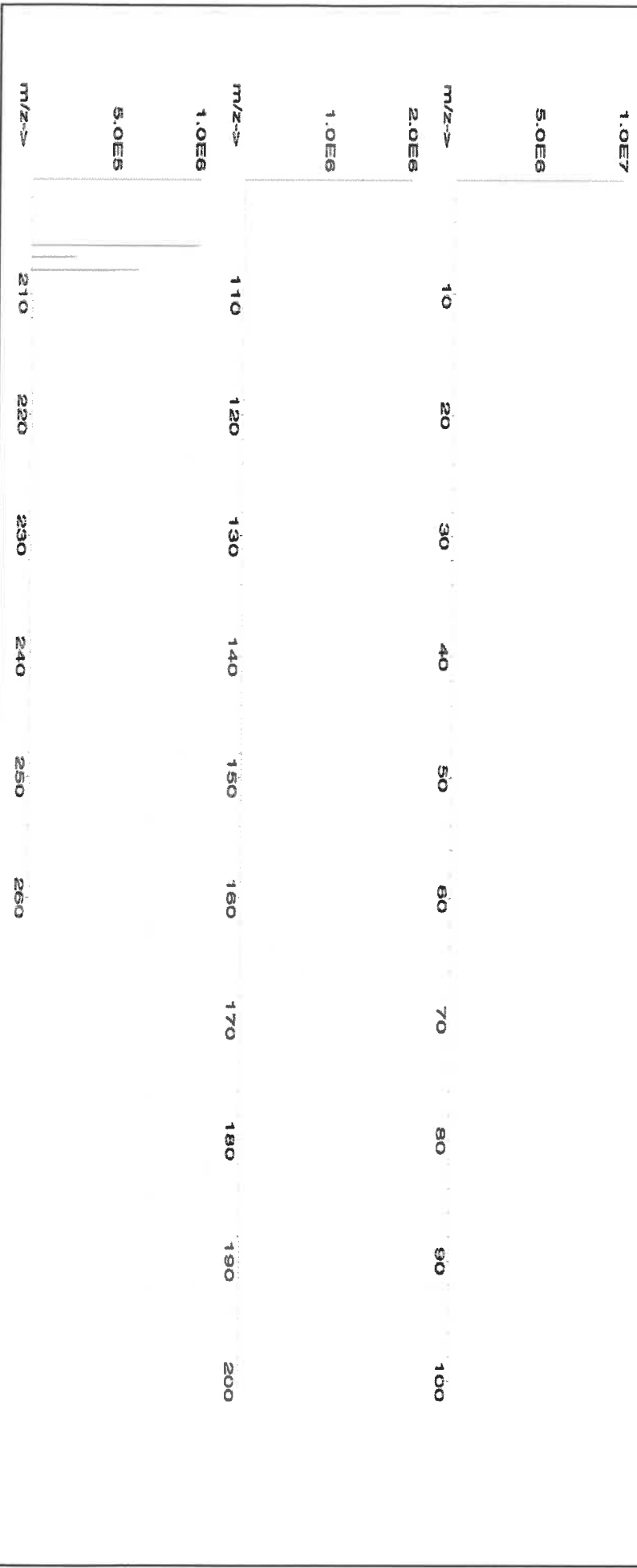
|                |                 |
|----------------|-----------------|
|                |                 |
| Formulated By: | Lawrence Barry  |
| 110923         |                 |
|                |                 |
| Reviewed By:   | Pedro L. Rentas |
| 110923         |                 |

**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) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|-----|------------|-----------------------|------------|------------------------|-----------|-------------------|-------------------|----------------------|----------------------------------|------|----------------|------|----------|
|-----|------------|-----------------------|------------|------------------------|-----------|-------------------|-------------------|----------------------|----------------------------------|------|----------------|------|----------|

1. Lead(II) nitrate (Pb) IN029 PED12016A1 10000 99.999 0.10 62.5 32.0006 32.0040 10001.1 20.0 10099-74-8 0.05 mg/m3 Inverse rat 83 mg/kg 3128

[1] Spectrum No.1 [ 17.284 sec]:58182.D# [Count] [Linear]







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

**Trace Metals Verification by ICP-MS ( $\mu\text{g/mL}$ )**

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pt | <0.02 | Se | <0.2  | Tb | <0.02 | W  | <0.02 |
| Sb | <0.02 | Ca | <0.2  | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U  | <0.02 |
| As | <0.2  | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V  | <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 |

**Physical Characterization:**

(T)= Target analyte

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

Certified by:

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

M4371

Hydroxylamine Hydrochloride, Crystal  
BAKER ANALYZED® A.C.S. Reagent  
Suitable for Mercury Determination  
(hydroxylammonium chloride)

Rec - 06.07.19



avantortm

Material No.: 2196-01  
Batch No.: 0000215387  
Manufactured Date: 2018/06/27  
Retest Date: 2025/06/25  
Revision No: 1

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

| Test                                                          | Specification | Result  |
|---------------------------------------------------------------|---------------|---------|
| Assay (NH <sub>2</sub> OH · HCl) (by KMnO <sub>4</sub> titrn) | >= 96.0 %     | 99.1    |
| Clarity of Alcohol Solution                                   | Passes Test   | PT      |
| Residue after Ignition                                        | <= 0.050 %    | 0.017   |
| Titrate Free Acid (meq/g)                                     | <= 0.25       | 0.19    |
| Ammonium (NH <sub>4</sub> )                                   | Passes Test   | PT      |
| Sulfur Compounds (as SO <sub>4</sub> )                        | <= 0.005 %    | < 0.003 |
| Trace Impurities - ACS - Heavy Metals (as Pb)                 | <= 5 ppm      | 4       |
| Trace Impurities - Iron (Fe)                                  | <= 5 ppm      | < 3     |
| Trace Impurities - Mercury (Hg)                               | <= 0.050 ppm  | < 0.005 |

For Laboratory, Research or Manufacturing Use

Country of Origin: CN  
Packaging Site: Paris Mfg Ctr & DC

ISO

Phillipsburg, NJ 9001:2015, FSSC22000  
Paris, KY 9001:2008  
Mexico City, Mexico 9001:2008  
Gliwice, Poland 9001:2015, 13485:2012  
Selangor, Malaysia 9001:2008  
Dehradun, India, 9001:2008, 14001:2004, 13485:2003  
Mumbai, India, 9001:2015, 17025:2005  
Panoli, India 9001:2015

*James Ethier*

Jamie Ethier  
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

M4913-16

MS

## Certificate of Analysis

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

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

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

|                   |                                |                             |            |
|-------------------|--------------------------------|-----------------------------|------------|
| Catalog Number    | P279                           | Quality Test / Release Date | 01/12/2021 |
| Lot Number        | 210306                         |                             |            |
| Description       | POTASSIUM PERMANGANATE, A.C.S. |                             |            |
| Country of Origin | United States                  | Suggested Retest Date       | Jan/2026   |

| N/A                 |           |                |                                      |
|---------------------|-----------|----------------|--------------------------------------|
| Result Name         | Units     | Specifications | Test Value                           |
| APPEARANCE          |           | REPORT         | Dark purple to purple green crystals |
| ASSAY               | %         | >= 99          | 99.3                                 |
| CHLORIDE & CHLORATE | %         | <= 0.005       | <0.005                               |
| IDENTIFICATION      | PASS/FAIL | = PASS TEST    | pass test                            |
| INSOLUBLE MATTER    | %         | <= 0.2         | <0.2                                 |
| MERCURY (Hg)        | ppm       | <= 0.05        | <0.004                               |
| SULFATE (SO4)       | %         | <= 0.02        | <0.02                                |

*Julian Burton*

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.

300 Technology Drive  
 Christiansburg, VA 24073 USA  
 inorganicventures.com

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

MS062  
 MS063  
 MS

## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Mass Spec Solution  
 Catalog Number: MSHG-10PPM  
 Lot Number: S2-HG709270  
 Matrix: 10% (v/v) HCl  
 Value / Analyte(s): 10 µg/mL ea:  
 Mercury  
 Starting Material: Hg metal  
 Starting Material Lot#: 1959  
 Starting Material Purity: 99.9994%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10.001 ± 0.053 µg/mL  
**Density:** 1.020 g/mL (measured at 20 ± 4 °C)

### Assay Information:

| ANALYTE | METHOD     | NIST SRM# | SRM LOT#     |
|---------|------------|-----------|--------------|
| Hg      | ICP Assay  | 3133      | 160921       |
| Hg      | EDTA       | 928       | 928          |
| Hg      | Calculated |           | See Sec. 4.2 |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

|   |    |          |          |    |          |          |          |    |          |          |          |          |          |          |          |          |          |
|---|----|----------|----------|----|----------|----------|----------|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 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](http://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<sub>3</sub>. 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<sub>3</sub> / LDPE container, stable in 10% HNO<sub>3</sub> packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO<sub>3</sub> packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO<sub>3</sub> / LDPE container.

**Hg Containing Samples (Preparation and Solution)** - Metal (soluble in HNO<sub>3</sub>); Oxide (Soluble in HNO<sub>3</sub>); 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,<br>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](http://inorganicventures.com); [info@inorganicventures.com](mailto: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





M5467 R: 03/01/23 (14)

CERTIFIED WEIGHT REPORT:

Part Number:  
Lot Number:  
Description:

57058  
020623  
Cerium (Ce)

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

020626  
Ambient (20 °C)  
1000  
6UTB

Weight shown below was diluted to (mL):

1000.12 0.058 Balance Uncertainty  
Flask Uncertainty

Solvent: Nitric Acid

2% 20.0 Nitric Acid (mL)

Lot #

21110221

Nitric Acid

Formulated By: Lawrence Barry 020623

Reviewed By: Pedro L. Rentas 020623

Expanded Uncertainty  
+/- (µg/mL)

SDS Information

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

2.0

10294-41-4

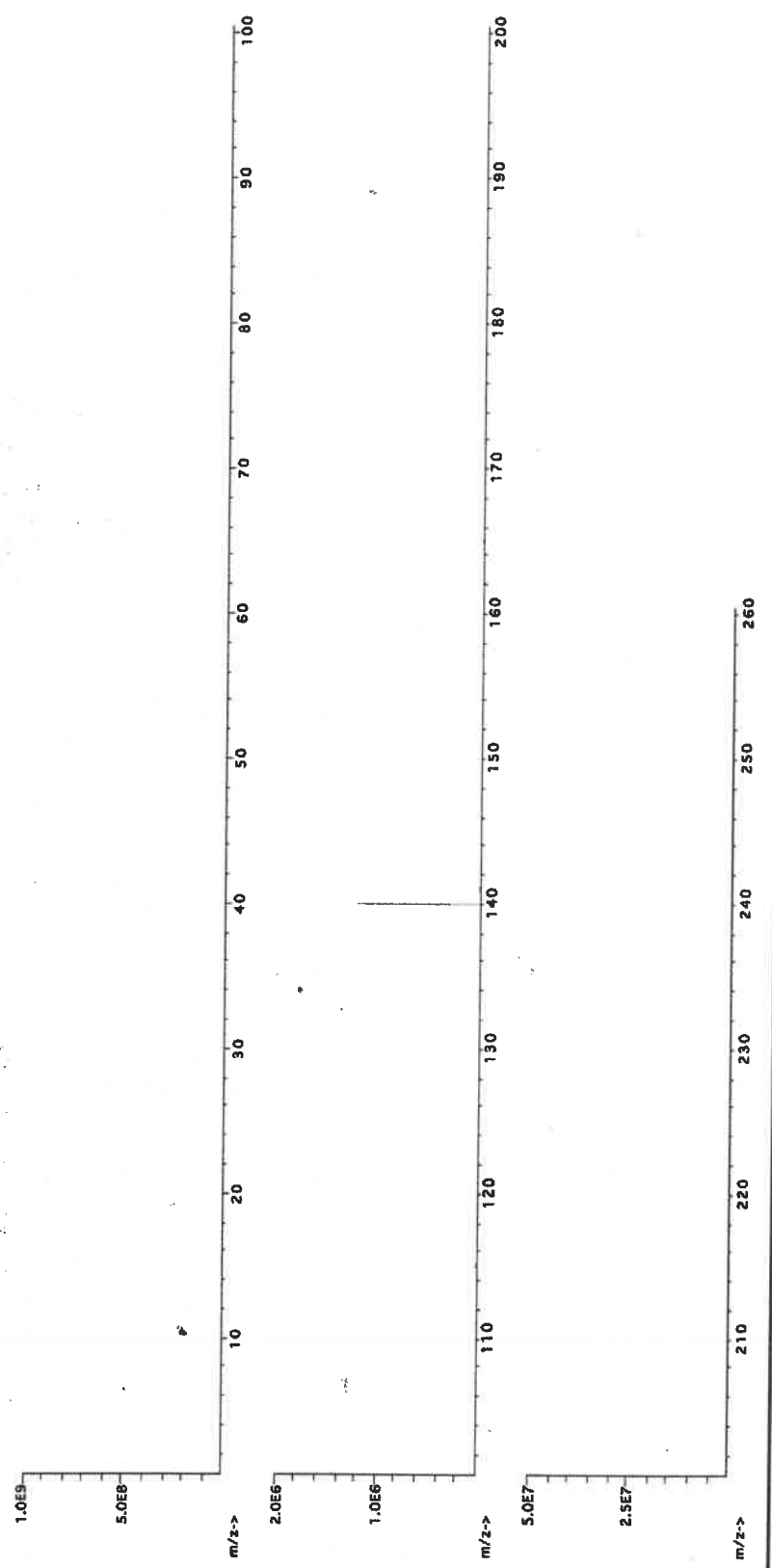
NA

NA

SRM

| Compound                           | RM#   | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | SRM |
|------------------------------------|-------|------------|-----------------------|------------|-----------------------|-------------------|-------------------|----------------------|----------------------------------|------|----------------|------|-----|
| 1. Cerium nitrate hexahydrate (Ce) | IN146 | Z512CEB1   | 1000                  | 99.999     | 0.10                  | 32.8              | 3.04919           | 3.04921              | 1000.0                           | 2.0  | 10294-41-4     | NA   | NA  |

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







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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

Part Number: 58024  
Lot Number: 060523  
Description: Chromium (Cr)

Lot #  
21110221  
Solvent: Nitric Acid

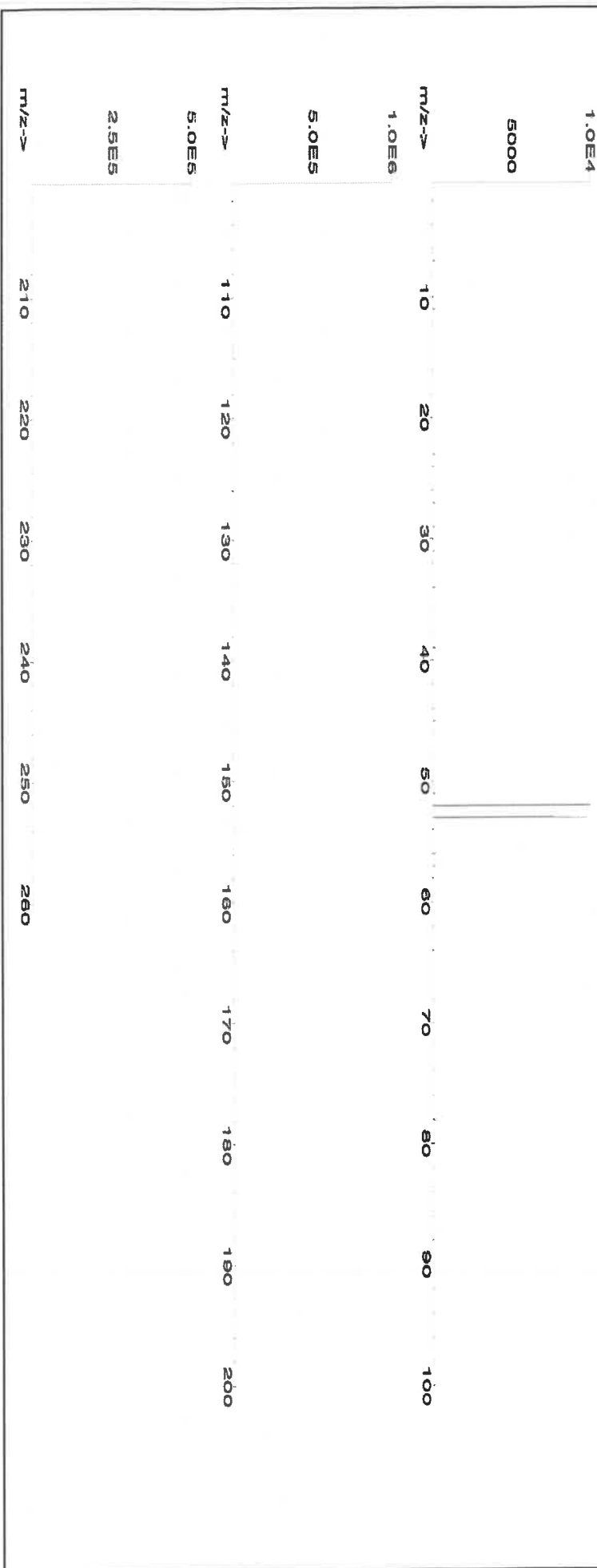
|                |                 |
|----------------|-----------------|
|                |                 |
| Formulated By: | Lawrence Barry  |
|                | 060523          |
|                |                 |
| Reviewed By:   | Pedro L. Ruelas |
|                | 060523          |

Expiration Date: 060526  
Recommended Storage: Ambient (20 °C)  
Nominal Concentration (µg/mL): 1000  
NIST Test Number: 6UTB  
Volume shown below was diluted to (mL): 2000.02  
5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|-------------|------------|-----------------|-------------------|------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|
|----------|-------------|------------|-----------------|-------------------|------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|

1. Chromium(III) nitrate nonahydrate (Cr) 58124 071122 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 7789-02-8 0.5 mg(Cr)/m3 or rat 3250 mg/kg 3112a

[1] Spectrum No.1 [ 31.393 sec]:57024.D# [Count] [Linear]





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

Part Number: **57028**  
Lot Number: **091223**  
Description: **Nickel (NI)**

Lot # **24002546** Solvent: **Nitric Acid**

Expiration Date: **091226**

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

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6U7B**

Volume shown below was diluted to (mL): **2000.02**

Balance Uncertainty: **5E-05**

Flask Uncertainty: **0.056**

2.0%

40.0 (mL)

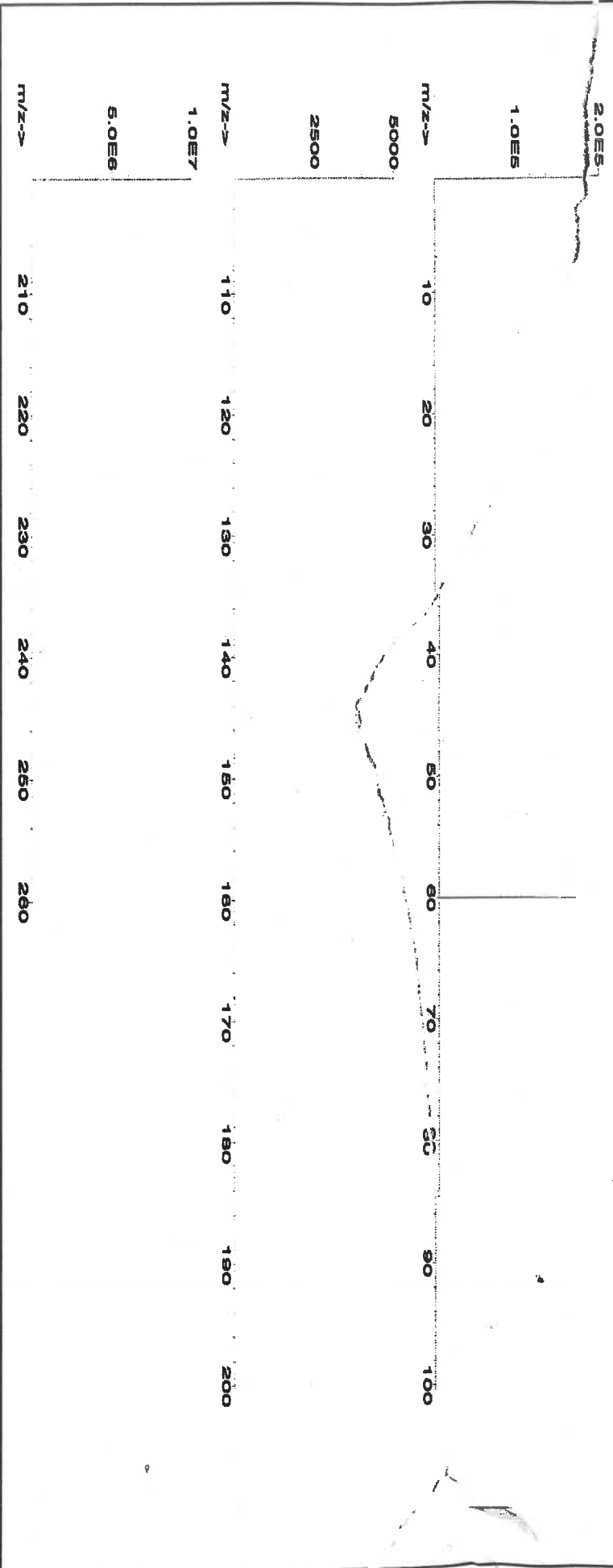
Nitric Acid

|                |                          |        |
|----------------|--------------------------|--------|
| Formulated By: | <i>Lawrence Barry</i>    | 091223 |
| Reviewed By:   | <i>Pedro L. Renteria</i> | 091223 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|-------------|------------|-----------------|-------------------|------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|
|----------|-------------|------------|-----------------|-------------------|------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|

1. Nickel(II) nitrate hexahydrate (NI) 58128 062023 0.1000 200.0 0.084 1000 10000.4 1000.0 2.2 13478-00-7 1 mg/m3 or-rel 1620 mg/kg 3136

[1] Spectrum No.1 [ 9.135 sec]:56028.D# [Count] [Linear]





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

Part Number: **58029**  
Lot Number: **071723**  
Description: **Copper (Cu)**

Lot #: **2110221**  
Solvent: **Nitric Acid**

2.0%

40.0 (mL)  
Nitric Acid

|                |                 |        |
|----------------|-----------------|--------|
| Formulated By: | Benson Chan     | 071723 |
| Reviewed By:   | Pedro L. Ruelas | 071723 |

Expiration Date: **071726**  
Recommended Storage: **Ambient (20 °C)**  
Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6L7B**

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

**SDS Information**

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|-------------|------------|-----------------|-------------------|------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|
|----------|-------------|------------|-----------------|-------------------|------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|

1. Copper(II) nitrate trihydrate (Cu) 58129 022723 0.1000 200.0 0.084 1000 10000.5 1000.0 2.2 10031-43-3 1 mg/m3 or rat 794 mg/kg 3114

[1] Spectrum No.1 [33.422 sec]:58029.D# [Count] [Linear]

|       |        |     |     |     |     |     |     |     |     |     |     |
|-------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.0E6 | m/z--> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 5.0E5 | m/z--> | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
| 2.5E7 | m/z--> | 210 | 220 | 230 | 240 | 250 | 260 |     |     |     |     |



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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

**Part Number:** 57004  
**Lot Number:** 102523  
**Description:** Beryllium (Be)

**Lot #** 24002546  
**Solvent:** Nitric Acid

**Expiration Date:**

102526

2.0%

40.0 (mL)

Nitric Acid

**Recommended Storage:**

Ambient (20 °C)

**Nominal Concentration (µg/mL):**

1000

**NIST Test Number:**

6UTB

**Volume shown below was diluted to (mL):** 2000.02

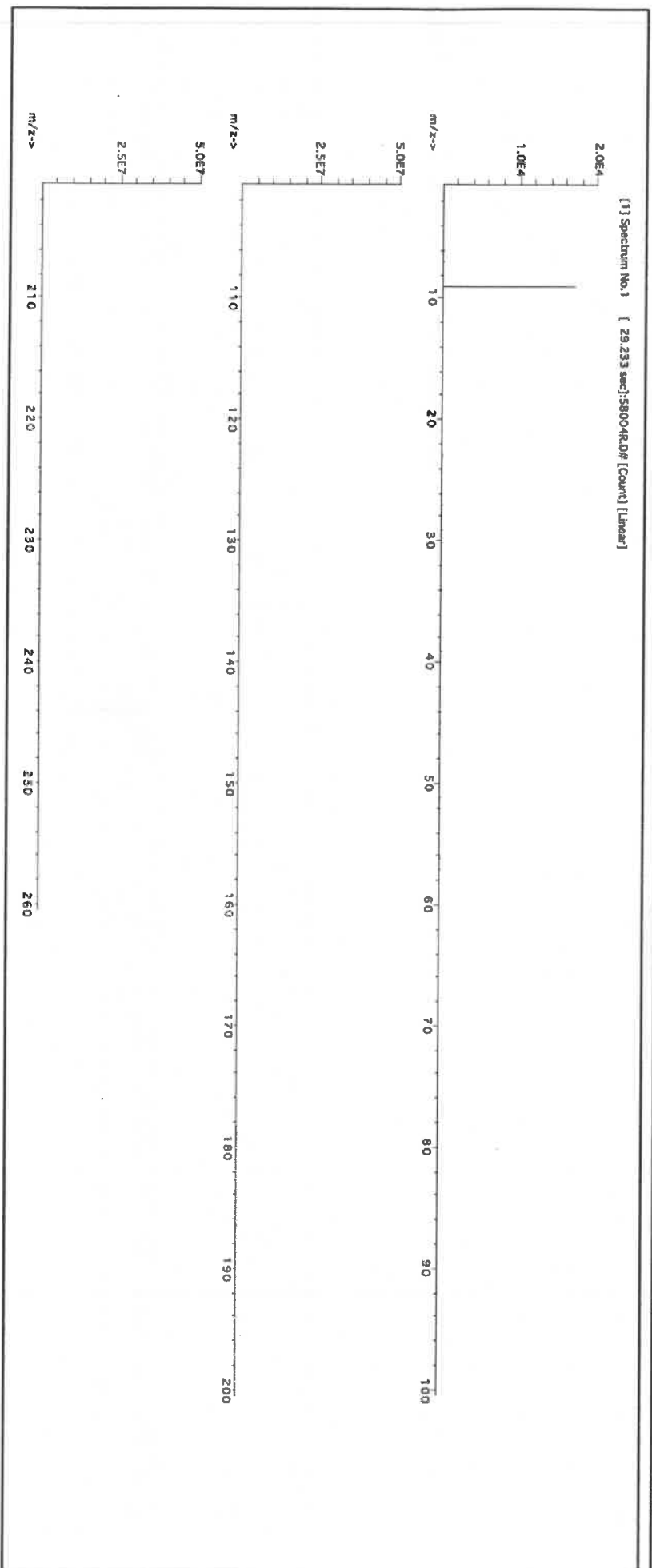
5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

|                |                 |
|----------------|-----------------|
|                |                 |
| Formulated By: | Benson Chan     |
|                | 102523          |
|                |                 |
| Reviewed By:   | Pedro L. Rentas |
|                | 102523          |

**SDS Information**

| Compound | Part Number | Lot | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|-------------|-----|-----------------|-------------------|--------------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|
|----------|-------------|-----|-----------------|-------------------|--------------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|

|                           |       |        |        |       |       |      |         |        |     |            |          |                        |    |
|---------------------------|-------|--------|--------|-------|-------|------|---------|--------|-----|------------|----------|------------------------|----|
| 1. Beryllium nitrate (Be) | 58104 | 091423 | 0.1000 | 200.0 | 0.084 | 1000 | 10001.5 | 1000.0 | 2.2 | 13597-99-4 | 0.2µg/m3 | intrinsc-rat 3.16mg/kg | NA |
|---------------------------|-------|--------|--------|-------|-------|------|---------|--------|-----|------------|----------|------------------------|----|







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

Trace Metals Verification by ICP-MS ( $\mu\text{g/mL}$ )

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

(T) = Target analyte

## Physical Characterization:

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

Certified by:

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

\* All standard containers are meticulously cleaned prior to use.

\* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).

\* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

\* All Standards should be stored with caps tight and under appropriate laboratory conditions.

\* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



**Certified Reference Material CRM**



**CERTIFIED WEIGHT REPORT:**

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

**Solvents:** 21110221 Nitric Acid  
22D0562008 Hydrochloric acid

Lot # R-02509124 M599

**Expiration Date:** 071126  
**Recommended Storage:** Ambient (20 °C)  
**Nominal Concentration (µg/mL):** 1000  
**NIST Test Number:** 6UTB

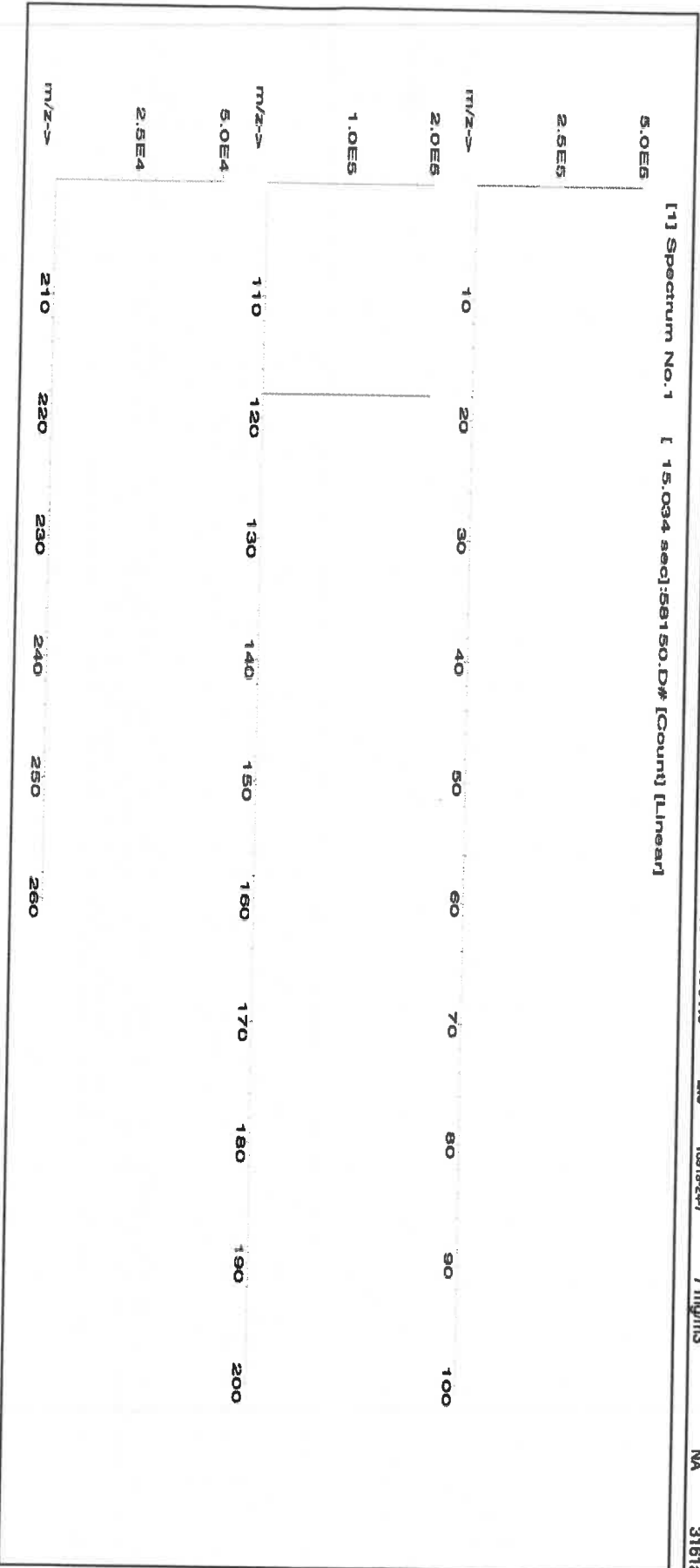
**Weight shown below was diluted to (mL):** 499.93  
5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

|                |                 |
|----------------|-----------------|
|                |                 |
| Formulated By: | Benson Chan     |
|                | 071123          |
|                |                 |
| Reviewed By:   | Pedro L. Rentas |
|                | 071123          |

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

1. Ammonium hexafluoroantimonate(V) (Sn) INO10 SMD042023A1 1000 99.999 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a

[1] Spectrum No. 1 [ 15.034 sec]:56150.D# [Count] [Linear]





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

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

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2  | Tb | <0.02 | W  | <0.02 |
| Sb | <0.02 | Ca | <0.2  | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U  | <0.02 |
| As | <0.2  | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Ti | <0.02 | V  | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <500  | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2  | Hg | <0.2  | P  | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y  | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S  | <0.02 | Ta | <0.02 | Zn | <0.02 |
| B  | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K  | <0.2  | Sc | <0.02 | Ta | <0.02 | Tl | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



R: 02/09/24 115800 (54)

CERTIFIED WEIGHT REPORT:

Part Number: 57027  
Lot Number: 091923  
Description: Cobalt (Co)

Expiration Date: 091926  
Recommended Storage: Ambient (20 °C)  
Nominal Concentration (µg/mL): 1000  
NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

Lot # 24002546  
Solvent: Nitric Acid

2.0% Nitric Acid  
40.0 (mL)

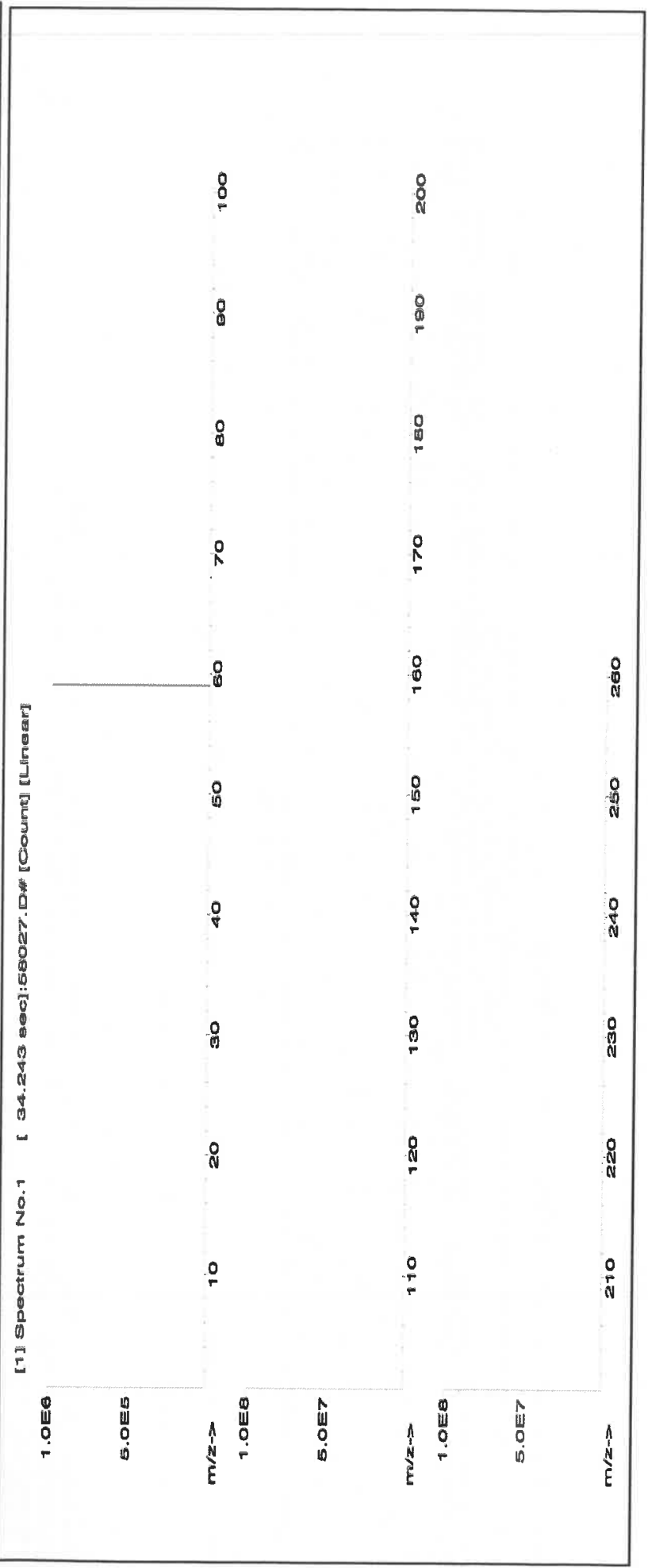
|                |                 |
|----------------|-----------------|
|                |                 |
| Formulated By: | Lawrence Barry  |
|                |                 |
| Reviewed By:   | Pedro L. Rentas |

SDS Information

Expanded Uncertainty +/- (µg/mL)  
Final Conc. (µg/mL)  
Initial Conc. (µg/mL)  
Nominal Conc. (µg/mL)  
Pipette (mL)  
Initial Vol. (mL)  
Dilution Factor  
Part Number  
Lot Number

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

1. Cobalt(II) nitrate hexahydrate (Co) 58127 050923 0.1000 200.0 0.084 1000 10000.0 1000.0 2.2 10026-22-9 0.02 mg/m3 orl-rat 691 mg/kg 3113





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

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

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

(T)= Target analyte

**Physical Characterization:**

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

**Certified by:**

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



**CERTIFIED WEIGHT REPORT:**

**Part Number:**  
**Lot Number:**  
**Description:**

**57033**  
**111323**  
**Arsenic (As)**

**Lot #**  
**Solvent:**

**24002546**  
**Nitric Acid**

**2.0%**

**80.0**

**Nitric Acid**

**Expiration Date:**  
**Recommended Storage:**  
**Nominal Concentration (µg/mL):**

**111326**  
**Ambient (20 °C)**  
**1000**

**NIST Test Number:**  
**Volume shown below was diluted to (mL):**

**6UTB**  
**4000.0**

**5E-05**  
**Balance Uncertainty**  
**0.06**  
**Flask Uncertainty**

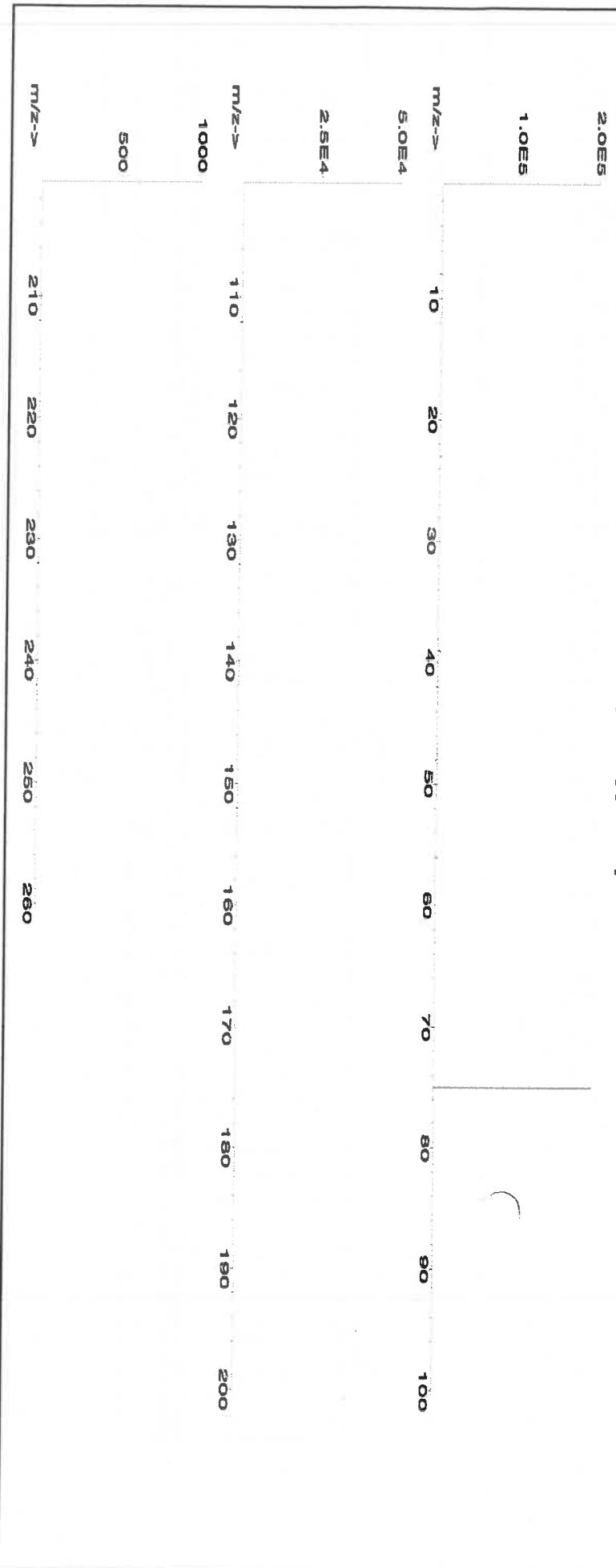
|                |                 |        |
|----------------|-----------------|--------|
| Formulated By: | Lawrence Barry  | 111323 |
| Reviewed By:   | Pedro L. Rendas | 111323 |

**Compound**

| Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|-------------|------------|-----------------|-------------------|--------------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|
|-------------|------------|-----------------|-------------------|--------------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|

|                 |       |        |        |       |       |      |         |        |     |           |           |                  |       |
|-----------------|-------|--------|--------|-------|-------|------|---------|--------|-----|-----------|-----------|------------------|-------|
| 1. Arsenic (As) | 58133 | 020522 | 0.1000 | 400.0 | 0.084 | 1000 | 10001.0 | 1000.0 | 2.0 | 7440-38-2 | 0.5 mg/m3 | or-rat 500 mg/kg | 3103a |
|-----------------|-------|--------|--------|-------|-------|------|---------|--------|-----|-----------|-----------|------------------|-------|

[1] Spectrum No.1 [34.433 sec]:57033.D# [Count] [Linear]





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

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

|    |       |    |       |     |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|-----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy  | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2  | Tb | <0.02 | W  | <0.02 |
| Sb | <0.02 | Ca | <0.2  | Er  | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U  | <0.02 |
| As | T     | Ce | <0.02 | Eu  | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V  | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd  | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2  | Tl | <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 | Su | <0.02 | Zn | <0.02 |
| B  | <0.02 | Cu | <0.02 | Au  | <0.02 | Pb | <0.02 | Nd | <0.02 | K  | <0.2  | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

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



**CERTIFIED WEIGHT REPORT:**

Part Number: **57005**  
Lot Number: **071123**  
Description: **Boron (B)**

Solvent: MKB8697V Ammonium hydroxide

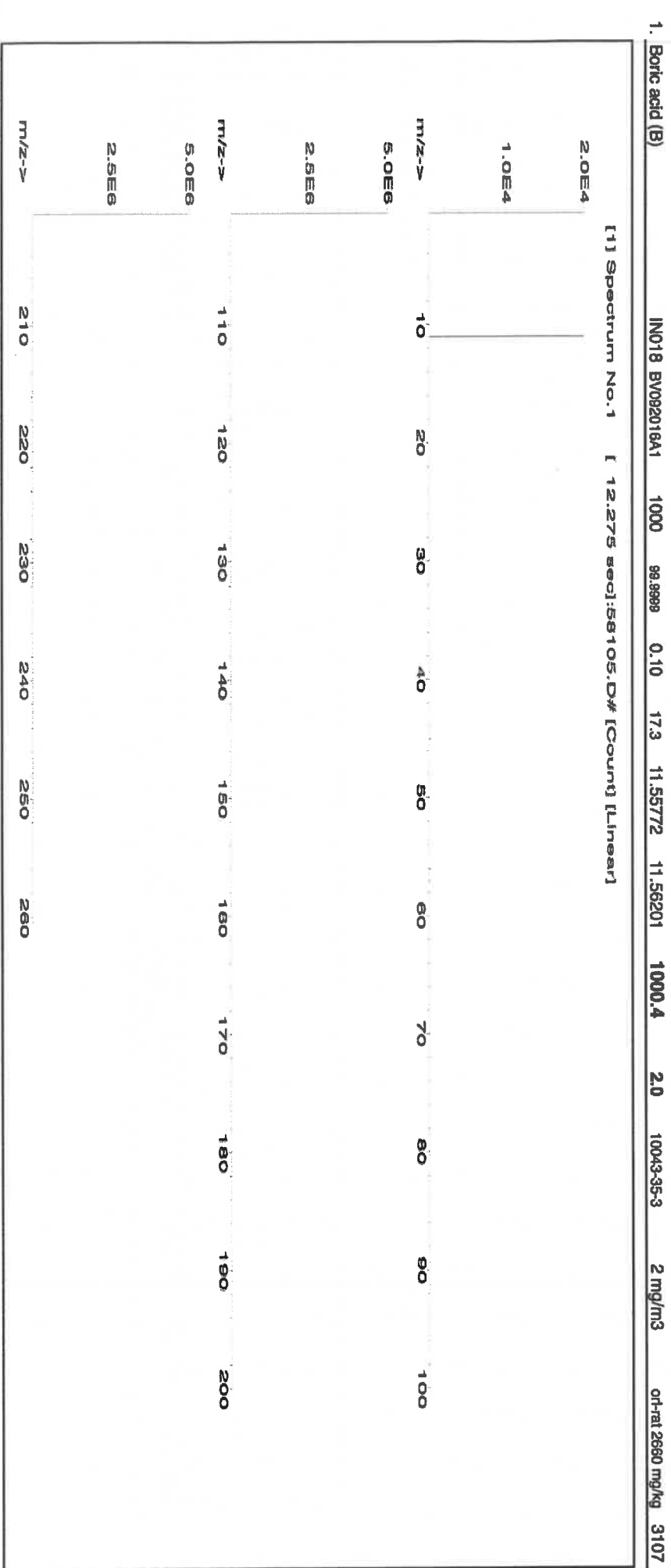
Lot #

AI: 021009124 M5814

Expiration Date: 071126  
Recommended Storage: Ambient (20 °C)  
Nominal Concentration (µg/mL): 1000  
NIST Test Number: 6UTB  
Weight shown below was diluted to (mL): 1999.48 0.058 Balance Uncertainty  
2.0% 40.0 Ammonium hydroxide (mL)

|                |                  |
|----------------|------------------|
|                |                  |
| Formulated By: | Benson Chan      |
| 071123         |                  |
|                |                  |
| Reviewed By:   | Pedro L. Rientas |
| 071123         |                  |

| SDS Information |        |               |        |             |       |            |            |               |                                        |
|-----------------|--------|---------------|--------|-------------|-------|------------|------------|---------------|----------------------------------------|
| Compound        | Lot    | Nominal       | Purity | Uncertainty | Assay | Target     | Actual     | Actual        | Expanded                               |
|                 | Number | Conc. (µg/mL) | (%)    | Purity (%)  | (%)   | Weight (g) | Weight (g) | Conc. (µg/mL) | +/- (µg/mL)                            |
|                 |        |               |        |             |       |            |            |               | (Solvent Safety Info. On Attached pg.) |
|                 |        |               |        |             |       |            |            |               | OSHA PEL (TWA)                         |
|                 |        |               |        |             |       |            |            |               | LD50                                   |
|                 |        |               |        |             |       |            |            |               | NIST SRM                               |







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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

**Part Number:** 57015  
**Lot Number:** 091123  
**Description:** Phosphorous (P)

**Solvent:** 24002546 Nitric Acid

**Lot #**

R: 02109124 M5820

Formulated By: Lawrence Barry 091123

Reviewed By: Pedro L. Rentas 091123

2% 40.0 (mL) Nitric Acid

**Expiration Date:** 091126  
**Recommended Storage:** Ambient (20 °C)  
**Nominal Concentration (µg/mL):** 1000  
**NIST Test Number:** 6LJB

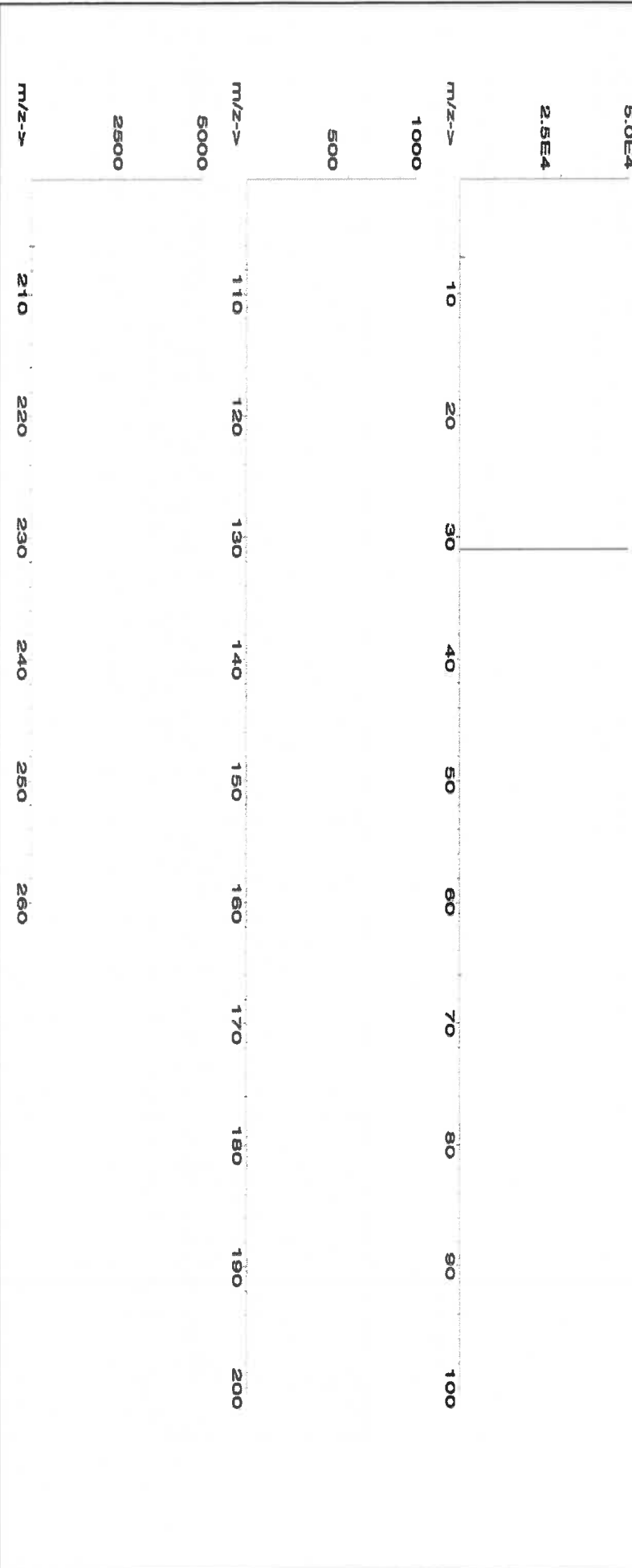
**Weight shown below was diluted to (mL):** 2000.02 0.058 Balance Uncertainty Flask Uncertainty

**Compound**

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

1. Ammonium dihydrogen phosphate (P) IN008 PVO82019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/m3 xH-rat >2000mg/kg 3186

[1] Spectrum No.1 [ 12.074 sec]:58115.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ( $\mu\text{g/mL}$ )

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

(T) = Target analyte

## Physical Characterization:

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

Certified by:

- \* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- \* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- \* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Sodium Chloride, Crystal  
BAKER ANALYZED® A.C.S. Reagent



MS824  
MB

Material No.: 3624-01

Batch No.: 0000281938

Manufactured Date: 2021-06-07

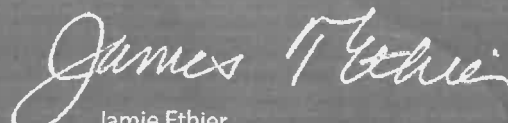
Retest Date: 2026-06-07

Revision No.: 1

## Certificate of Analysis

| Test                                       | Specification | Result      |
|--------------------------------------------|---------------|-------------|
| Assay (NaCl) (by Ag titrn)                 | ≥ 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 <sub>3</sub> ) | ≤ 0.003 %     | < 0.001 %   |
| ACS - Phosphate (PO <sub>4</sub> )         | ≤ 5 ppm       | < 5 ppm     |
| Sulfate (SO <sub>4</sub> )                 | ≤ 0.004 %     | < 0.004 %   |
| Barium (Ba)                                | Passes Test   | Passes Test |
| ACS - Heavy Metals (as Pb)                 | ≤ 5 ppm       | < 5 ppm     |
| Iron (Fe)                                  | ≤ 2 ppm       | < 1 ppm     |
| Calcium (Ca)                               | ≤ 0.002 %     | < 0.001 %   |
| Magnesium (Mg)                             | ≤ 0.001 %     | < 0.001 %   |
| Potassium (K)                              | ≤ 0.005 %     | 0.001 %     |

For Laboratory, Research, or Manufacturing Use  
Meets Reagent Specifications for testing USP/NF monographs  
Country of Origin: USA  
Packaging Site: Paris Mfg Ctr & DC

  
Jamie Ethier  
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Mansford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700



R: 06/14/29



**Lot #** **Solvent:**

24002546

## Nitric Acid

### Selenium (Se)

**Expiration Date:**

**Recommended Storage:**

**Nominal Concentration ( $\mu\text{g/mL}$ ):**

**NIST Test Number:**

Volume shown below was diluted to (mL): 2000.07

5E-05 Balance Uncertainty

0.100 Flask Uncertainty

|                |                 |        |
|----------------|-----------------|--------|
| Formulated By: | Benson Chan     | 060624 |
| Reviewed By:   | Pedro L. Rentas | 060624 |

## SDS Information

### Expanded

## Uncertainty

(Solvent Safety Info. On Attached pg.)

