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

## METALS

**PROJECT NAME : FORT MEADE MD TIPTON AIRFIELD PARCEL RI - 0111169**

**WESTON SOLUTIONS**

**1400 Weston Way**

**PO Box 2653**

**West Chester, PA - 19380**

**Phone No: 610-701-7400**

**ORDER ID : Q1352**

**ATTENTION : Nathan Fretz**

**Laboratory Certification ID # 20012**

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# Cover Page

**Order ID :** Q1352

**Project ID :** Fort Meade MD Tipton Airfield Parcel RI - 0111169

**Client :** Weston Solutions

| Lab Sample Number | Client Sample Number |
|---|---|
| Q1352-01 | TAP-IDW-SOIL-021025 |
| Q1352-02 | TAP-IDW-SOIL-021025 |

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: 2/28/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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# CASE NARRATIVE

**Weston Solutions**
**Project Name: Fort Meade MD Tipton Airfield Parcel RI - 0111169**
**Project # N/A**
**Chemtech Project # Q1352**
**Test Name: TCLP Mercury,TCLP ICP Metals**

**A. Number of Samples and Date of Receipt:**
2 Solid samples were received on 02/11/2025.

**B. Parameters:**
According to the Chain of Custody document, the following analyses were requested: Anions Group1, Cyanide, Ignitability, PCB, pH, Sulfide, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS, TCLP Pesticide, TCLP VOA and TCLP ZHE Extraction. This data package contains results for TCLP Mercury,TCLP ICP Metals.

**C. Analytical Techniques:**
The analysis of TCLP ICP Metals was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of TCLP Mercury was based on method 7470A and TCLP extraction method was 1311.

**D. QA/ QC Samples:**
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike (SOIL-PILEMS) analysis met criteria for all samples except for Mercury due to matrix interference.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

**E. Calculations:**

**Calculation for TCLP Metals:**
Concentration or Result (µg/L) = $C \times \frac{Vf}{Vi} \times DF \times 1000$

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

**Calculation for TCLP Hg**:

Concentration or Result (µg/L) = C x DF
Where,
C = Instrument response in µg/L from the calibration curve.
DF = Dilution Factor

**F. Additional Comments:**

---

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

Signature_____

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

# 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 |

# ALLIANCE 284 Sheffield Street, Mountainside New Jersey 07092

NEW JERSEY LAB ID#: 20012: NEW YORK LAB ID#: 11376

## METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: Q1352 MATRIX: TCLP

METHOD: 6010D,7470A,1311

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

ADDITIONAL COMMENTS:

_____ _____

QA REVIEW Date

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## APPENDIX A

## QA REVIEW GENERAL DOCUMENTATION

**Project #:** Q1352

| | 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:** 02/28/2025

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# LAB CHRONICLE

| | | | |
|---|---|---|---|
| **OrderID:** | Q1352 | **OrderDate:** | 2/11/2025 11:32:00 AM |
| **Client:** | Weston Solutions | **Project:** | Fort Meade MD Tipton Airfield Parcel RI - 0111169 |
| **Contact:** | Nathan Fretz | **Location:** | N51 |

| LabID | ClientID | Matrix | Test | Method | Sample Date | Prep Date | Anal Date | Received |
|---|---|---|---|---|---|---|---|---|
| **Q1352-02** | **TAP-IDW-SOIL-021025** | **TCLP** | | | **02/10/25** | | | **02/11/25** |
| | | | TCLP ICP Metals | 6010D | | 02/13/25 | 02/17/25 | |
| | | | TCLP Mercury | 7470A | | 02/13/25 | 02/14/25 | |

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# Hit Summary Sheet
**SW-846**

**SDG No.:** Q1352 **Order ID:** Q1352

**Client:** Weston Solutions **Project ID:** Fort Meade MD Tipton Airfield Parcel RI -

| Sample ID | Client ID | Matrix | Parameter | Concentration | C | MDL | LOD | RDL | Units |
|---|---|---|---|---|---|---|---|---|---|
| **Client ID : TAP-IDW-SOIL-021025** | | | | | | | | | |
| Q1352-02 | TAP-IDW-SOIL-021025 | TCLP | Barium | 812 | | 62.8 | 125 | 500 | ug/L |
| Q1352-02 | TAP-IDW-SOIL-021025 | TCLP | Chromium | 24.9 | J | 6.60 | 25.0 | 50.0 | ug/L |

# SAMPLE DATA

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | Weston Solutions | Date Collected: | 02/10/25 |
| Project: | Fort Meade MD Tipton Airfield Parcel RI - 0111169 | Date Received: | 02/11/25 |
| Client Sample ID: | TAP-IDW-SOIL-021025 | SDG No.: | Q1352 |
| Lab Sample ID: | Q1352-02 | Matrix: | TCLP |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. | Prep Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 80.0 | U | 1 | 34.8 | 80.0 | 100 | ug/L | 02/13/25 12:05 | 02/17/25 13:15 | SW6010 | SW3050 |
| 7440-39-3 | Barium | 812 | | 1 | 62.8 | 125 | 500 | ug/L | 02/13/25 12:05 | 02/17/25 13:15 | SW6010 | SW3050 |
| 7440-43-9 | Cadmium | 7.50 | U | 1 | 0.94 | 7.50 | 30.0 | ug/L | 02/13/25 12:05 | 02/17/25 13:15 | SW6010 | SW3050 |
| 7440-47-3 | Chromium | 24.9 | J | 1 | 6.60 | 25.0 | 50.0 | ug/L | 02/13/25 12:05 | 02/17/25 13:15 | SW6010 | SW3050 |
| 7439-92-1 | Lead | 48.0 | U | 1 | 35.1 | 48.0 | 60.0 | ug/L | 02/13/25 12:05 | 02/17/25 13:15 | SW6010 | SW3050 |
| 7439-97-6 | Mercury | 1.60 | UN | 1 | 0.81 | 1.60 | 2.00 | ug/L | 02/13/25 11:25 | 02/14/25 11:24 | SW7470A | |
| 7782-49-2 | Selenium | 80.0 | U | 1 | 58.8 | 80.0 | 100 | ug/L | 02/13/25 12:05 | 02/17/25 13:15 | SW6010 | SW3050 |
| 7440-22-4 | Silver | 25.0 | U | 1 | 5.80 | 25.0 | 50.0 | ug/L | 02/13/25 12:05 | 02/17/25 13:15 | SW6010 | SW3050 |

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

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

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

# METAL CALIBRATION DATA

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** PLASMA-PURE

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| ICV05 | Mercury | 3.63 | 4.0 | 91 | 90 - 110 | CV | 02/14/2025 | 11:01 | LB134719 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** PLASMA-PURE

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| CCV72 | Mercury | 5.02 | 5.0 | 100 | 90 - 110 | CV | 02/14/2025 | 11:06 | LB134719 |
| CCV73 | Mercury | 4.81 | 5.0 | 96 | 90 - 110 | CV | 02/14/2025 | 11:36 | LB134719 |
| CCV74 | Mercury | 4.74 | 5.0 | 95 | 90 - 110 | CV | 02/14/2025 | 12:06 | LB134719 |
| CCV75 | Mercury | 4.83 | 5.0 | 97 | 90 - 110 | CV | 02/14/2025 | 12:36 | LB134719 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| ICV01 | Arsenic | 1010 | 1000 | 101 | 90 - 110 | P | 02/17/2025 | 11:46 | LB134738 |
| | Barium | 538 | 520 | 104 | 90 - 110 | P | 02/17/2025 | 11:46 | LB134738 |
| | Cadmium | 484 | 510 | 95 | 90 - 110 | P | 02/17/2025 | 11:46 | LB134738 |
| | Chromium | 519 | 520 | 100 | 90 - 110 | P | 02/17/2025 | 11:46 | LB134738 |
| | Lead | 968 | 1000 | 97 | 90 - 110 | P | 02/17/2025 | 11:46 | LB134738 |
| | Selenium | 1010 | 1000 | 101 | 90 - 110 | P | 02/17/2025 | 11:46 | LB134738 |
| | Silver | 248 | 250 | 99 | 90 - 110 | P | 02/17/2025 | 11:46 | LB134738 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| LLICV01 | Arsenic | 19.0 | 20.0 | 95 | 80 - 120 | P | 02/17/2025 | 11:50 | LB134738 |
| | Barium | 108 | 100 | 108 | 80 - 120 | P | 02/17/2025 | 11:50 | LB134738 |
| | Cadmium | 5.94 | 6.0 | 99 | 80 - 120 | P | 02/17/2025 | 11:50 | LB134738 |
| | Chromium | 10.0 | 10.0 | 100 | 80 - 120 | P | 02/17/2025 | 11:50 | LB134738 |
| | Lead | 12.9 | 12.0 | 107 | 80 - 120 | P | 02/17/2025 | 11:50 | LB134738 |
| | Selenium | 20.1 | 20.0 | 101 | 80 - 120 | P | 02/17/2025 | 11:50 | LB134738 |
| | Silver | 10.7 | 10.0 | 107 | 80 - 120 | P | 02/17/2025 | 11:50 | LB134738 |

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# Metals

## - 2a -
## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| CCV01 | Arsenic | 5040 | 5000 | 101 | 90 - 110 | P | 02/17/2025 | 12:13 | LB134738 |
| | Barium | 9090 | 10000 | 91 | 90 - 110 | P | 02/17/2025 | 12:13 | LB134738 |
| | Cadmium | 2440 | 2500 | 98 | 90 - 110 | P | 02/17/2025 | 12:13 | LB134738 |
| | Chromium | 1020 | 1000 | 102 | 90 - 110 | P | 02/17/2025 | 12:13 | LB134738 |
| | Lead | 4890 | 5000 | 98 | 90 - 110 | P | 02/17/2025 | 12:13 | LB134738 |
| | Selenium | 5090 | 5000 | 102 | 90 - 110 | P | 02/17/2025 | 12:13 | LB134738 |
| | Silver | 1240 | 1250 | 100 | 90 - 110 | P | 02/17/2025 | 12:13 | LB134738 |
| CCV02 | Arsenic | 4820 | 5000 | 96 | 90 - 110 | P | 02/17/2025 | 13:06 | LB134738 |
| | Barium | 9270 | 10000 | 93 | 90 - 110 | P | 02/17/2025 | 13:06 | LB134738 |
| | Cadmium | 2360 | 2500 | 94 | 90 - 110 | P | 02/17/2025 | 13:06 | LB134738 |
| | Chromium | 997 | 1000 | 100 | 90 - 110 | P | 02/17/2025 | 13:06 | LB134738 |
| | Lead | 4730 | 5000 | 95 | 90 - 110 | P | 02/17/2025 | 13:06 | LB134738 |
| | Selenium | 4850 | 5000 | 97 | 90 - 110 | P | 02/17/2025 | 13:06 | LB134738 |
| | Silver | 1230 | 1250 | 99 | 90 - 110 | P | 02/17/2025 | 13:06 | LB134738 |
| CCV03 | Arsenic | 5030 | 5000 | 101 | 90 - 110 | P | 02/17/2025 | 13:57 | LB134738 |
| | Barium | 9050 | 10000 | 90 | 90 - 110 | P | 02/17/2025 | 13:57 | LB134738 |
| | Cadmium | 2420 | 2500 | 97 | 90 - 110 | P | 02/17/2025 | 13:57 | LB134738 |
| | Chromium | 1010 | 1000 | 101 | 90 - 110 | P | 02/17/2025 | 13:57 | LB134738 |
| | Lead | 4850 | 5000 | 97 | 90 - 110 | P | 02/17/2025 | 13:57 | LB134738 |
| | Selenium | 5120 | 5000 | 102 | 90 - 110 | P | 02/17/2025 | 13:57 | LB134738 |
| | Silver | 1230 | 1250 | 98 | 90 - 110 | P | 02/17/2025 | 13:57 | LB134738 |
| CCV04 | Arsenic | 4850 | 5000 | 97 | 90 - 110 | P | 02/17/2025 | 14:53 | LB134738 |
| | Barium | 10700 | 10000 | 107 | 90 - 110 | P | 02/17/2025 | 14:53 | LB134738 |
| | Cadmium | 2360 | 2500 | 95 | 90 - 110 | P | 02/17/2025 | 14:53 | LB134738 |
| | Chromium | 985 | 1000 | 98 | 90 - 110 | P | 02/17/2025 | 14:53 | LB134738 |
| | Lead | 4740 | 5000 | 95 | 90 - 110 | P | 02/17/2025 | 14:53 | LB134738 |
| | Selenium | 4900 | 5000 | 98 | 90 - 110 | P | 02/17/2025 | 14:53 | LB134738 |
| | Silver | 1190 | 1250 | 95 | 90 - 110 | P | 02/17/2025 | 14:53 | LB134738 |
| CCV05 | Arsenic | 4870 | 5000 | 98 | 90 - 110 | P | 02/17/2025 | 15:12 | LB134738 |
| | Barium | 10800 | 10000 | 108 | 90 - 110 | P | 02/17/2025 | 15:12 | LB134738 |
| | Cadmium | 2360 | 2500 | 94 | 90 - 110 | P | 02/17/2025 | 15:12 | LB134738 |
| | Chromium | 980 | 1000 | 98 | 90 - 110 | P | 02/17/2025 | 15:12 | LB134738 |
| | Lead | 4730 | 5000 | 95 | 90 - 110 | P | 02/17/2025 | 15:12 | LB134738 |
| | Selenium | 4950 | 5000 | 99 | 90 - 110 | P | 02/17/2025 | 15:12 | LB134738 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| CCV05 | Silver | 1200 | 1250 | 96 | 90 - 110 | P | 02/17/2025 | 15:12 | LB134738 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| ICV01 | Arsenic | 1060 | 1000 | 106 | 90 - 110 | P | 02/25/2025 | 15:57 | lb134801 |
| | Barium | 479 | 520 | 92 | 90 - 110 | P | 02/25/2025 | 15:57 | lb134801 |
| | Cadmium | 512 | 510 | 100 | 90 - 110 | P | 02/25/2025 | 15:57 | lb134801 |
| | Chromium | 540 | 520 | 104 | 90 - 110 | P | 02/25/2025 | 15:57 | lb134801 |
| | Lead | 1020 | 1000 | 102 | 90 - 110 | P | 02/25/2025 | 15:57 | lb134801 |
| | Selenium | 1050 | 1000 | 105 | 90 - 110 | P | 02/25/2025 | 15:57 | lb134801 |
| | Silver | 263 | 250 | 105 | 90 - 110 | P | 02/25/2025 | 15:57 | lb134801 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| LLICV01 | Arsenic | 20.0 | 20.0 | 100 | 80 - 120 | P | 02/25/2025 | 16:02 | lb134801 |
| | Barium | 91.8 | 100 | 92 | 80 - 120 | P | 02/25/2025 | 16:02 | lb134801 |
| | Cadmium | 6.05 | 6.0 | 101 | 80 - 120 | P | 02/25/2025 | 16:02 | lb134801 |
| | Chromium | 10.2 | 10.0 | 102 | 80 - 120 | P | 02/25/2025 | 16:02 | lb134801 |
| | Lead | 11.7 | 12.0 | 98 | 80 - 120 | P | 02/25/2025 | 16:02 | lb134801 |
| | Selenium | 20.9 | 20.0 | 104 | 80 - 120 | P | 02/25/2025 | 16:02 | lb134801 |
| | Silver | 10.8 | 10.0 | 108 | 80 - 120 | P | 02/25/2025 | 16:02 | lb134801 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:** EPA

**Continuing Calibration Source:** Inorganic Ventures

| Sample ID | Analyte | Result ug/L | True Value | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| CCV01 | Arsenic | 4900 | 5000 | 98 | 90 - 110 | P | 02/25/2025 | 16:23 | lb134801 |
| | Barium | 9100 | 10000 | 91 | 90 - 110 | P | 02/25/2025 | 16:23 | lb134801 |
| | Cadmium | 2420 | 2500 | 97 | 90 - 110 | P | 02/25/2025 | 16:23 | lb134801 |
| | Chromium | 1020 | 1000 | 102 | 90 - 110 | P | 02/25/2025 | 16:23 | lb134801 |
| | Lead | 4870 | 5000 | 98 | 90 - 110 | P | 02/25/2025 | 16:23 | lb134801 |
| | Selenium | 4850 | 5000 | 97 | 90 - 110 | P | 02/25/2025 | 16:23 | lb134801 |
| | Silver | 1260 | 1250 | 101 | 90 - 110 | P | 02/25/2025 | 16:23 | lb134801 |
| CCV02 | Arsenic | 4890 | 5000 | 98 | 90 - 110 | P | 02/25/2025 | 16:54 | lb134801 |
| | Barium | 9060 | 10000 | 91 | 90 - 110 | P | 02/25/2025 | 16:54 | lb134801 |
| | Cadmium | 2380 | 2500 | 95 | 90 - 110 | P | 02/25/2025 | 16:54 | lb134801 |
| | Chromium | 1010 | 1000 | 100 | 90 - 110 | P | 02/25/2025 | 16:54 | lb134801 |
| | Lead | 4840 | 5000 | 97 | 90 - 110 | P | 02/25/2025 | 16:54 | lb134801 |
| | Selenium | 4820 | 5000 | 96 | 90 - 110 | P | 02/25/2025 | 16:54 | lb134801 |
| | Silver | 1250 | 1250 | 100 | 90 - 110 | P | 02/25/2025 | 16:54 | lb134801 |

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# Metals

## - 2b -
## CRDL STANDARD FOR AA & ICP

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Initial Calibration Source:**

**Continuing Calibration Source:**

| Sample ID | Analyte | Result ug/L | True Value ug/L | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| **CRA** | Mercury | 0.21 | 0.2 | 105 | 40 - 160 | CV | 02/14/2025 | 11:10 | LB134719 |
| **CRI01** | Arsenic | 20.3 | 20.0 | 101 | 40 - 160 | P | 02/17/2025 | 12:00 | LB134738 |
| | Barium | 82.5 | 100 | 82 | 40 - 160 | P | 02/17/2025 | 12:00 | LB134738 |
| | Cadmium | 5.89 | 6.0 | 98 | 40 - 160 | P | 02/17/2025 | 12:00 | LB134738 |
| | Chromium | 9.87 | 10.0 | 99 | 40 - 160 | P | 02/17/2025 | 12:00 | LB134738 |
| | Lead | 11.6 | 12.0 | 97 | 40 - 160 | P | 02/17/2025 | 12:00 | LB134738 |
| | Selenium | 18.9 | 20.0 | 94 | 40 - 160 | P | 02/17/2025 | 12:00 | LB134738 |
| | Silver | 10.3 | 10.0 | 103 | 40 - 160 | P | 02/17/2025 | 12:00 | LB134738 |
| **CRI01** | Arsenic | 21.5 | 20.0 | 107 | 40 - 160 | P | 02/25/2025 | 16:10 | lb134801 |
| | Barium | 88.7 | 100 | 89 | 40 - 160 | P | 02/25/2025 | 16:10 | lb134801 |
| | Cadmium | 5.96 | 6.0 | 99 | 40 - 160 | P | 02/25/2025 | 16:10 | lb134801 |
| | Chromium | 10.3 | 10.0 | 103 | 40 - 160 | P | 02/25/2025 | 16:10 | lb134801 |
| | Lead | 11.3 | 12.0 | 94 | 40 - 160 | P | 02/25/2025 | 16:10 | lb134801 |
| | Selenium | 18.7 | 20.0 | 94 | 40 - 160 | P | 02/25/2025 | 16:10 | lb134801 |
| | Silver | 10.5 | 10.0 | 105 | 40 - 160 | P | 02/25/2025 | 16:10 | lb134801 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| **ICB05** | Mercury | 0.20 | +/-0.20 | U | 0.16 | 0.20 | CV | 02/14/2025 | 11:03 | LB134719 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| **CCB72** | Mercury | 0.20 | +/-0.20 | U | 0.16 | 0.20 | CV | 02/14/2025 | 11:08 | LB134719 |
| **CCB73** | Mercury | 0.20 | +/-0.20 | U | 0.16 | 0.20 | CV | 02/14/2025 | 11:38 | LB134719 |
| **CCB74** | Mercury | 0.20 | +/-0.20 | U | 0.16 | 0.20 | CV | 02/14/2025 | 12:08 | LB134719 |
| **CCB75** | Mercury | 0.20 | +/-0.20 | U | 0.16 | 0.20 | CV | 02/14/2025 | 12:38 | LB134719 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| ICB01 | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 11:56 | LB134738 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/17/2025 | 11:56 | LB134738 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/17/2025 | 11:56 | LB134738 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 11:56 | LB134738 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/17/2025 | 11:56 | LB134738 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 11:56 | LB134738 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 11:56 | LB134738 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| **CCB01** | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 12:17 | LB134738 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/17/2025 | 12:17 | LB134738 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/17/2025 | 12:17 | LB134738 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 12:17 | LB134738 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/17/2025 | 12:17 | LB134738 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 12:17 | LB134738 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 12:17 | LB134738 |
| **CCB02** | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 13:10 | LB134738 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/17/2025 | 13:10 | LB134738 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/17/2025 | 13:10 | LB134738 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 13:10 | LB134738 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/17/2025 | 13:10 | LB134738 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 13:10 | LB134738 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 13:10 | LB134738 |
| **CCB03** | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 14:06 | LB134738 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/17/2025 | 14:06 | LB134738 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/17/2025 | 14:06 | LB134738 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 14:06 | LB134738 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/17/2025 | 14:06 | LB134738 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 14:06 | LB134738 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 14:06 | LB134738 |
| **CCB04** | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 14:58 | LB134738 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/17/2025 | 14:58 | LB134738 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/17/2025 | 14:58 | LB134738 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 14:58 | LB134738 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/17/2025 | 14:58 | LB134738 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 14:58 | LB134738 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 14:58 | LB134738 |
| **CCB05** | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 15:15 | LB134738 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/17/2025 | 15:15 | LB134738 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/17/2025 | 15:15 | LB134738 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 15:15 | LB134738 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/17/2025 | 15:15 | LB134738 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/17/2025 | 15:15 | LB134738 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/17/2025 | 15:15 | LB134738 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| ICB01 | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/25/2025 | 16:06 | lb134801 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/25/2025 | 16:06 | lb134801 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/25/2025 | 16:06 | lb134801 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/25/2025 | 16:06 | lb134801 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/25/2025 | 16:06 | lb134801 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/25/2025 | 16:06 | lb134801 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/25/2025 | 16:06 | lb134801 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| **CCB01** | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/25/2025 | 16:27 | lb134801 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/25/2025 | 16:27 | lb134801 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/25/2025 | 16:27 | lb134801 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/25/2025 | 16:27 | lb134801 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/25/2025 | 16:27 | lb134801 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/25/2025 | 16:27 | lb134801 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/25/2025 | 16:27 | lb134801 |
| **CCB02** | Arsenic | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/25/2025 | 16:58 | lb134801 |
| | Barium | 100 | +/-100 | U | 25.0 | 100 | P | 02/25/2025 | 16:58 | lb134801 |
| | Cadmium | 6.00 | +/-6.00 | U | 1.50 | 6.00 | P | 02/25/2025 | 16:58 | lb134801 |
| | Chromium | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/25/2025 | 16:58 | lb134801 |
| | Lead | 12.0 | +/-12.0 | U | 9.60 | 12.0 | P | 02/25/2025 | 16:58 | lb134801 |
| | Selenium | 20.0 | +/-20.0 | U | 16.0 | 20.0 | P | 02/25/2025 | 16:58 | lb134801 |
| | Silver | 10.0 | +/-10.0 | U | 5.00 | 10.0 | P | 02/25/2025 | 16:58 | lb134801 |

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# Metals
## - 3b -
## PREPARATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Instrument:** CV1

| Sample ID | Analyte | Result (ug/L) | Acceptance Limit | Conc Qual | LOD ug/L | CRQL ug/L | M | Analysis Date | Analysis Time | Run |
|---|---|---|---|---|---|---|---|---|---|---|
| **PB166700TB** | | **WATER** | | **Batch Number:** | | **PB166720** | | **Prep Date:** | **02/13/2025** | |
| | Mercury | 2.00 | <2.00 | U | 1.60 | 2.00 | CV | 02/14/2025 | 12:17 | LB134719 |
| **PB166720BL** | | **WATER** | | **Batch Number:** | | **PB166720** | | **Prep Date:** | **02/13/2025** | |
| | Mercury | 0.20 | <0.20 | U | 0.16 | 0.20 | CV | 02/14/2025 | 11:17 | LB134719 |

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# Metals
## - 3b -
## PREPARATION BLANK SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Instrument:** P4

| Sample ID | Analyte | Result (ug/L) | Acceptance Limit | Conc Qual | LOD ug/L | CRQL ug/L | M | Analysis Date | Analysis Time | Run |
|---|---|---|---|---|---|---|---|---|---|---|
| **PB166700TB** | | **WATER** | | **Batch Number:** | | **PB166715** | | **Prep Date:** | **02/13/2025** | |
| | Arsenic | 100 | <100 | U | 80.0 | 100 | P | 02/17/2025 | 12:57 | LB134738 |
| | Barium | 500 | <500 | U | 125 | 500 | P | 02/17/2025 | 12:57 | LB134738 |
| | Cadmium | 30.0 | <30.0 | U | 7.50 | 30.0 | P | 02/17/2025 | 12:57 | LB134738 |
| | Chromium | 10.6 | <50.0 | J | 25.0 | 50.0 | P | 02/17/2025 | 12:57 | LB134738 |
| | Lead | 60.0 | <60.0 | U | 48.0 | 60.0 | P | 02/17/2025 | 12:57 | LB134738 |
| | Selenium | 100 | <100 | U | 80.0 | 100 | P | 02/17/2025 | 12:57 | LB134738 |
| | Silver | 50.0 | <50.0 | U | 25.0 | 50.0 | P | 02/17/2025 | 12:57 | LB134738 |

| Sample ID | Analyte | Result (ug/L) | Acceptance Limit | Conc Qual | LOD ug/L | CRQL ug/L | M | Analysis Date | Analysis Time | Run |
|---|---|---|---|---|---|---|---|---|---|---|
| **PB166715BL** | | **WATER** | | **Batch Number:** | | **PB166715** | | **Prep Date:** | **02/13/2025** | |
| | Arsenic | 100 | <100 | U | 80.0 | 100 | P | 02/25/2025 | 16:32 | lb134801 |
| | Barium | 500 | <500 | U | 125 | 500 | P | 02/25/2025 | 16:32 | lb134801 |
| | Cadmium | 30.0 | <30.0 | U | 7.50 | 30.0 | P | 02/25/2025 | 16:32 | lb134801 |
| | Chromium | 50.0 | <50.0 | U | 25.0 | 50.0 | P | 02/25/2025 | 16:32 | lb134801 |
| | Lead | 60.0 | <60.0 | U | 48.0 | 60.0 | P | 02/25/2025 | 16:32 | lb134801 |
| | Selenium | 100 | <100 | U | 80.0 | 100 | P | 02/25/2025 | 16:32 | lb134801 |
| | Silver | 50.0 | <50.0 | U | 25.0 | 50.0 | P | 02/25/2025 | 16:32 | lb134801 |

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# Metals
## - 4 -
## INTERFERENCE CHECK SAMPLE

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**ICS Source:** EPA **Instrument ID:** P4

| Sample ID | Analyte | Result ug/L | True Value ug/L | % Recovery | Low Limit (ug/L) | High Limit (ug/L) | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| **ICSA01** | Arsenic | 0.22 | | | -20 | 20 | 02/17/2025 | 12:05 | LB134738 |
| | Barium | 3.54 | 6.0 | 59 | -94 | 106 | 02/17/2025 | 12:05 | LB134738 |
| | Cadmium | 5.28 | 1.0 | 528 | -5 | 7 | 02/17/2025 | 12:05 | LB134738 |
| | Chromium | 58.1 | 52.0 | 112 | 42 | 62 | 02/17/2025 | 12:05 | LB134738 |
| | Lead | 6.05 | | | -12 | 12 | 02/17/2025 | 12:05 | LB134738 |
| | Selenium | -14.1 | | | -20 | 20 | 02/17/2025 | 12:05 | LB134738 |
| | Silver | -4.35 | | | -10 | 10 | 02/17/2025 | 12:05 | LB134738 |
| **ICSAB01** | Arsenic | 114 | 104 | 110 | 88.4 | 120 | 02/17/2025 | 12:09 | LB134738 |
| | Barium | 450 | 537 | 84 | 437 | 637 | 02/17/2025 | 12:09 | LB134738 |
| | Cadmium | 1010 | 972 | 104 | 826 | 1120 | 02/17/2025 | 12:09 | LB134738 |
| | Chromium | 583 | 542 | 108 | 460 | 624 | 02/17/2025 | 12:09 | LB134738 |
| | Lead | 56.7 | 49.0 | 116 | 37 | 61 | 02/17/2025 | 12:09 | LB134738 |
| | Selenium | 39.2 | 46.0 | 85 | 26 | 66 | 02/17/2025 | 12:09 | LB134738 |
| | Silver | 217 | 201 | 108 | 170 | 232 | 02/17/2025 | 12:09 | LB134738 |
| **ICSA01** | Arsenic | 5.14 | | | -20 | 20 | 02/25/2025 | 16:15 | lb134801 |
| | Barium | 5.02 | 6.0 | 84 | -94 | 106 | 02/25/2025 | 16:15 | lb134801 |
| | Cadmium | -1.53 | 1.0 | 153 | -5 | 7 | 02/25/2025 | 16:15 | lb134801 |
| | Chromium | 58.9 | 52.0 | 113 | 42 | 62 | 02/25/2025 | 16:15 | lb134801 |
| | Lead | 7.11 | | | -12 | 12 | 02/25/2025 | 16:15 | lb134801 |
| | Selenium | -8.52 | | | -20 | 20 | 02/25/2025 | 16:15 | lb134801 |
| | Silver | -3.59 | | | -10 | 10 | 02/25/2025 | 16:15 | lb134801 |
| **ICSAB01** | Arsenic | 110 | 104 | 106 | 88.4 | 120 | 02/25/2025 | 16:19 | lb134801 |
| | Barium | 445 | 537 | 83 | 437 | 637 | 02/25/2025 | 16:19 | lb134801 |
| | Cadmium | 968 | 972 | 100 | 826 | 1120 | 02/25/2025 | 16:19 | lb134801 |
| | Chromium | 574 | 542 | 106 | 460 | 624 | 02/25/2025 | 16:19 | lb134801 |
| | Lead | 55.6 | 49.0 | 114 | 37 | 61 | 02/25/2025 | 16:19 | lb134801 |
| | Selenium | 42.0 | 46.0 | 91 | 26 | 66 | 02/25/2025 | 16:19 | lb134801 |
| | Silver | 217 | 201 | 108 | 170 | 232 | 02/25/2025 | 16:19 | lb134801 |

# METAL QC DATA

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# metals
## - 5a -
## MATRIX SPIKE SUMMARY

**client:** Weston Solutions **level:** low **sdg no.:** Q1352

**contract:** WEST04 **lab code:** CHEM **case no.:** Q1352 **sas no.:** Q1352

**matrix:** Water **sample id:** Q1356-03 **client id:** SOIL-PILEMS

**Percent Solids for Sample:** NA **Spiked ID:** Q1356-03MS **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | ug/L | 82 - 119 | 32.1 | | 2.00 | U | 40.0 | 80 | N | CV |

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

**client:** Weston Solutions **level:** low **sdg no.:** Q1352

**contract:** WEST04 **lab code:** CHEM **case no.:** Q1352 **sas no.:** Q1352

**matrix:** Water **sample id:** Q1356-03 **client id:** SOIL-PILEMSD

**Percent Solids for Sample:** NA **Spiked ID:** Q1356-03MSD **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit %R | MSD Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | ug/L | 82 - 119 | 33.1 | | 2.00 | U | 40.0 | 83 | | CV |

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# metals
## - 5a -
## MATRIX SPIKE SUMMARY

**client:** Weston Solutions **level:** low **sdg no.:** Q1352

**contract:** WEST04 **lab code:** CHEM **case no.:** Q1352 **sas no.:** Q1352

**matrix:** Water **sample id:** Q1356-04 **client id:** CARBON-WATERMS

**Percent Solids for Sample:** NA **Spiked ID:** Q1356-04MS **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ug/L | 87 - 113 | 4090 | | 100 | U | 4000 | 102 | | P |
| Barium | ug/L | 88 - 113 | 1000 | | 75.7 | J | 1000 | 93 | | P |
| Cadmium | ug/L | 88 - 113 | 960 | | 30.0 | U | 1000 | 96 | | P |
| Chromium | ug/L | 90 - 113 | 2090 | | 50.0 | U | 2000 | 104 | | P |
| Lead | ug/L | 86 - 113 | 4820 | | 60.0 | U | 5000 | 96 | | P |
| Selenium | ug/L | 83 - 114 | 9620 | | 100 | U | 10000 | 96 | | P |
| Silver | ug/L | 84 - 115 | 373 | | 50.0 | U | 380 | 98 | | P |

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

**client:** Weston Solutions **level:** low **sdg no.:** Q1352

**contract:** WEST04 **lab code:** CHEM **case no.:** Q1352 **sas no.:** Q1352

**matrix:** Water **sample id:** Q1356-04 **client id:** CARBON-WATERMSD

**Percent Solids for Sample:** NA **Spiked ID:** Q1356-04MSD **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit %R | MSD Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ug/L | 87 - 113 | 4150 | | 100 | U | 4000 | 104 | | P |
| Barium | ug/L | 88 - 113 | 1010 | | 75.7 | J | 1000 | 93 | | P |
| Cadmium | ug/L | 88 - 113 | 966 | | 30.0 | U | 1000 | 97 | | P |
| Chromium | ug/L | 90 - 113 | 2100 | | 50.0 | U | 2000 | 105 | | P |
| Lead | ug/L | 86 - 113 | 4850 | | 60.0 | U | 5000 | 97 | | P |
| Selenium | ug/L | 83 - 114 | 9780 | | 100 | U | 10000 | 98 | | P |
| Silver | ug/L | 84 - 115 | 376 | | 50.0 | U | 380 | 99 | | P |

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# Metals
## - 5b -
## POST DIGEST SPIKE SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Matrix:** Water **Level:** LOW **Client ID:** SOIL-PILEA

**Sample ID:** Q1356-03 **Spiked ID:** Q1356-03A

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | ug/L | 82 - 119 | 31.1 | | 2.00 | U | 40.0 | 78 | | CV |

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# Metals

## - 6 -

## DUPLICATE SAMPLE SUMMARY

**Client:** Weston Solutions **Level:** LOW **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Matrix:** Water **Sample ID:** Q1356-03 **Client ID:** SOIL-PILEDUP

**Percent Solids for Sample:** NA **Duplicate ID** Q1356-03DUP **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | ug/L | 20 | 2.00 | U | 2.00 | U | | | CV |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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# Metals

## - 6 -
## DUPLICATE SAMPLE SUMMARY

**Client:** Weston Solutions **Level:** LOW **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Matrix:** Water **Sample ID:** Q1356-03MS **Client ID:** SOIL-PILEMSD

**Percent Solids for Sample:** NA **Duplicate ID** Q1356-03MSD **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | ug/L | 20 | 32.1 | | 33.1 | | 3 | | CV |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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# Metals

## - 6 -

## DUPLICATE SAMPLE SUMMARY

**Client:** Weston Solutions **Level:** LOW **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Matrix:** Water **Sample ID:** Q1356-04 **Client ID:** CARBON-WATERDUP

**Percent Solids for Sample:** NA **Duplicate ID** Q1356-04DUP **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ug/L | 20 | 100 | U | 100 | U | | | P |
| Barium | ug/L | 20 | 75.7 | J | 75.5 | J | 0 | | P |
| Cadmium | ug/L | 20 | 30.0 | U | 30.0 | U | | | P |
| Chromium | ug/L | 20 | 50.0 | U | 50.0 | U | | | P |
| Lead | ug/L | 20 | 60.0 | U | 60.0 | U | | | P |
| Selenium | ug/L | 20 | 100 | U | 100 | U | | | P |
| Silver | ug/L | 20 | 50.0 | U | 50.0 | U | | | P |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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# Metals

## - 6 -

## DUPLICATE SAMPLE SUMMARY

**Client:** Weston Solutions **Level:** LOW **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Matrix:** Water **Sample ID:** Q1356-04MS **Client ID:** CARBON-WATERMSD

**Percent Solids for Sample:** NA **Duplicate ID** Q1356-04MSD **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ug/L | 20 | 4090 | | 4150 | | 1 | | P |
| Barium | ug/L | 20 | 1000 | | 1010 | | 1 | | P |
| Cadmium | ug/L | 20 | 960 | | 966 | | 1 | | P |
| Chromium | ug/L | 20 | 2090 | | 2100 | | 0 | | P |
| Lead | ug/L | 20 | 4820 | | 4850 | | 1 | | P |
| Selenium | ug/L | 20 | 9620 | | 9780 | | 2 | | P |
| Silver | ug/L | 20 | 373 | | 376 | | 1 | | P |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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## LABORATORY CONTROL SAMPLE SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Analyte | Units | True Value | Result | C | % Recovery | Acceptance Limits | M |
|---|---|---|---|---|---|---|---|
| PB166715BS | | | | | | | |
| Arsenic | ug/L | 4000 | 3980 | | 100 | 87 - 113 | P |
| Barium | ug/L | 1000 | 1010 | | 101 | 88 - 113 | P |
| Cadmium | ug/L | 1000 | 953 | | 95 | 88 - 113 | P |
| Chromium | ug/L | 2000 | 2030 | | 102 | 90 - 113 | P |
| Lead | ug/L | 5000 | 4820 | | 96 | 86 - 113 | P |
| Selenium | ug/L | 10000 | 9580 | | 96 | 83 - 114 | P |
| Silver | ug/L | 380 | 379 | | 100 | 84 - 115 | P |

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## LABORATORY CONTROL SAMPLE SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

| Analyte | Units | True Value | Result | C | % Recovery | Acceptance Limits | M |
|---|---|---|---|---|---|---|---|
| PB166720BS | | | | | | | |
| Mercury | ug/L | 4.0 | 3.60 | | 90 | 82 - 119 | CV |

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# Metals

## -9 -

## ICP SERIAL DILUTIONS

SAMPLE NO.

SOIL-PILEL

**Lab Name:** Chemtech Consulting Group **Contract:** WEST04

**Lab Code:** CHEM **Lb No.:** lb134719 **Lab Sample ID :** Q1356-03L **SDG No.:** Q1352

**Matrix (soil/water):** Water **Level (low/med):** LOW

**Concentration Units:** ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Mercury | 2.00 | U | 10.0 | U | | | CV |

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# Metals

## -9 -

## ICP SERIAL DILUTIONS

SAMPLE NO.

CARBON-WATERL

**Lab Name:** Chemtech Consulting Group **Contract:** WEST04

**Lab Code:** CHEM **Lb No.:** lb134738 **Lab Sample ID :** Q1356-04L **SDG No.:** Q1352

**Matrix (soil/water):** Water **Level (low/med):** LOW

**Concentration Units:** ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Arsenic | 100 | U | 500 | U | | | P |
| Barium | 75.7 | J | 2500 | U | 100.0 | | P |
| Cadmium | 30.0 | U | 150 | U | | | P |
| Chromium | 50.0 | U | 250 | U | | | P |
| Lead | 60.0 | U | 300 | U | | | P |
| Selenium | 100 | U | 500 | U | | | P |
| Silver | 50.0 | U | 250 | U | | | P |

# METAL PREPARATION & INSTRUMENT DATA

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# Metals
## - 11 -
## ICP INTERELEMENT CORRECTION FACTORS

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Instrument ID:** **Date:**

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

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

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# Metals
## - 11 -
## ICP INTERELEMENT CORRECTION FACTORS

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Instrument ID:** **Date:**

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

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

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# Metals
## - 11 -
## ICP INTERELEMENT CORRECTION FACTORS

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Instrument ID:** **Date:**

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

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

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# Metals
## - 11 -
## ICP INTERELEMENT CORRECTION FACTORS

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Instrument ID:** **Date:**

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

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

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# Metals
## - 11 -
## ICP INTERELEMENT CORRECTION FACTORS

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Case No.:** Q1352 **SAS No.:** Q1352

**Instrument ID:** **Date:**

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

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

# METAL PREPARATION & ANALYICAL SUMMARY

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# Metals
## - 13 -
## SAMPLE PREPARATION SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Method:**

**Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Client ID | Sample Type | Matrix | Prep Date | Initial Sample Size(mL) | Final Sample Volume (mL) | Percent Solids |
|---|---|---|---|---|---|---|---|
| **Batch Number:** | **PB166715** | | | | | | |
| PB166700TB | PB166700TB | MB | WATER | 02/13/2025 | 5.0 | 25.0 | |
| PB166702TB | PB166702TB | MB | WATER | 02/13/2025 | 5.0 | 25.0 | |
| PB166715BL | PB166715BL | MB | WATER | 02/13/2025 | 5.0 | 25.0 | |
| PB166715BS | PB166715BS | LCS | WATER | 02/13/2025 | 5.0 | 25.0 | |
| Q1352-02 | TAP-IDW-SOIL-021025 | SAM | WATER | 02/13/2025 | 5.0 | 25.0 | |
| Q1356-04DUP | CARBON-WATERDUP | DUP | WATER | 02/13/2025 | 5.0 | 25.0 | |
| Q1356-04MS | CARBON-WATERMS | MS | WATER | 02/13/2025 | 5.0 | 25.0 | |
| Q1356-04MSD | CARBON-WATERMSD | MSD | WATER | 02/13/2025 | 5.0 | 25.0 | |

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# Metals
## - 13 -
## SAMPLE PREPARATION SUMMARY

**Client:** Weston Solutions **SDG No.:** Q1352

**Contract:** WEST04 **Lab Code:** CHEM **Method:**

**Case No.:** Q1352 **SAS No.:** Q1352

| Sample ID | Client ID | Sample Type | Matrix | Prep Date | Initial Sample Size(mL) | Final Sample Volume (mL) | Percent Solids |
|---|---|---|---|---|---|---|---|
| **Batch Number:** | **PB166720** | | | | | | |
| PB166700TB | PB166700TB | MB | WATER | 02/13/2025 | 3.0 | 30.0 | |
| PB166720BL | PB166720BL | MB | WATER | 02/13/2025 | 30.0 | 30.0 | |
| PB166720BS | PB166720BS | LCS | WATER | 02/13/2025 | 30.0 | 30.0 | |
| Q1352-02 | TAP-IDW-SOIL-021025 | SAM | WATER | 02/13/2025 | 3.0 | 30.0 | |
| Q1356-03DUP | SOIL-PILEDUP | DUP | WATER | 02/13/2025 | 3.0 | 30.0 | |
| Q1356-03MS | SOIL-PILEMS | MS | WATER | 02/13/2025 | 3.0 | 30.0 | |
| Q1356-03MSD | SOIL-PILEMSD | MSD | WATER | 02/13/2025 | 3.0 | 30.0 | |

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

**Client:** Weston Solutions **Contract:** WEST04

**Lab code:** CHEM **Case no.:** Q1352 **Sas no.:** Q1352 **Sdg no.:** Q1352

**Instrument id number:** **Method:** **Run number:** LB134719

**Start date:** 02/14/2025 **End date:** 02/14/2025

| Lab sample id. | Client Sample Id | d/f | Time | Parameter list |
|---|---|---|---|---|
| S0 | S0 | 1 | 1045 | HG |
| S0.2 | S0.2 | 1 | 1047 | HG |
| S2.5 | S2.5 | 1 | 1049 | HG |
| S5 | S5 | 1 | 1052 | HG |
| S7.5 | S7.5 | 1 | 1054 | HG |
| S10 | S10 | 1 | 1056 | HG |
| ICV05 | ICV05 | 1 | 1101 | HG |
| ICB05 | ICB05 | 1 | 1103 | HG |
| CCV72 | CCV72 | 1 | 1106 | HG |
| CCB72 | CCB72 | 1 | 1108 | HG |
| CRA | CRA | 1 | 1110 | HG |
| PB166720BL | PB166720BL | 1 | 1117 | HG |
| PB166720BS | PB166720BS | 1 | 1122 | HG |
| Q1352-02 | TAP-IDW-SOIL-021025 | 1 | 1124 | HG |
| Q1356-03DUP | SOIL-PILEDUP | 1 | 1133 | HG |
| CCV73 | CCV73 | 1 | 1136 | HG |
| CCB73 | CCB73 | 1 | 1138 | HG |
| Q1356-03MS | SOIL-PILEMS | 1 | 1140 | HG |
| Q1356-03MSD | SOIL-PILEMSD | 1 | 1145 | HG |
| CCV74 | CCV74 | 1 | 1206 | HG |
| CCB74 | CCB74 | 1 | 1208 | HG |
| PB166700TB | PB166700TB | 1 | 1217 | HG |
| Q1356-03L | SOIL-PILEL | 5 | 1222 | HG |
| Q1356-03A | SOIL-PILEA | 1 | 1224 | HG |
| CCV75 | CCV75 | 1 | 1236 | HG |
| CCB75 | CCB75 | 1 | 1238 | HG |

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

**Client:** Weston Solutions **Contract:** WEST04

**Lab code:** CHEM **Case no.:** Q1352 **Sas no.:** Q1352 **Sdg no.:** Q1352

**Instrument id number:** **Method:** **Run number:** LB134738

**Start date:** 02/17/2025 **End date:** 02/17/2025

| Lab sample id. | Client Sample Id | d/f | Time | Parameter list |
|---|---|---|---|---|
| S0 | S0 | 1 | 1053 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S1 | S1 | 1 | 1057 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S2 | S2 | 1 | 1102 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S3 | S3 | 1 | 1106 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S4 | S4 | 1 | 1110 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S5 | S5 | 1 | 1114 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICV01 | ICV01 | 1 | 1146 | Ag,As,Ba,Cd,Cr,Pb,Se |
| LLICV01 | LLICV01 | 1 | 1150 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICB01 | ICB01 | 1 | 1156 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CRI01 | CRI01 | 1 | 1200 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICSA01 | ICSA01 | 1 | 1205 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICSAB01 | ICSAB01 | 1 | 1209 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCV01 | CCV01 | 1 | 1213 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCB01 | CCB01 | 1 | 1217 | Ag,As,Ba,Cd,Cr,Pb,Se |
| PB166700TB | PB166700TB | 1 | 1257 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCV02 | CCV02 | 1 | 1306 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCB02 | CCB02 | 1 | 1310 | Ag,As,Ba,Cd,Cr,Pb,Se |
| Q1352-02 | TAP-IDW-SOIL-021025 | 1 | 1315 | Ag,As,Ba,Cd,Cr,Pb,Se |
| PB166702TB | PB166702TB | 1 | 1328 | Ag,As,Ba,Cd,Cr,Pb,Se |
| Q1356-04DUP | CARBON-WATERDUP | 1 | 1337 | Ag,As,Ba,Cd,Cr,Pb,Se |
| Q1356-04L | CARBON-WATERL | 5 | 1341 | Ag,As,Ba,Cd,Cr,Pb,Se |
| Q1356-04MS | CARBON-WATERMS | 1 | 1345 | Ag,As,Ba,Cd,Cr,Pb,Se |
| Q1356-04MSD | CARBON-WATERMSD | 1 | 1349 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCV03 | CCV03 | 1 | 1357 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCB03 | CCB03 | 1 | 1406 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCV04 | CCV04 | 1 | 1453 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCB04 | CCB04 | 1 | 1458 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCV05 | CCV05 | 1 | 1512 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCB05 | CCB05 | 1 | 1515 | Ag,As,Ba,Cd,Cr,Pb,Se |