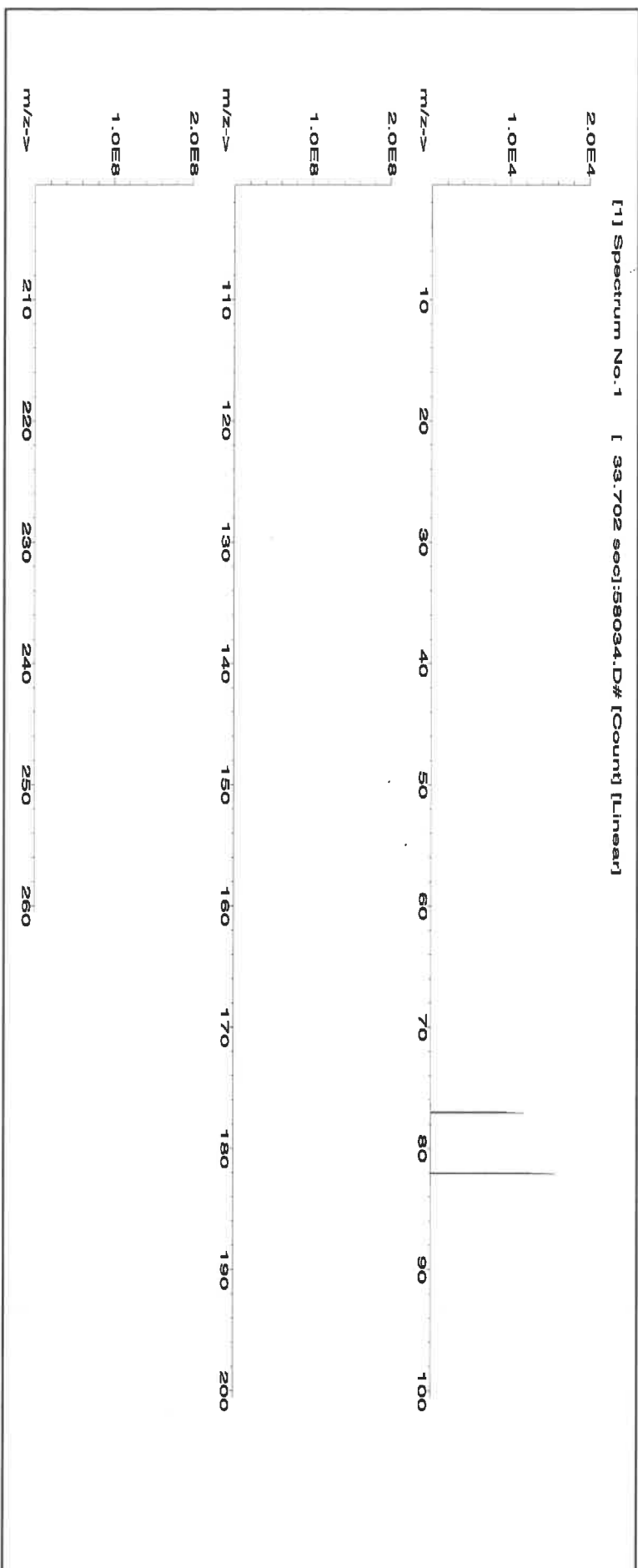
 $+/-$  ( $\mu\text{g/mL}$ )

| CAS#       | OSHA PEL (TWA)        |
|------------|-----------------------|
| 10102-93-2 | 0.1 mg/m <sup>3</sup> |
| 10102-94-1 | 0.1 mg/m <sup>3</sup> |
| 10102-95-0 | 0.1 mg/m <sup>3</sup> |
| 10102-96-9 | 0.1 mg/m <sup>3</sup> |
| 10102-97-8 | 0.1 mg/m <sup>3</sup> |
| 10102-98-7 | 0.1 mg/m <sup>3</sup> |
| 10102-99-6 | 0.1 mg/m <sup>3</sup> |
| 10103-00-5 | 0.1 mg/m <sup>3</sup> |
| 10103-01-4 | 0.1 mg/m <sup>3</sup> |
| 10103-02-3 | 0.1 mg/m <sup>3</sup> |
| 10103-03-2 | 0.1 mg/m <sup>3</sup> |
| 10103-04-1 | 0.1 mg/m <sup>3</sup> |
| 10103-05-0 | 0.1 mg/m <sup>3</sup> |
| 10103-06-9 | 0.1 mg/m <sup>3</sup> |
| 10103-07-8 | 0.1 mg/m <sup>3</sup> |
| 10103-08-7 | 0.1 mg/m <sup>3</sup> |
| 10103-09-6 | 0.1 mg/m <sup>3</sup> |
| 10103-10-5 | 0.1 mg/m <sup>3</sup> |
| 10103-11-4 | 0.1 mg/m <sup>3</sup> |
| 10103-12-3 | 0.1 mg/m <sup>3</sup> |
| 10103-13-2 | 0.1 mg/m <sup>3</sup> |
| 10103-14-1 | 0.1 mg/m <sup>3</sup> |
| 10103-15-0 | 0.1 mg/m <sup>3</sup> |
| 10103-16-9 | 0.1 mg/m <sup>3</sup> |
| 10103-17-8 | 0.1 mg/m <sup>3</sup> |
| 10103-18-7 | 0.1 mg/m <sup>3</sup> |
| 10103-19-6 | 0.1 mg/m <sup>3</sup> |
| 10103-20-5 | 0.1 mg/m <sup>3</sup> |
| 10103-21-4 | 0.1 mg/m <sup>3</sup> |
| 10103-22-3 | 0.1 mg/m <sup>3</sup> |
| 10103-23-2 | 0.1 mg/m <sup>3</sup> |
| 10103-24-1 | 0.1 mg/m <sup>3</sup> |
| 10103-25-0 | 0.1 mg/m <sup>3</sup> |
| 10103-26-9 | 0.1 mg/m <sup>3</sup> |
| 10103-27-8 | 0.1 mg/m <sup>3</sup> |
| 10103-28-7 | 0.1 mg/m <sup>3</sup> |
| 10103-29-6 | 0.1 mg/m <sup>3</sup> |
| 10103-30-5 | 0.1 mg/m <sup>3</sup> |
| 10103-31-4 | 0.1 mg/m <sup>3</sup> |
| 10103-32-3 | 0.1 mg/m <sup>3</sup> |
| 10103-33-2 | 0.1 mg/m <sup>3</sup> |
| 10103-34-1 | 0.1 mg/m <sup>3</sup> |
| 10103-35-0 | 0.1 mg/m <sup>3</sup> |
| 10103-36-9 | 0.1 mg/m <sup>3</sup> |
| 10103-37-8 | 0.1 mg/m <sup>3</sup> |
| 10103-38-7 | 0.1 mg/m <sup>3</sup> |
| 10103-39-6 | 0.1 mg/m <sup>3</sup> |
| 10103-40-5 | 0.1 mg/m <sup>3</sup> |
| 10103-41-4 | 0.1 mg/m <sup>3</sup> |
| 10103-42-3 | 0.1 mg/m <sup>3</sup> |
| 10103-43-2 | 0.1 mg/m <sup>3</sup> |
| 10103-44-1 | 0.1 mg/m <sup>3</sup> |
| 10103-45-0 | 0.1 mg/m <sup>3</sup> |
| 10103-46-9 | 0.1 mg/m <sup>3</sup> |
| 10103-47-8 | 0.1 mg/m <sup>3</sup> |
| 10103-48-7 | 0.1 mg/m <sup>3</sup> |
| 10103-49-6 | 0.1 mg/m <sup>3</sup> |
| 10103-50-5 | 0.1 mg/m <sup>3</sup> |
| 10103-51-4 | 0.1 mg/m <sup>3</sup> |
| 10103-52-3 | 0.1 mg/m <sup>3</sup> |
| 10103-53-2 | 0.1 mg/m <sup>3</sup> |
| 10103-54-1 | 0.1 mg/m <sup>3</sup> |
| 10103-55-0 | 0.1 mg/m <sup>3</sup> |
| 10103-56-9 | 0.1 mg/m <sup>3</sup> |
| 10103-57-8 | 0.1 mg/m <sup>3</sup> |
| 10103-58-7 | 0.1 mg/m <sup>3</sup> |
| 10103-59-6 | 0.1 mg/m <sup>3</sup> |
| 10103-60-5 | 0.1 mg/m <sup>3</sup> |
| 10103-61-4 | 0.1 mg/m <sup>3</sup> |
| 10103-62-3 | 0.1 mg/m <sup>3</sup> |
| 10103-63-2 | 0.1 mg/m <sup>3</sup> |
| 10103-64-1 | 0.1 mg/m <sup>3</sup> |
| 10103-65-0 | 0.1 mg/m <sup>3</sup> |
| 10103-66-9 | 0.1 mg/m <sup>3</sup> |
| 10103-67-8 | 0.1 mg/m <sup>3</sup> |
| 10103-68-7 | 0.1 mg/m <sup>3</sup> |
| 10103-69-6 | 0.1 mg/m <sup>3</sup> |
| 10103-70-5 | 0.1 mg/m <sup>3</sup> |
| 10103-71-4 | 0.1 mg/m <sup>3</sup> |
| 10103-72-3 | 0.1 mg/m <sup>3</sup> |
| 10103-73-2 | 0.1 mg/m <sup>3</sup> |
| 10103-74-1 | 0.1 mg/m <sup>3</sup> |
| 10103-75-0 | 0.1 mg/m <sup>3</sup> |
| 10103-76-9 | 0.1 mg/m <sup>3</sup> |
| 10103-77-8 | 0.1 mg/m <sup>3</sup> |
| 10103-78-7 | 0.1 mg/m <sup>3</sup> |
| 10103-79-6 | 0.1 mg/m <sup>3</sup> |
| 10103-80-5 | 0.1 mg/m <sup>3</sup> |
| 10103-81-4 | 0.1 mg/m <sup>3</sup> |
| 10103-82-3 | 0.1 mg/m <sup>3</sup> |
| 10103-83-2 | 0.1 mg/m <sup>3</sup> |
| 10103-84-1 | 0.1 mg/m <sup>3</sup> |
| 10103-85-0 | 0.1 mg/m <sup>3</sup> |
| 10103-86-9 | 0.1 mg/m <sup>3</sup> |
| 10103-87-8 | 0.1 mg/m <sup>3</sup> |
| 10103-88-7 | 0.1 mg/m <sup>3</sup> |
| 10103-89-6 | 0.1 mg/m <sup>3</sup> |
| 10103-90-5 | 0.1 mg/m <sup>3</sup> |
| 10103-91-4 | 0.1 mg/m <sup>3</sup> |
| 10103-92-3 | 0.1 mg/m <sup>3</sup> |
| 10103-93-2 | 0.1 mg/m <sup>3</sup> |
| 10103-94   |                       |

1050

SRM

|                  |       |        |        |       |       |      |         |               |            |           |           |                     |      |
|------------------|-------|--------|--------|-------|-------|------|---------|---------------|------------|-----------|-----------|---------------------|------|
| 1. Selenium (Se) | 58134 | 071223 | 0.1000 | 200.0 | 0.084 | 1000 | 10002.5 | <b>1000.0</b> | <b>2.2</b> | 7782-49-2 | 0.2 mg/m3 | oral rat 6700 mg/kg | 3149 |
|------------------|-------|--------|--------|-------|-------|------|---------|---------------|------------|-----------|-----------|---------------------|------|





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

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



**CERTIFIED WEIGHT REPORT:**

Part Number: 57016  
Lot Number: 122923  
Description: Sulfur (S)

Lot #  
Solvent: 122923 ASTM Type 1 Water

|                |                 |
|----------------|-----------------|
|                |                 |
| Formulated By: | Benson Chan     |
| 122923         |                 |
|                |                 |
| Reviewed By:   | Pedro L. Rentas |
| 122923         |                 |

Expiration Date: 122926  
Recommended Storage: Ambient (20 °C)  
Nominal Concentration (µg/mL): 1000  
NIST Test Number: 6UTB  
Weight shown below was diluted to (mL): 4000.0  
5E-05 Balance Uncertainty  
0.06 Flask Uncertainty

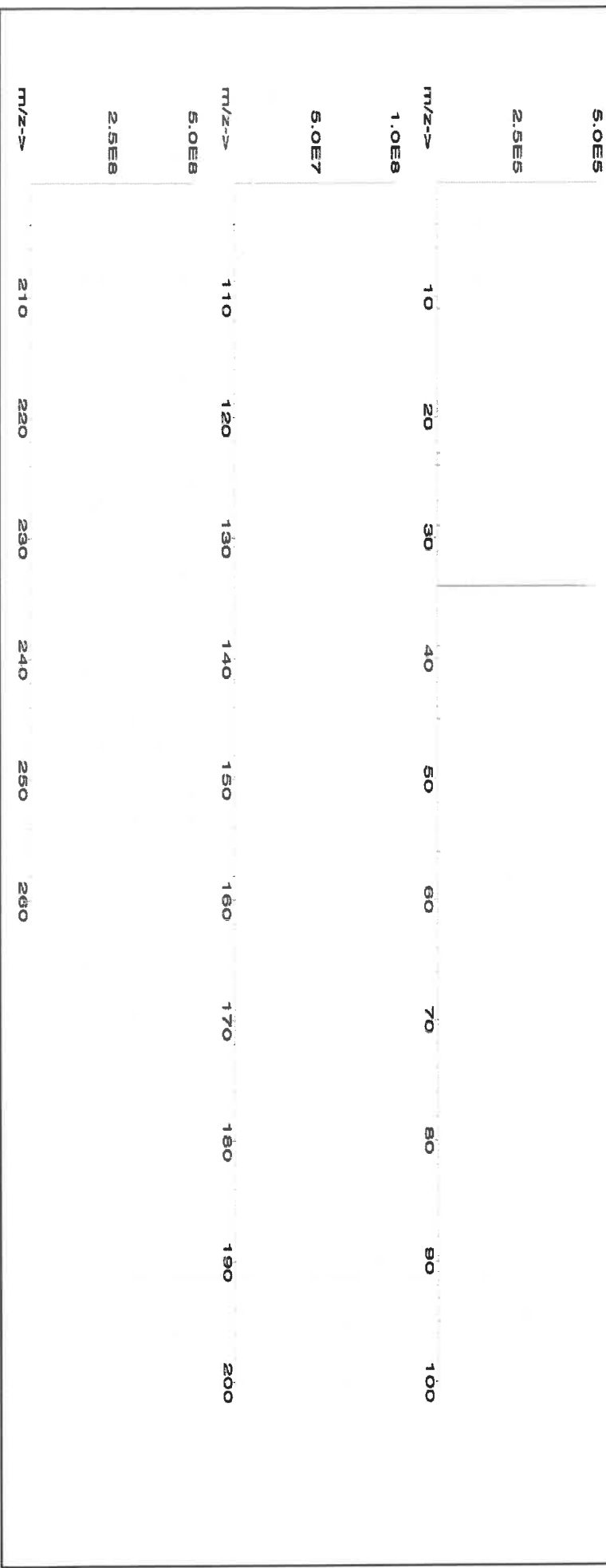
| Compound | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty |         | NIST SRM |
|----------|------------|-----------------------|------------|-----------------|-----------|-------------------|-------------------|----------------------|----------------------|---------|----------|
|          |            |                       |            |                 |           |                   |                   |                      | ±                    | (µg/mL) |          |

**SDS Information**

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

1. Ammonium sulfate (S) IN117 SLBR725V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA or-rel 4250mg/kg 3181

[1] Spectrum No. 1 [ 33.603 sec]:57016.D# [Count] [Linear]



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



**Certified Reference Material CRM**

M5970 M5971

R. J. 10/12/24

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

**CERTIFIED WEIGHT REPORT:**

Part Number: **57003**  
Lot Number: **062124**  
Description: **Lithium (Li)**  
Expiration Date: **06/12/27**  
Recommended Storage: **Ambient (20 °C)**  
Nominal Concentration (µg/mL): **1000**  
NIST Test Number: **6UTB**  
Volume shown below was diluted to (mL): **250.11**  
SE-05 Balance Uncertainty  
0.016 Flask Uncertainty

Lot # **24002546**  
Solvent: **Nitric Acid**

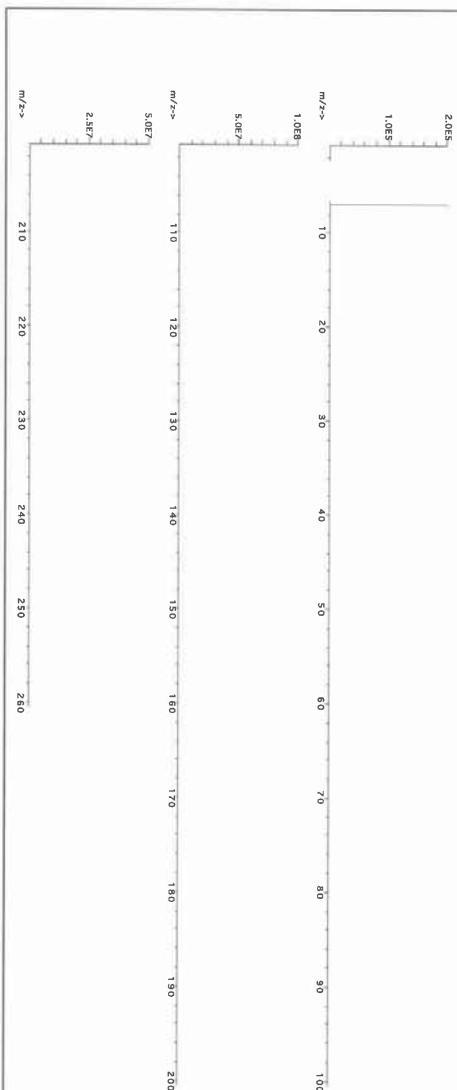
2.0% 5.0 (mL) Nitric Acid

|                   |                   |
|-------------------|-------------------|
| Microvial Capable |                   |
| Formulated By:    | Giovanni Esposito |
| Reviewed By:      | Pedro L. Parias   |
| CAS#              | 7440-58-4         |
| OSHA PEL (TWA)    | 5 mg/m3           |
| LD50              | or-hal 1428 mg/kg |
| NIST SRM          | NA                |

| Compound |  | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty | Peptide (mL) | Conc. (µg/mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|--|-------------|------------|-----------------|-------------------|-------------|--------------|---------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|
|----------|--|-------------|------------|-----------------|-------------------|-------------|--------------|---------------|-----------------------|-----------------------|---------------------|----------------------------------|------|----------------|------|----------|

|                         |       |        |        |      |       |      |         |        |     |           |         |                   |    |
|-------------------------|-------|--------|--------|------|-------|------|---------|--------|-----|-----------|---------|-------------------|----|
| 1. Lithium nitrate (Li) | 58103 | 070622 | 0.1000 | 25.0 | 0.004 | 1000 | 10000.4 | 1000.0 | 2.0 | 7790-68-4 | 5 mg/m3 | or-hal 1428 mg/kg | NA |
|-------------------------|-------|--------|--------|------|-------|------|---------|--------|-----|-----------|---------|-------------------|----|

[1] Spectrum No. 1 [ 32.093 sec; 15000.0Hz Count [Lines]







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

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

Physical Characterization:

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

Certified by:

*[Signature]*

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

# Certificate of Analysis

MS978, MS979



Refine your results. Redefine your industry.

300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

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

## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution

Catalog Number: CGT1

Lot Number: T2-T1719972

Matrix: 2% (v/v) HNO<sub>3</sub>

Value / Analyte(s): tr. HF

Starting Material: 1 000 µg/mL ea.

Starting Material: Titanium

Starting Material Lot#: T1 Metal

Starting Material Purity: 2094

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

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

Assay Method #1

1002 ± 4 µg/mL

ICP Assay NIST SRM 3162a Lot Number: 130925

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

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

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

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

$X_i$  = mean of Assay Method A with

$U_i$  = the standard uncertainty of characterization Method A

$U_{CRM/RM} = (U_i / \sqrt{k})$

$k$  = coverage factor = 2

$U_{CRM/RM} = (U_i / \sqrt{k})$

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$U_{CRM/RM} = (U_i / \sqrt{k})$

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 UHPA-filtered Clean Room. An UHPA-filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

|      |   |          |      |   |          |      |   |          |      |   |          |      |   |          |
|------|---|----------|------|---|----------|------|---|----------|------|---|----------|------|---|----------|
| M Ag | < | 0.000536 | M Eu | < | 0.000268 | O Na | < | 0.032670 | M Se | < | 0.001204 | O Zn | < | 0.003267 |
| M Al | < | 0.000872 | O Fe | < | 0.003225 | O Nb | < | 0.043560 | O Si | < | 0.004735 | O Zr | < | 0.043560 |
| M As | < | 0.008586 | M Ga | < | 0.000268 | M Nd | < | 0.000268 | M Sm | < | 0.000268 |      |   |          |
| M Au | < | 0.004577 | M Gd | < | 0.000268 | O Ni | < | 0.010890 | M Sn | < | 0.000986 |      |   |          |
| O B  | < | 0.008929 | M Ge | < | 0.002146 | M Os | < | 0.000269 | O Sr | < | 0.000986 |      |   |          |
| 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 Th | < | 0.001341 |      |   |          |
| O Ca | < | 0.000676 | M In | < | 0.002683 | M Pr | < | 0.000268 | M Tl | < | 0.053663 |      |   |          |
| M Cd | < | 0.000268 | M Ir | < | 0.000269 | M Pt | < | 0.000536 | S Ti | < |          |      |   |          |
| M Co | < | 0.000268 | M K  | < | 0.001172 | M Rb | < | 0.000268 | M Tl | < | 0.000268 |      |   |          |
| M Cr | < | 0.000752 | O Li | < | 0.000268 | M Re | < | 0.000268 | M Tm | < | 0.000268 |      |   |          |
| M Cs | < | 0.000268 | M Lu | < | 0.000268 | M Rh | < | 0.000268 | M U  | < | 0.000268 |      |   |          |
| O Cu | < | 0.010890 | O Mg | < | 0.005445 | I S  | < | 0.006976 | M Y  | < | 0.002146 |      |   |          |
| M Dy | < | 0.000268 | O Mn | < | 0.003267 | M Sb | < | 0.004900 | M Yb | < | 0.000536 |      |   |          |
| M Er | < | 0.000268 | M Mo | < | 0.000774 | O Sc | < |          |      |   |          |      |   |          |

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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 47.87 ± 4.6 Ti(F)<sub>6</sub>-2 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)<sub>6</sub>-2 for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)<sub>6</sub>-2 chemically stable for years in 2-5% HNO<sub>3</sub> / trace HF in an LDPE container.

**TI Containing Samples (Preparation and Solution)** - Metal (Soluble in H<sub>2</sub>O / HF caution - powder reacts violently). Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H<sub>2</sub>O / HF / H<sub>2</sub>SO<sub>4</sub>); K<sub>2</sub>SiO<sub>7</sub> - no KF if silica not present); Organic Matrices (Dry ash at 450EC in P10 and dissolve by heating with 1:1:1 H<sub>2</sub>O / HF / H<sub>2</sub>SO<sub>4</sub> or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystaline form).

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

| Technique/Line     | Estimated D.L.         | Order | Interferences (underlined indicates severe) |
|--------------------|------------------------|-------|---------------------------------------------|
| ICP-MS 48 amu      | 14 ppt                 | N/A   | 32S16O, 32S14N,                             |
| ICP-OES 323.452 nm | 0.0054 / 0.00092 µg/mL | 1     | 14N17N2, 36Ar12C,                           |
| ICP-OES 334.941 nm | 0.0038 / 0.00028 µg/mL | 1     | 48Ca, 196X=2                                |
| ICP-OES 336.121 nm | 0.0053 / 0.00034 µg/mL | 1     | W, Mo, Co                                   |
|                    |                        |       | Nb, Ta, Cr, U                               |
|                    |                        |       | Ce, Ar, Ni                                  |
|                    |                        |       | Ru                                          |
|                    |                        |       | (where X = Zr, Mo,                          |

## HAZARDOUS INFORMATION

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

## 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.

## 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: 800.868.6786; 540.565.3030; Fax: 540.565.3030; Email: info@inorganicventures.com; <http://www.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 Kozlikowski  
Manager, Quality Control

*80978*

Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director

*Paul R. Gaines*

# Certificate of Analysis

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Christiansburg, VA 24073 USA  
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*M5985*  
*R: 6/14/24*

## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGIN10  
Lot Number: U2-IN729349  
Matrix: 5% (v/v) HNO<sub>3</sub>  
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<br>ICP Assay NIST SRM 3124a Lot Number: 110516  |
| Assay Method #2 | 10035 ± 25 µg/mL<br>EDTA NIST SRM 928 Lot Number: 928            |
| Assay Method #3 | 10001 ± 33 µg/mL<br>Calculated NIST SRM Lot Number: See Sec. 4.2 |

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

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

|   |    |          |          |    |          |          |          |    |          |          |          |          |    |          |          |          |   |          |
|---|----|----------|----------|----|----------|----------|----------|----|----------|----------|----------|----------|----|----------|----------|----------|---|----------|
| M | Ag | <        | 0.000760 | M  | Eu       | <        | 0.000760 | O  | Na       | 0.012771 | M        | Se       | <  | 0.023000 | M        | Zn       | < | 0.006100 |
| M | Al | 0.003385 | O        | Fe | 0.004462 | M        | Nb       | <  | 0.000760 | O        | Si       | 0.024619 | M  | Zr       | <        | 0.000760 |   |          |
| M | As | <        | 0.004600 | M  | Ga       | <        | 0.000760 | M  | Nd       | <        | 0.000760 | M        | Sm | <        | 0.000760 |          |   |          |
| M | Au | <        | 0.002300 | M  | Gd       | <        | 0.000760 | O  | Ni       | <        | 0.005100 | M        | Sn | <        | 0.000760 |          |   |          |
| O | B  | 0.003692 | M        | Ge | <        | 0.001600 | M        | Os | <        | 0.000760 | O        | Sr       | <  | 0.000610 |          |          |   |          |
| M | Ba | <        | 0.001600 | M  | Hf       | <        | 0.000760 | n  | P        | <        |          | M        | Ta | <        | 0.000760 |          |   |          |
| O | Be | <        | 0.000130 | M  | Hg       | <        | 0.003100 | M  | Pb       | 0.001400 | M        | Tb       | <  | 0.000760 |          |          |   |          |
| M | Bi | <        | 0.000760 | M  | Ho       | <        | 0.000760 | M  | Pd       | <        | 0.001600 | M        | Te | <        | 0.000760 |          |   |          |
| O | Ca | 0.004616 | s        | In | <        |          |          | M  | Pr       | <        | 0.000760 | M        | Th | <        | 0.000760 |          |   |          |
| M | Cd | <        | 0.000760 | M  | Ir       | <        | 0.000760 | M  | Pt       | <        | 0.000760 | O        | Ti | <        | 0.001100 |          |   |          |
| M | Ce | <        | 0.000760 | O  | K        | 0.007078 | M        | Rb | <        | 0.000760 | M        | Tl       | <  | 0.000760 |          |          |   |          |
| M | Co | <        | 0.000760 | M  | La       | <        | 0.000760 | M  | Re       | <        | 0.000760 | M        | Tm | <        | 0.000760 |          |   |          |
| O | Cr | <        | 0.001300 | O  | Li       | <        | 0.000130 | M  | Rh       | <        | 0.000760 | M        | U  | <        | 0.000760 |          |   |          |
| M | Cs | <        | 0.000760 | M  | Lu       | <        | 0.000760 | M  | Ru       | <        | 0.000760 | M        | V  | <        | 0.001600 |          |   |          |
| M | Cu | <        | 0.003800 | O  | Mg       | 0.000707 | n        | S  | <        |          | M        | W        | <  | 0.001600 |          |          |   |          |
| M | Dy | <        | 0.000760 | O  | Mn       | 0.000149 | M        | Sb | <        | 0.000760 | M        | Y        | <  | 0.000760 |          |          |   |          |
| M | Er | <        | 0.000760 | M  | Mo       | <        | 0.002300 | M  | Sc       | <        | 0.000760 | M        | Yb | <        | 0.000760 |          |   |          |

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

## 6.0 INTENDED USE

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

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale. <https://www.inorganicventures.com/terms-and-conditions-sale>. 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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form In Solution** - 114.82 +3 6 In(H<sub>2</sub>O)<sub>6</sub>+3

**Chemical Compatibility** -Soluble in HCl, HNO<sub>3</sub>, and H<sub>2</sub>SO<sub>4</sub>. 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% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**In Containing Samples (Preparation and Solution)** -Metal (Best dissolved in HCl / HNO<sub>3</sub>); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

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

| Technique/Line     | Estimated D.L.     | Order | Interferences (underlined indicates severe) |
|--------------------|--------------------|-------|---------------------------------------------|
| ICP-MS 115 amu     | 1 ppt              | n/a   | 115Sn, 99Ru16O                              |
| ICP-OES 158.583 nm | 0.05 / 0.002 µg/mL | 1     |                                             |
| ICP-OES 230.606 nm | 0.1 / 0.03 µg/mL   | 1     | Ni, Os                                      |
| ICP-OES 325.609 nm | 0.2 / 0.05 µg/mL   | 1     | Mn, Mo, Th                                  |

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01



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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

February 21, 2023

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

### 11.2 Lot Expiration Date

- February 21, 2028

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Approved By:

Thomas Kozikowski  
Manager, Quality Control



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



# Certificate of Analysis

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## 1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories".

Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
Catalog Number: CLPP-CAL-3  
Lot Number: T2-MEB727800  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s):  
1 000 µg/mL ea:  
Arsenic, Lead,  
Selenium, Thallium,  
500 µg/mL ea:  
Cadmium

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE      | CERTIFIED VALUE | ANALYTE      | CERTIFIED VALUE   |
|--------------|-----------------|--------------|-------------------|
| Arsenic, As  | 1 000 ± 7 µg/mL | Cadmium, Cd  | 500.0 ± 2.2 µg/mL |
| Lead, Pb     | 1 000 ± 4 µg/mL | Selenium, Se | 1 000 ± 6 µg/mL   |
| Thallium, Tl | 1 000 ± 7 µg/mL |              |                   |

Density: 1.042 g/mL (measured at 20 ± 4 °C)

### Assay Information:

| ANALYTE | METHOD     | NIST SRM# | SRM LOT#     |
|---------|------------|-----------|--------------|
| As      | ICP Assay  | 3103a     | 100818       |
| As      | Calculated |           | See Sec. 4.2 |
| Cd      | ICP Assay  | 3108      | 130116       |
| Cd      | EDTA       | 928       | 928          |
| Pb      | ICP Assay  | 3128      | 101026       |
| Pb      | EDTA       | 928       | 928          |
| Se      | ICP Assay  | 3149      | 100901       |
| Tl      | ICP Assay  | 3158      | 151215       |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = 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](http://www.inorganicventures.com/TCT)

## **8.0 HAZARDOUS INFORMATION**

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

## **9.0 HOMOGENEITY**

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

## **10.0 QUALITY STANDARD DOCUMENTATION**

### **10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## **11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

### **11.1 Certification Issue Date**

December 21, 2022

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

### **11.2 Lot Expiration Date**

- **December 21, 2027**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

### 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

#### Certificate Approved By:

Thomas Kozikowski  
Manager, Quality Control



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



Sulfuric Acid  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis  
Low Selenium

avantor™



Material No.: 9673-33  
Batch No.: 23D2462010  
Manufactured Date: 2023-03-22  
Retest Date: 2028-03-20  
Revision No.: 0

## Certificate of Analysis

| Test                                                         | Specification | Result      |
|--------------------------------------------------------------|---------------|-------------|
| ACS – Assay (H <sub>2</sub> SO <sub>4</sub> )                | 95.0 – 98.0 % | 96.1 %      |
| Appearance                                                   | Passes Test   | Passes Test |
| ACS – Color (APHA)                                           | ≤ 10          | 5           |
| ACS – Residue after Ignition                                 | ≤ 3 ppm       | < 1 ppm     |
| ACS – Substances Reducing Permanganate (as SO <sub>2</sub> ) | ≤ 2 ppm       | < 2 ppm     |
| Ammonium (NH <sub>4</sub> )                                  | ≤ 1 ppm       | 1 ppm       |
| Chloride (Cl)                                                | ≤ 0.1 ppm     | < 0.1 ppm   |
| Nitrate (NO <sub>3</sub> )                                   | ≤ 0.2 ppm     | < 0.1 ppm   |
| Phosphate (PO <sub>4</sub> )                                 | ≤ 0.5 ppm     | < 0.1 ppm   |
| Trace Impurities – Aluminum (Al)                             | ≤ 30.0 ppb    | < 5.0 ppb   |
| Arsenic and Antimony (as As)                                 | ≤ 4.0 ppb     | < 2.0 ppb   |
| Trace Impurities – Boron (B)                                 | ≤ 10.0 ppb    | 8.5 ppb     |
| Trace Impurities – Cadmium (Cd)                              | ≤ 2.0 ppb     | < 0.3 ppb   |
| Trace Impurities – Chromium (Cr)                             | ≤ 6.0 ppb     | < 0.4 ppb   |
| Trace Impurities – Cobalt (Co)                               | ≤ 0.5 ppb     | < 0.3 ppb   |
| Trace Impurities – Copper (Cu)                               | ≤ 1.0 ppb     | < 0.1 ppb   |
| Trace Impurities – Gold (Au)                                 | ≤ 10.0 ppb    | 0.5 ppb     |
| Heavy Metals (as Pb)                                         | ≤ 500.0 ppb   | < 100.0 ppb |
| Trace Impurities – Iron (Fe)                                 | ≤ 50.0 ppb    | 1.3 ppb     |
| Trace Impurities – Lead (Pb)                                 | ≤ 0.5 ppb     | < 0.5 ppb   |
| Trace Impurities – Magnesium (Mg)                            | ≤ 7.0 ppb     | 0.8 ppb     |
| Trace Impurities – Manganese (Mn)                            | ≤ 1.0 ppb     | < 0.4 ppb   |
| Trace Impurities – Mercury (Hg)                              | ≤ 0.5 ppb     | < 0.1 ppb   |
| Trace Impurities – Nickel (Ni)                               | ≤ 2.0 ppb     | 0.3 ppb     |
| Trace Impurities – Potassium (K)                             | ≤ 500.0 ppb   | < 2.0 ppb   |
| Trace Impurities – Selenium (Se)                             | ≤ 50.0 ppb    | < 0.1 ppb   |
| Trace Impurities – Silicon (Si)                              | ≤ 100.0 ppb   | 31.5 ppb    |
| Trace Impurities – Silver (Ag)                               | ≤ 1.0 ppb     | < 0.3 ppb   |

>>> Continued on page 2 >>>

Sulfuric Acid  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis  
Low Selenium

 **avantor™**

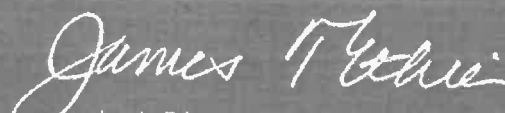


Material No.: 9673-33  
Batch No.: 23D2462010

| Test                              | Specification    | Result    |
|-----------------------------------|------------------|-----------|
| Trace Impurities – Sodium (Na)    | $\leq 500.0$ ppb | 5.4 ppb   |
| Trace Impurities – Strontium (Sr) | $\leq 5.0$ ppb   | < 0.2 ppb |
| Trace Impurities – Tin (Sn)       | $\leq 5.0$ ppb   | < 0.8 ppb |
| Trace Impurities – Zinc (Zn)      | $\leq 5.0$ ppb   | 0.4 ppb   |

For Laboratory, Research, or Manufacturing Use

Country of Origin: USA  
Packaging Site: Phillipsburg Mfg Ctr & DC

  
Jamie Ethier  
Vice President Global Quality



Refine your results. Redefine your industry.

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Christiansburg, VA 24073 USA  
inorganicventures.com

# Certificate of Analysis

M6074  
M6075  
M6076  
M6077

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

EXP: 9/6/2029

## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
Catalog Number: CHEM-CLP-4  
Lot Number: V2-MEB746762  
Matrix: 3% (v/v) HNO<sub>3</sub>  
3% (v/v) HF  
Value / Analyte(s): 1 000 µg/mL ea:  
Boron, Molybdenum,  
Silicon, Tin,  
Titanium

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

Density: 1.033 g/mL (measured at 20 ± 4 °C)

### Assay Information:

| ANALYTE | METHOD     | NIST SRM#          | SRM LOT#     |
|---------|------------|--------------------|--------------|
| B       | ICP Assay  | 3107               | 190605       |
| B       | Calculated |                    | See Sec. 4.2 |
| Mo      | ICP Assay  | traceable to 3134  | U2-MO739068  |
| Si      | ICP Assay  | Traceable to 3150  | S2-SI702546  |
| Sn      | ICP Assay  | 3161a              | 140917       |
| Ti      | ICP Assay  | traceable to 3162a | T2-TI725816  |

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



#### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = 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](http://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"**

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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.

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### 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.

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#### Certificate Approved By:

Joseph Burns  
Custom VS Manager



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





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## **10.0 QUALITY STANDARD DOCUMENTATION**

### **10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

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## **11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

### **11.1 Certification Issue Date**

September 06, 2024

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- **September 06, 2029**

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### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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### 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

#### Certificate Approved By:

Joseph Burns  
Custom VS Manager



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





**CERTIFIED WEIGHT REPORT:**

Part Number:  
Lot Number:  
Description:

**58025**  
**101124**  
**Manganese (Mn)**

*R-71113128*

Lot #  
Solvent: 24002546 Nitric Acid

Expiration Date:

101127

2% 80.0 (mL) Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

SE-05 Balance Uncertainty

Weight shown below was diluted to (mL):

4000.2

0.10 Flask Uncertainty

|                          |                          |
|--------------------------|--------------------------|
| <i>Giovanni Esposito</i> |                          |
| Formulated By:           | Giovanni Esposito        |
| Reviewed By:             | <i>Pedro L. Renteria</i> |
|                          | 101124                   |

**Compound**

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

1. Manganese(II) nitrate hydrate (Mn) IN031 MNM02020A1 1000 99.999 0.10 20.8 19.2322 19.2344 1000.1 2.0 15710-66-4 5 mg/m3 or-rel >300mg/kg 3132

[1] Spectrum No.1 [ 34.243 sec]:57025.D# [Count] [Linear]

|       |       |     |     |     |     |     |     |     |     |     |     |
|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 5.0E6 | m/z-> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 2.5E6 | m/z-> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 1.0E6 | m/z-> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 5.0E7 | m/z-> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 1.0E6 | m/z-> | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
| 5.0E7 | m/z-> | 210 | 220 | 230 | 240 | 250 | 260 |     |     |     |     |





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

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

# Certificate of Analysis

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M6137  
R-71013124

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## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGSI1  
Lot Number: V2-SI744713  
Matrix: tr. HNO<sub>3</sub>  
tr. HF  
Value / Analyte(s): 1 000 µg/mL ea:  
Silicon  
Starting Material: Silica  
Starting Material Lot#: 1771  
Starting Material Purity: 99.9981%

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL  
Density: 1.003 g/mL (measured at 20 ± 4 °C)

### Assay Information:

|                 |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| Assay Method #1 | 999 ± 5 µg/mL<br>ICP Assay NIST SRM Traceable to 3150 Lot Number: S2-SI702546 |
| Assay Method #2 | 1000 ± 7 µg/mL<br>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.

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

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

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

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

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## Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

|   |    |   |          |   |    |   |          |   |    |          |          |    |    |          |          |    |    |          |          |
|---|----|---|----------|---|----|---|----------|---|----|----------|----------|----|----|----------|----------|----|----|----------|----------|
| M | Ag | < | 0.000310 | M | Eu | < | 0.000310 | O | Na | 0.001656 | M        | Se | <  | 0.022000 | M        | Zn | <  | 0.002500 |          |
| M | Al |   | 0.010787 | M | Fe | < | 0.027000 | M | Nb | <        | 0.001300 | s  | Si | <        |          | O  | Zr | <        | 0.001900 |
| M | As | < | 0.001900 | M | Ga | < | 0.001300 | M | Nd | <        | 0.000310 | M  | Sm | <        | 0.000310 |    |    |          |          |
| M | Au | < | 0.000910 | M | Gd | < | 0.000310 | M | Ni | <        | 0.005500 | M  | Sn |          | 0.000096 |    |    |          |          |
| M | B  |   | 0.016180 | M | Ge | < | 0.001900 | M | Os | <        | 0.000610 | O  | Sr |          | 0.000092 |    |    |          |          |
| M | Ba |   | 0.000096 | M | Hf |   | 0.000423 | i | P  | <        |          | M  | Ta |          | 0.002542 |    |    |          |          |
| O | Be | < | 0.000570 | M | Hg | < | 0.000610 | M | Pb | <        | 0.000310 | M  | Tb | <        | 0.000310 |    |    |          |          |
| M | Bi | < | 0.000310 | M | Ho | < | 0.000610 | M | Pd | <        | 0.000610 | M  | Te | <        | 0.000910 |    |    |          |          |
| O | Ca |   | 0.011557 | M | In | < | 0.000310 | M | Pr | <        | 0.000310 | M  | Th | <        | 0.001900 |    |    |          |          |
| M | Cd | < | 0.000310 | M | Ir | < | 0.000310 | M | Pt | <        | 0.000310 | M  | Ti |          | 0.001078 |    |    |          |          |
| M | Ce | < | 0.000610 | O | K  |   | 0.000577 | M | Rb | <        | 0.009100 | M  | Tl | <        | 0.000310 |    |    |          |          |
| M | Co | < | 0.001600 | M | La | < | 0.000310 | M | Re | <        | 0.000310 | M  | Tm | <        | 0.000310 |    |    |          |          |
| M | Cr | < | 0.010000 | O | Li | < | 0.000460 | M | Rh | <        | 0.000310 | M  | U  | <        | 0.000310 |    |    |          |          |
| M | Cs | < | 0.000310 | M | Lu | < | 0.000310 | M | Ru | <        | 0.000310 | O  | V  | <        | 0.001300 |    |    |          |          |
| M | Cu | < | 0.002500 | O | Mg |   | 0.001348 | O | S  | <        | 0.570000 | M  | W  | <        | 0.001900 |    |    |          |          |
| M | Dy | < | 0.000310 | M | Mn | < | 0.002500 | M | Sb | <        | 0.000310 | M  | Y  | <        | 0.000310 |    |    |          |          |
| M | Er | < | 0.000310 | M | Mo | < | 0.000310 | O | Sc | <        | 0.000590 | M  | Yb | <        | 0.000310 |    |    |          |          |

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

## 6.0 INTENDED USE

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

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form In Solution** - 28.09 +4 6 Si(OH)x(F)y2-

**Chemical Compatibility** -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away ( i.e. Do not mix with Alkaline or Rare Earths, or high levels of transition elements unless they are fluorinated. Stable with most inorganic anions with a tendency to hydrolyze forming silicic acid (silicic acid is soluble up to &sim;100 ppm in water) in all dilute acids except HF.

**Stability** - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

**Si Containing Samples (Preparation and Solution)** -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphous (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O ); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

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

| Technique/Line     | Estimated D.L.    | Order | Interferences (underlined indicates severe) |
|--------------------|-------------------|-------|---------------------------------------------|
| ICP-MS 28 amu      | 4000 - 8000 ppt   | N/A   | N2, 12C16O                                  |
| ICP-OES 212.412 nm | 0.02/0.01 µg/mL   | 1     | Hf, Os, Mo, Ta                              |
| ICP-OES 251.611 nm | 0.012/0.003 µg/mL | 1     | Ta, U, Zn, Th                               |
| ICP-OES 288.158 nm | 0.03/0.004 µg/mL  | 1     | Ta, Ce, Cr, Cd, Th                          |

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

July 10, 2024

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

### 11.2 Lot Expiration Date

- July 10, 2029

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Prepared By:

Uyen Truong  
Custom Processing Supervisor



### Certificate Approved By:

Muzzammil Khan  
Stock Laboratory Supervisor



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





M6138

R → 11/13/25



**CERTIFIED WEIGHT REPORT:**

**Part Number:**  
**Lot Number:**  
**Description:**

**58120**  
**121824**  
**Calcium (Ca)**

**Solvent:** 24012496 Nitric Acid

**Lot #**

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

121827  
Ambient (20 °C)  
10000  
6UTB

2% Nitric Acid  
(mL)

5E-05 Balance Uncertainty  
0.15 Flask Uncertainty

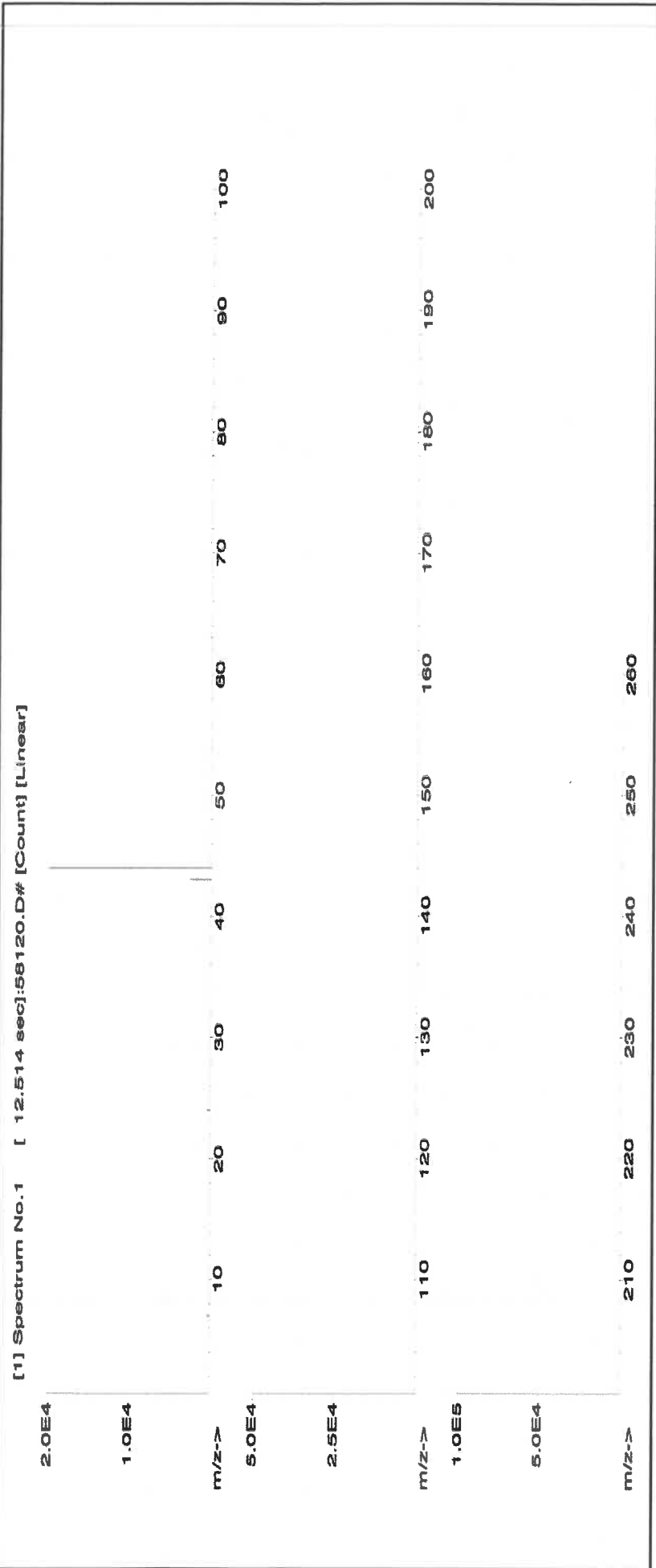
**Weight shown below was diluted to (mL):** 4000.1

|                          |                          |
|--------------------------|--------------------------|
| <i>Giovanni Esposito</i> |                          |
| Formulated By:           | Giovanni Esposito 121824 |
| <i>Pedro L. Rentas</i>   |                          |
| Reviewed By:             | Pedro L. Rentas 121824   |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information                        |      |          |
|----------|-----|------------|-----------------------|------------|-------------|-----------|-------------------|-------------------|----------------------|----------------------------------|----------------------------------------|------|----------|
|          |     |            |                       |            |             |           |                   |                   |                      |                                  | (Solvent Safety Info. On Attached pg.) | LD50 | NIST SRM |

1. Calcium carbonate (Ca) IN014 CAD032028B3 10000 99.999 0.10 39.9 100.2537 100.2677 10001.4 20.0 471-34-1 5 mg/m3 otl-rat >2000mg/kg 3109a

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





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

| Trace Metals Verification by ICP-MS ( $\mu\text{g/mL}$ ) |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----------------------------------------------------------|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al                                                       | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2  | Tb | <0.02 |
| Sb                                                       | <0.02 | Ca | T     | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 |
| As                                                       | <0.2  | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 |
| Ba                                                       | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2  | Th | <0.02 |
| Be                                                       | <0.01 | Cr | <0.02 | Ga | 30    | Fe | <0.02 | Hg | <0.2  | P  | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 |
| Bi                                                       | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S  | <0.02 | Sn | <0.02 |
| B                                                        | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K  | <0.2  | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 |
|                                                          |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       | W  | <0.02 |
|                                                          |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       | U  | <0.02 |
|                                                          |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       | V  | <0.02 |
|                                                          |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       | Yb | <0.02 |
|                                                          |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       | Y  | <0.02 |
|                                                          |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       | Zn | <0.02 |
|                                                          |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       | Zr | <0.02 |

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

**Part Number:** 58126  
**Lot Number:** 011025  
**Description:** Iron (Fe)

**R-113125**  
**M6140**

**Solvent:** 24012496 Nitric Acid  
**Lot #**

**Expiration Date:** 011028

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

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

**NIST Test Number:** 6U7B

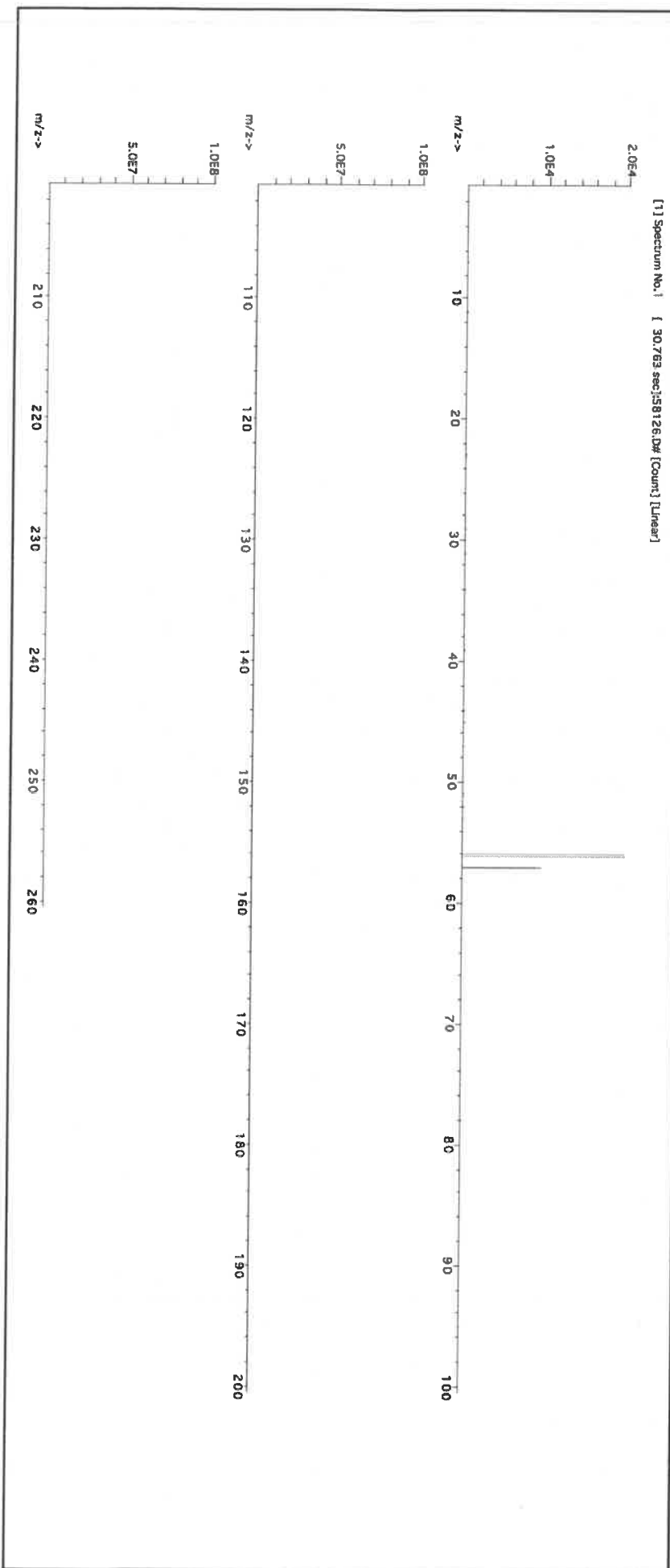
**Weight shown below was diluted to (mL):** 2000.07

**2%** 40.0 (mL) Nitric Acid

|                |                   |        |
|----------------|-------------------|--------|
| Formulated By: | Benson Chan       | 011025 |
| Reviewed By:   | Pedro L. Renteria | 011025 |

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

1. Iron(III) nitrate nonahydrate (Fe) IN028 FED082023A1 10000 99.999 0.10 13.0 153.8534 ##### 10000.2 20.0 7782-61-8 1 mg/m<sup>3</sup> or-rel 3250mg/kg 3126A







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

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

(T)= Target analyte

**Physical Characterization:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

**Part Number:** 57119  
**Lot Number:** 103024  
**Description:** Potassium (K)

R-21113125

**Solvent:** 24002546 Nitric Acid  
**Lot #**

**Expiration Date:** 103027  
**Recommended Storage:** Ambient (20 °C)  
**Nominal Concentration (µg/mL):** 10000  
**NIST Test Number:** 6UTB

M6141  
M6142  
M6143

2% 80.0 (mL) Nitric Acid

**Weight shown below was diluted to (mL):** 4000.1 0.15 Flask Uncertainty

|                          |                   |
|--------------------------|-------------------|
| <i>Giovanni Esposito</i> |                   |
| Formulated By:           | Giovanni Esposito |
| Reviewed By:             | Pedro L. Renteria |
|                          | 103024            |

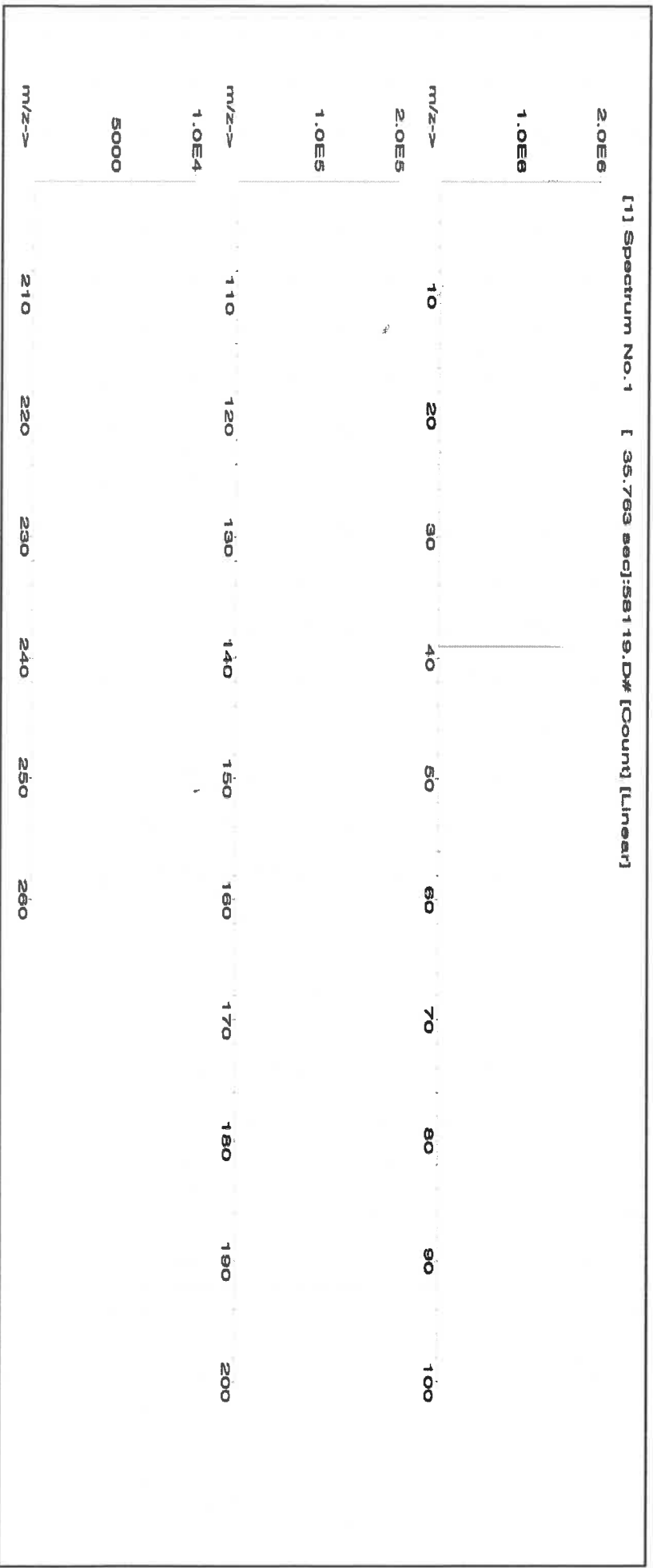
| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|-----|------------|-----------------------|------------|------------------------|-----------|-------------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

**SDS Information**

(Solvent Safety Info. On Attached pg.)

1. Potassium nitrate (K) IN034 KD062022A1 10000 99.999 0.10 37.7 106.1040 ##### 10001.1 20.0 7757-79-1 5 mg/m3 orl-rat 3750 mg/kg 3141a

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





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

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



**CERTIFIED WEIGHT REPORT:**

Part Number: **58111** Lot # **R-1113125**  
Lot Number: **072424** Solvent: **24002546 Nitric Acid**  
Description: **Sodium (Na)**

Expiration Date: **072427** 2% 80.0 Nitric Acid (mL)

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

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

NIST Test Number: **6UTB** SE-05 Balance Uncertainty

Weight shown below was diluted to (mL): **4000.2** 0.10 Flask Uncertainty

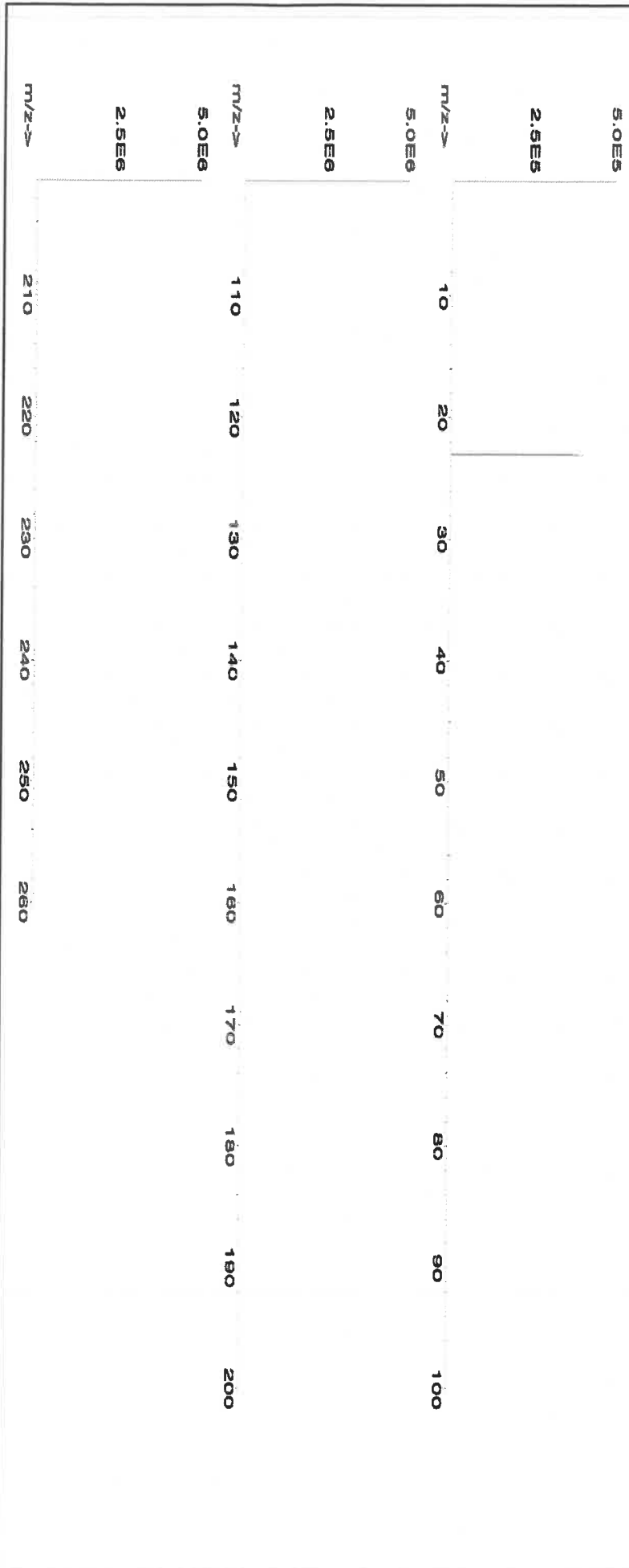
|                |                   |        |
|----------------|-------------------|--------|
| Formulated By: | Benson Chan       | 072424 |
| Reviewed By:   | Pedro L. Renteria | 072424 |

**SDS Information**

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

1. Sodium nitrate (Na) IN036 NAV01201511 10000 99.999 0.10 26.9 148.7096 ##### 10000.0 20.0 7631-99-4 5 mg/m3 orl-rat 3430 mg/kg 3152a

[1] Spectrum No. 1 [ 8.935 sec]: 58111.D# [Count] [Linear]





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

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

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pt | <0.02 | Se | <0.2  | Tb | <0.02 | W  | <0.02 |
| Sb | <0.02 | Ca | <0.2  | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U  | <0.02 |
| As | <0.2  | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rb | <0.02 | Ag | <0.02 | Tl | <0.02 | V  | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | 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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- \* All Standards should be stored with caps tight and under appropriate laboratory conditions.
- \* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



**CERTIFIED WEIGHT REPORT:**

Part Number: **58030** Lot # **R → 11/13/25**  
Lot Number: **121724** Solvent: **24012496 Nitric Acid**  
Description: **Zinc (Zn)**

Expiration Date: **121727** 2% 40.0 (mL) Nitric Acid

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

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6UTB**

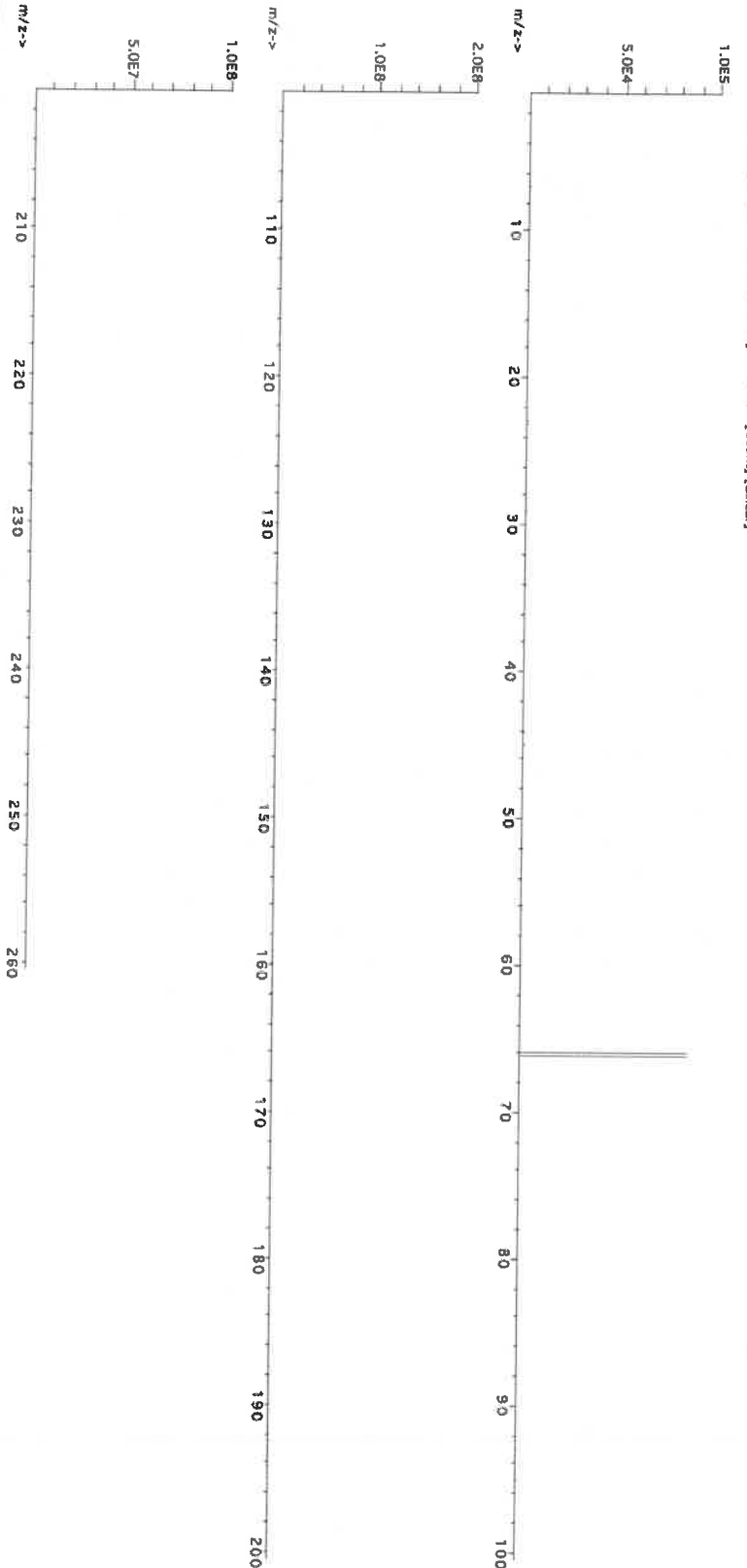
Weight shown below was diluted to (mL): **2000.1** 0.10 Balance Uncertainty  
Flask Uncertainty

|                      |                        |
|----------------------|------------------------|
| <i>Aleah O'Brady</i> |                        |
| Formulated By:       | Aleah O'Brady          |
| Reviewed By:         | <i>Pedro L. Rentes</i> |
|                      | Pedro L. Rentes        |
|                      | 121724                 |

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

1. Zinc nitrate hexahydrate (Zn) IN016 ZNE032021A1 1000 99.999 0.10 24.3 8.2308 8.2311 1000.0 2.0 10196-18-6 1 mg/m3 or-rat 1190mg/kg 3168

[1] Spectrum No.1 [ 31.103 sec; 58130.D# [Count] [Linear]





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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

Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis

 **avantor™**



M6151

R → 11/15/25

Material No.: 9530-33  
Batch No.: 22G2862015  
Manufactured Date: 2022-06-15  
Retest Date: 2027-06-14  
Revision No.: 0

## Certificate of Analysis

| Test                                      | Specification | Result      |
|-------------------------------------------|---------------|-------------|
| ACS – Assay (as HCl) (by acid–base titrn) | 36.5 – 38.0 % | 37.9 %      |
| ACS – Color (APHA)                        | ≤ 10          | 5           |
| ACS – Residue after Ignition              | ≤ 3 ppm       | < 1 ppm     |
| ACS – Specific Gravity at 60°/60°F        | 1.185 – 1.192 | 1.191       |
| ACS – Bromide (Br)                        | ≤ 0.005 %     | < 0.005 %   |
| ACS – Extractable Organic Substances      | ≤ 5 ppm       | < 1 ppm     |
| ACS – Free Chlorine (as Cl <sub>2</sub> ) | ≤ 0.5 ppm     | < 0.5 ppm   |
| Phosphate (PO <sub>4</sub> )              | ≤ 0.05 ppm    | < 0.03 ppm  |
| Sulfate (SO <sub>4</sub> )                | ≤ 0.5 ppm     | < 0.3 ppm   |
| Sulfite (SO <sub>3</sub> )                | ≤ 0.8 ppm     | 0.3 ppm     |
| Ammonium (NH <sub>4</sub> )               | ≤ 3 ppm       | < 1 ppm     |
| Trace Impurities – Arsenic (As)           | ≤ 0.010 ppm   | < 0.003 ppm |
| Trace Impurities – Aluminum (Al)          | ≤ 10.0 ppb    | 1.3 ppb     |
| Arsenic and Antimony (as As)              | ≤ 5.0 ppb     | < 3.0 ppb   |
| Trace Impurities – Barium (Ba)            | ≤ 1.0 ppb     | 0.2 ppb     |
| Trace Impurities – Beryllium (Be)         | ≤ 1.0 ppb     | < 0.2 ppb   |
| Trace Impurities – Bismuth (Bi)           | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Boron (B)              | ≤ 20.0 ppb    | < 5.0 ppb   |
| Trace Impurities – Cadmium (Cd)           | ≤ 1.0 ppb     | < 0.3 ppb   |
| Trace Impurities – Calcium (Ca)           | ≤ 50.0 ppb    | 163.0 ppb   |
| Trace Impurities – Chromium (Cr)          | ≤ 1.0 ppb     | 0.7 ppb     |
| Trace Impurities – Cobalt (Co)            | ≤ 1.0 ppb     | < 0.3 ppb   |
| Trace Impurities – Copper (Cu)            | ≤ 1.0 ppb     | < 0.1 ppb   |
| Trace Impurities – Gallium (Ga)           | ≤ 1.0 ppb     | < 0.2 ppb   |
| Trace Impurities – Germanium (Ge)         | ≤ 3.0 ppb     | < 2.0 ppb   |
| Trace Impurities – Gold (Au)              | ≤ 4.0 ppb     | 0.6 ppb     |
| Heavy Metals (as Pb)                      | ≤ 100 ppb     | < 50 ppb    |
| Trace Impurities – Iron (Fe)              | ≤ 15 ppb      | 6 ppb       |

>>> Continued on page 2 >>>



Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis

 **avantorsm**



Material No.: 9530-33  
Batch No.: 22G2862015

| Test                                                   | Specification | Result     |
|--------------------------------------------------------|---------------|------------|
| Trace Impurities – Lead (Pb)                           | ≤ 1.0 ppb     | < 0.5 ppb  |
| Trace Impurities – Lithium (Li)                        | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Magnesium (Mg)                      | ≤ 10.0 ppb    | 2.9 ppb    |
| Trace Impurities – Manganese (Mn)                      | ≤ 1.0 ppb     | < 0.4 ppb  |
| Trace Impurities – Mercury (Hg)                        | ≤ 0.5 ppb     | 0.1 ppb    |
| Trace Impurities – Molybdenum (Mo)                     | ≤ 10.0 ppb    | < 3.0 ppb  |
| Trace Impurities – Nickel (Ni)                         | ≤ 4.0 ppb     | < 0.3 ppb  |
| Trace Impurities – Niobium (Nb)                        | ≤ 1.0 ppb     | 0.8 ppb    |
| Trace Impurities – Potassium (K)                       | ≤ 9.0 ppb     | < 2.0 ppb  |
| Trace Impurities – Selenium (Se), For Information Only |               | < 1.0 ppb  |
| Trace Impurities – Silicon (Si)                        | ≤ 100.0 ppb   | < 10.0 ppb |
| Trace Impurities – Silver (Ag)                         | ≤ 1.0 ppb     | 0.5 ppb    |
| Trace Impurities – Sodium (Na)                         | ≤ 100.0 ppb   | 2.3 ppb    |
| Trace Impurities – Strontium (Sr)                      | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Tantalum (Ta)                       | ≤ 1.0 ppb     | 1.6 ppb    |
| Trace Impurities – Thallium (Tl)                       | ≤ 5.0 ppb     | < 2.0 ppb  |
| Trace Impurities – Tin (Sn)                            | ≤ 5.0 ppb     | 4.0 ppb    |
| Trace Impurities – Titanium (Ti)                       | ≤ 1.0 ppb     | 1.5 ppb    |
| Trace Impurities – Vanadium (V)                        | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Zinc (Zn)                           | ≤ 5.0 ppb     | 0.8 ppb    |
| Trace Impurities – Zirconium (Zr)                      | ≤ 1.0 ppb     | 0.3 ppb    |

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA–ANALYZED® Reagent  
For Trace Metal Analysis



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

A handwritten signature in cursive script that reads 'Jamie Ethier'.  
Jamie Ethier  
Vice President Global Quality

Nitric Acid 69%  
CMOS

avantor™



R- 0210212025

m - 6158

Material No.: 9606-03  
Batch No.: 24D1062002  
Manufactured Date: 2024-03-26  
Retest Date: 2029-03-25  
Revision No.: 0

## Certificate of Analysis

| Test                              | Specification | Result      |
|-----------------------------------|---------------|-------------|
| Assay (HNO <sub>3</sub> )         | 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 <sub>4</sub> )      | ≤ 0.10 ppm    | < 0.03 ppm  |
| Sulfate (SO <sub>4</sub> )        | ≤ 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

 **avantors<sup>TM</sup>**



Material No.: 9606-03  
Batch No.: 24D1062002

| Test                                | Specification | Result     |
|-------------------------------------|---------------|------------|
| Trace Impurities – Niobium (Nb)     | ≤ 50.0 ppb    | < 1.0 ppb  |
| Trace Impurities – Potassium (K)    | ≤ 50 ppb      | 16 ppb     |
| Trace Impurities – Silicon (Si)     | ≤ 50 ppb      | < 10 ppb   |
| Trace Impurities – Silver (Ag)      | ≤ 20.0 ppb    | < 1.0 ppb  |
| Trace Impurities – Sodium (Na)      | ≤ 150.0 ppb   | < 5.0 ppb  |
| Trace Impurities – Strontium (Sr)   | ≤ 30.0 ppb    | < 1.0 ppb  |
| Trace Impurities – Tantalum (Ta)    | ≤ 10.0 ppb    | < 5.0 ppb  |
| Trace Impurities – Thallium (Tl)    | ≤ 10.0 ppb    | < 5.0 ppb  |
| Trace Impurities – Tin (Sn)         | ≤ 20.0 ppb    | < 10.0 ppb |
| Trace Impurities – Titanium (Ti)    | ≤ 10.0 ppb    | < 1.0 ppb  |
| Trace Impurities – Vanadium (V)     | ≤ 10.0 ppb    | < 1.0 ppb  |
| Trace Impurities – Zinc (Zn)        | ≤ 20.0 ppb    | < 1.0 ppb  |
| Trace Impurities – Zirconium (Zr)   | ≤ 10.0 ppb    | < 1.0 ppb  |
| Particle Count – 0.5 µm and greater | ≤ 60 par/ml   | 10 par/ml  |
| Particle Count – 1.0 µm and greater | ≤ 10 par/ml   | 3 par/ml   |

>>> Continued on page 3 >>>

Nitric Acid 69%  
CMOS

 **avantors<sup>TM</sup>**



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

Nitric Acid 69%  
CMOS

 **avantors**<sup>TM</sup>



m-6162

Material No.: 9606-03  
Batch No.: 24H0162012  
Manufactured Date: 2024-06-28  
Retest Date: 2029-06-27  
Revision No.: 0

R. Date :- 04/27/2025

## Certificate of Analysis

| Test                              | Specification | Result      |
|-----------------------------------|---------------|-------------|
| Assay (HNO <sub>3</sub> )         | 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 <sub>4</sub> )      | ≤ 0.10 ppm    | < 0.03 ppm  |
| Sulfate (SO <sub>4</sub> )        | ≤ 0.2 ppm     | < 0.2 ppm   |
| Trace Impurities – Aluminum (Al)  | ≤ 40.0 ppb    | < 1.0 ppb   |
| Arsenic and Antimony (as As)      | ≤ 5.0 ppb     | < 2.0 ppb   |
| Trace Impurities – Barium (Ba)    | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Beryllium (Be) | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Bismuth (Bi)   | ≤ 20.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Boron (B)      | ≤ 10.0 ppb    | 0.1 ppb     |
| Trace Impurities – Cadmium (Cd)   | ≤ 50 ppb      | < 1 ppb     |
| Trace Impurities – Calcium (Ca)   | ≤ 50.0 ppb    | 0.3 ppb     |
| Trace Impurities – Chromium (Cr)  | ≤ 30.0 ppb    | 0.1 ppb     |
| Trace Impurities – Cobalt (Co)    | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Copper (Cu)    | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Gallium (Ga)   | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Germanium (Ge) | ≤ 20 ppb      | < 1 ppb     |
| Trace Impurities – Gold (Au)      | ≤ 20 ppb      | < 1 ppb     |
| Heavy Metals (as Pb)              | ≤ 100 ppb     | < 50 ppb    |
| Trace Impurities – Iron (Fe)      | ≤ 40.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Lead (Pb)      | ≤ 20.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Lithium (Li)   | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Magnesium (Mg) | ≤ 20 ppb      | < 1 ppb     |
| Trace Impurities – Manganese (Mn) | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Nickel (Ni)    | ≤ 20.0 ppb    | < 1.0 ppb   |

>>> Continued on page 2 >>>

Nitric Acid 69%  
CMOS

 **avantors<sup>TM</sup>**



Material No.: 9606-03  
Batch No.: 24H0162012

| Test                                | Specification | Result    |
|-------------------------------------|---------------|-----------|
| Trace Impurities – Niobium (Nb)     | ≤ 50.0 ppb    | < 1.0 ppb |
| Trace Impurities – Potassium (K)    | ≤ 50 ppb      | < 1 ppb   |
| Trace Impurities – Silicon (Si)     | ≤ 50 ppb      | 1 ppb     |
| Trace Impurities – Silver (Ag)      | ≤ 20.0 ppb    | < 1.0 ppb |
| Trace Impurities – Sodium (Na)      | ≤ 150.0 ppb   | < 1.0 ppb |
| Trace Impurities – Strontium (Sr)   | ≤ 30.0 ppb    | < 1.0 ppb |
| Trace Impurities – Tantalum (Ta)    | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Thallium (Tl)    | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Tin (Sn)         | ≤ 20.0 ppb    | < 1.0 ppb |
| Trace Impurities – Titanium (Ti)    | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Vanadium (V)     | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Zinc (Zn)        | ≤ 20.0 ppb    | < 1.0 ppb |
| Trace Impurities – Zirconium (Zr)   | ≤ 10.0 ppb    | < 1.0 ppb |
| Particle Count – 0.5 µm and greater | ≤ 60 par/ml   | 13 par/ml |
| Particle Count – 1.0 µm and greater | ≤ 10 par/ml   | 5 par/ml  |

>>> Continued on page 3 >>>

Nitric Acid 69%  
CMOS

 **avantor™**



Material No.: 9606-03  
Batch No.: 24H0162012

| Test | Specification | Result |
|------|---------------|--------|
|------|---------------|--------|

For Microelectronic Use

Country of Origin: USA  
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Croak  
Director Quality Operations, Bioscience Production



300 Technology Drive  
 Christiansburg, VA 24073 USA  
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 F: 540-585-3012  
 info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

|                     |                                     |  |            |
|---------------------|-------------------------------------|--|------------|
| Product Code:       | Multi Analyte Custom Grade Solution |  |            |
| Catalog Number:     | QCP-CICV-1                          |  |            |
| Lot Number:         | V2-MEB744107                        |  |            |
| Matrix:             | 7% (v/v) HNO <sub>3</sub>           |  |            |
| Value / Analyte(s): | 2 500 µg/mL ea:                     |  |            |
|                     | Calcium,                            |  | Potassium, |
|                     | Magnesium,                          |  | Sodium,    |
|                     | 1 000 µg/mL ea:                     |  |            |
|                     | Aluminum,                           |  | Barium,    |
|                     | 500 µg/mL ea:                       |  |            |
|                     | Iron,                               |  |            |
|                     | 250 µg/mL ea:                       |  |            |
|                     | Nickel,                             |  | Vanadium,  |
|                     | Zinc,                               |  | Cobalt,    |
|                     | Manganese,                          |  |            |
|                     | 125 µg/mL ea:                       |  |            |
|                     | Silver,                             |  | Copper,    |
|                     | 100 µg/mL ea:                       |  |            |
|                     | Chromium,                           |  |            |
|                     | 25 µg/mL ea:                        |  |            |
|                     | Beryllium                           |  |            |

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

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE       | CERTIFIED VALUE    | ANALYTE       | CERTIFIED VALUE   |
|---------------|--------------------|---------------|-------------------|
| Aluminum, Al  | 1 000 ± 4 µg/mL    | Barium, Ba    | 1 000 ± 6 µg/mL   |
| Beryllium, Be | 24.98 ± 0.12 µg/mL | Calcium, Ca   | 2 500 ± 8 µg/mL   |
| Chromium, Cr  | 99.9 ± 0.6 µg/mL   | Cobalt, Co    | 250.2 ± 1.2 µg/mL |
| Copper, Cu    | 125.0 ± 0.5 µg/mL  | Iron, Fe      | 500.0 ± 2.2 µg/mL |
| Magnesium, Mg | 2 500 ± 11 µg/mL   | Manganese, Mn | 249.9 ± 1.1 µg/mL |
| Nickel, Ni    | 250.0 ± 1.2 µg/mL  | Potassium, K  | 2 500 ± 11 µg/mL  |
| Silver, Ag    | 125.0 ± 0.6 µg/mL  | Sodium, Na    | 2 500 ± 11 µg/mL  |
| Vanadium, V   | 250.0 ± 1.1 µg/mL  | Zinc, Zn      | 249.9 ± 1.1 µg/mL |