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

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

**Client:** Weston Solutions **Contract:** WEST04

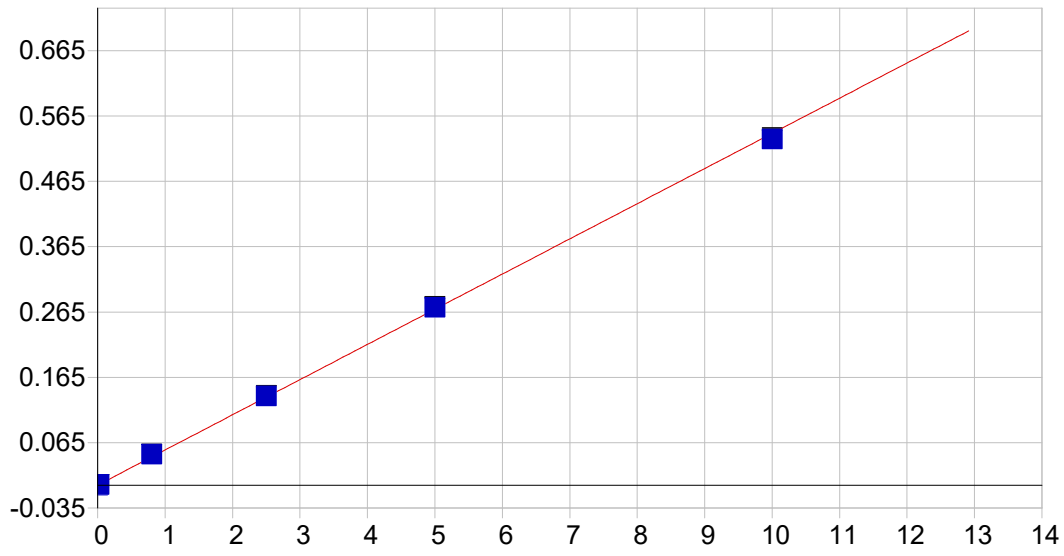
**Lab code:** CHEM **Case no.:** Q1352 **Sas no.:** Q1352 **Sdg no.:** Q1352

**Instrument id number:** **Method:** **Run number:** lb134801

**Start date:** 02/25/2025 **End date:** 02/25/2025

| Lab sample id. | Client Sample Id | d/f | Time | Parameter list |
|---|---|---|---|---|
| S0 | S0 | 1 | 1531 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S1 | S1 | 1 | 1536 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S2 | S2 | 1 | 1540 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S3 | S3 | 1 | 1544 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S4 | S4 | 1 | 1549 | Ag,As,Ba,Cd,Cr,Pb,Se |
| S5 | S5 | 1 | 1553 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICV01 | ICV01 | 1 | 1557 | Ag,As,Ba,Cd,Cr,Pb,Se |
| LLICV01 | LLICV01 | 1 | 1602 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICB01 | ICB01 | 1 | 1606 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CRI01 | CRI01 | 1 | 1610 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICSA01 | ICSA01 | 1 | 1615 | Ag,As,Ba,Cd,Cr,Pb,Se |
| ICSAB01 | ICSAB01 | 1 | 1619 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCV01 | CCV01 | 1 | 1623 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCB01 | CCB01 | 1 | 1627 | Ag,As,Ba,Cd,Cr,Pb,Se |
| PB166715BL | PB166715BL | 1 | 1632 | Ag,As,Ba,Cd,Cr,Pb,Se |
| PB166715BS | PB166715BS | 1 | 1648 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCV02 | CCV02 | 1 | 1654 | Ag,As,Ba,Cd,Cr,Pb,Se |
| CCB02 | CCB02 | 1 | 1658 | Ag,As,Ba,Cd,Cr,Pb,Se |

# METAL
# RAW DATA

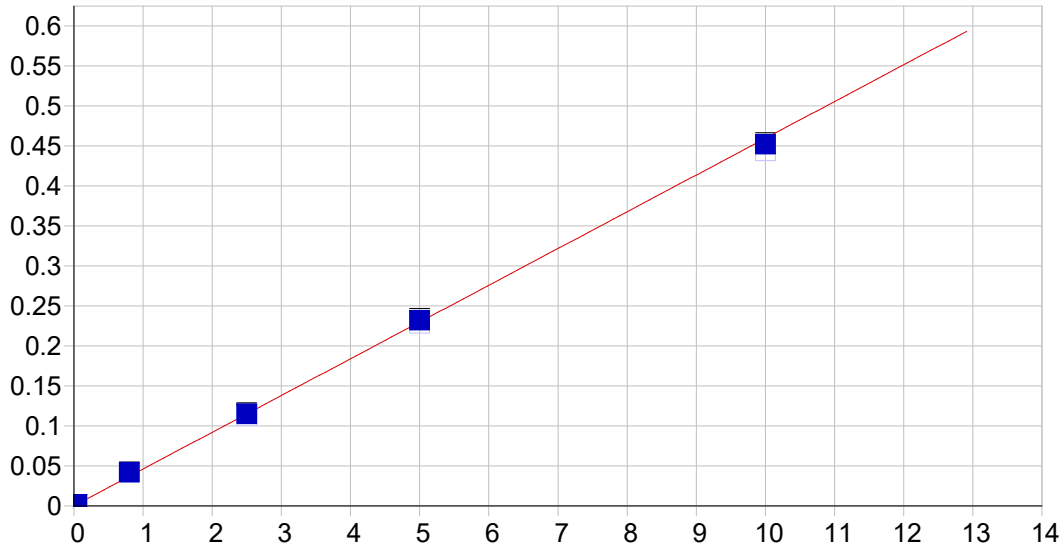



**As 189.042 {479}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000042 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.053848 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999687 | Status: | OK. |
| Std Error of Est: | 0.000032 | | |
| Predicted MDL: | 0.002495 | | |
| Predicted MQL: | 0.008317 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00004 | .000 | 1 |
| S1 | .02000 | .01813 | -.002 | -9.35 | .00093 | .000 | 1 |
| S3 | 2.5000 | 2.5306 | .031 | 1.22 | .13608 | .001 | 1 |
| S4 | 5.0000 | 5.0561 | .056 | 1.12 | .27193 | .001 | 1 |
| S5 | 10.000 | 9.8372 | -.163 | -1.63 | .52909 | .002 | 1 |
| S2 | .80000 | .87801 | .078 | 9.75 | .04719 | .000 | 1 |

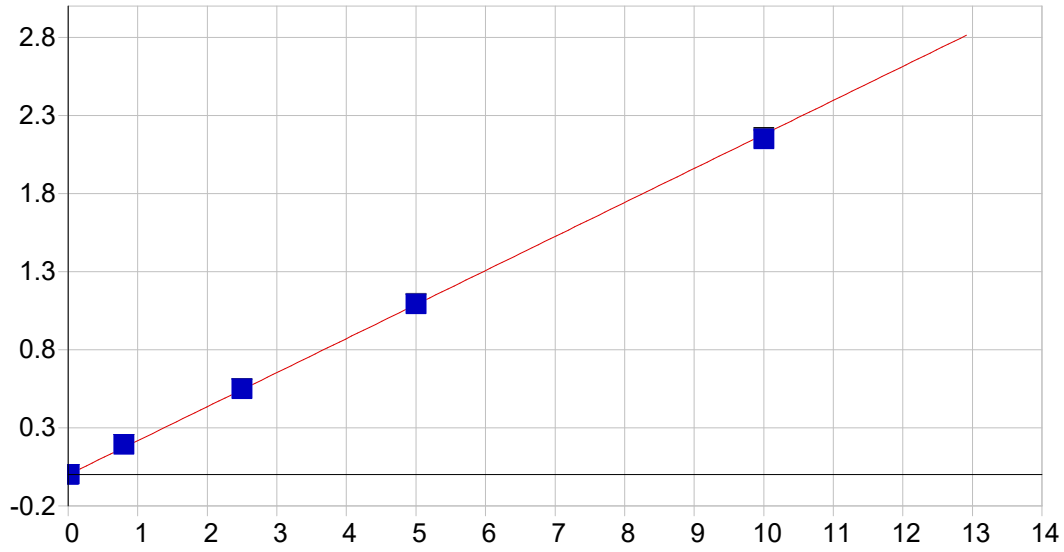



**Tl 190.856 {477}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000205 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.045944 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999445 | Status: | OK. |
| Std Error of Est: | 0.000050 | | |
| Predicted MDL: | 0.002418 | | |
| Predicted MQL: | 0.008061 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00021 | .000 | 1 |
| S1 | .04000 | .03600 | -.004 | -10.0 | .00174 | .000 | 1 |
| S3 | 2.5000 | 2.5061 | .006 | .244 | .11323 | .001 | 1 |
| S4 | 5.0000 | 5.0495 | .049 | .989 | .22797 | .002 | 1 |
| S5 | 10.000 | 9.8351 | -.165 | -1.65 | .44361 | .002 | 1 |
| S2 | .80000 | .91313 | .113 | 14.1 | .04148 | .000 | 1 |

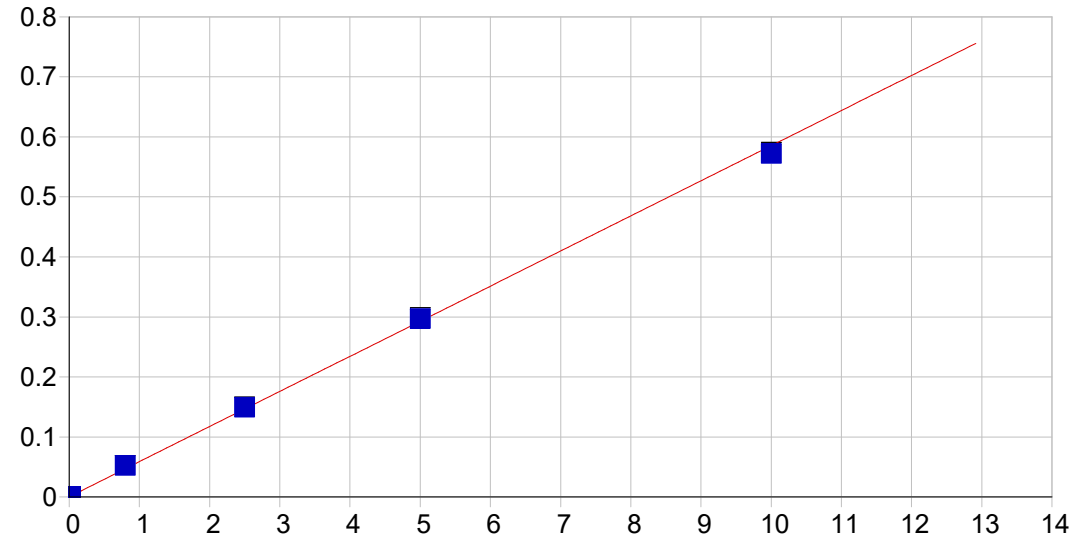



**Pb 220.353 {453}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000309 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.217844 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999666 | Status: | OK. |
| Std Error of Est: | 0.000102 | | |
| Predicted MDL: | 0.001280 | | |
| Predicted MQL: | 0.004268 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00031 | .000 | 1 |
| S1 | .01200 | .01279 | .001 | 6.58 | .00242 | .000 | 1 |
| S3 | 2.5000 | 2.5223 | .022 | .892 | .54856 | .002 | 1 |
| S4 | 5.0000 | 5.0208 | .021 | .416 | 1.0922 | .003 | 1 |
| S5 | 10.000 | 9.8663 | -.134 | -1.34 | 2.1466 | .008 | 1 |
| S2 | .80000 | .88979 | .090 | 11.2 | .19333 | .001 | 1 |

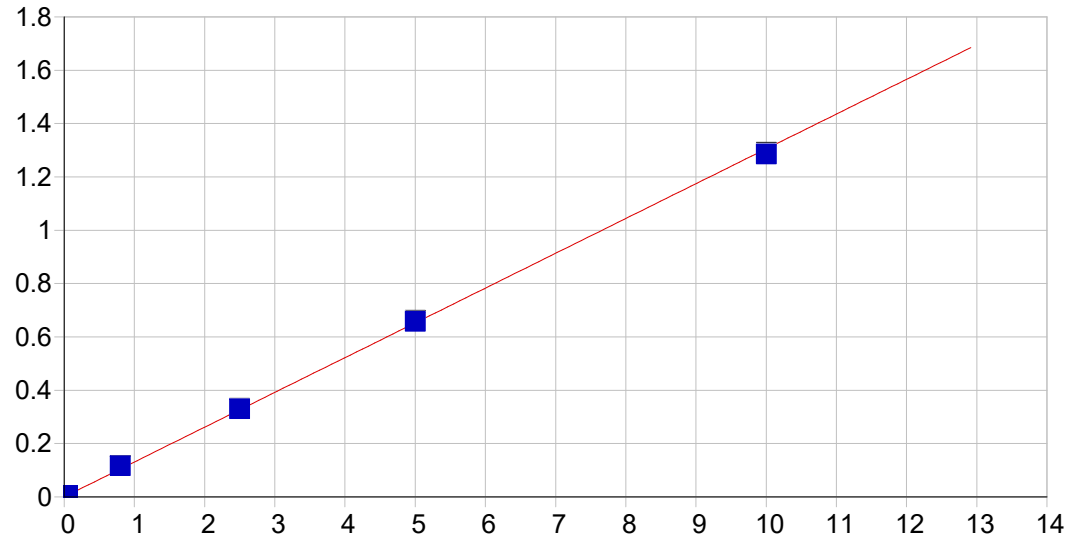



**Se 196.090 {472}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000218 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.058513 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999523 | Status: | OK. |
| Std Error of Est: | 0.000042 | | |
| Predicted MDL: | 0.002854 | | |
| Predicted MQL: | 0.009512 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00022 | .000 | 1 |
| S1 | .02000 | .01965 | -.000 | -1.75 | .00137 | .000 | 1 |
| S3 | 2.5000 | 2.5524 | .052 | 2.10 | .14953 | .001 | 1 |
| S4 | 5.0000 | 5.0766 | .077 | 1.53 | .29720 | .001 | 1 |
| S5 | 10.000 | 9.7803 | -.220 | -2.20 | .57235 | .002 | 1 |
| S2 | .80000 | .89100 | .091 | 11.4 | .05234 | .000 | 1 |

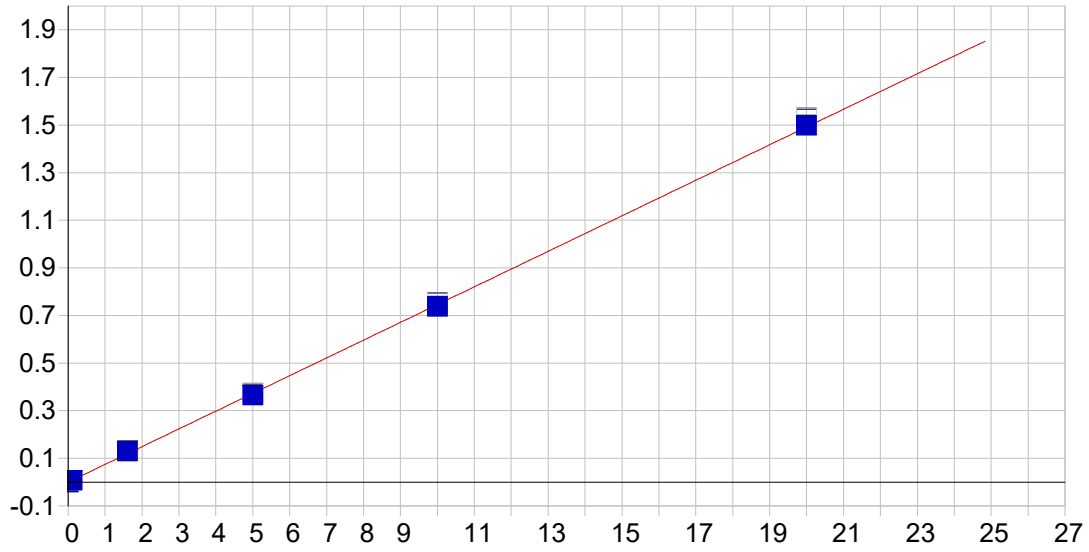



**Sb 206.833 {463}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000432 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.130452 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999679 | Status: | OK. |
| Std Error of Est: | 0.000123 | | |
| Predicted MDL: | 0.001600 | | |
| Predicted MQL: | 0.005333 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00043 | .000 | 1 |
| S1 | .05000 | .04927 | -.001 | -1.45 | .00687 | .000 | 1 |
| S3 | 2.5000 | 2.5248 | .025 | .993 | .33069 | .002 | 1 |
| S4 | 5.0000 | 5.0414 | .041 | .827 | .65986 | .003 | 1 |
| S5 | 10.000 | 9.8497 | -.150 | -1.50 | 1.2889 | .004 | 1 |
| S2 | .80000 | .88488 | .085 | 10.6 | .11615 | .000 | 1 |

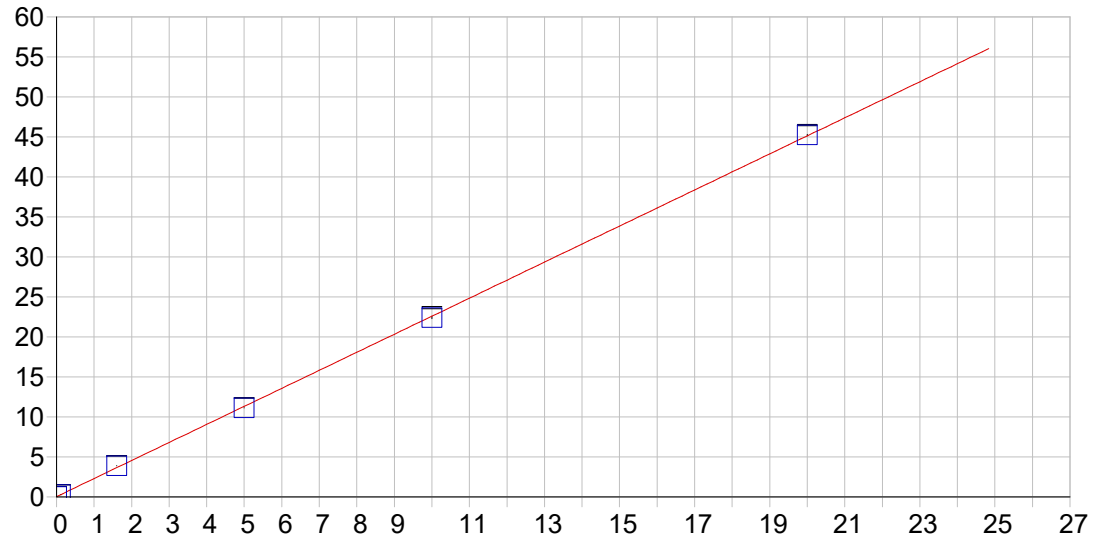



**Al 396.152 { 85}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000126 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.074602 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999793 | Status: | OK. |
| Std Error of Est: | 0.000115 | | |
| Predicted MDL: | 0.007516 | | |
| Predicted MQL: | 0.025053 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00013 | .000 | 1 |
| S1 | .10000 | .09751 | -.002 | -2.49 | .00773 | .000 | 1 |
| S3 | 5.0000 | 4.8941 | -.106 | -2.12 | .37222 | .001 | 1 |
| S4 | 10.000 | 9.8902 | -.110 | -1.10 | .75218 | .001 | 1 |
| S5 | 20.000 | 20.080 | .080 | .400 | 1.5268 | .002 | 1 |
| S2 | 1.6000 | 1.7383 | .138 | 8.65 | .13187 | .000 | 1 |

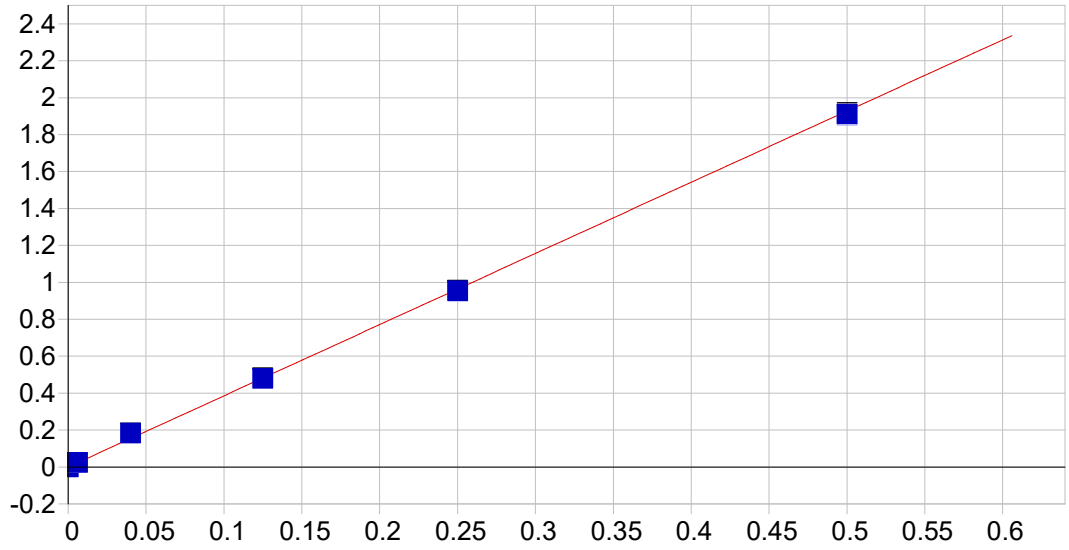



**Ba 493.409 { 68}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.044087 | Re-Slope: | 1.000000 |
| A1 (Gain): | 2.254386 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999877 | Status: | OK. |
| Std Error of Est: | 0.002621 | | |
| Predicted MDL: | 0.000732 | | |
| Predicted MQL: | 0.002442 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .04408 | .000 | 1 |
| S1 | .10000 | .09674 | -.003 | -3.26 | .26217 | .001 | 1 |
| S3 | 5.0000 | 4.9178 | -.082 | -1.64 | 11.131 | .022 | 1 |
| S4 | 10.000 | 9.9252 | -.075 | -.748 | 22.419 | .124 | 1 |
| S5 | 20.000 | 20.056 | .056 | .278 | 45.257 | .080 | 1 |
| S2 | 1.6000 | 1.7047 | .105 | 6.54 | 3.8871 | .025 | 1 |

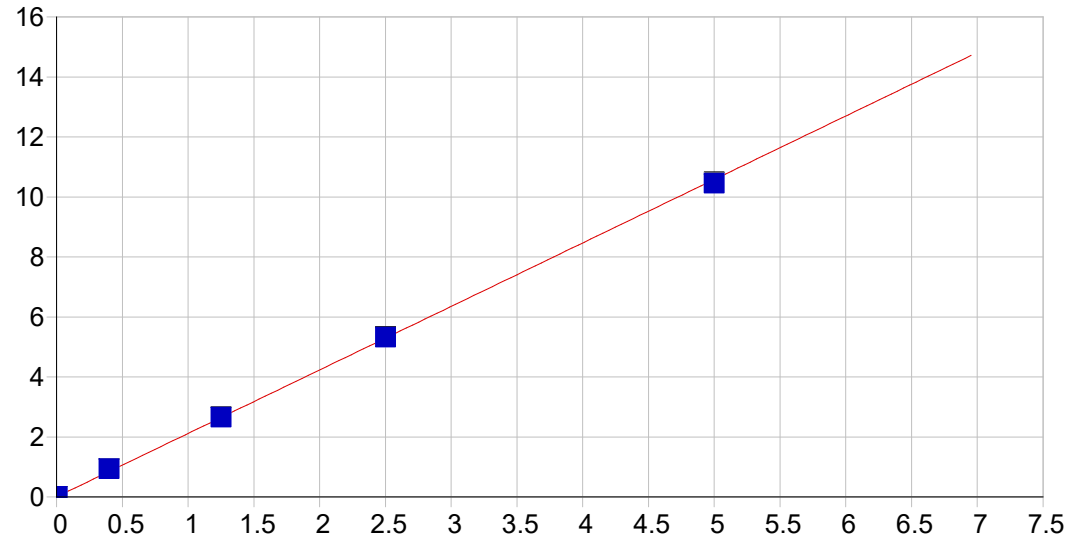



**Be 234.861 {144}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000184 | Re-Slope: | 1.000000 |
| A1 (Gain): | 3.855419 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999182 | Status: | OK. |
| Std Error of Est: | 0.000447 | | |
| Predicted MDL: | 0.000063 | | |
| Predicted MQL: | 0.000209 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00019 | .000 | 1 |
| S1 | .00600 | .00601 | .000 | .092 | .02280 | .000 | 1 |
| S3 | .12500 | .12443 | -.001 | -.454 | .47740 | .003 | 1 |
| S4 | .25000 | .24753 | -.002 | -.988 | .94983 | .004 | 1 |
| S5 | .50000 | .49548 | -.005 | -.904 | 1.9015 | .009 | 1 |
| S2 | .04000 | .04755 | .008 | 18.9 | .18246 | .000 | 1 |

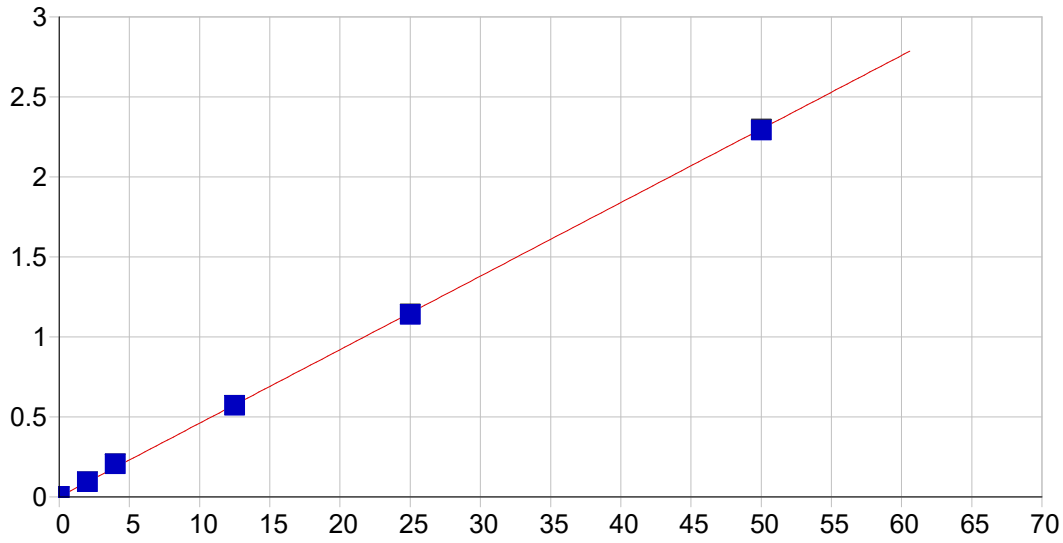



**Cd 226.502 {449}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000123 | Re-Slope: | 1.000000 |
| A1 (Gain): | 2.116337 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999721 | Status: | OK. |
| Std Error of Est: | 0.000454 | | |
| Predicted MDL: | 0.000100 | | |
| Predicted MQL: | 0.000334 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00012 | .000 | 1 |
| S1 | .00600 | .00604 | .000 | .592 | .01294 | .000 | 1 |
| S3 | 1.2500 | 1.2556 | .006 | .452 | 2.6593 | .010 | 1 |
| S4 | 2.5000 | 2.5137 | .014 | .548 | 5.3236 | .019 | 1 |
| S5 | 5.0000 | 4.9393 | -.061 | -1.21 | 10.460 | .040 | 1 |
| S2 | .40000 | .44136 | .041 | 10.3 | .93477 | .004 | 1 |

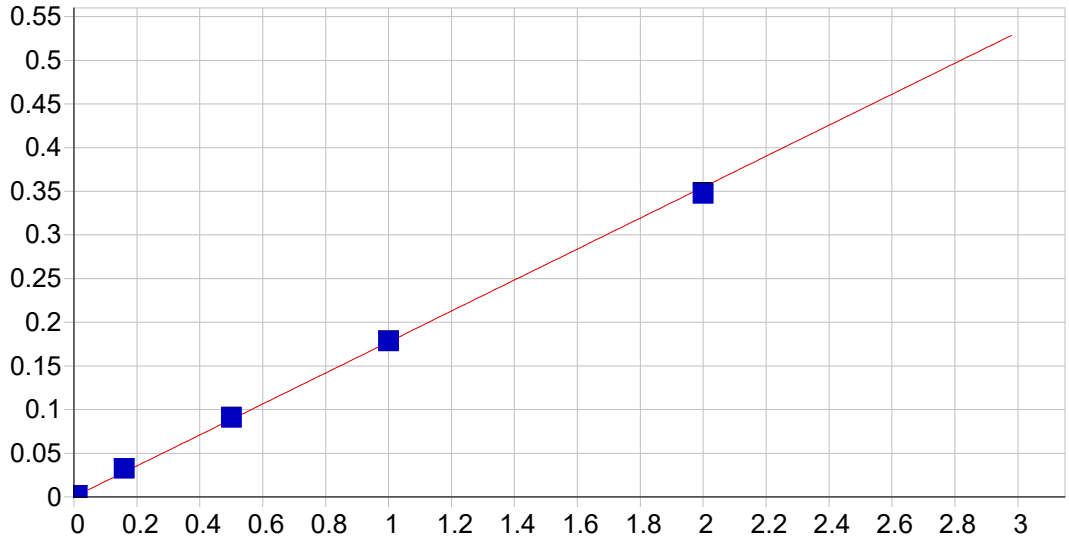



**Ca 373.690 { 90}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001153 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.045959 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999721 | Status: | OK. |
| Std Error of Est: | 0.000575 | | |
| Predicted MDL: | 0.010841 | | |
| Predicted MQL: | 0.036136 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00019 | -.000 | .000 | .00114 | .000 | 1 |
| S2 | 4.0000 | 4.4441 | .444 | 11.1 | .20540 | .001 | 1 |
| S3 | 12.500 | 12.402 | -.098 | -.782 | .57115 | .002 | 1 |
| S4 | 25.000 | 24.795 | -.205 | -.819 | 1.1407 | .002 | 1 |
| S5 | 50.000 | 49.851 | -.149 | -.299 | 2.2923 | .005 | 1 |
| S1 | 2.0000 | 2.0078 | .008 | .392 | .09343 | .001 | 1 |

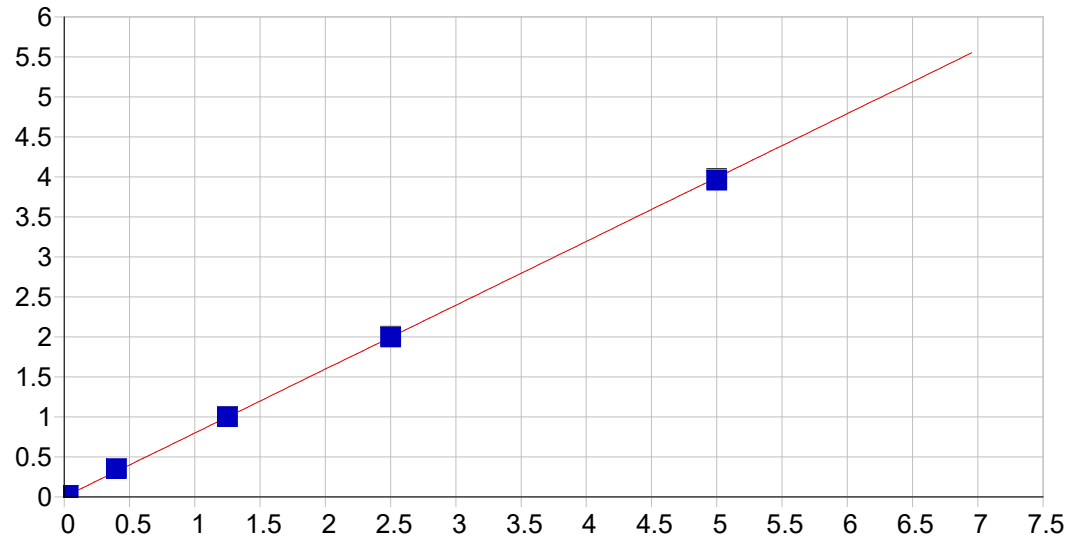



**Cr 267.716 {126}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000061 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.177359 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999371 | Status: | OK. |
| Std Error of Est: | 0.000047 | | |
| Predicted MDL: | 0.000398 | | |
| Predicted MQL: | 0.001328 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00006 | .000 | 1 |
| S1 | .01000 | .00985 | -.000 | -1.47 | .00181 | .000 | 1 |
| S3 | .50000 | .51260 | .013 | 2.52 | .09100 | .000 | 1 |
| S4 | 1.0000 | 1.0062 | .006 | .618 | .17857 | .000 | 1 |
| S5 | 2.0000 | 1.9581 | -.042 | -2.10 | .34745 | .001 | 1 |
| S2 | .16000 | .18328 | .023 | 14.5 | .03258 | .000 | 1 |

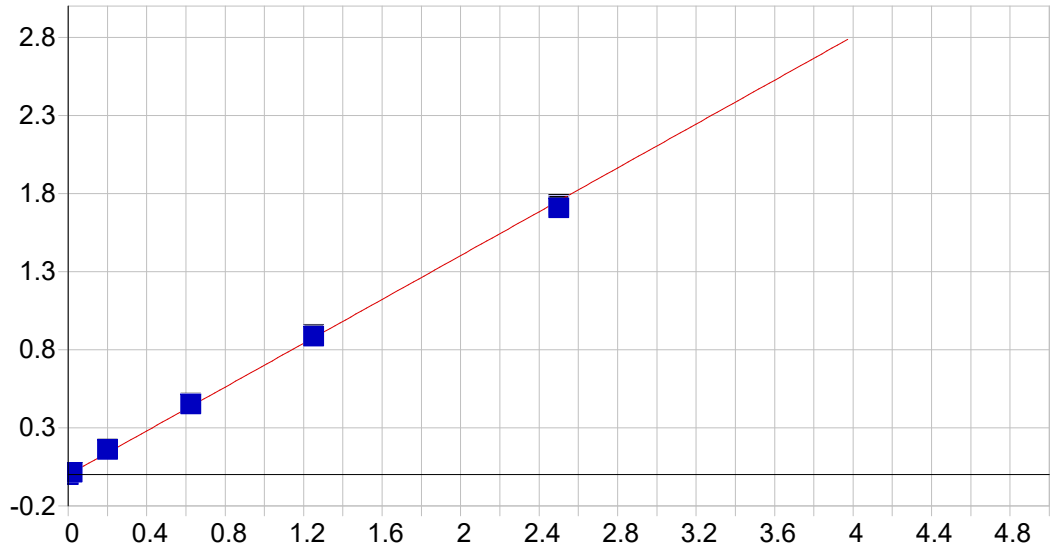



**Co 228.616 {448}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000107 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.798401 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999730 | Status: | OK. |
| Std Error of Est: | 0.000377 | | |
| Predicted MDL: | 0.000236 | | |
| Predicted MQL: | 0.000786 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00011 | .000 | 1 |
| S1 | .03000 | .02939 | -.001 | -2.04 | .02347 | .000 | 1 |
| S3 | 1.2500 | 1.2516 | .002 | .131 | 1.0011 | .003 | 1 |
| S4 | 2.5000 | 2.5004 | .000 | .014 | 1.9998 | .008 | 1 |
| S5 | 5.0000 | 4.9559 | -.044 | -.883 | 3.9636 | .013 | 1 |
| S2 | .40000 | .44275 | .043 | 10.7 | .35414 | .001 | 1 |

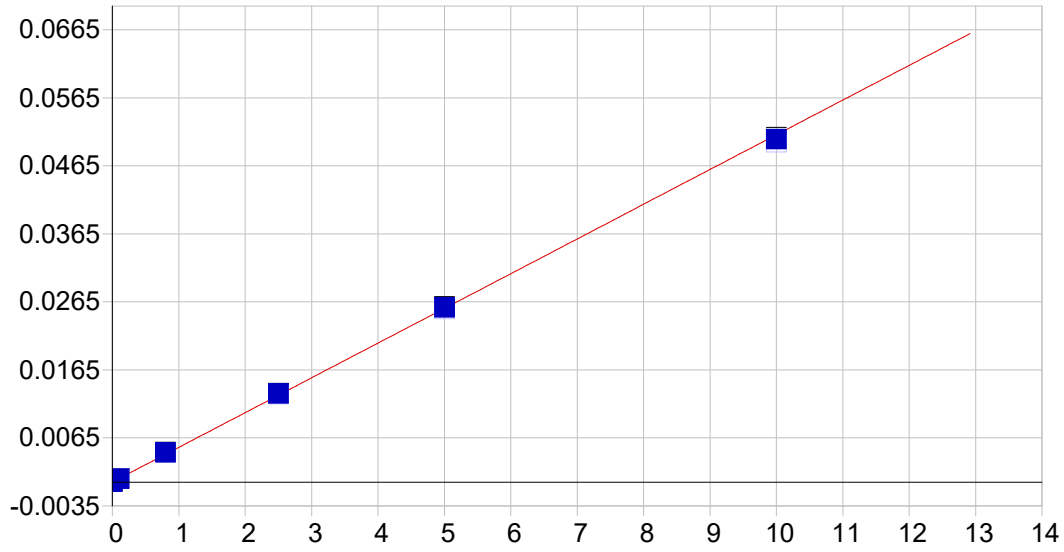



**Cu 224.700 {450}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000777 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.701659 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999228 | Status: | OK. |
| Std Error of Est: | 0.000327 | | |
| Predicted MDL: | 0.000418 | | |
| Predicted MQL: | 0.001395 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | -.00078 | .000 | 1 |
| S1 | .02000 | .02231 | .002 | 11.5 | .01505 | .000 | 1 |
| S3 | .62500 | .64355 | .019 | 2.97 | .45495 | .003 | 1 |
| S4 | 1.2500 | 1.2642 | .014 | 1.13 | .89459 | .004 | 1 |
| S5 | 2.5000 | 2.4348 | -.065 | -2.61 | 1.7243 | .006 | 1 |
| S2 | .20000 | .23019 | .030 | 15.1 | .16208 | .000 | 1 |

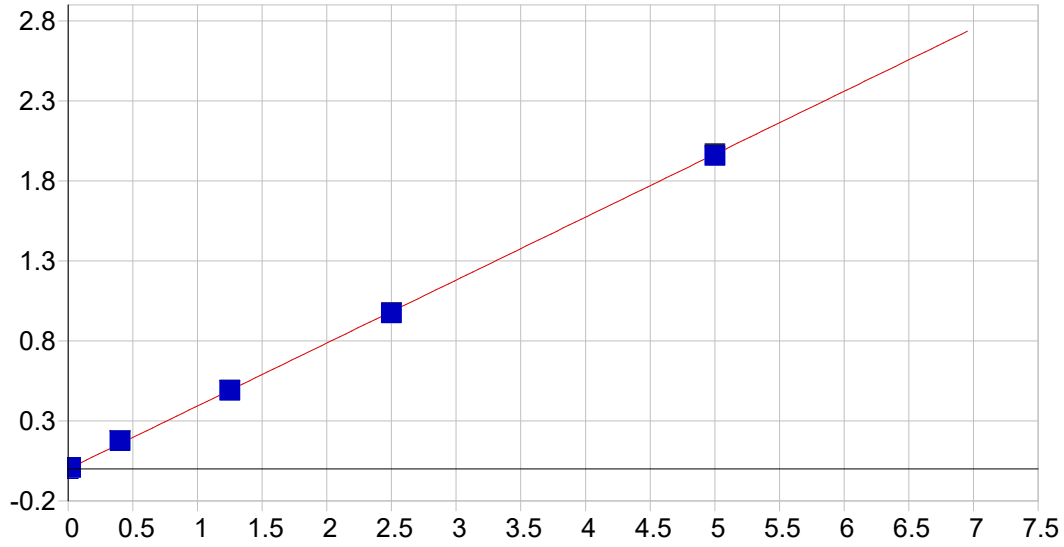



**Fe 240.488 {140}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000007 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.005106 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999808 | Status: | OK. |
| Std Error of Est: | 0.000005 | | |
| Predicted MDL: | 0.004780 | | |
| Predicted MQL: | 0.015933 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00001 | .000 | 1 |
| S1 | .10000 | .09416 | -.006 | -5.84 | .00048 | .000 | 1 |
| S3 | 2.5000 | 2.5523 | .052 | 2.09 | .01293 | .000 | 1 |
| S4 | 5.0000 | 5.0276 | .028 | .551 | .02546 | .000 | 1 |
| S5 | 10.000 | 9.8714 | -.129 | -1.29 | .04998 | .000 | 1 |
| S2 | .80000 | .85450 | .054 | 6.81 | .00434 | .000 | 1 |

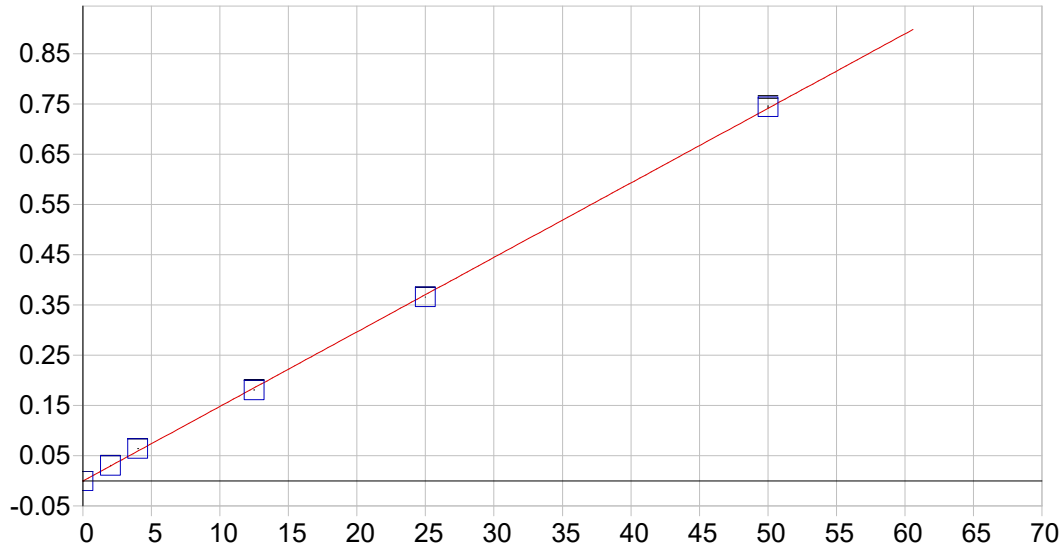



**Mn 257.610 {131}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000007 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.393354 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999677 | Status: | OK. |
| Std Error of Est: | 0.000166 | | |
| Predicted MDL: | 0.000497 | | |
| Predicted MQL: | 0.001655 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00001 | .000 | 1 |
| S1 | .02000 | .02141 | .001 | 7.07 | .00843 | .000 | 1 |
| S3 | 1.2500 | 1.2482 | -.002 | -.146 | .49108 | .000 | 1 |
| S4 | 2.5000 | 2.4738 | -.026 | -1.05 | .97327 | .002 | 1 |
| S5 | 5.0000 | 4.9799 | -.020 | -.403 | 1.9592 | .009 | 1 |
| S2 | .40000 | .44678 | .047 | 11.7 | .17578 | .001 | 1 |

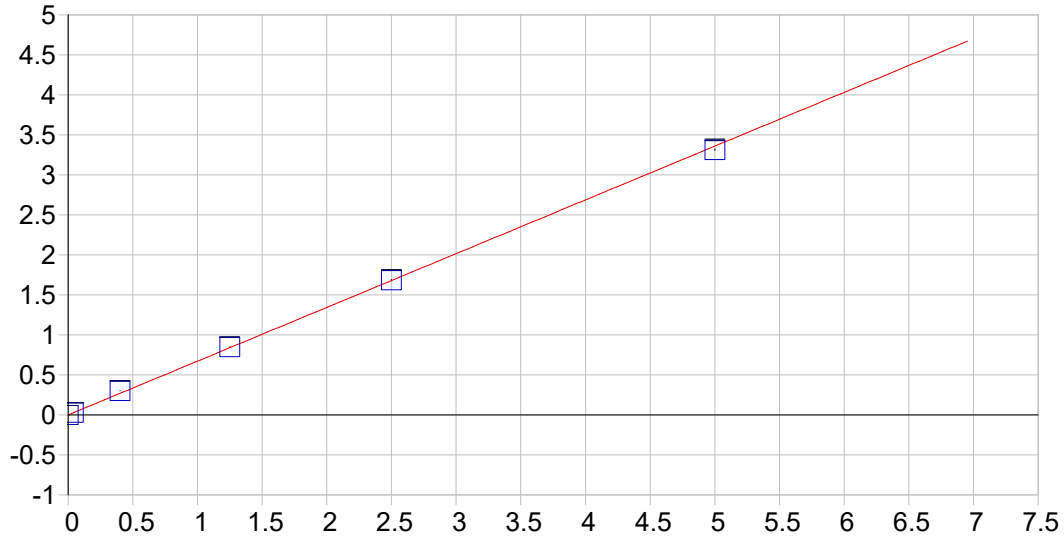



**Mg 279.079 {121}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000337 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.014833 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999759 | Status: | OK. |
| Std Error of Est: | 0.000172 | | |
| Predicted MDL: | 0.015069 | | |
| Predicted MQL: | 0.050229 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00018 | -.000 | .000 | -.00034 | .000 | 1 |
| S2 | 4.0000 | 4.3518 | .352 | 8.79 | .06421 | .000 | 1 |
| S3 | 12.500 | 12.216 | -.284 | -2.27 | .18086 | .001 | 1 |
| S4 | 25.000 | 24.673 | -.327 | -1.31 | .36565 | .001 | 1 |
| S5 | 50.000 | 50.187 | .187 | .373 | .74409 | .003 | 1 |
| S1 | 2.0000 | 2.0723 | .072 | 3.62 | .03040 | .000 | 1 |

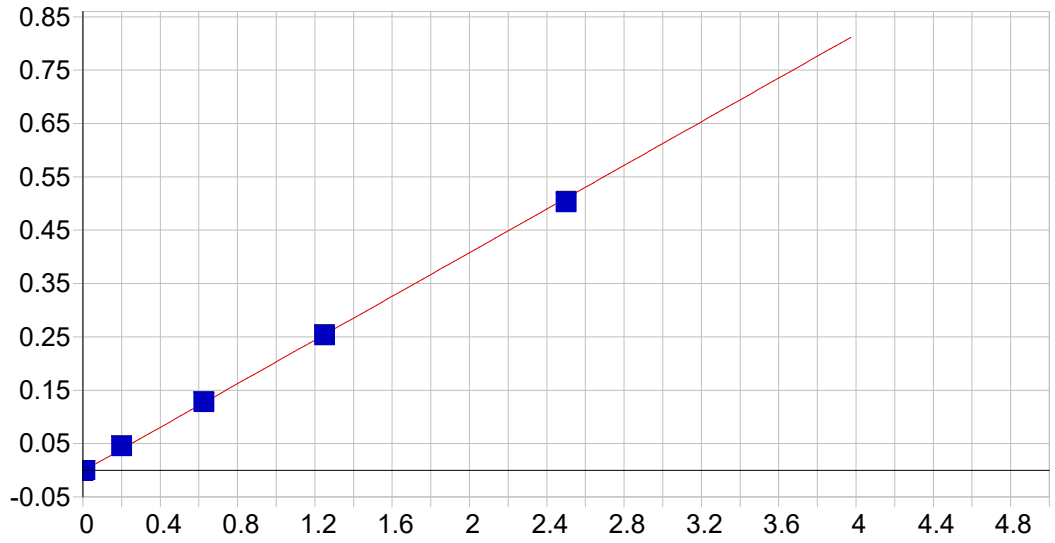



**Ni 231.604 {446}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000017 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.671963 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999625 | Status: | OK. |
| Std Error of Est: | 0.000432 | | |
| Predicted MDL: | 0.000338 | | |
| Predicted MQL: | 0.001127 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00002 | .000 | 1 |
| S1 | .04000 | .03971 | -.000 | -.719 | .02667 | .000 | 1 |
| S3 | 1.2500 | 1.2633 | .013 | 1.06 | .84885 | .003 | 1 |
| S4 | 2.5000 | 2.5085 | .008 | .338 | 1.6856 | .005 | 1 |
| S5 | 5.0000 | 4.9306 | -.069 | -1.39 | 3.3132 | .011 | 1 |
| S2 | .40000 | .44797 | .048 | 12.0 | .30100 | .002 | 1 |