**Density:** 1.081 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| ANALYTE | METHOD      | NIST SRM# | SRM LOT#     |
|---------|-------------|-----------|--------------|
| Ag      | ICP Assay   | 3151      | 160729       |
| Ag      | Volhard     | 999c      | 999c         |
| Al      | ICP Assay   | 3101a     | 140903       |
| Al      | EDTA        | 928       | 928          |
| Ba      | ICP Assay   | 3104a     | 140909       |
| Ba      | Gravimetric |           | See Sec. 4.2 |
| Be      | ICP Assay   | 3105a     | 090514       |
| Be      | Calculated  |           | See Sec. 4.2 |
| Ca      | ICP Assay   | 3109a     | 130213       |
| Ca      | EDTA        | 928       | 928          |
| Co      | ICP Assay   | 3113      | 190630       |
| Co      | EDTA        | 928       | 928          |
| Cr      | ICP Assay   | 3112a     | 170630       |
| Cu      | ICP Assay   | 3114      | 120618       |
| Cu      | EDTA        | 928       | 928          |
| Fe      | ICP Assay   | 3126a     | 140812       |
| Fe      | EDTA        | 928       | 928          |
| K       | ICP Assay   | 3141a     | 140813       |
| K       | Gravimetric |           | See Sec. 4.2 |
| Mg      | ICP Assay   | 3131a     | 140110       |
| Mg      | EDTA        | 928       | 928          |
| Mn      | ICP Assay   | 3132      | 050429       |
| Mn      | EDTA        | 928       | 928          |
| Na      | ICP Assay   | 3152a     | 200413       |
| Na      | Gravimetric |           | See Sec. 4.2 |
| Ni      | ICP Assay   | 3136      | 120619       |
| Ni      | EDTA        | 928       | 928          |
| V       | ICP Assay   | 3165      | 160906       |
| V       | EDTA        | 928       | 928          |
| Zn      | ICP Assay   | 3168a     | 120629       |
| Zn      | EDTA        | 928       | 928          |

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

#### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Note:** This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>)

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

May 22, 2024

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

### 11.2 Lot Expiration Date

- **May 22, 2029**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

### 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

#### Certificate Prepared By:

Justin Dirico  
Stock Processing Supervisor



#### Certificate Approved By:

Jodie Wall  
Stock VSM Coordinator



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



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## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
 Catalog Number: QCP-CICV-2  
 Lot Number: U2-MEB733713  
 Matrix: 3% (w/v) Tartaric acid  
 1% (v/v) HNO<sub>3</sub>  
 Value / Analyte(s): 500 µg/mL ea:  
 Antimony

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

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE      | CERTIFIED VALUE   | ANALYTE | CERTIFIED VALUE |
|--------------|-------------------|---------|-----------------|
| Antimony, Sb | 500.0 ± 2.8 µg/mL |         |                 |

**Density:** 1.017 g/mL (measured at 20 ± 4 °C)

### Assay Information:

| ANALYTE | METHOD    | NIST SRM# | SRM LOT# |
|---------|-----------|-----------|----------|
| Sb      | ICP Assay | 3102a     | 140911   |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

#### 4.0 TRACEABILITY TO NIST

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

##### 4.1 Thermometer Calibration

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

##### 4.2 Balance Calibration

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

##### 4.3 Glassware Calibration

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

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

N/A

#### 6.0 INTENDED USE

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

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

#### 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

##### 7.1 Storage and Handling Recommendations

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

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

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

- For more information, visit [www.inorganicventures.com/TCT](https://www.inorganicventures.com/TCT)

#### 8.0 HAZARDOUS INFORMATION

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

#### 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

June 01, 2023

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

### 11.2 Lot Expiration Date

- **June 01, 2028**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

### Certificate Approved By:

Thomas Kozikowski  
Manager, Quality Control



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





300 Technology Drive  
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## 1.0 ACCREDITATION / REGISTRATION

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## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
 Catalog Number: QCP-CICV-3  
 Lot Number: V2-MEB749572  
 Matrix: 7% (v/v) HNO<sub>3</sub>  
 Value / Analyte(s):  
     500 µg/mL ea:  
     Arsenic, Lead,  
     Selenium, Thallium,  
     250 µg/mL ea:  
     Cadmium

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

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE      | CERTIFIED VALUE   | ANALYTE      | CERTIFIED VALUE   |
|--------------|-------------------|--------------|-------------------|
| Arsenic, As  | 500.0 ± 3.1 µg/mL | Cadmium, Cd  | 250.1 ± 1.1 µg/mL |
| Lead, Pb     | 500.0 ± 2.3 µg/mL | Selenium, Se | 500.0 ± 3.2 µg/mL |
| Thallium, Tl | 500.0 ± 3.0 µg/mL |              |                   |

**Density:** 1.040 g/mL (measured at 20 ± 4 °C)

### Assay Information:

| ANALYTE | METHOD    | NIST SRM# | SRM LOT# |
|---------|-----------|-----------|----------|
| As      | ICP Assay | 3103a     | 100818   |
| Cd      | ICP Assay | 3108      | 130116   |
| Cd      | EDTA      | 928       | 928      |
| Pb      | ICP Assay | 3128      | 101026   |
| Pb      | EDTA      | 928       | 928      |
| Se      | ICP Assay | 3149      | 100901   |
| Tl      | ICP Assay | 3158      | 151215   |

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

#### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

## **8.0 HAZARDOUS INFORMATION**

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

## **9.0 HOMOGENEITY**

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

## **10.0 QUALITY STANDARD DOCUMENTATION**

### **10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## **11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

### **11.1 Certification Issue Date**

January 02, 2025

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

### **11.2 Lot Expiration Date**

- **January 02, 2030**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

### 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

#### Certificate Prepared By:

Justin Dirico  
Stock Processing Supervisor



#### Certificate Approved By:

Jodie Wall  
Stock VSM Coordinator



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





**Certified Reference Material CRM**



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

**CERTIFIED WEIGHT REPORT:**

Part Number: **58112** Lot # **24012496**  
Lot Number: **011525** Solvent: **Nitric Acid**  
Description: **Magnesium (Mg)**

Expiration Date: **011528** 2%  
Recommended Storage: **Ambient (20 °C)** 40.0 (mL)  
Nominal Concentration (µg/mL): **10000** Nitric Acid  
NIST Test Number: **6UTB** 5E-05 Balance Uncertainty  
Weight shown below was diluted to (mL): **2000.07** 0.100 Flask Uncertainty

|                                   |        |
|-----------------------------------|--------|
| Formulated By: <i>[Signature]</i> |        |
| Benson Chan                       | 011525 |
| Reviewed By: <i>[Signature]</i>   |        |
| Pedro L. Rentas                   | 011525 |

**Compound**

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

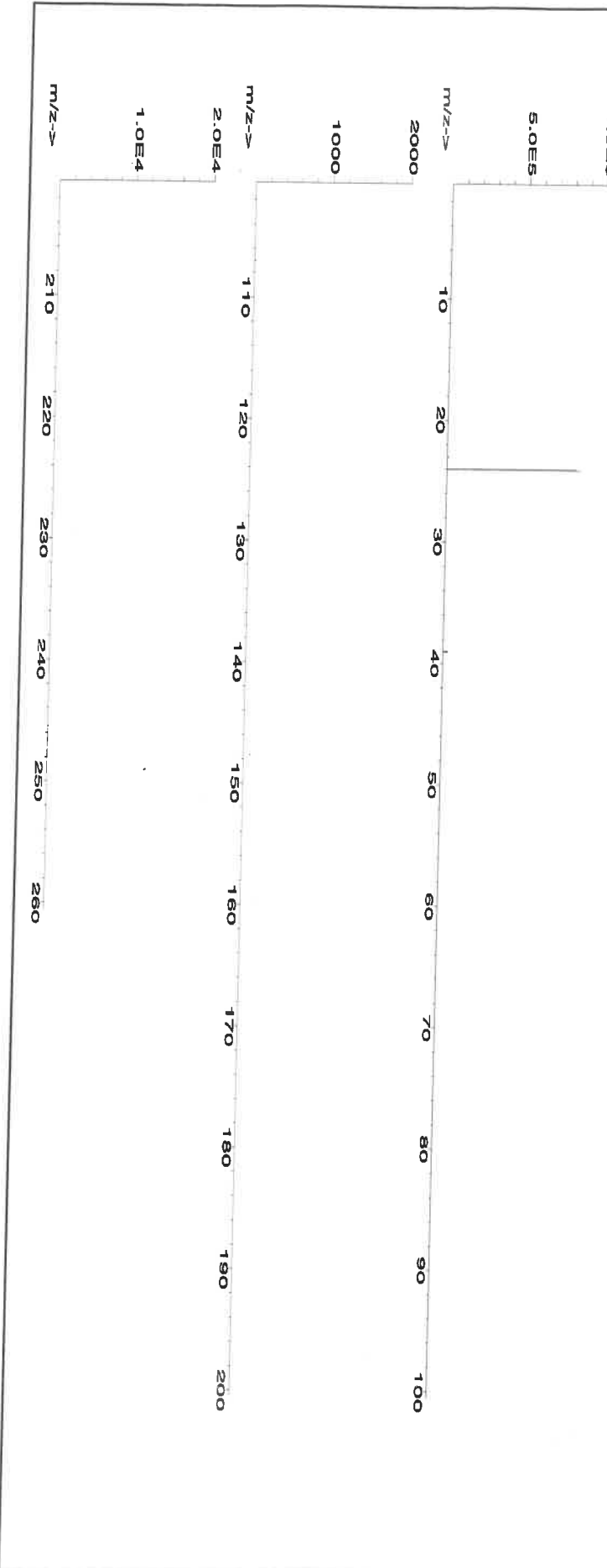
**SDS Information**

(Solvent Safety Info. On Attached pg.)

1. Magnesium nitrate hexahydrate (Mg) IN030 MGD05023A1 10000 99.999 0.10 8.51 234.9183 234.9195 10000.1 20.0 13446-18-9 NA

off-ret 5440 mg/kg 3131a

[1] Spectrum No.1 [19.923 sec]:58112.D# [Count] [Linear]





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

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

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | 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 | Ku | <0.02 | Sr | <0.02 | Tm | <0.02 | Y  | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S  | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B  | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K  | <0.2  | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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

# Certificate of Analysis

300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

M6174  
R → S1/S124

## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

|                     |                                     |            |
|---------------------|-------------------------------------|------------|
| Product Code:       | Multi Analyte Custom Grade Solution |            |
| Catalog Number:     | CLPP-CAL-1                          |            |
| Lot Number:         | V2-MEB742428                        |            |
| Matrix:             | 5% (v/v) HNO <sub>3</sub>           |            |
| 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 | 50.03 ± 0.30 µg/mL | Calcium, Ca   | 5 000 ± 16 µg/mL  |
| Chromium, Cr  | 200.0 ± 1.1 µg/mL  | Cobalt, Co    | 500.0 ± 2.3 µg/mL |
| Copper, Cu    | 250.0 ± 1.1 µg/mL  | Iron, Fe      | 1 000 ± 4 µg/mL   |
| Magnesium, Mg | 5 000 ± 22 µg/mL   | Manganese, Mn | 499.9 ± 2.2 µg/mL |
| Nickel, Ni    | 500.1 ± 2.3 µg/mL  | Potassium, K  | 5 000 ± 22 µg/mL  |
| Silver, Ag    | 250.0 ± 1.1 µg/mL  | Sodium, Na    | 5 000 ± 22 µg/mL  |
| Vanadium, V   | 500.0 ± 2.2 µg/mL  | Zinc, Zn      | 500.0 ± 2.2 µg/mL |

Density: 1.117 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| ANALYTE | METHOD      | NIST SRM# | SRM LOT#     |
|---------|-------------|-----------|--------------|
| Ag      | ICP Assay   | 3151      | 160729       |
| Ag      | Volhard     | 999c      | 999c         |
| Al      | ICP Assay   | 3101a     | 140903       |
| Al      | EDTA        | 928       | 928          |
| Ba      | ICP Assay   | 3104a     | 140909       |
| Ba      | Gravimetric |           | See Sec. 4.2 |
| Be      | ICP Assay   | 3105a     | 090514       |
| Ca      | ICP Assay   | 3109a     | 130213       |
| Ca      | EDTA        | 928       | 928          |
| Co      | ICP Assay   | 3113      | 190630       |
| Co      | EDTA        | 928       | 928          |
| Cr      | ICP Assay   | 3112a     | 170630       |
| Cu      | ICP Assay   | 3114      | 120618       |
| Cu      | EDTA        | 928       | 928          |
| Fe      | ICP Assay   | 3126a     | 140812       |
| Fe      | EDTA        | 928       | 928          |
| K       | ICP Assay   | 3141a     | 140813       |
| K       | Gravimetric |           | See Sec. 4.2 |
| Mg      | ICP Assay   | 3131a     | 140110       |
| Mg      | EDTA        | 928       | 928          |
| Mn      | ICP Assay   | 3132      | 050429       |
| Mn      | EDTA        | 928       | 928          |
| Na      | ICP Assay   | 3152a     | 200413       |
| Na      | Gravimetric |           | See Sec. 4.2 |
| Ni      | ICP Assay   | 3136      | 120619       |
| Ni      | EDTA        | 928       | 928          |
| V       | ICP Assay   | 3165      | 160906       |
| V       | EDTA        | 928       | 928          |
| Zn      | ICP Assay   | 3168a     | 120629       |
| Zn      | EDTA        | 928       | 928          |

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



#### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

**Note:** This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>)

## **8.0 HAZARDOUS INFORMATION**

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

## **9.0 HOMOGENEITY**

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

## **10.0 QUALITY STANDARD DOCUMENTATION**

### **10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## **11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

### **11.1 Certification Issue Date**

March 22, 2024

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

### **11.2 Lot Expiration Date**

- **March 22, 2029**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

### 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

#### Certificate Prepared By:

Uyen Truong  
Custom Processing Supervisor



#### Certificate Approved By:

Jodie Wall  
Stock VSM Coordinator



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





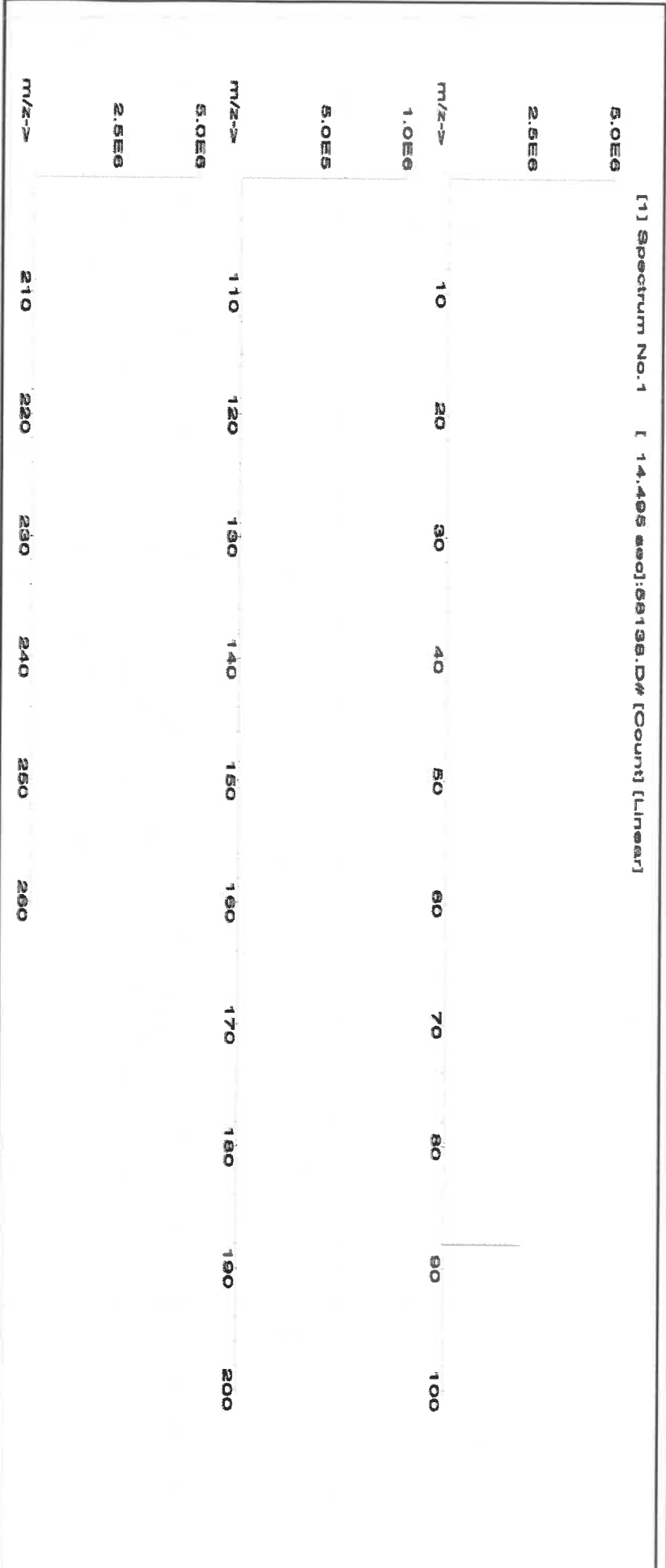
**CERTIFIED WEIGHT REPORT:**

**Part Number:** 57038 **Lot #** 24002546 **Solvent:** Nitric Acid  
**Lot Number:** 092724  
**Description:** Strontium (Sr)  
**Expiration Date:** 092727 **2%** **40.0** **Nitric Acid**  
**Recommended Storage:** Ambient (20 °C) **(mL)**  
**Nominal Concentration (µg/mL):** 1000  
**NIST Test Number:** 8UTB **5E-05** **Balance Uncertainty**  
**Weight shown below was diluted to (mL):** 2000.07 **0.100** **Flask Uncertainty**

|                |                 |        |
|----------------|-----------------|--------|
| Formulated By: | Benson Chan     | 092724 |
| Reviewed By:   | Pedro L. Rentas | 092724 |

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

1. **Strontium nitrate (Sr)** IN017 SR2022018A1 **1000** **99.997** **0.10** **41.2** **4.85470** **4.85481** **1000.0** **2.0** **10042-76-9** **NA** **or-rel >2000mg/kg 3153a**





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

**Trace Metals Verification by ICP-MS ( $\mu\text{g/mL}$ )**

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pt | <0.02 | Se | <0.2  | Tb | <0.02 | W  | <0.02 |
| Sb | <0.02 | Ca | <0.2  | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U  | <0.02 |
| As | <0.2  | Ce | <0.02 | Bu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V  | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2  | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2  | Hg | <0.2  | P  | <0.02 | Ru | <0.02 | Sr | 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:**

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

Certified by:

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



**CERTIFIED WEIGHT REPORT:**

**Part Number:**  
**Lot Number:**  
**Description:**

57042  
080525  
Molybdenum (Mo)

57042  
080525  
Molybdenum (Mo)

57042  
080525  
Molybdenum (Mo)

**Solvent:**  
Ammonium hydroxide  
ASTM Type 1 Water

**Expiration Date:**

080528

**Recommended Storage:**

Ambient (15 - 30 °C)

**Nominal Concentration (µg/mL):**

1000

**NIST Test Number:**

6UTB

**Volume shown below was diluted to (mL):**

1999.41

5E-05

Balance Uncertainty  
Flesh Uncertainty

0.5%

10.0

Ammonium hydroxide

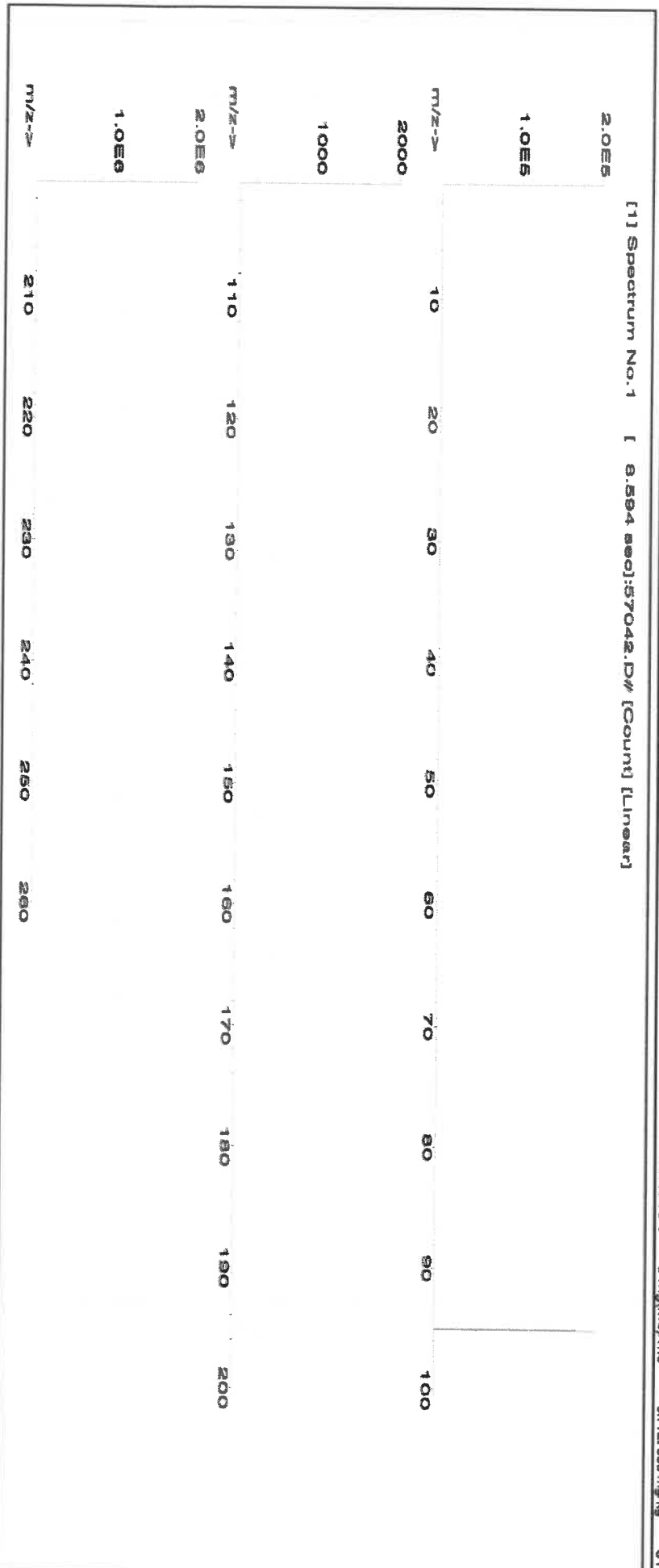
|                |                 |        |
|----------------|-----------------|--------|
| Formulated By: | Benson Chan     | 080525 |
| Reviewed By:   | Pedro L. Rentes | 080525 |

**SDS Information**

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty (mL) | Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty ± (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|-------------|------------|-----------------|-------------------|------------------|--------------|-----------------------|-----------------------|---------------------|--------------------------------|------|----------------|------|----------|
|----------|-------------|------------|-----------------|-------------------|------------------|--------------|-----------------------|-----------------------|---------------------|--------------------------------|------|----------------|------|----------|

1. Ammonium molybdate (Mo) 58142 112322 0.1000 200.0 0.084 1000 10001.4 1000.5 2.2 13106-76-8 5 mg(Mo)/mL 0.1-0.333 mg/kg 3134

[1] Spectrum No. 1 [ 8.594 sec]:57042.D# [Count] [Linear]





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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

- \* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- \* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware, and the highest purity raw materials are used in the preparation of all standards.
- \* All standard containers are meticulously cleaned prior to use.
- \* Standards are prepared gravimetrically using balances that are calibrated by an ISO17025 certified organization with weights traceable through NIST to the SI kilogram (see above).
- \* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- \* All standards should be stored with caps tight and under appropriate laboratory conditions.
- \* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).
- Rev 1.0, 2/25/2025



**CERTIFIED WEIGHT REPORT:**

**Part Number:**  
**Lot Number:**  
**Description:**

**57082**  
**031525**  
**Lead (Pb)**

**Lot #**

**Nitric Acid**

**Expiration Date:**

**031528**

**2%**

**40.0**

**Nitric Acid**

**Recommended Storage:**

**Ambient (20 °C)**

**Nominal Concentration (µg/mL):**

**1000**

**NIST Test Number:**

**6UTB**

**Weight shown below was diluted to (mL):**

**2000.07**

**0.10 Flask Uncertainty**

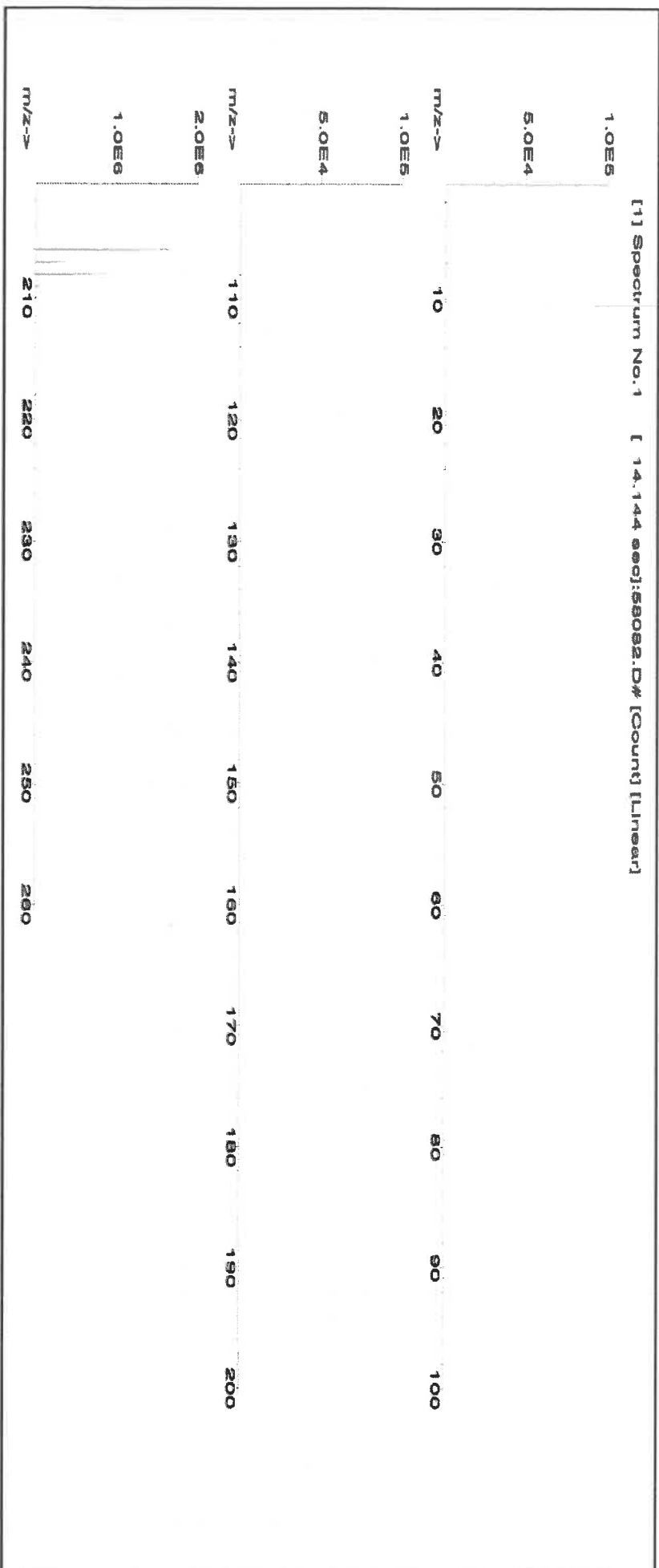
**Compound**

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

**1. Lead(II) nitrate (Pb)**

|       |             |      |        |      |      |         |         |        |     |            |            |                      |      |
|-------|-------------|------|--------|------|------|---------|---------|--------|-----|------------|------------|----------------------|------|
| IN029 | PBD122016A1 | 1000 | 99.999 | 0.10 | 62.5 | 3.20015 | 3.20067 | 1000.2 | 2.0 | 10099-74-8 | 0.05 mg/m3 | Intrins-ral 93 mg/kg | 3128 |
|-------|-------------|------|--------|------|------|---------|---------|--------|-----|------------|------------|----------------------|------|

[1] Spectrum No. 1 [14.144 sec]:58082.D# [Count] [Linear]







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

**Trace Metals Verification by ICP-MS ( $\mu\text{g/mL}$ )**

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pt | <0.02 | 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 | Tc | <0.02 | U  | <0.02 |
| As | <0.2  | Ce | <0.02 | Bu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V  | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2  | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2  | Hg | <0.2  | P  | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y  | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S  | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B  | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K  | <0.2  | Se | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

Certified by:

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

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

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## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution  
Catalog Number: CGY10  
Lot Number: V2-Y740548  
Matrix: 2% (v/v) HNO<sub>3</sub>  
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:

|                        |                                                                        |
|------------------------|------------------------------------------------------------------------|
| <b>Assay Method #1</b> | <b>10011 ± 25 µg/mL</b><br>EDTA NIST SRM 928 Lot Number: 928           |
| <b>Assay Method #2</b> | <b>9997 ± 50 µg/mL</b><br>ICP Assay NIST SRM 3167a Lot Number: 190730  |
| <b>Assay Method #3</b> | <b>9984 ± 31 µg/mL</b><br>Calculated NIST SRM Lot Number: See Sec. 4.2 |

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

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

|        |          |        |          |        |          |        |          |        |          |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|
| M Ag < | 0.004600 | 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). <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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form In Solution** - 88.91 +3 6 Y(OH)(H<sub>2</sub>O)<sub>x+2</sub>  
**Chemical Compatibility** -Soluble in HCl, H<sub>2</sub>SO<sub>4</sub> and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub> 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% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Y Containing Samples (Preparation and Solution)** - Metal (Soluble in acids); Oxide (Dissolve by heating in H<sub>2</sub>O / HNO<sub>3</sub>); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H<sub>2</sub>O / HCl or HNO<sub>3</sub>).