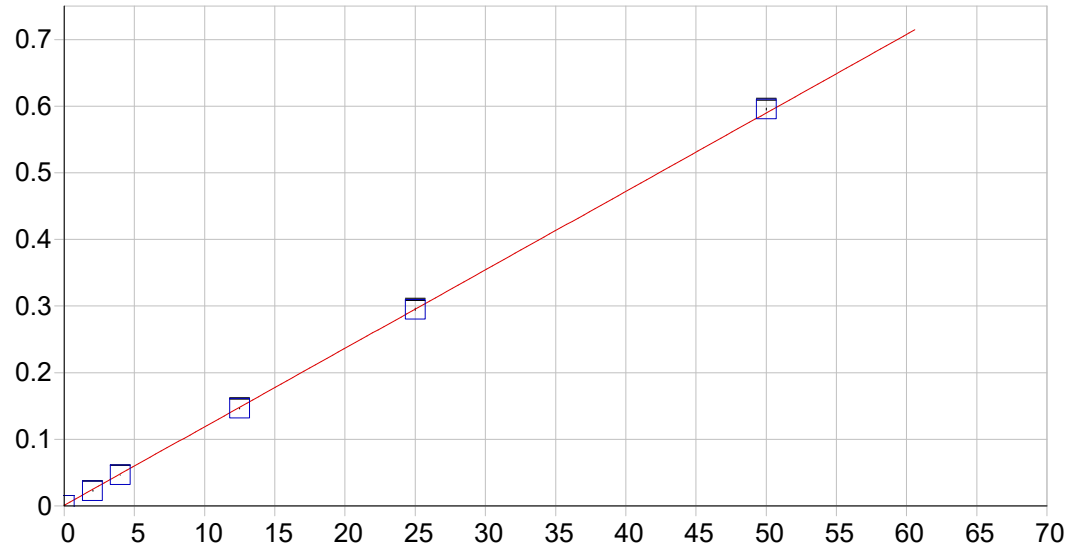



**Ag 328.068 {103}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.001504 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.204635 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999432 | Status: | OK. |
| Std Error of Est: | 0.000057 | | |
| Predicted MDL: | 0.000464 | | |
| Predicted MQL: | 0.001547 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00150 | .000 | 1 |
| S1 | .01000 | .00976 | -.000 | -2.35 | .00048 | .000 | 1 |
| S3 | .62500 | .63269 | .008 | 1.23 | .12746 | .000 | 1 |
| S4 | 1.2500 | 1.2461 | -.004 | -.312 | .25248 | .000 | 1 |
| S5 | 2.5000 | 2.4661 | -.034 | -1.36 | .50112 | .001 | 1 |
| S2 | .20000 | .23032 | .030 | 15.2 | .04546 | .000 | 1 |

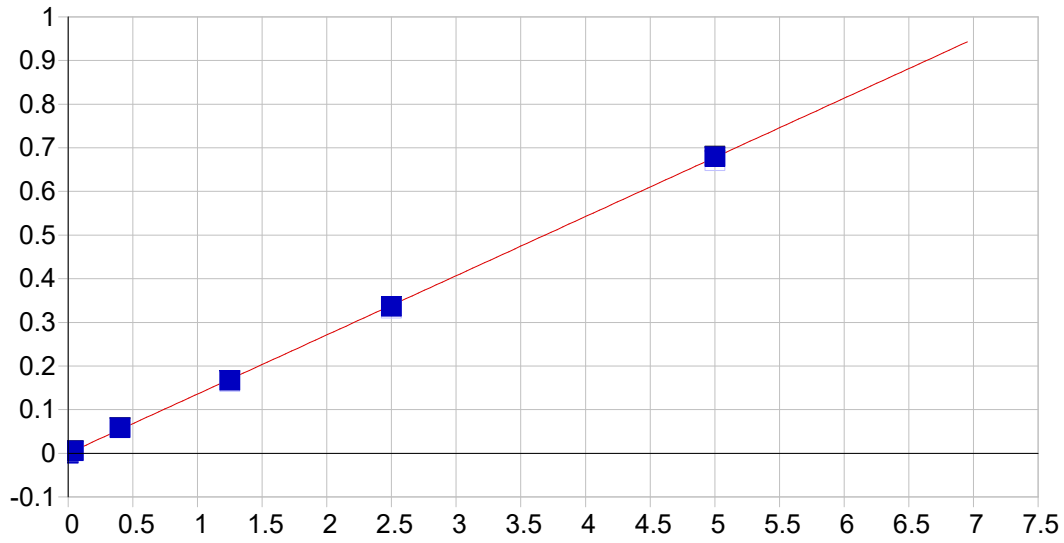



**Na 589.592 { 57}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001019 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.011776 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999864 | Status: | OK. |
| Std Error of Est: | 0.000103 | | |
| Predicted MDL: | 0.014178 | | |
| Predicted MQL: | 0.047259 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00024 | .000 | .000 | .00102 | .000 | 1 |
| S2 | 4.0000 | 3.8570 | -.143 | -3.57 | .04644 | .000 | 1 |
| S3 | 12.500 | 12.353 | -.147 | -1.18 | .14648 | .001 | 1 |
| S4 | 25.000 | 24.968 | -.032 | -.127 | .29503 | .002 | 1 |
| S5 | 50.000 | 50.488 | .488 | .975 | .59554 | .001 | 1 |
| S1 | 2.0000 | 1.8345 | -.166 | -8.28 | .02262 | .000 | 1 |

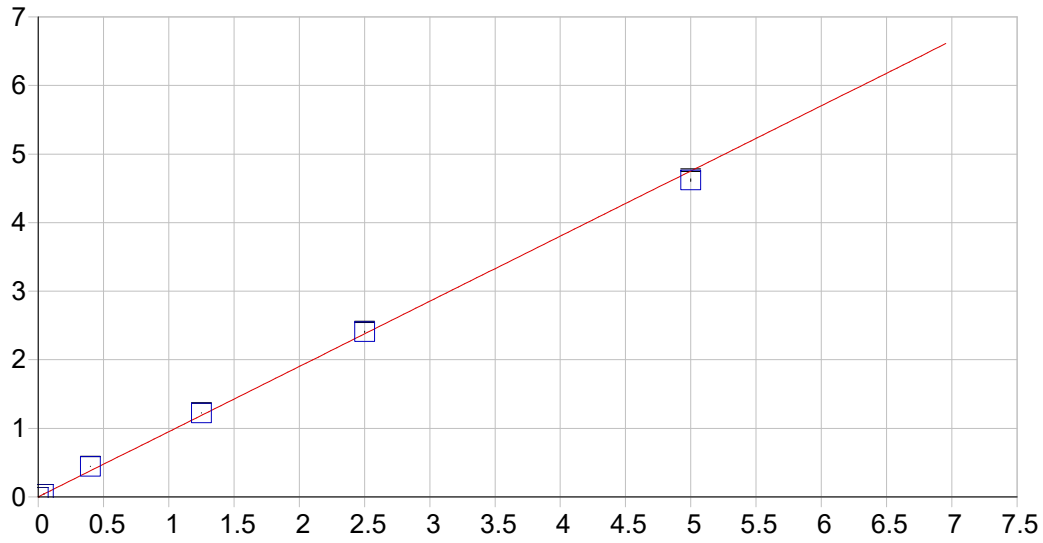



**V 292.402 {115}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000094 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.135590 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999848 | Status: | OK. |
| Std Error of Est: | 0.000055 | | |
| Predicted MDL: | 0.001819 | | |
| Predicted MQL: | 0.006062 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00009 | .000 | 1 |
| S1 | .04000 | .03804 | -.002 | -4.90 | .00505 | .000 | 1 |
| S3 | 1.2500 | 1.2286 | -.021 | -1.71 | .16421 | .000 | 1 |
| S4 | 2.5000 | 2.4812 | -.019 | -.752 | .33158 | .000 | 1 |
| S5 | 5.0000 | 5.0134 | .013 | .268 | .66997 | .001 | 1 |
| S2 | .40000 | .42874 | .029 | 7.19 | .05744 | .000 | 1 |

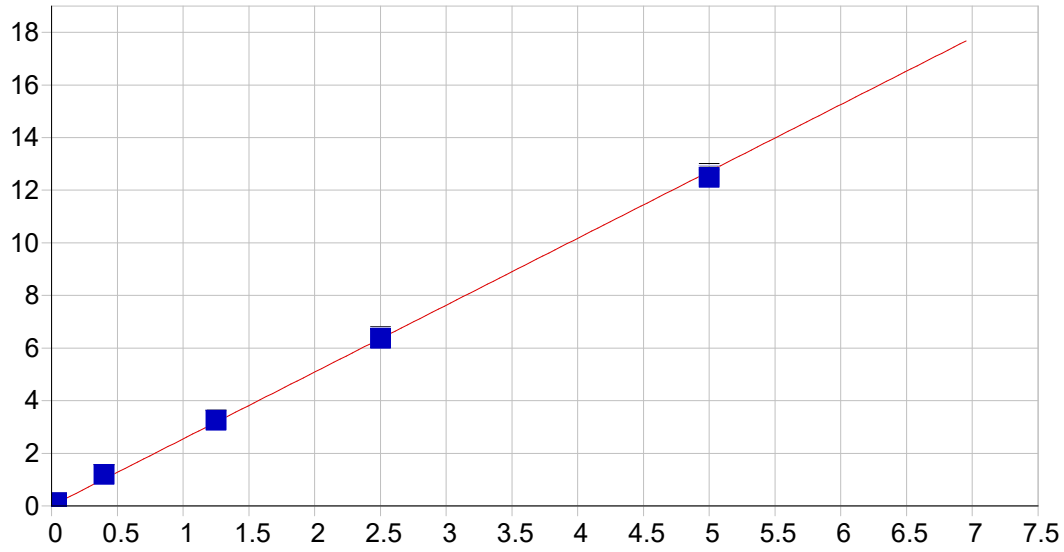



**Zn 206.200 {464}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001233 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.950505 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999083 | Status: | OK. |
| Std Error of Est: | 0.000956 | | |
| Predicted MDL: | 0.000188 | | |
| Predicted MQL: | 0.000627 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00122 | .000 | 1 |
| S1 | .04000 | .04421 | .004 | 10.5 | .04325 | .000 | 1 |
| S3 | 1.2500 | 1.2869 | .037 | 2.95 | 1.2244 | .003 | 1 |
| S4 | 2.5000 | 2.5310 | .031 | 1.24 | 2.4069 | .010 | 1 |
| S5 | 5.0000 | 4.8613 | -.139 | -2.77 | 4.6219 | .018 | 1 |
| S2 | .40000 | .46668 | .067 | 16.7 | .44481 | .001 | 1 |

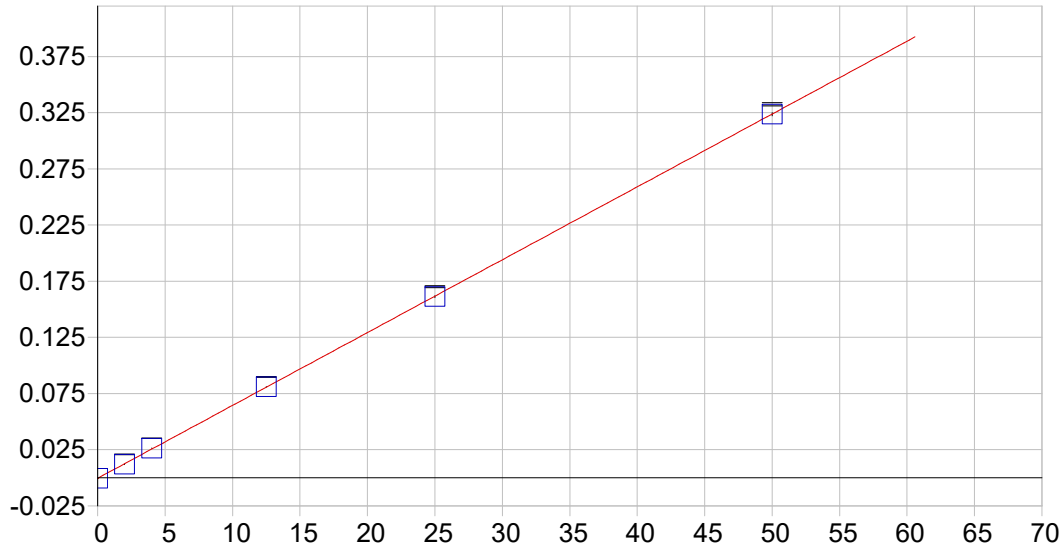



**Zn 213.856 {158}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.004369 | Re-Slope: | 1.000000 |
| A1 (Gain): | 2.541890 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999295 | Status: | OK. |
| Std Error of Est: | 0.002256 | | |
| Predicted MDL: | 0.000264 | | |
| Predicted MQL: | 0.000879 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00434 | .000 | 1 |
| S1 | .04000 | .04385 | .004 | 9.62 | .11654 | .002 | 1 |
| S3 | 1.2500 | 1.2745 | .025 | 1.96 | 3.2661 | .010 | 1 |
| S4 | 2.5000 | 2.5009 | .001 | .036 | 6.4056 | .026 | 1 |
| S5 | 5.0000 | 4.9059 | -.094 | -1.88 | 12.563 | .074 | 1 |
| S2 | .40000 | .46487 | .065 | 16.2 | 1.1931 | .002 | 1 |

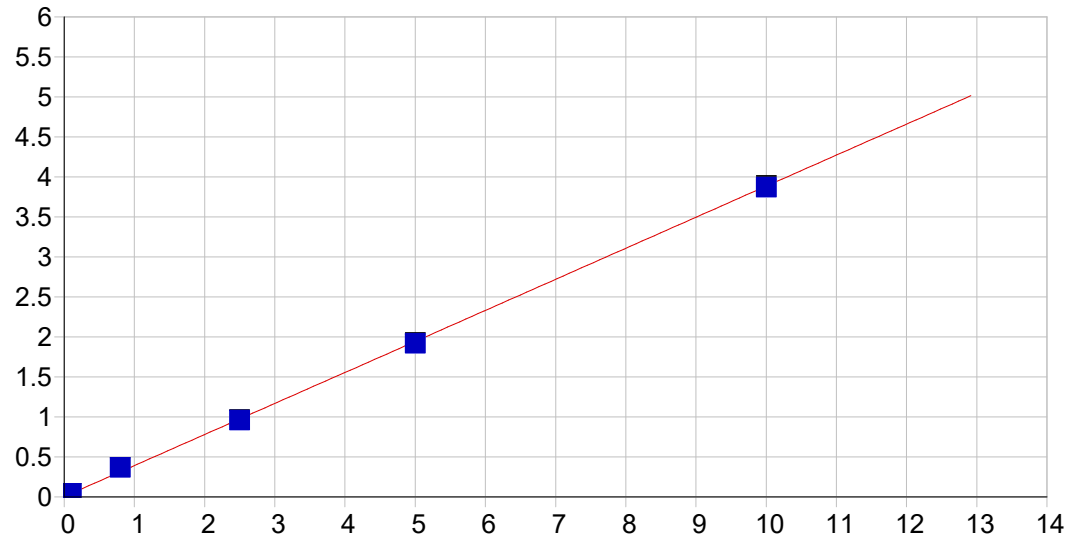



**K 766.490 { 44}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000405 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.006486 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999960 | Status: | OK. |
| Std Error of Est: | 0.000031 | | |
| Predicted MDL: | 0.031208 | | |
| Predicted MQL: | 0.104028 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00002 | .000 | .000 | -.00040 | .000 | 1 |
| S2 | 4.0000 | 4.1234 | .123 | 3.09 | .02634 | .000 | 1 |
| S3 | 12.500 | 12.536 | .036 | .289 | .08090 | .000 | 1 |
| S4 | 25.000 | 24.955 | -.045 | -.180 | .16144 | .001 | 1 |
| S5 | 50.000 | 49.968 | -.032 | -.065 | .32367 | .001 | 1 |
| S1 | 2.0000 | 1.9178 | -.082 | -4.11 | .01203 | .000 | 1 |

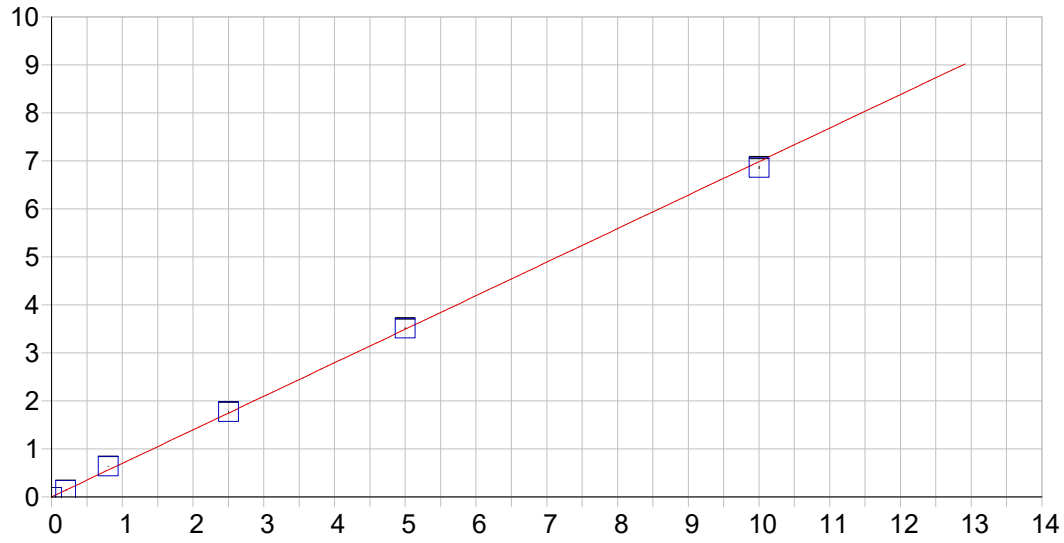



**B 249.678 {135}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.003496 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.388045 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999326 | Status: | OK. |
| Std Error of Est: | 0.000747 | | |
| Predicted MDL: | 0.000785 | | |
| Predicted MQL: | 0.002617 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00002 | -.000 | .000 | .00349 | .000 | 1 |
| S1 | .10000 | .10158 | .002 | 1.58 | .04275 | .000 | 1 |
| S3 | 2.5000 | 2.4599 | -.040 | -1.61 | .95614 | .004 | 1 |
| S4 | 5.0000 | 4.9383 | -.062 | -1.23 | 1.9160 | .007 | 1 |
| S5 | 10.000 | 9.9641 | -.036 | -.359 | 3.8624 | .022 | 1 |
| S2 | .80000 | .93612 | .136 | 17.0 | .36614 | .002 | 1 |

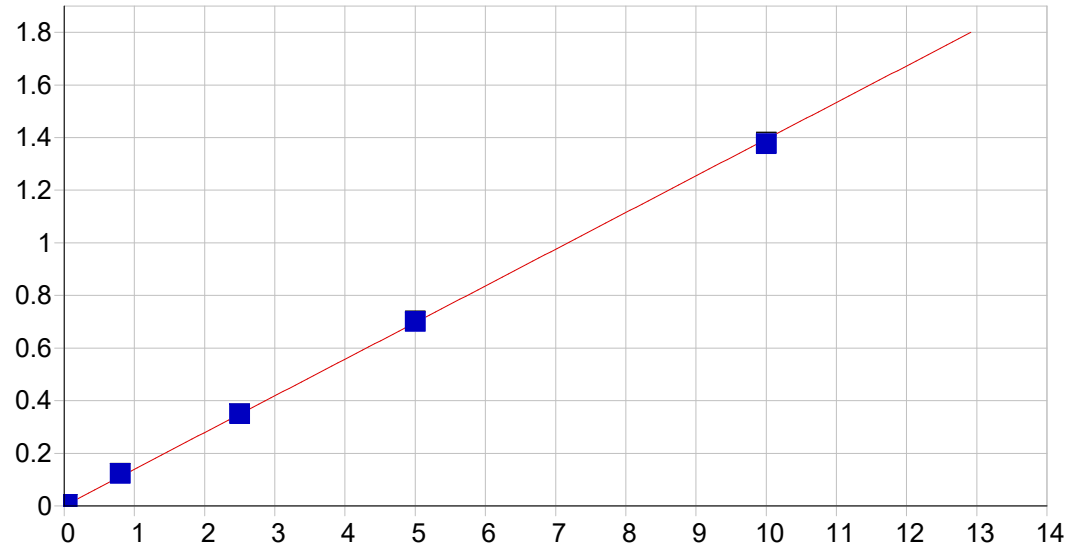



**Mo 202.030 {467}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000088 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.698573 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999471 | Status: | OK. |
| Std Error of Est: | 0.001692 | | |
| Predicted MDL: | 0.000268 | | |
| Predicted MQL: | 0.000892 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00003 | -.000 | .000 | .00007 | .000 | 1 |
| S1 | .20000 | .19973 | -.000 | -.136 | .13961 | .000 | 1 |
| S3 | 2.5000 | 2.5372 | .037 | 1.49 | 1.7725 | .009 | 1 |
| S4 | 5.0000 | 5.0282 | .028 | .565 | 3.5127 | .015 | 1 |
| S5 | 10.000 | 9.8227 | -.177 | -1.77 | 6.8619 | .022 | 1 |
| S2 | .80000 | .91213 | .112 | 14.0 | .63727 | .003 | 1 |

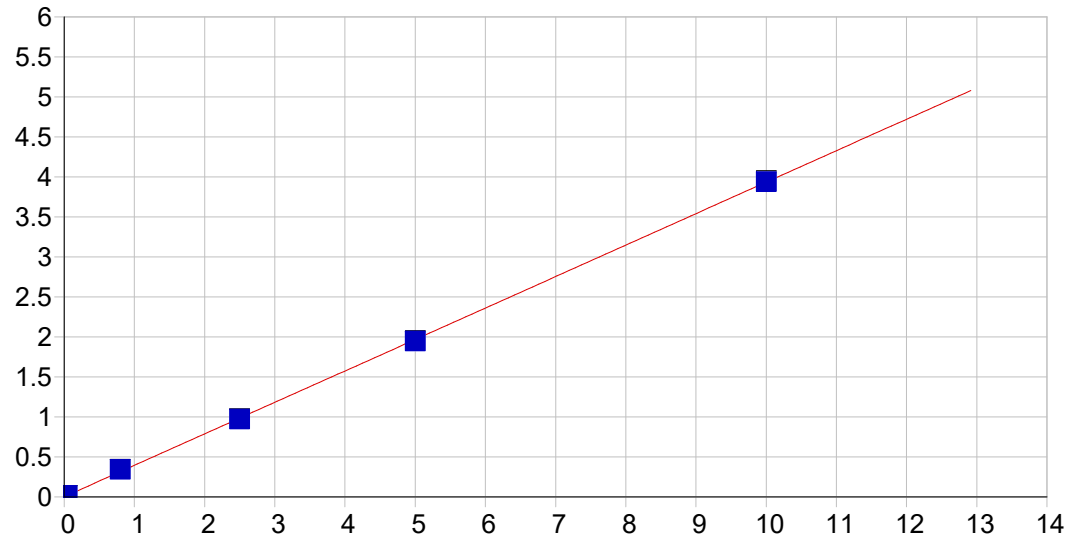



**Sn 189.989 {478}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000114 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.139366 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999727 | Status: | OK. |
| Std Error of Est: | 0.000108 | | |
| Predicted MDL: | 0.000747 | | |
| Predicted MQL: | 0.002489 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00011 | .000 | 1 |
| S1 | .04000 | .03919 | -.001 | -2.02 | .00557 | .000 | 1 |
| S3 | 2.5000 | 2.5127 | .013 | .508 | .34994 | .002 | 1 |
| S4 | 5.0000 | 5.0259 | .026 | .518 | .69984 | .002 | 1 |
| S5 | 10.000 | 9.8805 | -.119 | -1.19 | 1.3757 | .005 | 1 |
| S2 | .80000 | .88172 | .082 | 10.2 | .12288 | .000 | 1 |

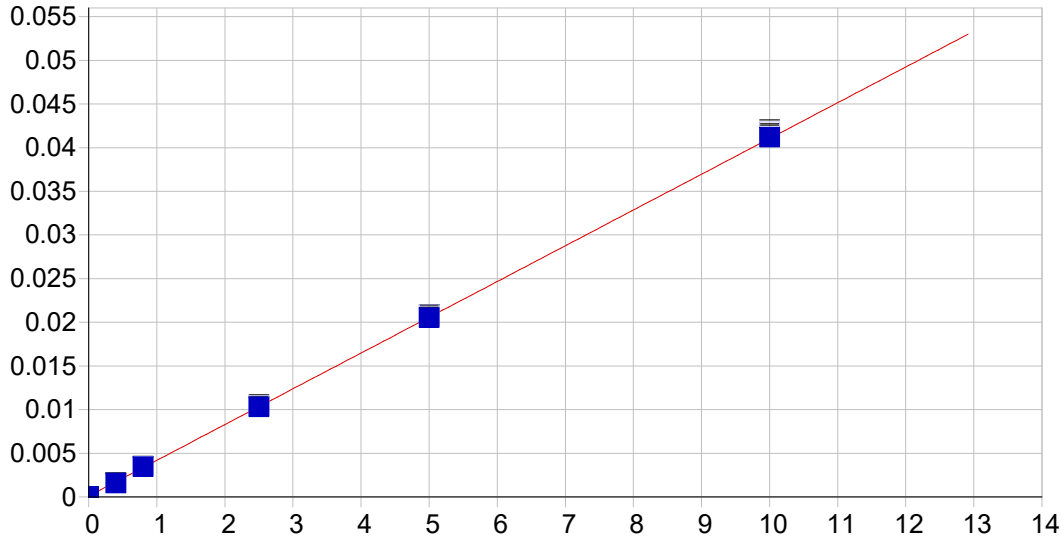



**Ti 336.121 {100}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001683 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.393218 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999800 | Status: | OK. |
| Std Error of Est: | 0.000261 | | |
| Predicted MDL: | 0.000853 | | |
| Predicted MQL: | 0.002844 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00168 | .000 | 1 |
| S1 | .04000 | .03986 | -.000 | -.360 | .01734 | .000 | 1 |
| S3 | 2.5000 | 2.4678 | -.032 | -1.29 | .97171 | .003 | 1 |
| S4 | 5.0000 | 4.9455 | -.055 | -1.09 | 1.9456 | .004 | 1 |
| S5 | 10.000 | 10.016 | .016 | .159 | 3.9387 | .010 | 1 |
| S2 | .80000 | .87097 | .071 | 8.87 | .34405 | .000 | 1 |

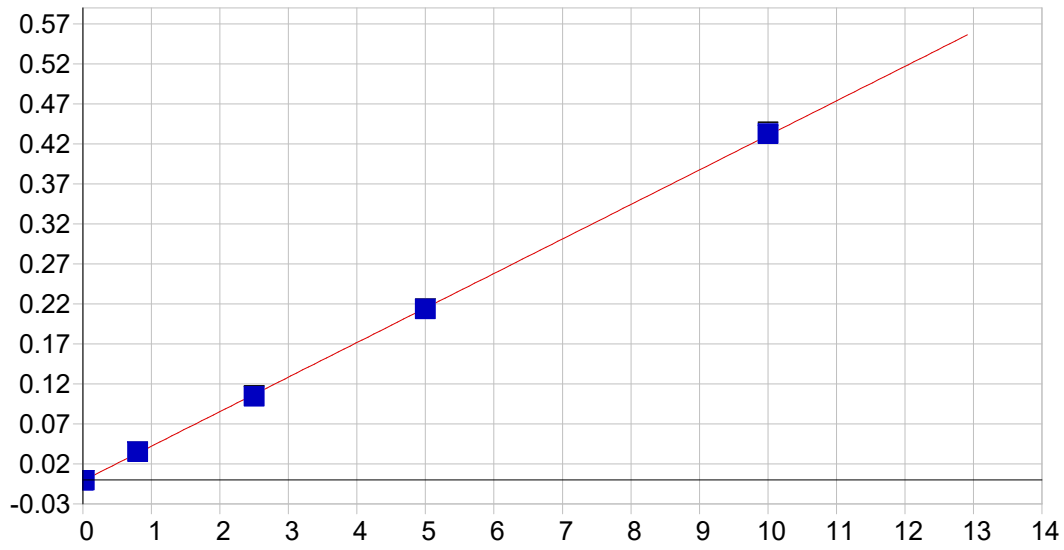



**Si 288.158 {117}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000092 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.004096 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999875 | Status: | OK. |
| Std Error of Est: | 0.000007 | | |
| Predicted MDL: | 0.009705 | | |
| Predicted MQL: | 0.032348 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00003 | .000 | .000 | .00009 | .000 | 1 |
| S1 | .40000 | .35883 | -.041 | -10.3 | .00156 | .000 | 1 |
| S3 | 2.5000 | 2.4944 | -.006 | -.225 | .01046 | .000 | 1 |
| S4 | 5.0000 | 4.9910 | -.009 | -.181 | .02084 | .000 | 1 |
| S5 | 10.000 | 10.037 | .037 | .369 | .04182 | .000 | 1 |
| S2 | .80000 | .81840 | .018 | 2.30 | .00349 | .000 | 1 |

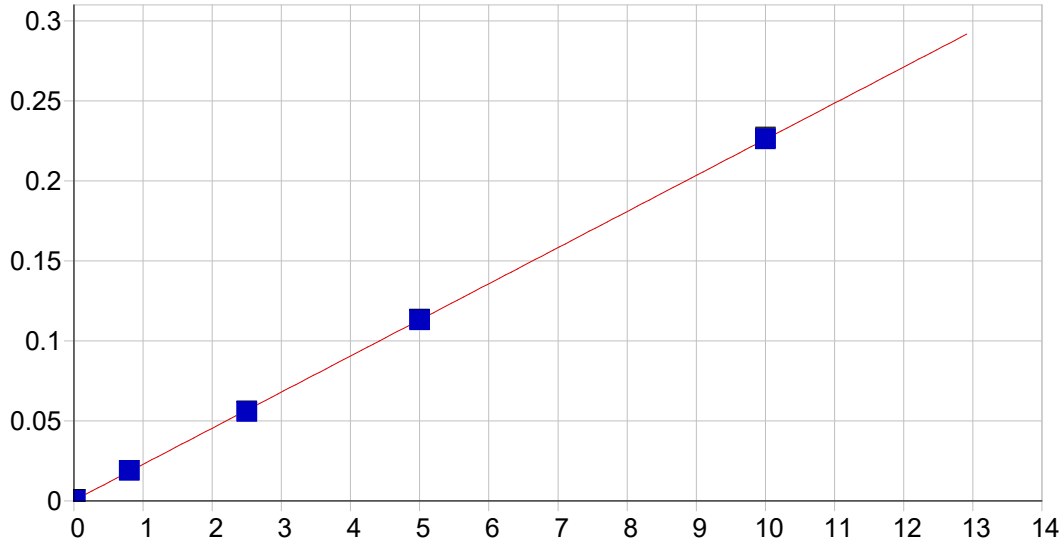



**P 177.495 {490}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000991 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.043161 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999906 | Status: | OK. |
| Std Error of Est: | 0.000014 | | |
| Predicted MDL: | 0.002208 | | |
| Predicted MQL: | 0.007361 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | -.00099 | .000 | 1 |
| S1 | .02000 | .01759 | -.002 | -12.0 | -.00023 | .000 | 1 |
| S3 | 2.5000 | 2.4446 | -.055 | -2.21 | .10451 | .001 | 1 |
| S4 | 5.0000 | 4.9721 | -.028 | -.557 | .21358 | .000 | 1 |
| S5 | 10.000 | 10.051 | .051 | .511 | .43276 | .002 | 1 |
| S2 | .80000 | .83456 | .035 | 4.32 | .03502 | .000 | 1 |

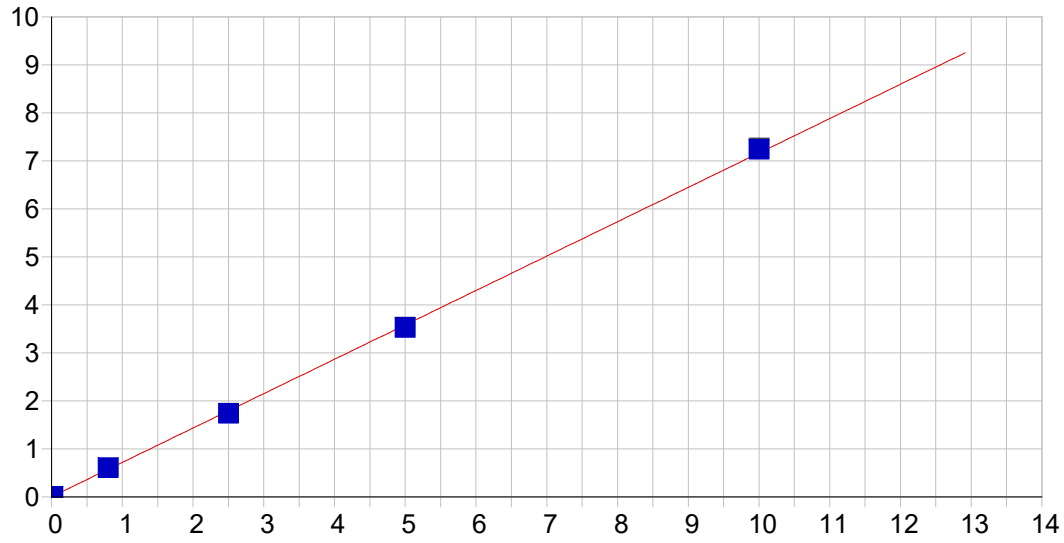



**S 182.034 {485}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000294 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.022570 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999945 | Status: | OK. |
| Std Error of Est: | 0.000006 | | |
| Predicted MDL: | 0.003923 | | |
| Predicted MQL: | 0.013077 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .00029 | .000 | 1 |
| S1 | .02000 | .01790 | -.002 | -10.5 | .00068 | .000 | 1 |
| S3 | 2.5000 | 2.4587 | -.041 | -1.65 | .05564 | .000 | 1 |
| S4 | 5.0000 | 4.9994 | -.001 | -.013 | .11284 | .001 | 1 |
| S5 | 10.000 | 10.015 | .015 | .146 | .22574 | .001 | 1 |
| S2 | .80000 | .82942 | .029 | 3.68 | .01897 | .000 | 1 |

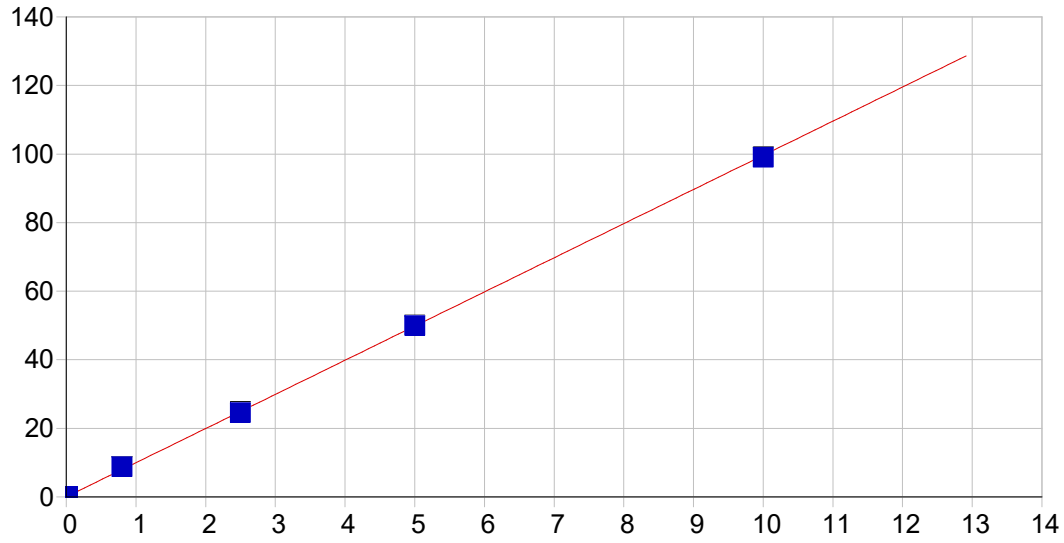



**Li 670.784 { 50}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.002544 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.716241 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999792 | Status: | OK. |
| Std Error of Est: | 0.000342 | | |
| Predicted MDL: | 0.001353 | | |
| Predicted MQL: | 0.004510 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .00254 | .001 | 1 |
| S5 | 10.000 | 10.108 | .108 | 1.08 | 7.2462 | .019 | 1 |
| S4 | 5.0000 | 4.9185 | -.082 | -1.63 | 3.5271 | .008 | 1 |
| S3 | 2.5000 | 2.4263 | -.074 | -2.95 | 1.7412 | .002 | 1 |
| S1 | .02000 | .01887 | -.001 | -5.63 | .01629 | .001 | 1 |
| S2 | .80000 | .84794 | .048 | 5.99 | .61016 | .003 | 1 |

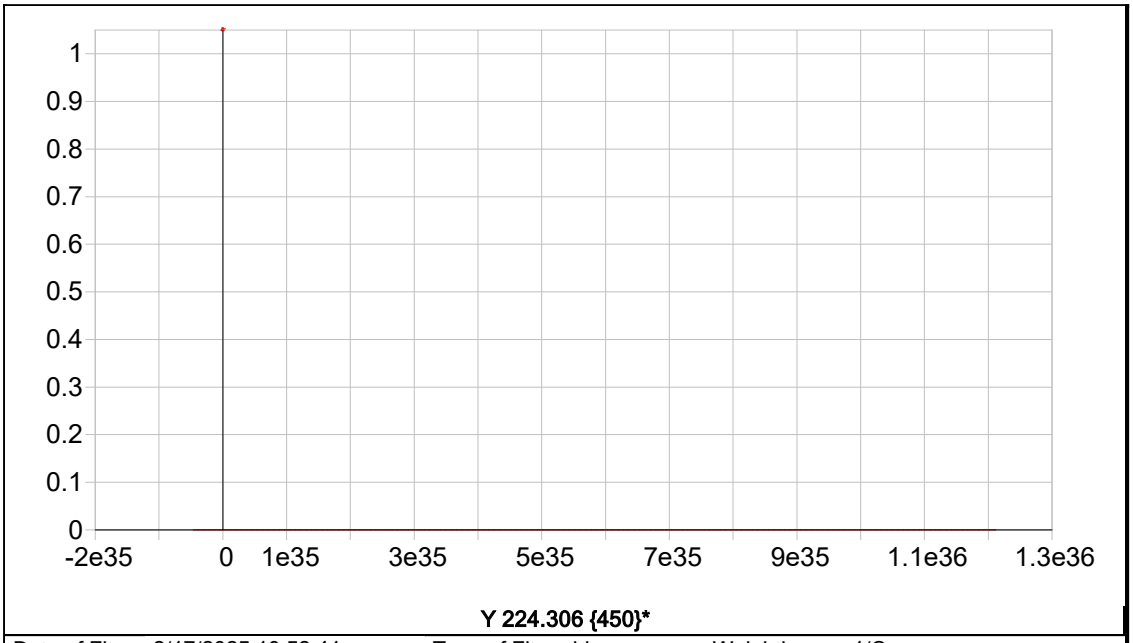



**Sr 407.771 { 83}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 11:19:02 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000885 | Re-Slope: | 1.000000 |
| A1 (Gain): | 9.963167 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999750 | Status: | OK. |
| Std Error of Est: | 0.005225 | | |
| Predicted MDL: | 0.000058 | | |
| Predicted MQL: | 0.000193 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00087 | .000 | 1 |
| S1 | .02000 | .02005 | .000 | .238 | .20162 | .000 | 1 |
| S3 | 2.5000 | 2.4664 | -.034 | -1.34 | 24.599 | .213 | 1 |
| S4 | 5.0000 | 5.0120 | .012 | .240 | 49.986 | .092 | 1 |
| S5 | 10.000 | 9.9399 | -.060 | -.601 | 99.133 | .116 | 1 |
| S2 | .80000 | .88166 | .082 | 10.2 | 8.7930 | .048 | 1 |

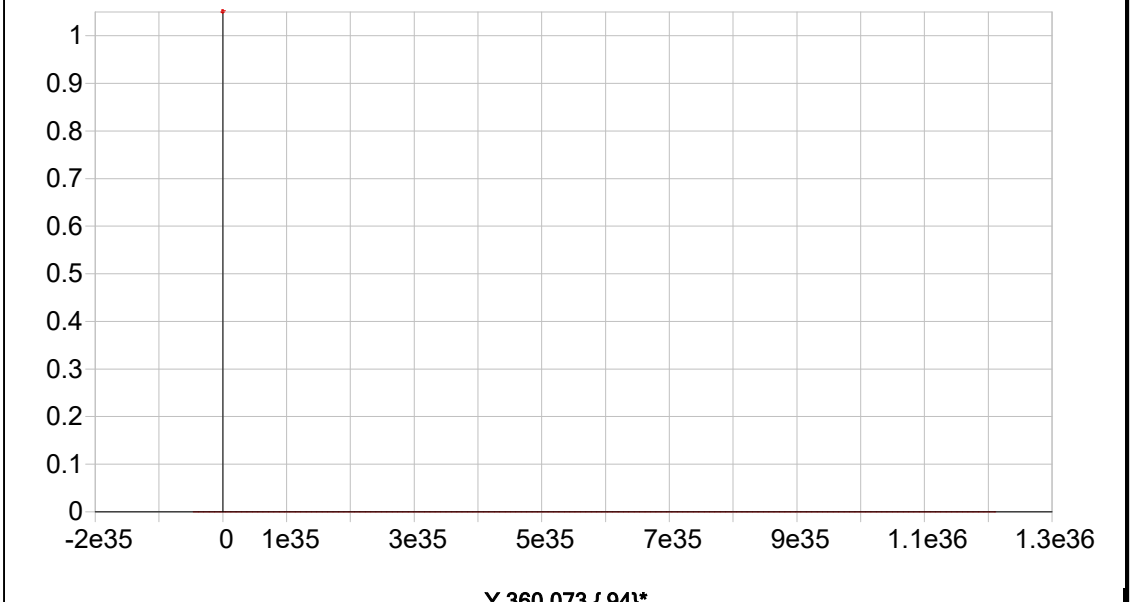



**Y 224.306 {450}***

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/17/2025 10:52:41 | Type of Fit: | Linear | Weighting: | 1/Conc |

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

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



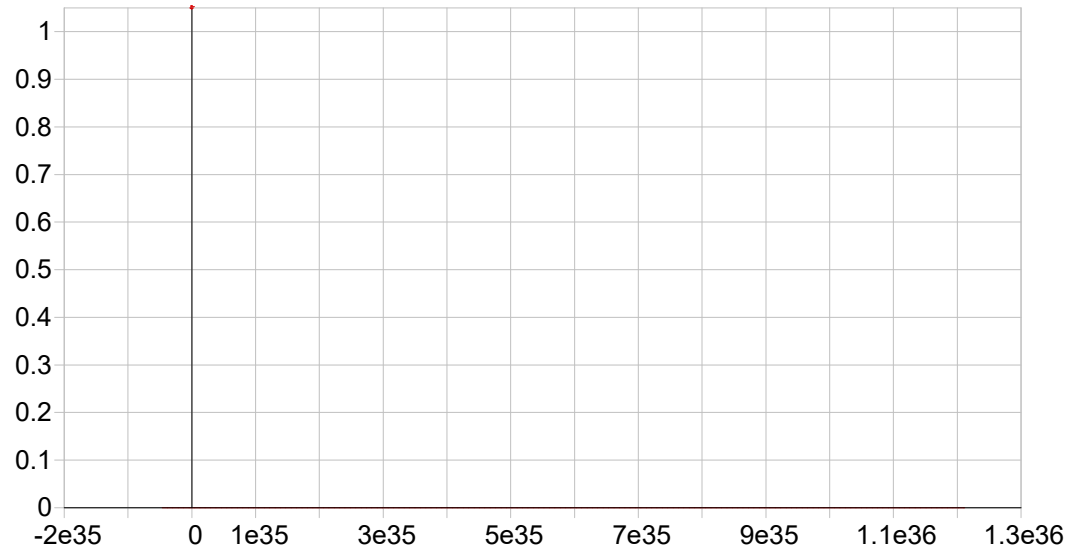

**Y 360.073 { 94}***

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

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

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

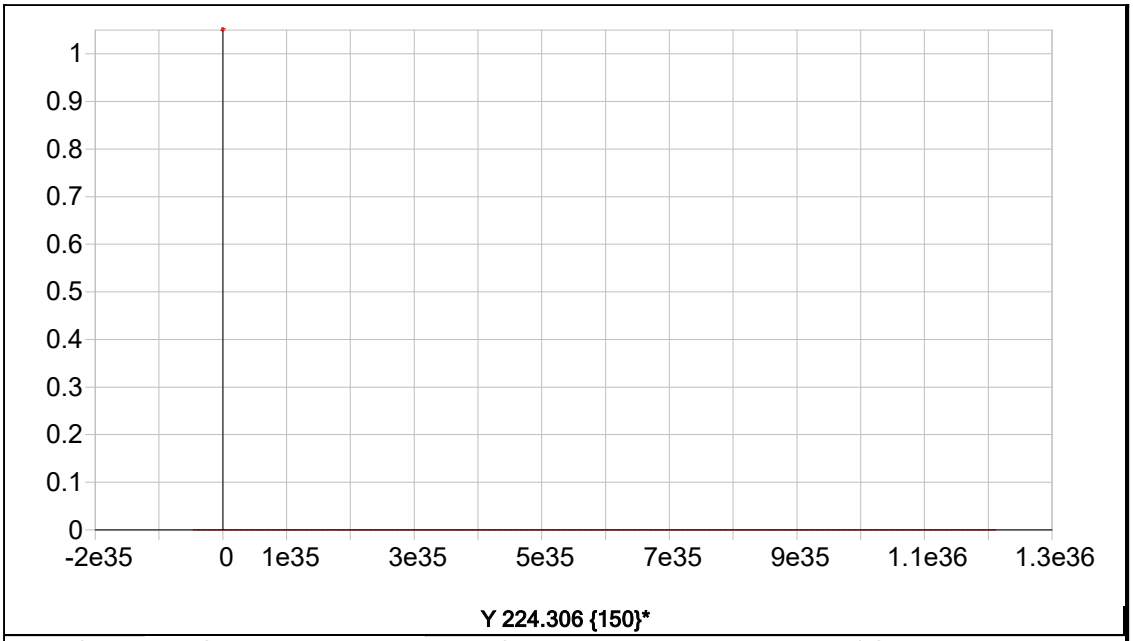
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|




**Y 371.030 { 91}***

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

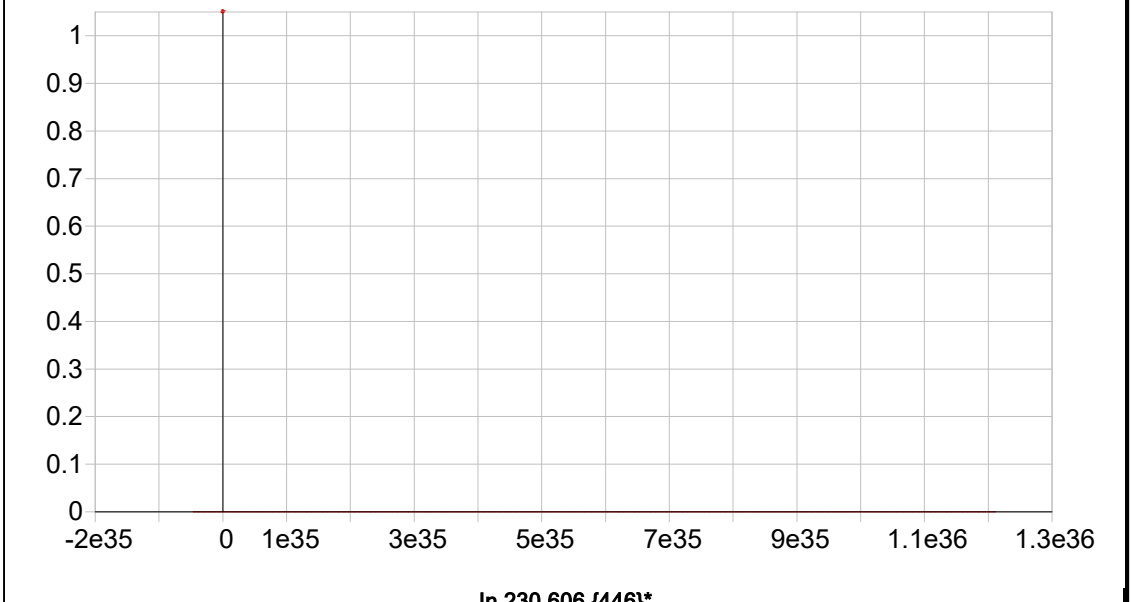
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|