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

| Technique/Line     | Estimated D.L.         | Order | Interferences (underlined indicates severe) |
|--------------------|------------------------|-------|---------------------------------------------|
| ICP-MS 89 amu      | 0.8 ppt                | N/A   | <u>73Ge16O</u> , <u>178Hf+2</u>             |
| 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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## 1.0 ACCREDITATION / REGISTRATION

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## 2.0 PRODUCT DESCRIPTION

|                 |                                     |
|-----------------|-------------------------------------|
| Product Code:   | Multi Analyte Custom Grade Solution |
| Catalog Number: | WW-LFS-1                            |
| Lot Number:     | W2-MEB752149                        |
| Matrix:         | 5% (v/v) HNO <sub>3</sub>           |

M6180  
R-37/22/23

|                     |                 |            |
|---------------------|-----------------|------------|
| Value / Analyte(s): | 1 000 µg/mL ea: |            |
|                     | Potassium,      |            |
|                     | 600 µg/mL ea:   |            |
|                     | Phosphorus,     |            |
|                     | 300 µg/mL ea:   |            |
|                     | Sodium,         | Iron,      |
|                     | 200 µg/mL ea:   |            |
|                     | Magnesium,      | Aluminum,  |
|                     | Cerium,         | Selenium,  |
|                     | Thallium,       |            |
|                     | 100 µg/mL ea:   |            |
|                     | Lead,           | Calcium,   |
|                     | 80 µg/mL ea:    |            |
|                     | Arsenic,        |            |
|                     | 70 µg/mL ea:    |            |
|                     | Mercury,        |            |
|                     | 50 µg/mL ea:    |            |
|                     | Nickel,         |            |
|                     | 40 µg/mL ea:    |            |
|                     | Chromium,       |            |
|                     | 30 µg/mL ea:    |            |
|                     | Copper,         | Boron,     |
|                     | Vanadium,       |            |
|                     | 20 µg/mL ea:    |            |
|                     | Zinc,           | Strontium, |
|                     | Barium,         | Beryllium, |
|                     | Cadmium,        | Cobalt,    |
|                     | Manganese,      | Lithium,   |
|                     | 7.5 µg/mL ea:   |            |
|                     | Silver          |            |

### 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE       | CERTIFIED VALUE    | ANALYTE       | CERTIFIED VALUE    |
|---------------|--------------------|---------------|--------------------|
| Aluminum, Al  | 200.2 ± 0.7 µg/mL  | Arsenic, As   | 80.1 ± 0.5 µg/mL   |
| Barium, Ba    | 20.02 ± 0.12 µg/mL | Beryllium, Be | 20.02 ± 0.11 µg/mL |
| Boron, B      | 30.02 ± 0.15 µg/mL | Cadmium, Cd   | 20.04 ± 0.09 µg/mL |
| Calcium, Ca   | 100.1 ± 0.3 µg/mL  | Cerium, Ce    | 200.2 ± 1.0 µg/mL  |
| Chromium, Cr  | 40.02 ± 0.26 µg/mL | Cobalt, Co    | 20.03 ± 0.09 µg/mL |
| Copper, Cu    | 30.03 ± 0.13 µg/mL | Iron, Fe      | 300.3 ± 1.3 µg/mL  |
| Lead, Pb      | 100.1 ± 0.5 µg/mL  | Lithium, Li   | 20.03 ± 0.09 µg/mL |
| Magnesium, Mg | 200.2 ± 0.9 µg/mL  | Manganese, Mn | 19.99 ± 0.09 µg/mL |
| Mercury, Hg   | 70.0 ± 0.3 µg/mL   | Nickel, Ni    | 50.05 ± 0.22 µg/mL |
| Phosphorus, P | 600.5 ± 2.9 µg/mL  | Potassium, K  | 1 001 ± 4 µg/mL    |
| Selenium, Se  | 200.2 ± 1.1 µg/mL  | Silver, Ag    | 7.52 ± 0.03 µg/mL  |
| Sodium, Na    | 300.3 ± 1.3 µg/mL  | Strontium, Sr | 20.02 ± 0.10 µg/mL |
| Thallium, Tl  | 200.2 ± 1.0 µg/mL  | Vanadium, V   | 30.02 ± 0.13 µg/mL |
| Zinc, Zn      | 20.05 ± 0.09 µg/mL |               |                    |

Density: 1.037 g/mL (measured at 20 ± 5 °C)

Assay Information:



| <b>ANALYTE</b> | <b>METHOD</b> | <b>NIST SRM#</b>   | <b>SRM LOT#</b> |
|----------------|---------------|--------------------|-----------------|
| Ag             | ICP Assay     | 3151               | 160729          |
| Ag             | Volhard       | 999c               | 999c            |
| Al             | ICP Assay     | 3101a              | 140903          |
| Al             | EDTA          | 928                | 928             |
| As             | ICP Assay     | 3103a              | 100818          |
| B              | ICP Assay     | 3107               | 190605          |
| B              | Calculated    |                    | See Sec. 4.2    |
| Ba             | ICP Assay     | 3104a              | 140909          |
| Ba             | Gravimetric   |                    | See Sec. 4.2    |
| Be             | ICP Assay     | 3105a              | 090514          |
| Ca             | ICP Assay     | 3109a              | 130213          |
| Ca             | EDTA          | 928                | 928             |
| Cd             | ICP Assay     | 3108               | 130116          |
| Cd             | EDTA          | 928                | 928             |
| Ce             | ICP Assay     | 3110               | 160830          |
| Ce             | EDTA          | 928                | 928             |
| Co             | ICP Assay     | 3113               | 190630          |
| Co             | EDTA          | 928                | 928             |
| Cr             | ICP Assay     | 3112a              | 170630          |
| Cu             | ICP Assay     | 3114               | 120618          |
| Cu             | EDTA          | 928                | 928             |
| Fe             | ICP Assay     | 3126a              | 140812          |
| Fe             | EDTA          | 928                | 928             |
| Hg             | ICP Assay     | 3133               | 160921          |
| Hg             | EDTA          | 928                | 928             |
| K              | ICP Assay     | 3141a              | 140813          |
| K              | Gravimetric   |                    | See Sec. 4.2    |
| Li             | ICP Assay     | 3129a              | 100714          |
| Li             | Gravimetric   |                    | See Sec. 4.2    |
| Mg             | ICP Assay     | 3131a              | 140110          |
| Mg             | EDTA          | 928                | 928             |
| Mn             | ICP Assay     | 3132               | 050429          |
| Mn             | EDTA          | 928                | 928             |
| Na             | ICP Assay     | 3152a              | 200413          |
| Na             | Gravimetric   |                    | See Sec. 4.2    |
| Ni             | ICP Assay     | 3136               | 120619          |
| Ni             | EDTA          | 928                | 928             |
| P              | ICP Assay     | 3139a              | 060717          |
| P              | Acidimetric   | 84L                | 84L             |
| Pb             | ICP Assay     | 3128               | 101026          |
| Pb             | EDTA          | 928                | 928             |
| Se             | ICP Assay     | 3149               | 100901          |
| Sr             | EDTA          | 928                | 928             |
| Sr             | ICP Assay     | Traceable to 3153a | K2-SR650985     |
| Tl             | ICP Assay     | 3158               | 151215          |
| V              | ICP Assay     | 3165               | 160906          |
| V              | EDTA          | 928                | 928             |
| Zn             | ICP Assay     | 3168a              | 120629          |
| Zn             | EDTA          | 928                | 928             |

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

#### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{TS}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{TS}}$  = 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° - 25° C to minimize the effects of transpiration. Use at 20° ± 5° 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](http://www.inorganicventures.com/TCT)

**Note:** This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>)

## **8.0 HAZARDOUS INFORMATION**

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

## **9.0 HOMOGENEITY**

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

## **10.0 QUALITY STANDARD DOCUMENTATION**

### **10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [Info@inorganicventures.com](mailto:Info@inorganicventures.com);

## **11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

### **11.1 Certification Issue Date**

April 08, 2025

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

### **11.2 Lot Expiration Date**

- **April 08, 2029**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

### 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

#### Certificate Prepared By:

Justin Dirico  
Stock Processing Supervisor



#### Certificate Approved By:

Jodie Wall  
Stock VSM Coordinator



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director



300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

# Certificate of Analysis

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

M6181  
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## 1.0 ACCREDITATION / REGISTRATION

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



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution  
Catalog Number: WW-LFS-2  
Lot Number: V2-MEB743480  
Matrix: 5% (v/v) HNO<sub>3</sub>  
tr. HF  
Value / Analyte(s):  
200 µg/mL ea:  
Silica,  
80 µg/mL ea:  
Antimony,  
70 µg/mL ea:  
Tin,  
40 µg/mL ea:  
Molybdenum,  
20 µg/mL ea:  
Titanium

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE                  | CERTIFIED VALUE    | ANALYTE        | CERTIFIED VALUE    |
|--------------------------|--------------------|----------------|--------------------|
| Antimony, Sb             | 80.1 ± 0.5 µg/mL   | Molybdenum, Mo | 40.05 ± 0.22 µg/mL |
| Silica, SiO <sub>2</sub> | 200.3 ± 1.4 µg/mL  | Tin, Sn        | 70.1 ± 0.4 µg/mL   |
| Titanium, Ti             | 20.03 ± 0.12 µg/mL |                |                    |

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

### Assay Information:

| ANALYTE          | METHOD     | NIST SRM#          | SRM LOT#     |
|------------------|------------|--------------------|--------------|
| Mo               | ICP Assay  | 3134               | 130418       |
| Sb               | ICP Assay  | 3102a              | 140911       |
| SiO <sub>2</sub> | Calculated |                    | See Sec. 4.2 |
| Sn               | ICP Assay  | 3161a              | 140917       |
| Ti               | ICP Assay  | traceable to 3162a | T2-TI725816  |

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

#### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

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

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

$X_a$  = mean of Assay Method A with

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

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

$k$  = coverage factor = 2

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{\text{ts}}$  = 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](http://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](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## **11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

### **11.1 Certification Issue Date**

May 07, 2024

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

### **11.2 Lot Expiration Date**

- **May 07, 2029**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

### 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

#### Certificate Prepared By:

Justin Dirico  
Stock Processing Supervisor



#### Certificate Approved By:

Thomas Kozikowski  
Stock VS Manager



#### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director







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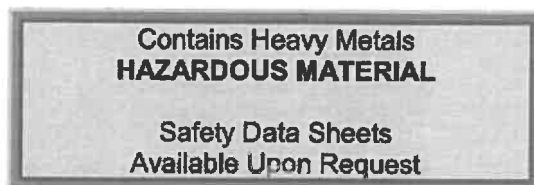
Instructions for QATS Reference Material: ICP-AES ICS

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.



M6182

(A) **SAMPLE DESCRIPTION**

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

**CAUTION:** The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) **BREAKAGE OR MISSING ITEMS**

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

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

(C) **ANALYSIS OF SAMPLES**

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





**QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY**  
**"An ISO 9001:2015 Certified Program"**

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

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

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

**ICSA-1211, Interferents:** Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO<sub>3</sub>. 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<sub>3</sub>. 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<br>(µg/L) | Low<br>Limit<br>(µg/L) | High<br>Limit<br>(µg/L) | Part A<br>+Part B<br>(µg/L) | Low<br>Limit<br>(µg/L) | High<br>Limit<br>(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.



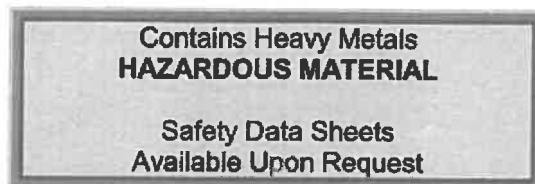
Instructions for QATS Reference Material: ICP-AES ICS

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.



M6184

(A) **SAMPLE DESCRIPTION**

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

**CAUTION:** The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) **BREAKAGE OR MISSING ITEMS**

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

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

(C) **ANALYSIS OF SAMPLES**

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





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

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

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

**ICSA-1211, Interferents:** Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO<sub>3</sub>. 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<sub>3</sub>. 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.

| <b>Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710</b> |             |                          |                                 |                                  |                                      |                                 |                                  |
|------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|---------------------------------|----------------------------------|--------------------------------------|---------------------------------|----------------------------------|
| <b>Element</b>                                                                                                         | <b>CRQL</b> | <b>Part A<br/>(µg/L)</b> | <b>Low<br/>Limit<br/>(µg/L)</b> | <b>High<br/>Limit<br/>(µg/L)</b> | <b>Part A<br/>+Part B<br/>(µg/L)</b> | <b>Low<br/>Limit<br/>(µg/L)</b> | <b>High<br/>Limit<br/>(µg/L)</b> |
| Al                                                                                                                     | 200         | 255000                   | 216000                          | 294000                           | 247000                               | 209000                          | 285000                           |
| Sb                                                                                                                     | 60          | (0.0)                    | -60.0                           | 60.0                             | 618                                  | 525                             | 711                              |
| As                                                                                                                     | 10          | (0.0)                    | -10.0                           | 10.0                             | 104                                  | 88.4                            | 120                              |
| Ba                                                                                                                     | 200         | (6.0)                    | -194                            | 206                              | (537)                                | 337                             | 737                              |
| Be                                                                                                                     | 5.0         | (0.0)                    | -5.0                            | 5.0                              | 495                                  | 420                             | 570                              |
| Cd                                                                                                                     | 5.0         | (1.0)                    | -4.0                            | 6.0                              | 972                                  | 826                             | 1120                             |
| Ca                                                                                                                     | 5000        | 245000                   | 208000                          | 282000                           | 235000                               | 199000                          | 271000                           |
| Cr                                                                                                                     | 10          | (52.0)                   | 42.0                            | 62.0                             | 542                                  | 460                             | 624                              |
| Co                                                                                                                     | 50          | (0.0)                    | -50.0                           | 50.0                             | 476                                  | 404                             | 548                              |
| Cu                                                                                                                     | 25          | (2.0)                    | -23.0                           | 27.0                             | 511                                  | 434                             | 588                              |
| Fe                                                                                                                     | 100         | 101000                   | 85600                           | 116500                           | 99300                                | 84400                           | 114500                           |
| Pb                                                                                                                     | 10          | (0.0)                    | -10.0                           | 10.0                             | (49.0)                               | 39.0                            | 59.0                             |
| Mg                                                                                                                     | 5000        | 255000                   | 216000                          | 294000                           | 248000                               | 210000                          | 286000                           |
| Mn                                                                                                                     | 15          | (7.0)                    | -8.0                            | 22.0                             | 507                                  | 430                             | 584                              |
| Ni                                                                                                                     | 40          | (2.0)                    | -38.0                           | 42.0                             | 954                                  | 810                             | 1100                             |
| Se                                                                                                                     | 35          | (0.0)                    | -35.0                           | 35.0                             | (46.0)                               | 11.0                            | 81.0                             |
| Ag                                                                                                                     | 10          | (0.0)                    | -10.0                           | 10.0                             | 201                                  | 170                             | 232                              |
| Tl                                                                                                                     | 25          | (0.0)                    | -25.0                           | 25.0                             | (108)                                | 83.0                            | 133                              |
| V                                                                                                                      | 50          | (0.0)                    | -50.0                           | 50.0                             | 491                                  | 417                             | 565                              |
| Zn                                                                                                                     | 60          | (0.0)                    | -60.0                           | 60.0                             | 952                                  | 809                             | 1095                             |

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

Nitric Acid 69%  
CMOS



M6187

R.D :- 08/08/25

Material No.: 9606-03  
Batch No.: 24H0162012  
Manufactured Date: 2024-06-28  
Retest Date: 2029-06-27  
Revision No.: 0

## Certificate of Analysis

| Test                              | Specification | Result      |
|-----------------------------------|---------------|-------------|
| Assay (HNO <sub>3</sub> )         | 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 <sub>4</sub> )      | ≤ 0.10 ppm    | < 0.03 ppm  |
| Sulfate (SO <sub>4</sub> )        | ≤ 0.2 ppm     | < 0.2 ppm   |
| Trace Impurities – Aluminum (Al)  | ≤ 40.0 ppb    | < 1.0 ppb   |
| Arsenic and Antimony (as As)      | ≤ 5.0 ppb     | < 2.0 ppb   |
| Trace Impurities – Barium (Ba)    | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Beryllium (Be) | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Bismuth (Bi)   | ≤ 20.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Boron (B)      | ≤ 10.0 ppb    | 0.1 ppb     |
| Trace Impurities – Cadmium (Cd)   | ≤ 50 ppb      | < 1 ppb     |
| Trace Impurities – Calcium (Ca)   | ≤ 50.0 ppb    | 0.3 ppb     |
| Trace Impurities – Chromium (Cr)  | ≤ 30.0 ppb    | 0.1 ppb     |
| Trace Impurities – Cobalt (Co)    | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Copper (Cu)    | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Gallium (Ga)   | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Germanium (Ge) | ≤ 20 ppb      | < 1 ppb     |
| Trace Impurities – Gold (Au)      | ≤ 20 ppb      | < 1 ppb     |
| Heavy Metals (as Pb)              | ≤ 100 ppb     | < 50 ppb    |
| Trace Impurities – Iron (Fe)      | ≤ 40.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Lead (Pb)      | ≤ 20.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Lithium (Li)   | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Magnesium (Mg) | ≤ 20 ppb      | < 1 ppb     |
| Trace Impurities – Manganese (Mn) | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Nickel (Ni)    | ≤ 20.0 ppb    | < 1.0 ppb   |

>>> Continued on page 2 >>>

Nitric Acid 69%  
CMOS



Material No.: 9606-03  
Batch No.: 24H0162012

| Test                                | Specification | Result    |
|-------------------------------------|---------------|-----------|
| Trace Impurities – Niobium (Nb)     | ≤ 50.0 ppb    | < 1.0 ppb |
| Trace Impurities – Potassium (K)    | ≤ 50 ppb      | < 1 ppb   |
| Trace Impurities – Silicon (Si)     | ≤ 50 ppb      | 1 ppb     |
| Trace Impurities – Silver (Ag)      | ≤ 20.0 ppb    | < 1.0 ppb |
| Trace Impurities – Sodium (Na)      | ≤ 150.0 ppb   | < 1.0 ppb |
| Trace Impurities – Strontium (Sr)   | ≤ 30.0 ppb    | < 1.0 ppb |
| Trace Impurities – Tantalum (Ta)    | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Thallium (Tl)    | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Tin (Sn)         | ≤ 20.0 ppb    | < 1.0 ppb |
| Trace Impurities – Titanium (Ti)    | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Vanadium (V)     | ≤ 10.0 ppb    | < 1.0 ppb |
| Trace Impurities – Zinc (Zn)        | ≤ 20.0 ppb    | < 1.0 ppb |
| Trace Impurities – Zirconium (Zr)   | ≤ 10.0 ppb    | < 1.0 ppb |
| Particle Count – 0.5 µm and greater | ≤ 60 par/ml   | 13 par/ml |
| Particle Count – 1.0 µm and greater | ≤ 10 par/ml   | 5 par/ml  |

>>> Continued on page 3 >>>

Nitric Acid 69%  
CMOS

 **avantors<sup>TM</sup>**



Material No.: 9606-03  
Batch No.: 24H0162012

| 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



M6200  
R.O → 08/25/25

Material No.: 9530-33  
Batch No.: 24D1562005  
Manufactured Date: 2024-03-18  
Retest Date: 2029-03-17  
Revision No.: 0

## 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 ppm     |
| ACS – Specific Gravity at 60°/60°F        | 1.185 – 1.192 | 1.192       |
| ACS – Bromide (Br)                        | ≤ 0.005 %     | < 0.005 %   |
| ACS – Extractable Organic Substances      | ≤ 5 ppm       | < 1 ppm     |
| ACS – Free Chlorine (as Cl <sub>2</sub> ) | ≤ 0.5 ppm     | < 0.5 ppm   |
| Phosphate (PO <sub>4</sub> )              | ≤ 0.05 ppm    | 0.03 ppm    |
| Sulfate (SO <sub>4</sub> )                | ≤ 0.5 ppm     | < 0.3 ppm   |
| Sulfite (SO <sub>3</sub> )                | ≤ 0.8 ppm     | 0.3 ppm     |
| Ammonium (NH <sub>4</sub> )               | ≤ 3 ppm       | < 1 ppm     |
| Trace Impurities – Arsenic (As)           | ≤ 0.010 ppm   | < 0.003 ppm |
| Trace Impurities – Aluminum (Al)          | ≤ 10.0 ppb    | < 5.0 ppb   |
| Arsenic and Antimony (as As)              | ≤ 5.0 ppb     | < 3.0 ppb   |
| Trace Impurities – Barium (Ba)            | ≤ 1.0 ppb     | < 1.0 ppb   |
| Trace Impurities – Beryllium (Be)         | ≤ 1.0 ppb     | < 1.0 ppb   |
| Trace Impurities – Bismuth (Bi)           | ≤ 10.0 ppb    | < 10.0 ppb  |
| Trace Impurities – Boron (B)              | ≤ 20.0 ppb    | 2.2 ppb     |
| Trace Impurities – Cadmium (Cd)           | ≤ 1.0 ppb     | < 1.0 ppb   |
| Trace Impurities – Calcium (Ca)           | ≤ 50.0 ppb    | 31.0 ppb    |
| Trace Impurities – Chromium (Cr)          | ≤ 1.0 ppb     | 0.5 ppb     |
| Trace Impurities – Cobalt (Co)            | ≤ 1.0 ppb     | 0.2 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     | < 0.2 ppb   |
| Heavy Metals (as Pb)                      | ≤ 100 ppb     | < 50 ppb    |
| Trace Impurities – Iron (Fe)              | ≤ 15 ppb      | 3 ppb       |

>>> Continued on page 2 >>>



Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis



Material No.: 9530-33  
Batch No.: 24D1562005

| Test                                                   | Specification | Result     |
|--------------------------------------------------------|---------------|------------|
| Trace Impurities – Lead (Pb)                           | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Lithium (Li)                        | ≤ 1.0 ppb     | < 0.1 ppb  |
| Trace Impurities – Magnesium (Mg)                      | ≤ 10.0 ppb    | 2.2 ppb    |
| Trace Impurities – Manganese (Mn)                      | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Mercury (Hg)                        | ≤ 0.5 ppb     | < 0.1 ppb  |
| Trace Impurities – Molybdenum (Mo)                     | ≤ 10.0 ppb    | < 5.0 ppb  |
| Trace Impurities – Nickel (Ni)                         | ≤ 4.0 ppb     | 0.2 ppb    |
| Trace Impurities – Niobium (Nb)                        | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Potassium (K)                       | ≤ 9.0 ppb     | < 1.0 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     | < 0.3 ppb  |
| Trace Impurities – Sodium (Na)                         | ≤ 100.0 ppb   | 2.0 ppb    |
| Trace Impurities – Strontium (Sr)                      | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Tantalum (Ta)                       | ≤ 1.0 ppb     | < 0.9 ppb  |
| Trace Impurities – Thallium (Tl)                       | ≤ 5.0 ppb     | < 2.0 ppb  |
| Trace Impurities – Tin (Sn)                            | ≤ 5.0 ppb     | < 0.4 ppb  |
| Trace Impurities – Titanium (Ti)                       | ≤ 1.0 ppb     | 0.2 ppb    |
| Trace Impurities – Vanadium (V)                        | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Zinc (Zn)                           | ≤ 5.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Zirconium (Zr)                      | ≤ 1.0 ppb     | < 0.1 ppb  |

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA–ANALYZED® Reagent  
For Trace Metal Analysis



Material No.: 9530–33  
Batch No.: 24D1562005

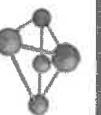
| Test | Specification | Result |
|------|---------------|--------|
|------|---------------|--------|

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

A handwritten signature in cursive script, appearing to read 'JCroak'.

Jamie Croak  
Director Quality Operations, Bioscience Production



CERTIFIED WEIGHT REPORT:

Part Number: **57028**  
Lot Number: **062024**  
Description: **Nickel (NI)**

Lot # **24002546**  
Solvent: **Nitric Acid**

Formulated By: *Benson Chan*  
Reviewed By: *Pedro L. Rentes*

062024

Expiration Date: **062027**

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

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6UTB**

Balance Uncertainty

Volume shown below was diluted to (mL): **2000.07**

Flask Uncertainty

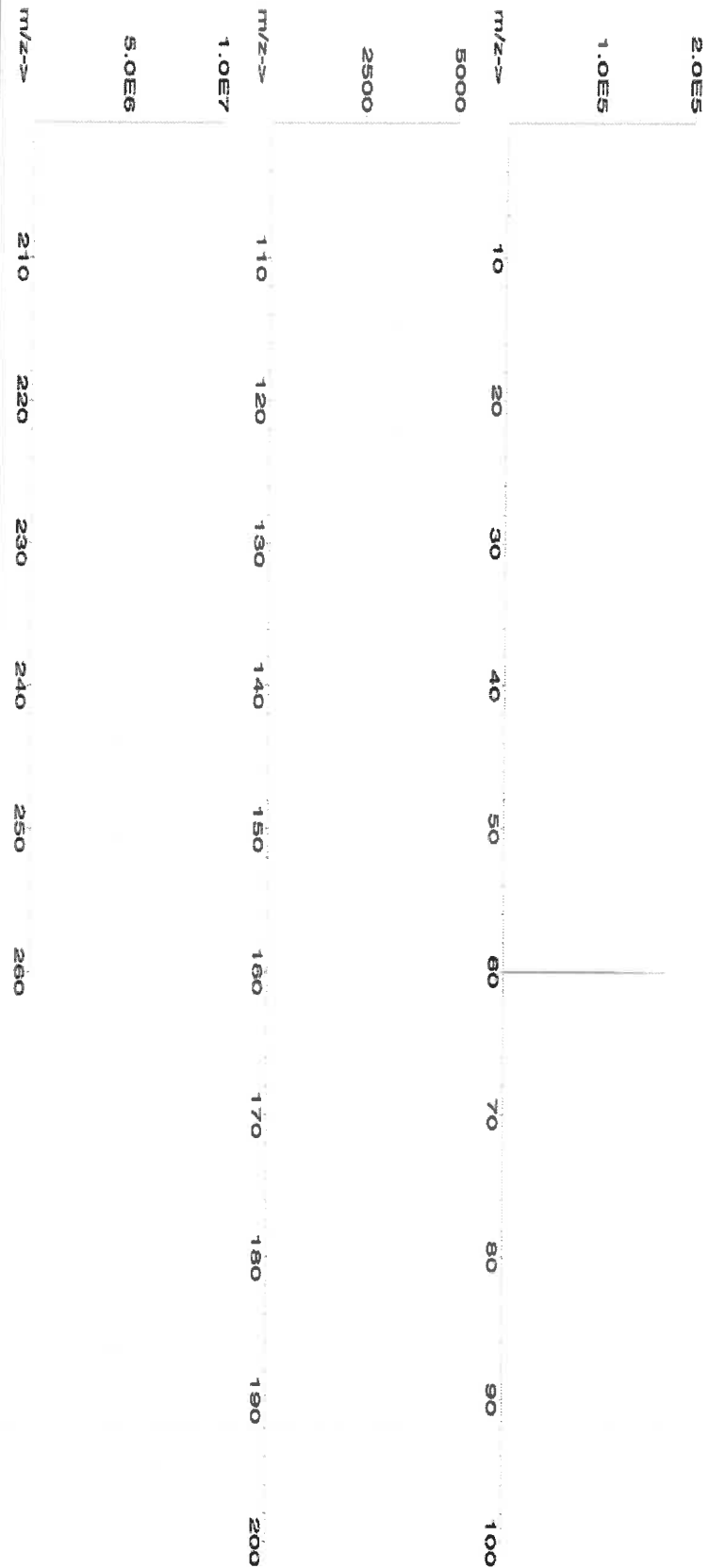
Expanded

SDS Information

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty (mL) | Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Uncertainty +/- (µg/mL) | CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|----------|-------------|------------|-----------------|-------------------|------------------|---------------|-----------------------|---------------------|-------------------------|------|----------------|------|----------|
|----------|-------------|------------|-----------------|-------------------|------------------|---------------|-----------------------|---------------------|-------------------------|------|----------------|------|----------|

1. Nickel(II) nitrate hexahydrate (NI) 58128 062023 0.1000 200.0 0.084 1000 10000.4 1000.0 2.2 13478-00-7 1 mg/m3 orl-rat 1620 mg/kg 3136

[1] Spectrum No.1 [ 9.136 sec]:S8028.D# [Count] [Linear]





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

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

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | 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:**

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

**Certified by:**

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



**Certified Reference Material CRM**

M6030



**CERTIFIED WEIGHT REPORT:**

Part Number: **57047**  
Lot Number: **122823**  
Description: **Silver (Ag)**  
Solvent: **24002546 Nitric Acid**

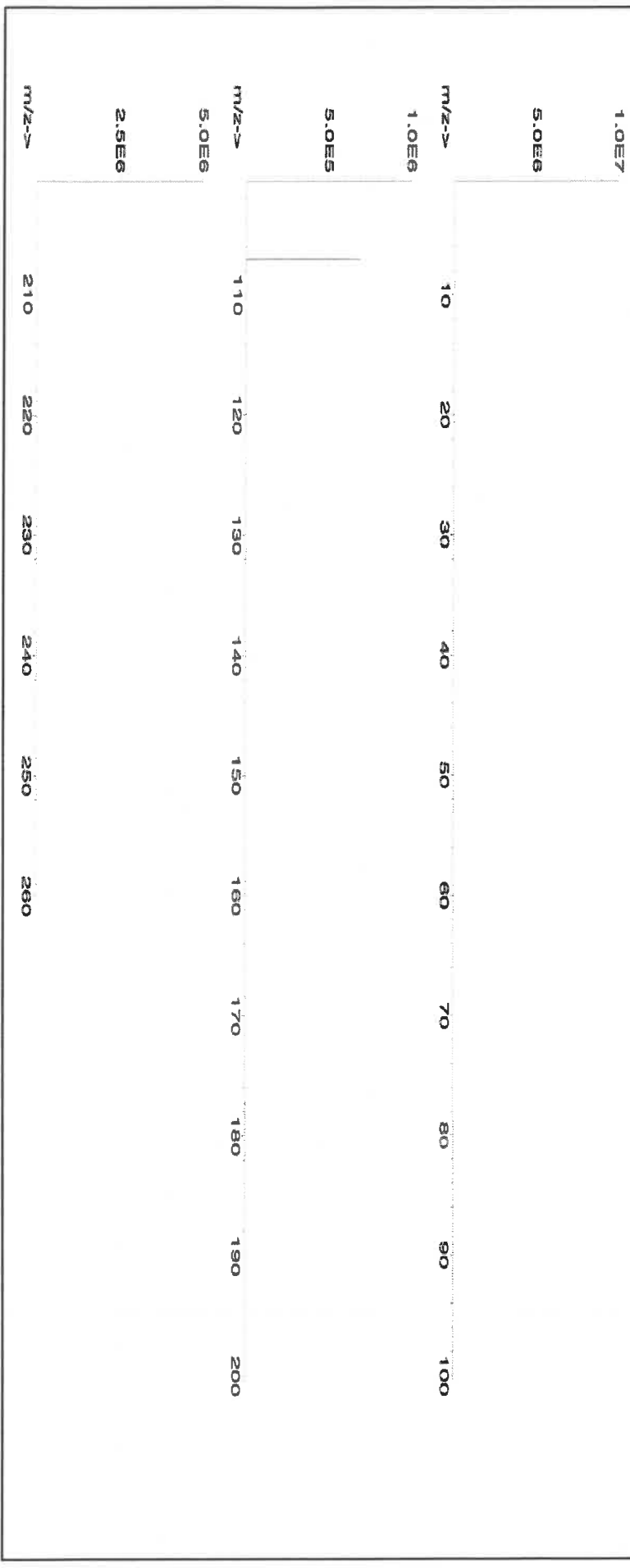
Expiration Date: **122826**  
Recommended Storage: **Ambient (20 °C)**  
Nominal Concentration (µg/mL): **1000**  
NIST Test Number: **6UTB**

Weight shown below was diluted to (mL): **4000.30** **5E-05 Balance Uncertainty**  
**0.058 Flask Uncertainty**

|                |                 |
|----------------|-----------------|
|                |                 |
| Formulated By: | Benson Chan     |
| Reviewed By:   | Pedro L. Rentas |
|                | 122823          |

| SDS Information        |       |            |                       |            |                        |           |                   |                   |                      |
|------------------------|-------|------------|-----------------------|------------|------------------------|-----------|-------------------|-------------------|----------------------|
| Compound               | RM#   | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) |
| 1. Silver nitrate (Ag) | IN035 | J0612AGA1  | 1000.0                | 99.999     | 0.10                   | 63.7      | 6.27992           | 6.27998           | 1000.0               |
|                        |       |            |                       |            |                        |           | 2.0               | 7761-88-8         | 10 µg/mL             |
|                        |       |            |                       |            |                        |           |                   |                   | NA                   |
|                        |       |            |                       |            |                        |           |                   |                   | 3151                 |

[1] Spectrum No. 1 [ 14.044 sec]:58147.D# [Count] [Linear]





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

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

|    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | 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 meghom deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- \* All standard containers are meticulously cleaned prior to use.
- \* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- \* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- \* All Standards should be stored with caps tight and under appropriate laboratory conditions.
- \* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).









**Certified Reference Material CRM**



**CERTIFIED WEIGHT REPORT:**

**Part Number:**  
**Lot Number:**  
**Description:**

**57051**  
**071724**  
**Antimony (Sb)**

*MG160*

**Lot #**  
**Solvent:**

24002546

Nitric Acid

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

071727  
Ambient (20 °C)  
1000  
6UTB

2.0%  
Nitric Acid  
(mL)

5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

**Volume shown below was diluted to (mL):** 2000.26

**Formulated By:**

Giovanni Esposito

071724

**Expanded**

Uncertainty  
+/- (µg/mL)

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

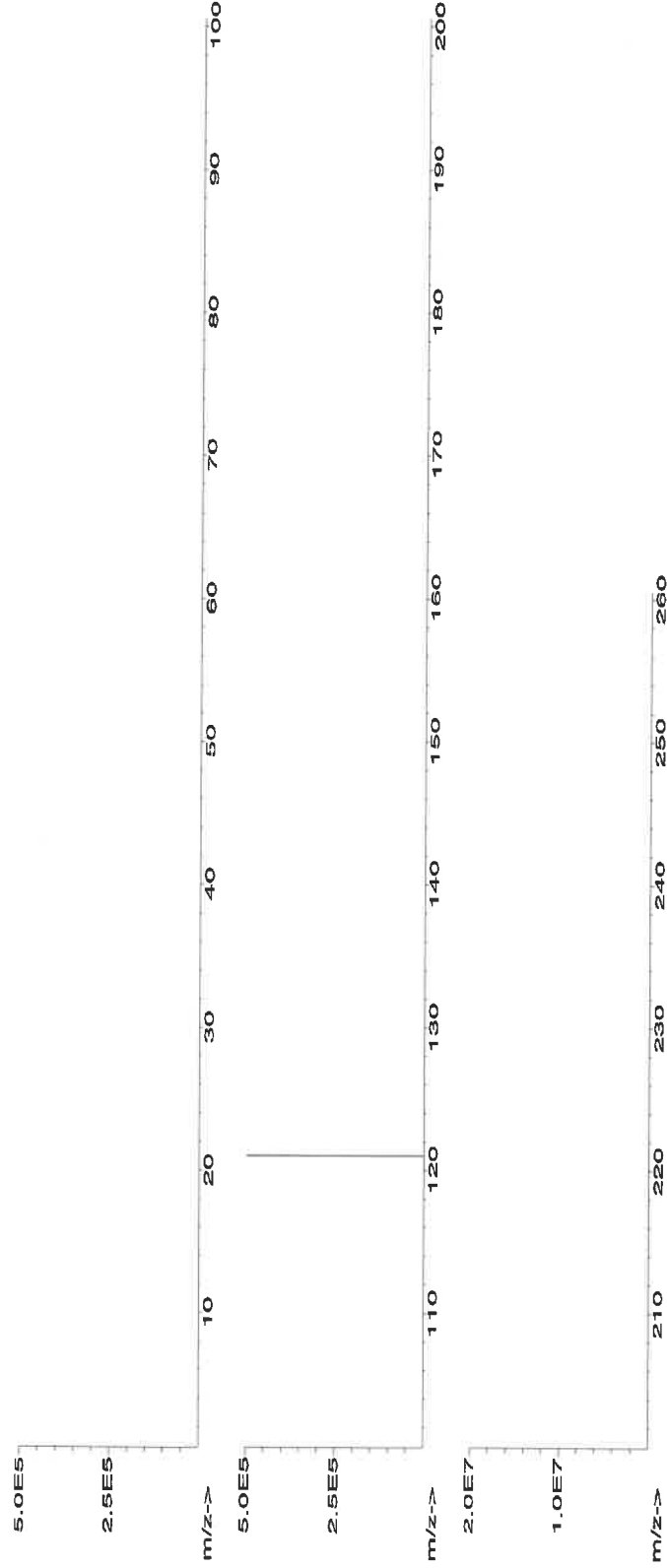
NIST  
SRM

**Compound**

1. Antimony (Sb)

58151 060324 0.1000 200.0 0.084 1000 10001.4 **1000.0** **2.2** 7440-36-0 0.5 mg/m3 or-rat 7000 mg/kg 3102a

[1] Spectrum No.1 [ 17.964 sec]:58051.D# [Count] [Linear]





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

| Trace Metals Verification by ICP-MS ( $\mu\text{g/mL}$ ) |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |    |       |
|----------------------------------------------------------|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| Al                                                       | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.02 | 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 | Tc | <0.02 | U  | <0.02 |
| As                                                       | <0.2  | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.02 | Os | <0.01 | Rh | <0.02 | Ag | <0.02 | Ti | <0.02 | V  | <0.02 |
| Ba                                                       | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.02 | Th | <0.02 | Yb | <0.02 |
| Be                                                       | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.02 | Hg | <0.2  | P  | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y  | <0.02 |
| Bi                                                       | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pr | <0.02 | Sm | <0.02 | S  | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B                                                        | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K  | <0.2  | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

Physical Characterization:

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

Certified by:

- \* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- \* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- \* All standard containers are meticulously cleaned prior to use.
- \* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- \* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
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**CERTIFIED WEIGHT REPORT:**

**Part Number:** 57081  
**Lot Number:** 062724  
**Description:** Thallium (TI)

Lot #

**Solvent:** 24002546 Nitric Acid

2% 40.0 Nitric Acid (mL)

**Expiration Date:**

062727

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

**Nominal Concentration (µg/mL):** 1000

**NIST Test Number:** 6UTB

5E-05 Balance Uncertainty

**Weight shown below was diluted to (mL):** 2000.1 0.10 Flask Uncertainty

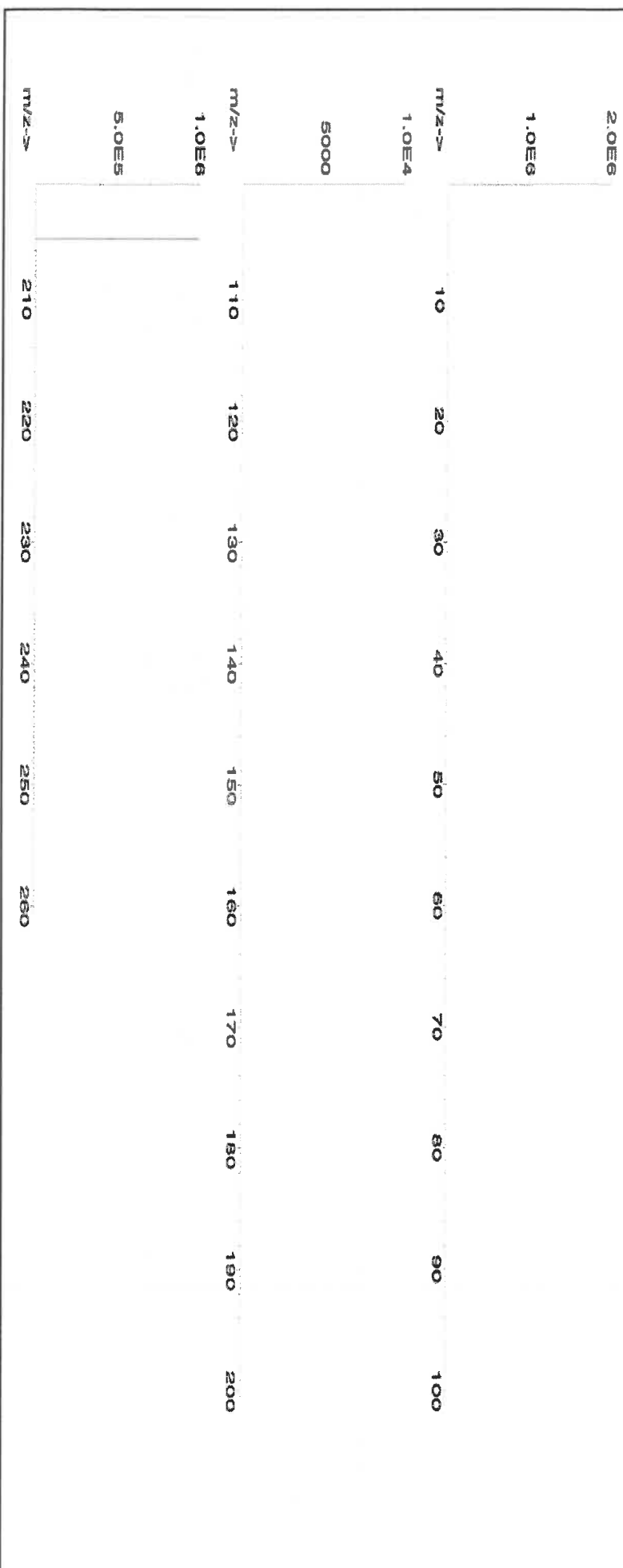
|                      |                        |
|----------------------|------------------------|
| <i>Aleah O'Brady</i> |                        |
| Formulated By:       | Aleah O'Brady          |
|                      | 062724                 |
| Reviewed By:         | <i>Pedro L. Renias</i> |
|                      | Pedro L. Renias        |
|                      | 062724                 |

**SDS Information**

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

1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 orl-mus 15mg/kg 3158

[1] Spectrum No.1 [ 14.044 sec]:57081.D# [Count] [Linear]





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

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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

- \* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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- \* All standard containers are meticulously cleaned prior to use.
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Certified Reference Material CRM

M6021



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

CERTIFIED WEIGHT REPORT:

Part Number: 57023  
Lot Number: 062424  
Description: Vanadium (V)

Lot # 24002546  
Solvent: Nitric Acid

2.0%

40.0 (mL)

Nitric Acid

Formulated By: *Aleah O'Brady*  
Aleah O'Brady 062424

Reviewed By: *Pedro L. Rentas*  
Pedro L. Rentas 062424

Expiration Date: 062427  
Recommended Storage: Ambient (20 °C)  
Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.3

5E-05 Balance Uncertainty  
0.06 Flask Uncertainty

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | CAS# | SDS Information (Solvent Safety Info. On Attached pg.) | NIST SRM |
|----------|-------------|------------|-----------------|-------------------|--------------------------|-----------------------|-----------------------|---------------------|----------------------------------|------|--------------------------------------------------------|----------|
|          |             |            |                 |                   |                          |                       |                       |                     |                                  |      |                                                        |          |

1. Ammonium metavanadate (V) 58123 021224 0.1000 200.0 0.084 1000 10000.3 10000.0 2.2 7803-55-6 0.05 mg/m3 or-at 58.1mg/kg 3165

[1] Spectrum No.1 [ 34.243 sec]:58023.D# [Count] [Linear]

|       |        |     |     |     |     |     |     |     |     |     |     |
|-------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2.0E6 | m/z--> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 1.0E6 | m/z--> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 2.0E7 | m/z--> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 1.0E7 | m/z--> | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 |
| 5.0E8 | m/z--> | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
| 2.5E8 | m/z--> | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |



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

(T) = Target analyte

**Physical Characterization:**

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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).



# SHIPPING DOCUMENTS



284 Sheffield Street, Mountainside, NJ 07092

(908) 789-8900 Fax: (908) 788-9222

www.chemtech.net

## CHAIN OF CUSTODY RECORD

Alliance Project Number:

Q 3103

COC Number:

Page 1 of 1

## CLIENT INFORMATION

COMPANY: ENTACT, LLC

ADDRESS: 150 Bay Street, Suite 806

CITY: Jersey City STATE: NJ ZIP: 07302

ATTENTION: Austin Farmerie

PHONE: 412-716-1366

FAX:

## PROJECT INFORMATION

PROJECT NAME: 540 Degraw St Brooklyn, NY

PROJECT #: E9309 LOCATION: Brooklyn, NY

PROJECT MANAGER: Austin Farmerie

E-MAIL: afarmerie@entact.com

PHONE: 412-716-1366

FAX:

## BILLING INFORMATION

BILL TO: ENTACT, LLC

PO# E9309

ADDRESS: 999 Oakmont Plaza Drive, Suite 300

CITY: Westmont

STATE: IL ZIP: 60559

ATTENTION: Wendy Murray

PHONE: 800-936-8228

## DATA TURNAROUND INFORMATION

FAX: 5 DAYS\*

HARD COPY: 5 DAYS\*

EDD 5 DAYS\*

\* TO BE APPROVED BY ALLIANCE

STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

## DATA DELIVERABLE INFORMATION

- ☐ RESEULTS ONLY ☐ USEPA CLP  
☐ RESULTS + QC ☐ New York State ASP "B"  
☐ New Jersey REDUCED ☐ New York State ASP "A"  
☐ New Jersey CLP ☐ Other \_\_\_\_\_  
☐ EDD Format \_\_\_\_\_

## ANALYSIS

| SVOC-TCL<br>BNA-20 | Flash Point | PCB | BOD5 | TSS | VOC-TCLVOA-<br>10 | Metals ICP-TAL |   |   |  |
|--------------------|-------------|-----|------|-----|-------------------|----------------|---|---|--|
| 1                  | 2           | 3   | 4    | 5   | 6                 | 7              | 8 | 9 |  |

## PRESERVATIVES

## COMMENTS

<-- Specify Preservatives  
A-HCl B-HNO3  
C-H2SO4 D-NaOH  
E-ICE F-Other

| CHEMTECH<br>SAMPLE<br>ID | PROJECT<br>SAMPLE IDENTIFICATION | SAMPLE<br>MATRIX | SAMPLE<br>TYPE |      | SAMPLE<br>COLLECTION |       | # of Bottles | E | E | E | E | E | A | B |   |   |
|--------------------------|----------------------------------|------------------|----------------|------|----------------------|-------|--------------|---|---|---|---|---|---|---|---|---|
|                          |                                  |                  | COMP           | GRAB | DATE                 | TIME  |              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1.                       | TW-WTS-14                        | Surface Water    |                | X    | 9/15                 | 12:00 | 7            | X | X | X | X | X | X | X |   |   |
| 2.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 3.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 4.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 5.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 6.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 7.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 8.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 9.                       |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |
| 10.                      |                                  |                  |                |      |                      |       |              |   |   |   |   |   |   |   |   |   |

## SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

|                                                                                                                                                                                    |                                |                                                |                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RELINQUISHED BY SAMPLER<br>1. Austin Farmerie                                                                                                                                      | DATE/TIME<br>09/15/25<br>12:00 | RECEIVED BY<br>1. [Signature] 12:00<br>9-15-25 | Conditions of bottles or coolers at receipt: <input type="checkbox"/> Compliant <input type="checkbox"/> Non Compliant <input type="checkbox"/> Cooler Temp 3.8°C<br><input type="checkbox"/> Ice in Cooler?; |
| RELINQUISHED BY<br>2.                                                                                                                                                              | DATE/TIME                      | RECEIVED BY<br>2.                              | Comments:                                                                                                                                                                                                     |
| RELINQUISHED BY<br>3. [Signature]                                                                                                                                                  | DATE/TIME<br>9-15-25<br>1540   | RECEIVED FOR LAB BY<br>3.                      | Page _____ of _____                                                                                                                                                                                           |
| SHIPPED VIA: CLIENT: <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Overnight<br>ALLIANCE: <input type="checkbox"/> Picked Up <input type="checkbox"/> Overnight |                                |                                                | Shipment Complete<br><input type="checkbox"/> YES <input type="checkbox"/> NO                                                                                                                                 |

WHITE - ALLIANCE COPY FOR RETURN TO CLIENT

YELLOW - ALLIANCE COPY

PINK - SAMPLER COPY



### Laboratory Certification

| Certified By    | License No.      |
|-----------------|------------------|
|                 |                  |
| Connecticut     | PH-0830          |
|                 |                  |
| DOD ELAP (ANAB) | L2219            |
|                 |                  |
| Maine           | 2024021          |
|                 |                  |
| Maryland        | 296              |
|                 |                  |
| New Hampshire   | 255425           |
|                 |                  |
| New Jersey      | 20012            |
|                 |                  |
| New York        | 11376            |
|                 |                  |
| Pennsylvania    | 68-00548         |
|                 |                  |
| Soil Permit     | 525-24-234-08441 |
|                 |                  |
| Texas           | TX-C25-00189     |
|                 |                  |
| Virginia        | 460312           |

## LOGIN REPORT/SAMPLE TRANSFER

|                                          |        |                                                  |                              |
|------------------------------------------|--------|--------------------------------------------------|------------------------------|
| <b>Order ID :</b> Q3103                  | ENTA05 | <b>Order Date :</b> 9/15/2025 12:11:00 PM        | <b>Project Mgr :</b>         |
| <b>Client Name :</b> ENTACT              |        | <b>Project Name :</b> 540 Degraw St, Brooklyn, N | <b>Report Type :</b> Level 1 |
| <b>Client Contact :</b> Austin Farmerie  |        | <b>Receive DateTime :</b> 9/15/2025 3:40:00 PM   | <b>EDD Type :</b> Excel NJ   |
| <b>Invoice Name :</b> ENTACT             |        | <b>Purchase Order :</b>                          | <b>Hard Copy Date :</b>      |
| <b>Invoice Contact :</b> Austin Farmerie |        |                                                  | <b>Date Signoff :</b>        |

| LAB ID   | CLIENT ID | MATRIX | SAMPLE DATE | SAMPLE TIME | TEST         | TEST GROUP | METHOD   | FAX DATE | DUE DATES   |
|----------|-----------|--------|-------------|-------------|--------------|------------|----------|----------|-------------|
| Q3103-01 | TW-WTS-14 | Water  | 09/15/2025  | 12:00       | VOCMS Group4 |            | 8260-Low |          | 5 Bus. Days |

Relinquished By :

Date / Time :

  
9-15-25 1600

Received By :

Date / Time :

  
09/16/25 9:15 Pg 4 4

Storage Area : VOA Refridgerator Room