**Y 224.306 {150}***

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

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




**In 230.606 {446}***

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

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

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S0 Acquired: 2/17/2025 10:53:28 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | -.00004 | .00021 | -.00031 | .00022 | .00043 | -.00013 | .04408 | -.00019 |
| Stddev | .00012 | .00002 | .00014 | .00010 | .00006 | .00022 | .00002 | .00017 |
| %RSD | 283.20 | 10.834 | 45.042 | 48.036 | 14.614 | 178.21 | .04170 | 89.525 |
| #1 | -.00002 | .00023 | -.00027 | .00032 | .00047 | -.00031 | .04408 | .00001 |
| #2 | .00006 | .00021 | -.00047 | .00011 | .00036 | .00013 | .04410 | -.00028 |
| #3 | -.00017 | .00018 | -.00020 | .00023 | .00046 | -.00020 | .04407 | -.00029 |

| 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 | .00012 | .00114 | .00006 | .00011 | -.00078 | .00001 | .00001 | -.00034 |
| Stddev | .00010 | .00030 | .00003 | .00005 | .00009 | .00003 | .00010 | .00011 |
| %RSD | 78.926 | 25.783 | 53.374 | 47.486 | 11.111 | 412.88 | 1864.9 | 31.843 |
| #1 | .00003 | .00129 | .00009 | .00006 | -.00086 | -.00001 | -.00004 | -.00022 |
| #2 | .00012 | .00133 | .00007 | .00016 | -.00080 | -.00000 | -.00006 | -.00040 |
| #3 | .00022 | .00080 | .00003 | .00009 | -.00069 | .00004 | .00012 | -.00040 |

| 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 | -.00002 | -.00150 | .00102 | .00009 | .00434 | -.00040 | .00349 | .00007 |
| Stddev | .00003 | .00008 | .00025 | .00024 | .00010 | .00007 | .00002 | .00004 |
| %RSD | 134.18 | 5.4916 | 24.444 | 258.96 | 2.3820 | 17.255 | .53873 | 58.499 |
| #1 | -.00004 | -.00143 | .00088 | .00020 | .00425 | -.00046 | .00349 | .00011 |
| #2 | -.00003 | -.00159 | .00087 | .00026 | .00432 | -.00033 | .00347 | .00006 |
| #3 | .00001 | -.00148 | .00131 | -.00019 | .00446 | -.00043 | .00351 | .00003 |

| 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 | .00011 | .00168 | .00009 | -.00099 | .00029 | .00254 | .00087 |
| Stddev | .00009 | .00019 | .00000 | .00004 | .00009 | .00059 | .00023 |
| %RSD | 80.386 | 11.422 | 5.3334 | 4.0003 | 29.594 | 23.381 | 26.479 |
| #1 | .00017 | .00186 | .00010 | -.00095 | .00030 | .00256 | .00089 |
| #2 | .00016 | .00170 | .00009 | -.00100 | .00021 | .00313 | .00108 |
| #3 | .00001 | .00148 | .00009 | -.00103 | .00038 | .00194 | .00063 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S0 Acquired: 2/17/2025 10:53:28 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 3379.5 | 72316. | 11868. | 2623.2 | 4493.8 |
| Stddev | 7.3 | 240. | 102. | 7.8 | 7.7 |
| %RSD | .21522 | .33223 | .85882 | .29624 | .17039 |
| | | | | | |
| #1 | 3373.4 | 72562. | 11818. | 2616.0 | 4492.2 |
| #2 | 3387.5 | 72303. | 11801. | 2631.4 | 4502.1 |
| #3 | 3377.4 | 72082. | 11985. | 2622.3 | 4487.0 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S1 Acquired: 2/17/2025 10:57:55 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .00093 | .00174 | .00242 | .00137 | .00687 | .00773 | .26217 | .02280 |
| Stddev | .00010 | .00015 | .00028 | .00015 | .00008 | .00046 | .00115 | .00021 |
| %RSD | 10.807 | 8.6848 | 11.727 | 10.625 | 1.1077 | 5.9284 | .43698 | .92046 |
| #1 | .00085 | .00157 | .00269 | .00122 | .00687 | .00824 | .26337 | .02288 |
| #2 | .00089 | .00179 | .00247 | .00137 | .00680 | .00758 | .26208 | .02296 |
| #3 | .00104 | .00186 | .00212 | .00151 | .00695 | .00736 | .26108 | .02256 |

| 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 | .01294 | .09343 | .00181 | .02347 | .01505 | .00048 | .00843 | .03040 |
| Stddev | .00022 | .00062 | .00003 | .00014 | .00017 | .00002 | .00003 | .00029 |
| %RSD | 1.7235 | .66519 | 1.7645 | .59324 | 1.0983 | 3.3796 | .40819 | .95547 |
| #1 | .01310 | .09366 | .00177 | .02332 | .01524 | .00047 | .00847 | .03065 |
| #2 | .01269 | .09273 | .00184 | .02350 | .01498 | .00050 | .00840 | .03008 |
| #3 | .01303 | .09390 | .00182 | .02360 | .01493 | .00048 | .00843 | .03047 |

| 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 | .02667 | .00048 | .02262 | .00505 | .11654 | .01203 | .04275 | .13961 |
| Stddev | .00008 | .00006 | .00014 | .00007 | .00180 | .00016 | .00042 | .00032 |
| %RSD | .28583 | 11.996 | .60177 | 1.4386 | 1.5419 | 1.3327 | .97171 | .23144 |
| #1 | .02670 | .00049 | .02273 | .00497 | .11446 | .01218 | .04266 | .13925 |
| #2 | .02672 | .00053 | .02247 | .00510 | .11753 | .01186 | .04320 | .13971 |
| #3 | .02658 | .00042 | .02267 | .00508 | .11762 | .01206 | .04238 | .13988 |

| 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 | .00557 | .01734 | .00156 | -.00023 | .00068 | .01629 | .20162 |
| Stddev | .00011 | .00040 | .00004 | .00004 | .00008 | .00099 | .00039 |
| %RSD | 2.0110 | 2.2893 | 2.3268 | 19.368 | 11.259 | 6.0588 | .19336 |
| #1 | .00547 | .01704 | .00158 | -.00027 | .00061 | .01740 | .20199 |
| #2 | .00555 | .01719 | .00152 | -.00024 | .00066 | .01598 | .20121 |
| #3 | .00569 | .01779 | .00159 | -.00018 | .00076 | .01550 | .20166 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S1 Acquired: 2/17/2025 10:57:55 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3338.3 | 71311. | 12082. | 2527.4 | 4447.2 |
| Stddev | 4.3 | 105. | 45. | 5.7 | 5.1 |
| %RSD | .12917 | .14765 | .36920 | .22439 | .11392 |
| | | | | | |
| #1 | 3342.1 | 71281. | 12058. | 2529.7 | 4452.0 |
| #2 | 3339.3 | 71428. | 12055. | 2531.5 | 4447.9 |
| #3 | 3333.6 | 71224. | 12134. | 2520.9 | 4441.9 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S2 Acquired: 2/17/2025 11:02:18 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .04719 | .04148 | .19333 | .05234 | .11615 | .13187 | 3.8871 | .18246 |
| Stddev | .00016 | .00014 | .00064 | .00005 | .00036 | .00026 | .0247 | .00048 |
| %RSD | .32886 | .34530 | .33150 | .09918 | .30930 | .19758 | .63462 | .26394 |
| #1 | .04709 | .04162 | .19340 | .05228 | .11583 | .13214 | 3.9112 | .18256 |
| #2 | .04712 | .04150 | .19266 | .05236 | .11609 | .13185 | 3.8881 | .18289 |
| #3 | .04737 | .04133 | .19394 | .05238 | .11654 | .13162 | 3.8619 | .18194 |

| 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 | .93477 | .20540 | .03258 | .35414 | .16208 | .00434 | .17578 | .06421 |
| Stddev | .00416 | .00051 | .00009 | .00141 | .00032 | .00001 | .00058 | .00008 |
| %RSD | .44550 | .24956 | .28206 | .39773 | .19944 | .31612 | .32781 | .12919 |
| #1 | .93382 | .20514 | .03265 | .35371 | .16225 | .00435 | .17574 | .06421 |
| #2 | .93116 | .20599 | .03247 | .35299 | .16170 | .00433 | .17637 | .06430 |
| #3 | .93932 | .20507 | .03260 | .35571 | .16227 | .00432 | .17522 | .06413 |

| 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 | .30100 | .04546 | .04644 | .05744 | 1.1931 | .02634 | .36614 | .63727 |
| Stddev | .00155 | .00017 | .00019 | .00011 | .0025 | .00020 | .00158 | .00290 |
| %RSD | .51410 | .36652 | .40759 | .19023 | .20631 | .75913 | .43199 | .45469 |
| #1 | .30091 | .04563 | .04665 | .05751 | 1.1952 | .02619 | .36757 | .63458 |
| #2 | .29951 | .04547 | .04630 | .05749 | 1.1904 | .02656 | .36642 | .63691 |
| #3 | .30260 | .04530 | .04635 | .05731 | 1.1937 | .02626 | .36444 | .64034 |

| 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 | .12288 | .34405 | .00349 | .03502 | .01897 | .61016 | 8.7930 |
| Stddev | .00049 | .00048 | .00003 | .00007 | .00003 | .00307 | .0475 |
| %RSD | .39526 | .13827 | .90191 | .20195 | .15190 | .50284 | .54068 |
| #1 | .12287 | .34448 | .00346 | .03510 | .01899 | .61299 | 8.8363 |
| #2 | .12240 | .34413 | .00350 | .03496 | .01893 | .61058 | 8.8005 |
| #3 | .12337 | .34354 | .00352 | .03501 | .01898 | .60690 | 8.7422 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S2 Acquired: 2/17/2025 11:02:18 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 3339.1 | 70308. | 11856. | 2425.0 | 4439.3 |
| Stddev | 10.3 | 217. | 21. | 3.4 | 14.3 |
| %RSD | .30904 | .30845 | .17968 | .14085 | .32314 |
| | | | | | |
| #1 | 3347.2 | 70430. | 11864. | 2421.1 | 4442.2 |
| #2 | 3342.7 | 70437. | 11831. | 2426.5 | 4452.0 |
| #3 | 3327.5 | 70058. | 11871. | 2427.4 | 4423.8 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S3 Acquired: 2/17/2025 11:06:27 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .13608 | .11323 | .54856 | .14953 | .33069 | .37222 | 11.131 | .47740 |
| Stddev | .00095 | .00113 | .00156 | .00055 | .00177 | .00091 | .022 | .00270 |
| %RSD | .69809 | 1.0008 | .28391 | .37056 | .53561 | .24339 | .20092 | .56644 |
| #1 | .13555 | .11279 | .54794 | .14956 | .32984 | .37293 | 11.129 | .48051 |
| #2 | .13551 | .11238 | .54740 | .14897 | .32950 | .37120 | 11.154 | .47570 |
| #3 | .13718 | .11452 | .55033 | .15007 | .33272 | .37254 | 11.109 | .47597 |

| 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 | 2.6593 | .57115 | .09100 | 1.0011 | .45495 | .01293 | .49108 | .18086 |
| Stddev | .0103 | .00151 | .00024 | .0031 | .00265 | .00002 | .00048 | .00081 |
| %RSD | .38863 | .26401 | .26178 | .31252 | .58312 | .15863 | .09806 | .44677 |
| #1 | 2.6560 | .57262 | .09122 | .99980 | .45341 | .01295 | .49104 | .18145 |
| #2 | 2.6510 | .57124 | .09075 | .99885 | .45343 | .01292 | .49158 | .17994 |
| #3 | 2.6709 | .56961 | .09104 | 1.0047 | .45802 | .01292 | .49062 | .18120 |

| 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 | .84885 | .12746 | .14648 | .16421 | 3.2661 | .08090 | .95614 | 1.7725 |
| Stddev | .00343 | .00014 | .00091 | .00011 | .0104 | .00026 | .00401 | .0091 |
| %RSD | .40411 | .11018 | .62249 | .06715 | .31868 | .32096 | .41963 | .51369 |
| #1 | .84716 | .12749 | .14559 | .16410 | 3.2546 | .08060 | .96075 | 1.7684 |
| #2 | .84659 | .12758 | .14741 | .16432 | 3.2689 | .08100 | .95348 | 1.7662 |
| #3 | .85280 | .12731 | .14643 | .16419 | 3.2749 | .08109 | .95419 | 1.7830 |

| 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 | .34994 | .97171 | .01046 | .10451 | .05564 | 1.7412 | 24.599 |
| Stddev | .00152 | .00348 | .00007 | .00052 | .00035 | .0017 | .213 |
| %RSD | .43359 | .35822 | .71501 | .49760 | .63241 | .09569 | .86400 |
| #1 | .34976 | .97528 | .01038 | .10409 | .05533 | 1.7428 | 24.802 |
| #2 | .34853 | .97154 | .01052 | .10435 | .05556 | 1.7414 | 24.617 |
| #3 | .35154 | .96832 | .01049 | .10509 | .05602 | 1.7395 | 24.378 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S3 Acquired: 2/17/2025 11:06:27 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 3207.5 | 69253. | 12548. | 2359.9 | 4183.8 |
| Stddev | 5.6 | 96. | 57. | 6.8 | 6.3 |
| %RSD | .17446 | .13827 | .45258 | .28918 | .15075 |
| #1 | 3208.5 | 69354. | 12483. | 2367.5 | 4179.3 |
| #2 | 3212.6 | 69164. | 12575. | 2357.9 | 4191.0 |
| #3 | 3201.5 | 69239. | 12587. | 2354.3 | 4181.1 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S4 Acquired: 2/17/2025 11:10:36 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .27193 | .22797 | 1.0922 | .29720 | .65986 | .75218 | 22.419 | .94983 |
| Stddev | .00124 | .00216 | .0030 | .00128 | .00275 | .00090 | .124 | .00404 |
| %RSD | .45571 | .94960 | .27101 | .43196 | .41744 | .11998 | .55339 | .42495 |
| #1 | .27210 | .22713 | 1.0917 | .29657 | .65912 | .75128 | 22.276 | .94902 |
| #2 | .27061 | .22635 | 1.0896 | .29634 | .65755 | .75217 | 22.487 | .94626 |
| #3 | .27307 | .23043 | 1.0955 | .29867 | .66291 | .75308 | 22.495 | .95421 |

| 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 | 5.3236 | 1.1407 | .17857 | 1.9998 | .89459 | .02546 | .97327 | .36565 |
| Stddev | .0195 | .0017 | .00044 | .0076 | .00362 | .00015 | .00240 | .00050 |
| %RSD | .36585 | .14687 | .24628 | .37789 | .40518 | .60555 | .24649 | .13794 |
| #1 | 5.3276 | 1.1426 | .17907 | 2.0000 | .89262 | .02563 | .97597 | .36507 |
| #2 | 5.3024 | 1.1395 | .17839 | 1.9921 | .89238 | .02543 | .97139 | .36601 |
| #3 | 5.3407 | 1.1400 | .17825 | 2.0072 | .89878 | .02532 | .97246 | .36587 |

| Elem | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 1.6856 | .25248 | .29503 | .33158 | 6.4056 | .16144 | 1.9160 | 3.5127 |
| Stddev | .0052 | .00024 | .00166 | .00007 | .0256 | .00086 | .0070 | .0153 |
| %RSD | .31090 | .09700 | .56357 | .02136 | .39952 | .53539 | .36393 | .43449 |
| #1 | 1.6868 | .25264 | .29645 | .33155 | 6.4160 | .16189 | 1.9091 | 3.5092 |
| #2 | 1.6798 | .25260 | .29545 | .33166 | 6.4243 | .16199 | 1.9157 | 3.4994 |
| #3 | 1.6901 | .25219 | .29320 | .33153 | 6.3764 | .16045 | 1.9231 | 3.5294 |

| 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 | .69984 | 1.9456 | .02084 | .21358 | .11284 | 3.5271 | 49.986 |
| Stddev | .00222 | .0044 | .00006 | .00047 | .00053 | .0081 | .092 |
| %RSD | .31783 | .22496 | .28727 | .21858 | .47008 | .23008 | .18377 |
| #1 | .69943 | 1.9495 | .02088 | .21361 | .11277 | 3.5324 | 50.088 |
| #2 | .69785 | 1.9464 | .02077 | .21310 | .11235 | 3.5312 | 49.909 |
| #3 | .70224 | 1.9409 | .02087 | .21403 | .11340 | 3.5178 | 49.962 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S4 Acquired: 2/17/2025 11:10:36 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 3137.4 | 68393. | 12199. | 2293.4 | 4033.7 |
| Stddev | 9.1 | 28. | 54. | 2.9 | 10.6 |
| %RSD | .29059 | .04148 | .43862 | .12526 | .26200 |
| #1 | 3139.6 | 68420. | 12246. | 2291.0 | 4033.9 |
| #2 | 3145.2 | 68364. | 12208. | 2292.6 | 4044.3 |
| #3 | 3127.4 | 68394. | 12141. | 2296.6 | 4023.1 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: S5 Acquired: 2/17/2025 11:14:49 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .52909 | .44361 | 2.1466 | .57235 | 1.2889 | 1.5268 | 45.257 | 1.9015 |
| Stddev | .00196 | .00199 | .0084 | .00207 | .0037 | .0022 | .080 | .0090 |
| %RSD | .36952 | .44819 | .38977 | .36154 | .28354 | .14070 | .17764 | .47473 |
| #1 | .53116 | .44528 | 2.1562 | .57458 | 1.2929 | 1.5286 | 45.277 | 1.9080 |
| #2 | .52728 | .44141 | 2.1425 | .57049 | 1.2858 | 1.5245 | 45.169 | 1.8912 |
| #3 | .52883 | .44413 | 2.1411 | .57196 | 1.2880 | 1.5274 | 45.326 | 1.9053 |

| 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 | 10.460 | 2.2923 | .34745 | 3.9636 | 1.7243 | .04998 | 1.9592 | .74409 |
| Stddev | .040 | .0048 | .00126 | .0134 | .0062 | .00032 | .0087 | .00257 |
| %RSD | .38256 | .20773 | .36141 | .33686 | .35758 | .63262 | .44363 | .34555 |
| #1 | 10.506 | 2.2964 | .34605 | 3.9790 | 1.7314 | .04967 | 1.9648 | .74568 |
| #2 | 10.441 | 2.2871 | .34783 | 3.9545 | 1.7201 | .05030 | 1.9492 | .74113 |
| #3 | 10.434 | 2.2932 | .34847 | 3.9575 | 1.7214 | .04997 | 1.9637 | .74547 |

| Elem | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3.3132 | .50112 | .59554 | .66997 | 12.563 | .32367 | 3.8624 | 6.8619 |
| Stddev | .0109 | .00127 | .00141 | .00140 | .074 | .00134 | .0223 | .0222 |
| %RSD | .32755 | .25381 | .23739 | .20895 | .59048 | .41476 | .57795 | .32377 |
| #1 | 3.3257 | .49967 | .59448 | .67014 | 12.519 | .32233 | 3.8748 | 6.8876 |
| #2 | 3.3072 | .50166 | .59714 | .66849 | 12.521 | .32502 | 3.8367 | 6.8495 |
| #3 | 3.3066 | .50203 | .59499 | .67128 | 12.649 | .32365 | 3.8759 | 6.8487 |

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 1.3757 | 3.9387 | .04182 | .43276 | .22574 | 7.2462 | 99.133 |
| Stddev | .0053 | .0104 | .00023 | .00196 | .00099 | .0188 | .116 |
| %RSD | .38801 | .26527 | .55375 | .45327 | .43948 | .25907 | .11727 |
| #1 | 1.3818 | 3.9504 | .04155 | .43502 | .22671 | 7.2669 | 99.063 |
| #2 | 1.3720 | 3.9304 | .04195 | .43154 | .22473 | 7.2302 | 99.267 |
| #3 | 1.3732 | 3.9353 | .04195 | .43172 | .22578 | 7.2416 | 99.070 |

Sample Name: S5 Acquired: 2/17/2025 11:14:49 Type: Cal
Method: NON EPA-6010-200.7(v2699) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 3097.1 | 66848. | 11679. | 2237.8 | 3904.1 |
| Stddev | 8.5 | 306. | 55. | 17.8 | 10.5 |
| %RSD | .27331 | .45810 | .47117 | .79715 | .26847 |
| #1 | 3087.6 | 67198. | 11667. | 2253.5 | 3892.6 |
| #2 | 3104.0 | 66714. | 11739. | 2241.5 | 3913.2 |
| #3 | 3099.6 | 66631. | 11631. | 2218.4 | 3906.6 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: ICV01 Acquired: 2/17/2025 11:46:51 Type: Unk
Method: NON EPA-6010-200.7(v2700) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.006294 | 1.052004 | .9678554 | 1.012969 | 1.019942 | 2.371238 |
| Stddev | .001063 | .004534 | .0026436 | .001237 | .002656 | .011146 |
| %RSD | .1056245 | .4310260 | .2731423 | .1220932 | .2603877 | .4700695 |
| #1 | 1.005909 | 1.047004 | .9708908 | 1.011612 | 1.023008 | 2.369568 |
| #2 | 1.007496 | 1.055849 | .9666183 | 1.014032 | 1.018438 | 2.383126 |
| #3 | 1.005478 | 1.053159 | .9660572 | 1.013264 | 1.018379 | 2.361021 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5379416 | .4735450 | .4839453 | 9.176154 | .5190373 | .4851912 |
| Stddev | .0018349 | .0040324 | .0005160 | .035716 | .0006659 | .0010830 |
| %RSD | .3410972 | .8515415 | .1066310 | .3892304 | .1282919 | .2232134 |
| #1 | .5364556 | .4759566 | .4844138 | 9.190890 | .5183520 | .4864289 |
| #2 | .5373766 | .4757887 | .4833922 | 9.202145 | .5196819 | .4844178 |
| #3 | .5399926 | .4688898 | .4840299 | 9.135427 | .5190780 | .4847268 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5033140 | 9.357191 | .5436488 | 5.511829 | .4839010 | .2478660 |
| Stddev | .0005959 | .063282 | .0009192 | .012254 | .0012215 | .0004980 |
| %RSD | .1184001 | .6762929 | .1690809 | .2223221 | .2524192 | .2009030 |
| #1 | .5039484 | 9.329379 | .5447075 | 5.507998 | .4848743 | .2477871 |
| #2 | .5032275 | 9.312578 | .5430539 | 5.525541 | .4825303 | .2483987 |
| #3 | .5027660 | 9.429616 | .5431850 | 5.501949 | .4842983 | .2474121 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.732504 | .4651008 | .9928101 | 9.328467 | F -.026299 | F -.000240 |
| Stddev | .093452 | .0039703 | .0005217 | .040161 | .000389 | .000257 |
| %RSD | .9602070 | .8536493 | .0525524 | .4305176 | 1.477771 | 106.9463 |
| #1 | 9.660083 | .4661091 | .9933998 | 9.292756 | -.026545 | -.000382 |
| #2 | 9.699435 | .4684697 | .9924083 | 9.320702 | -.025851 | -.000396 |
| #3 | 9.837994 | .4607235 | .9926222 | 9.371944 | -.026501 | .000056 |

Sample Name: ICV01 Acquired: 2/17/2025 11:46:51 Type: Unk
Method: NON EPA-6010-200.7(v2700) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | F -.000756 | F .0003112 | F -.006912 | F -.002710 | F -.003327 | F .0017937 |
| Stddev | .000314 | .0004229 | .005287 | .001759 | .001660 | .0006709 |
| %RSD | 41.54658 | 135.8729 | 76.48913 | 64.89930 | 49.90298 | 37.40427 |
| #1 | -.000398 | .0007472 | -.001430 | -.004160 | -.001508 | .0022018 |
| #2 | -.000882 | .0002837 | -.011980 | -.000754 | -.004761 | .0010194 |
| #3 | -.000987 | -.000097 | -.007327 | -.003215 | -.003712 | .0021599 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | F -.008397 |
| Stddev | .000025 |
| %RSD | .2988337 |
| #1 | -.008383 |
| #2 | -.008381 |
| #3 | -.008426 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3234.146 | 68749.56 | 12831.41 | 2226.074 | 4385.296 |
| Stddev | 8.734 | 156.05 | 64.71 | 8.277 | 10.401 |
| %RSD | .2700557 | .2269766 | .5043037 | .3718189 | .2371693 |
| #1 | 3224.173 | 68925.13 | 12810.48 | 2232.623 | 4373.813 |
| #2 | 3240.430 | 68626.67 | 12779.75 | 2228.828 | 4394.083 |
| #3 | 3237.836 | 68696.89 | 12903.99 | 2216.771 | 4387.991 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: LLICV01 Acquired: 2/17/2025 11:50:59 Type: Unk
Method: NON EPA-6010-200.7(v2700) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0190268 | .0374070 | .0128924 | .0201131 | .0513951 | .0957038 |
| Stddev | .0014983 | .0006421 | .0008413 | .0001615 | .0017806 | .0034711 |
| %RSD | 7.874445 | 1.716544 | 6.525252 | .8029864 | 3.464527 | 3.626920 |
| #1 | .0198779 | .0379943 | .0131808 | .0202491 | .0501910 | .0929399 |
| #2 | .0172968 | .0375054 | .0135516 | .0199346 | .0534404 | .0995996 |
| #3 | .0199057 | .0367215 | .0119449 | .0201556 | .0505538 | .0945721 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1084819 | .0056178 | .0059357 | 1.877558 | .0100332 | .0286494 |
| Stddev | .0014658 | .0000565 | .0000696 | .007072 | .0002546 | .0001687 |
| %RSD | 1.351202 | 1.005988 | 1.173469 | .3766856 | 2.537919 | .5889244 |
| #1 | .1097989 | .0056467 | .0059298 | 1.884253 | .0102579 | .0286122 |
| #2 | .1069027 | .0055527 | .0060081 | 1.870160 | .0097566 | .0285024 |
| #3 | .1087443 | .0056540 | .0058691 | 1.878261 | .0100852 | .0288337 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0223097 | .0908917 | .0219551 | 1.996031 | .0379286 | .0107330 |
| Stddev | .0002820 | .0024485 | .0006450 | .015423 | .0001441 | .0002466 |
| %RSD | 1.264180 | 2.693913 | 2.937923 | .7726792 | .3800175 | 2.297561 |
| #1 | .0226354 | .0907404 | .0225874 | 1.992057 | .0377908 | .0109122 |
| #2 | .0221473 | .0885223 | .0212981 | 1.982983 | .0380783 | .0108350 |
| #3 | .0221465 | .0934124 | .0219798 | 2.013051 | .0379166 | .0104518 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.026007 | .0356005 | .0439417 | 1.980865 | .0869480 | .2028140 |
| Stddev | .028455 | .0003733 | .0005254 | .004504 | .0006405 | .0009300 |
| %RSD | 1.404498 | 1.048528 | 1.195769 | .2273769 | .7366977 | .4585476 |
| #1 | 2.021504 | .0359370 | .0433578 | 1.986045 | .0864981 | .2021455 |
| #2 | 2.056445 | .0351990 | .0443764 | 1.978679 | .0866645 | .2024204 |
| #3 | 2.000072 | .0356654 | .0440909 | 1.977872 | .0876813 | .2038761 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: LLICV01 Acquired: 2/17/2025 11:50:59 Type: Unk
Method: NON EPA-6010-200.7(v2700) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0385245 | .0373826 | .3829095 | F .0138061 | F .0159932 | .0166740 |
| Stddev | .0008906 | .0004421 | .0138394 | .0018413 | .0025789 | .0005478 |
| %RSD | 2.311865 | 1.182753 | 3.614263 | 13.33660 | 16.12467 | 3.285566 |
| | | | | | | |
| #1 | .0385209 | .0377790 | .3678144 | .0138726 | .0133260 | .0169692 |
| #2 | .0394169 | .0374630 | .3949992 | .0119325 | .0184735 | .0170110 |
| #3 | .0376357 | .0369058 | .3859150 | .0156133 | .0161801 | .0160419 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0181839 |
| Stddev | .0000801 |
| %RSD | .4403162 |
| | |
| #1 | .0182744 |
| #2 | .0181548 |
| #3 | .0181224 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3227.063 | 68809.97 | 12974.09 | 2230.917 | 4418.921 |
| Stddev | 7.886 | 252.48 | 90.82 | 6.402 | 10.880 |
| %RSD | .2443835 | .3669203 | .7000101 | .2869711 | .2462245 |
| | | | | | |
| #1 | 3234.587 | 68789.27 | 12908.72 | 2225.847 | 4430.410 |
| #2 | 3227.744 | 69072.16 | 13077.79 | 2228.791 | 4417.580 |
| #3 | 3218.858 | 68568.48 | 12935.76 | 2238.111 | 4408.773 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: ICB01 Acquired: 2/17/2025 11:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | -.001508 | -.000295 | .0005339 | .0016764 | -.000489 | .0003898 | -.002299 |
| Stddev | .001923 | .002592 | .0007986 | .0031269 | .000945 | .0025482 | .000490 |
| %RSD | 127.4744 | 879.4315 | 149.5816 | 186.5270 | 193.5166 | 653.6877 | 21.31742 |
| #1 | .000057 | -.002958 | .0005780 | .0034339 | -.000480 | -.000234 | -.002225 |
| #2 | -.003654 | .002219 | .0013095 | .0035291 | -.001438 | -.001789 | -.001850 |
| #3 | -.000928 | -.000144 | -.000286 | -.001934 | .000452 | .003192 | -.002822 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000580 | .0000251 | -.013520 | -.000023 | -.000015 | .0000578 | -.004656 |
| Stddev | .0000599 | .0000694 | .005492 | .000165 | .000114 | .0003716 | .001880 |
| %RSD | 103.3069 | 276.1719 | 40.61664 | 709.5898 | 737.2501 | 642.5829 | 40.38413 |
| #1 | .0000281 | .0001012 | -.008185 | -.000104 | -.000147 | -.000370 | -.002631 |
| #2 | .0001270 | .0000089 | -.019156 | .000167 | .000043 | .000243 | -.004992 |
| #3 | .0000190 | -.000035 | -.013220 | -.000132 | .000058 | .000300 | -.006346 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000192 | .0018446 | -.000169 | .0003486 | -.003165 | -.000459 | -.000526 |
| Stddev | .000090 | .0085969 | .000624 | .0005671 | .011386 | .000334 | .000013 |
| %RSD | 47.19015 | 466.0652 | 369.6354 | 162.6964 | 359.7513 | 72.76564 | 2.547880 |
| #1 | -.000242 | .0109931 | -.000789 | -.000194 | .002129 | -.000085 | -.000516 |
| #2 | -.000087 | -.006067 | -.000175 | .000302 | .004610 | -.000562 | -.000521 |
| #3 | -.000245 | .000607 | .000458 | .000938 | -.016234 | -.000729 | -.000541 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0663185 | -.006330 | .0000481 | .0001622 | .0013763 | .0004923 | -.004186 |
| Stddev | .0064105 | .000472 | .0001284 | .0004060 | .0003288 | .0085631 | .000430 |
| %RSD | 9.666283 | 7.463115 | 266.8328 | 250.3305 | 23.88766 | 1739.268 | 10.26174 |
| #1 | .0614008 | -.006184 | .0000627 | .0004525 | .0013675 | .0052239 | -.003855 |
| #2 | .0735687 | -.005948 | .0001687 | -.000302 | .0010521 | -.009393 | -.004671 |
| #3 | .0639858 | -.006858 | -.000087 | .000336 | .0017094 | .005646 | -.004030 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: ICB01 Acquired: 2/17/2025 11:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.001845 | -.000977 | -.000131 |
| Stddev | .000748 | .000967 | .000010 |
| %RSD | 40.56065 | 99.00916 | 7.577215 |
| | | | |
| #1 | -.002553 | -.002085 | -.000120 |
| #2 | -.001062 | -.000537 | -.000133 |
| #3 | -.001920 | -.000308 | -.000140 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3191.282 | 68468.68 | 12448.05 | 2228.641 | 4367.958 |
| Stddev | 6.269 | 261.33 | 66.00 | 13.945 | 10.561 |
| %RSD | .1964374 | .3816783 | .5302083 | .6257212 | .2417724 |
| | | | | | |
| #1 | 3186.010 | 68176.28 | 12523.22 | 2214.994 | 4362.027 |
| #2 | 3189.623 | 68550.28 | 12421.33 | 2228.062 | 4361.698 |
| #3 | 3198.214 | 68679.47 | 12399.59 | 2242.866 | 4380.151 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CRI01 Acquired: 2/17/2025 12:00:41 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0202888 | .0347860 | .0115932 | .0188962 | .0495008 | .0980575 | .0824554 |
| Stddev | .0009944 | .0026547 | .0005878 | .0001342 | .0008898 | .0056097 | .0006780 |
| %RSD | 4.901248 | 7.631386 | 5.070109 | .7099761 | 1.797495 | 5.720866 | .8222507 |
| #1 | .0196447 | .0331398 | .0113165 | .0188804 | .0485869 | .0981974 | .0816784 |
| #2 | .0214340 | .0333698 | .0111948 | .0190375 | .0503644 | .0923792 | .0827606 |
| #3 | .0197876 | .0378485 | .0122683 | .0187706 | .0495512 | .1035960 | .0829271 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0059422 | .0058939 | 1.864540 | .0098714 | .0283723 | .0217648 | .0865193 |
| Stddev | .0000305 | .0000513 | .008733 | .0002518 | .0000665 | .0000892 | .0040939 |
| %RSD | .5134264 | .8697060 | .4683557 | 2.550970 | .2345421 | .4100229 | 4.731756 |
| #1 | .0059134 | .0058375 | 1.855542 | .0097089 | .0283274 | .0218005 | .0912393 |
| #2 | .0059742 | .0059063 | 1.872980 | .0097439 | .0284487 | .0216633 | .0843854 |
| #3 | .0059391 | .0059378 | 1.865096 | .0101615 | .0283408 | .0218307 | .0839332 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0219893 | 2.012319 | .0373210 | .0102987 | 1.574384 | .0370417 | .0435080 |
| Stddev | .0006668 | .028350 | .0002989 | .0007261 | .007771 | .0008280 | .0003886 |
| %RSD | 3.032418 | 1.408830 | .8010360 | 7.050220 | .4935916 | 2.235195 | .8931998 |
| #1 | .0218520 | 1.979601 | .0371171 | .0096373 | 1.582730 | .0362570 | .0431506 |
| #2 | .0214019 | 2.027752 | .0371818 | .0110756 | 1.567357 | .0379070 | .0439217 |
| #3 | .0227141 | 2.029605 | .0376642 | .0101832 | 1.573065 | .0369611 | .0434517 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.823503 | .0928136 | .2016747 | .0375332 | .0366863 | .3573938 | .0159780 |
| Stddev | .015549 | .0011517 | .0007277 | .0008215 | .0006323 | .0051703 | .0015790 |
| %RSD | .8526780 | 1.240864 | .3608549 | 2.188835 | 1.723385 | 1.446668 | 9.882337 |
| #1 | 1.841419 | .0914844 | .2008600 | .0382209 | .0359676 | .3552714 | .0149643 |
| #2 | 1.813542 | .0934441 | .2022606 | .0377553 | .0369344 | .3536224 | .0151723 |
| #3 | 1.815547 | .0935124 | .2019033 | .0366235 | .0371568 | .3632876 | .0177973 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CRI01 Acquired: 2/17/2025 12:00:41 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .0146601 | .0169333 | .0179896 |
| Stddev | .0027229 | .0010495 | .0000882 |
| %RSD | 18.57337 | 6.197743 | .4905165 |
| | | | |
| #1 | .0117215 | .0181043 | .0180914 |
| #2 | .0151614 | .0166179 | .0179356 |
| #3 | .0170976 | .0160777 | .0179417 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3291.400 | 69141.23 | 12182.23 | 2257.488 | 4530.472 |
| Stddev | 2.272 | 180.90 | 49.93 | 7.527 | 9.480 |
| %RSD | .0690192 | .2616412 | .4098395 | .3334104 | .2092440 |
| | | | | | |
| #1 | 3292.065 | 68932.40 | 12239.77 | 2248.982 | 4529.628 |
| #2 | 3293.265 | 69241.36 | 12150.28 | 2260.196 | 4540.346 |
| #3 | 3288.870 | 69249.93 | 12156.65 | 2263.286 | 4521.443 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: ICSA01 Acquired: 2/17/2025 12:05:00 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0002184 | -.005749 | .0060521 | -.014135 | -.002593 | 240.5043 |
| Stddev | .0023032 | .004627 | .0011050 | .001025 | .001476 | .3956 |
| %RSD | 1054.591 | 80.49716 | 18.25827 | 7.250775 | 56.93527 | .1645048 |
| #1 | .0018335 | -.010951 | .0072975 | -.015261 | -.004297 | 240.6657 |
| #2 | -.002419 | -.002091 | .0056700 | -.013256 | -.001768 | 240.7938 |
| #3 | .001241 | -.004205 | .0051889 | -.013888 | -.001713 | 240.0535 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0035364 | .0013718 | .0052802 | 221.5732 | .0581393 | .0014585 |
| Stddev | .0005485 | .0000594 | .0001578 | .2085 | .0001439 | .0001815 |
| %RSD | 15.50888 | 4.332571 | 2.987542 | .0940882 | .2475526 | 12.44228 |
| #1 | .0041473 | .0013748 | .0052350 | 221.7822 | .0581146 | .0016051 |
| #2 | .0030864 | .0013110 | .0051500 | 221.5721 | .0582941 | .0012555 |
| #3 | .0033756 | .0014297 | .0054556 | 221.3653 | .0580094 | .0015148 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0199681 | 95.57576 | .0050987 | 240.5542 | .0021776 | -.004347 |
| Stddev | .0001524 | .17831 | .0005953 | .3709 | .0005617 | .000214 |
| %RSD | .7632757 | .1865652 | 11.67518 | .1541689 | 25.79533 | 4.924588 |
| #1 | .0199392 | 95.66256 | .0045278 | 240.9555 | .0027249 | -.004473 |
| #2 | .0198323 | 95.37067 | .0050527 | 240.4828 | .0022054 | -.004468 |
| #3 | .0201330 | 95.69406 | .0057157 | 240.2242 | .0016025 | -.004100 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0487237 | .0016138 | .0027894 | .1133267 | F -.200928 | .0004421 |
| Stddev | .0090259 | .0010700 | .0006546 | .0283659 | .003391 | .0002042 |
| %RSD | 18.52474 | 66.30222 | 23.46624 | 25.03020 | 1.687531 | 46.19351 |
| #1 | .0562006 | .0027047 | .0026969 | .0808704 | -.201636 | .0006300 |
| #2 | .0512733 | .0005660 | .0034853 | .1333714 | -.203908 | .0002247 |
| #3 | .0386972 | .0015708 | .0021861 | .1257384 | -.197239 | .0004716 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: ICSA01 Acquired: 2/17/2025 12:05:00 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | -.003347 | -.000155 | .0164951 | .0005853 | F -.020197 | .0014189 |
| Stddev | .000534 | .000255 | .0104051 | .0008339 | .004757 | .0015111 |
| %RSD | 15.94522 | 164.7108 | 63.07986 | 142.4865 | 23.55286 | 106.4952 |
| | | | | | | |
| #1 | -.003240 | .000061 | .0064500 | .0015480 | -.015071 | .0028339 |
| #2 | -.002874 | -.000437 | .0272263 | .0001191 | -.021052 | -.000173 |
| #3 | -.003926 | -.000089 | .0158091 | .0000887 | -.024469 | .001596 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | -.006003 |
| Stddev | .000248 |
| %RSD | 4.134778 |
| | |
| #1 | -.006154 |
| #2 | -.005716 |
| #3 | -.006138 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2910.260 | 61015.08 | 12252.26 | 1985.145 | 3707.608 |
| Stddev | 4.538 | 221.77 | 64.57 | 10.872 | 1.619 |
| %RSD | .1559200 | .3634640 | .5269870 | .5476517 | .0436718 |
| | | | | | |
| #1 | 2914.848 | 60854.20 | 12214.65 | 1981.652 | 3707.959 |
| #2 | 2910.158 | 60922.98 | 12215.31 | 1976.449 | 3705.842 |
| #3 | 2905.775 | 61268.06 | 12326.81 | 1997.333 | 3709.022 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: ICSAB01 Acquired: 2/17/2025 12:09:17 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1137808 | .0976582 | .0566603 | .0391603 | .6583301 | 245.9933 |
| Stddev | .0027371 | .0034499 | .0025583 | .0028035 | .0031224 | .1951 |
| %RSD | 2.405545 | 3.532669 | 4.515067 | 7.159012 | .4742917 | .0792980 |
| #1 | .1107808 | .0936751 | .0555128 | .0372006 | .6558441 | 245.7712 |
| #2 | .1161418 | .0997075 | .0595914 | .0423716 | .6618346 | 246.0720 |
| #3 | .1144197 | .0995919 | .0548766 | .0379087 | .6573117 | 246.1368 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4496569 | .4723280 | 1.010983 | 225.8506 | .5830049 | .5057451 |
| Stddev | .0011719 | .0031146 | .002971 | .3923 | .0017870 | .0010661 |
| %RSD | .2606191 | .6594213 | .2938836 | .1736962 | .3065212 | .2108047 |
| #1 | .4493135 | .4722379 | 1.007740 | 225.8090 | .5849495 | .5045267 |
| #2 | .4509622 | .4692594 | 1.011633 | 225.4808 | .5826303 | .5062015 |
| #3 | .4486951 | .4754867 | 1.013574 | 226.2620 | .5814348 | .5065070 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5266982 | 100.0642 | .5279003 | 245.7921 | .9935846 | .2172935 |
| Stddev | .0009425 | .5143 | .0021318 | .8889 | .0027464 | .0001196 |
| %RSD | .1789367 | .5139268 | .4038236 | .3616533 | .2764161 | .0550559 |
| #1 | .5277764 | 100.0796 | .5271324 | 245.3689 | .9910882 | .2172707 |
| #2 | .5262862 | 100.5706 | .5262589 | 245.1939 | .9931391 | .2171869 |
| #3 | .5260318 | 99.5425 | .5303097 | 246.8135 | .9965266 | .2174229 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0708454 | .4642386 | 1.063975 | .1537226 | F -.193445 | F .0003917 |
| Stddev | .0129933 | .0013606 | .001860 | .0168428 | .003905 | .0000953 |
| %RSD | 18.34030 | .2930704 | .1748009 | 10.95660 | 2.018908 | 24.32955 |
| #1 | .0677167 | .4626781 | 1.066071 | .1418631 | -.194959 | .0003376 |
| #2 | .0851174 | .4651756 | 1.062524 | .1463035 | -.189009 | .0003357 |
| #3 | .0597022 | .4648622 | 1.063328 | .1730013 | -.196366 | .0005017 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: ICSAB01 Acquired: 2/17/2025 12:09:17 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | F -.004008 | F -.001349 | F .0106325 | F .0023740 | F -.021525 | F .0023957 |
| Stddev | .000790 | .000566 | .0102449 | .0031007 | .005120 | .0009264 |
| %RSD | 19.71198 | 41.92877 | 96.35467 | 130.6093 | 23.78800 | 38.66809 |
| #1 | -.004395 | -.001434 | .0122916 | -.001205 | -.026856 | .0020578 |
| #2 | -.003099 | -.000746 | .0199465 | .004236 | -.016645 | .0034436 |
| #3 | -.004529 | -.001867 | -.000341 | .004091 | -.021074 | .0016857 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | F -.008426 |
| Stddev | .000353 |
| %RSD | 4.184597 |
| #1 | -.008327 |
| #2 | -.008817 |
| #3 | -.008133 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2811.704 | 60440.79 | 12559.56 | 1943.135 | 3599.200 |
| Stddev | 2.795 | 183.70 | 59.04 | 2.528 | 8.353 |
| %RSD | .0994131 | .3039370 | .4700640 | .1301097 | .2320688 |
| #1 | 2813.787 | 60265.61 | 12546.70 | 1943.845 | 3608.164 |
| #2 | 2808.528 | 60424.77 | 12623.97 | 1940.328 | 3597.800 |
| #3 | 2812.798 | 60631.97 | 12508.01 | 1945.232 | 3591.636 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV01 Acquired: 2/17/2025 12:13:29 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 5.039280 | 5.142299 | 4.888744 | 5.086911 | 5.140657 | 9.704861 | 9.086485 |
| Stddev | .017004 | .019692 | .021649 | .015726 | .021928 | .031617 | .152127 |
| %RSD | .3374238 | .3829465 | .4428289 | .3091519 | .4265695 | .3257887 | 1.674211 |
| #1 | 5.030308 | 5.135423 | 4.878140 | 5.080447 | 5.121014 | 9.680129 | 9.260611 |
| #2 | 5.028642 | 5.126966 | 4.874442 | 5.075447 | 5.136640 | 9.740484 | 8.979356 |
| #3 | 5.058891 | 5.164507 | 4.913650 | 5.104839 | 5.164316 | 9.693970 | 9.019487 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2326913 | 2.439167 | 23.40047 | 1.020326 | 2.432759 | 1.246189 | 4.910228 |
| Stddev | .0009954 | .010194 | .06579 | .001023 | .012026 | .006093 | .021433 |
| %RSD | .4277630 | .4179370 | .2811385 | .1002394 | .4943377 | .4888925 | .4365008 |
| #1 | .2338023 | 2.434466 | 23.45977 | 1.021475 | 2.427285 | 1.241492 | 4.903422 |
| #2 | .2318810 | 2.432171 | 23.41195 | 1.019514 | 2.424444 | 1.244001 | 4.934238 |
| #3 | .2323905 | 2.450864 | 23.32970 | 1.019990 | 2.446548 | 1.253073 | 4.893024 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.669375 | 23.70147 | 2.415230 | 1.243535 | 24.35755 | 2.376189 | 2.504002 |
| Stddev | .003330 | .05500 | .011215 | .001299 | .12709 | .007213 | .004958 |
| %RSD | .1247314 | .2320635 | .4643292 | .1044418 | .5217844 | .3035577 | .1980167 |
| #1 | 2.671975 | 23.72115 | 2.412927 | 1.244131 | 24.25293 | 2.379018 | 2.509715 |
| #2 | 2.670527 | 23.74393 | 2.405346 | 1.244429 | 24.49899 | 2.381558 | 2.501484 |
| #3 | 2.665622 | 23.63934 | 2.427418 | 1.242046 | 24.32073 | 2.367990 | 2.500809 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 25.09648 | 4.541756 | 5.069237 | 4.911226 | 4.640571 | 5.164408 | 4.843818 |
| Stddev | .12699 | .023545 | .017248 | .021820 | .005744 | .044028 | .025589 |
| %RSD | .5060103 | .5184058 | .3402415 | .4442782 | .1237709 | .8525200 | .5282801 |
| #1 | 24.95852 | 4.565288 | 5.053124 | 4.896674 | 4.641207 | 5.123897 | 4.822842 |
| #2 | 25.20850 | 4.518199 | 5.067157 | 4.900691 | 4.645970 | 5.211263 | 4.836283 |
| #3 | 25.12241 | 4.541781 | 5.087430 | 4.936314 | 4.634536 | 5.158063 | 4.872328 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV01 Acquired: 2/17/2025 12:13:29 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 4.831280 | 4.648319 | 4.658638 |
| Stddev | .025345 | .018658 | .022306 |
| %RSD | .5246011 | .4013985 | .4788037 |
| #1 | 4.816014 | 4.639302 | 4.677365 |
| #2 | 4.817290 | 4.669774 | 4.633961 |
| #3 | 4.860537 | 4.635883 | 4.664589 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3091.424 | 65744.84 | 12646.21 | 2109.289 | 4057.080 |
| Stddev | 9.565 | 91.29 | 63.01 | 7.974 | 15.375 |
| %RSD | .3093955 | .1388522 | .4982320 | .3780210 | .3789738 |
| #1 | 3099.402 | 65679.02 | 12573.48 | 2100.154 | 4063.955 |
| #2 | 3094.049 | 65706.44 | 12684.07 | 2112.856 | 4067.819 |
| #3 | 3080.821 | 65849.05 | 12681.09 | 2114.856 | 4039.467 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB01 Acquired: 2/17/2025 12:17:41 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.001563 | -.001172 | .0001279 | .0007679 | -.000484 | -.002033 | -.000856 |
| Stddev | .002221 | .001224 | .0009678 | .0028238 | .000443 | .002323 | .000591 |
| %RSD | 142.1502 | 104.3959 | 756.5729 | 367.7455 | 91.61195 | 114.2894 | 68.96516 |
| #1 | -.003251 | -.002378 | .0009461 | -.002281 | -.000686 | -.001137 | -.001527 |
| #2 | -.002391 | .000069 | .0003780 | .001291 | .000024 | -.000290 | -.000413 |
| #3 | .000954 | -.001208 | -.000940 | .003294 | -.000791 | -.004670 | -.000629 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000638 | .0000134 | -.010914 | -.000097 | -.000142 | .0003701 | -.001710 |
| Stddev | .0000266 | .0000560 | .006252 | .000157 | .000062 | .0001764 | .004564 |
| %RSD | 41.66937 | 419.1264 | 57.28648 | 162.1351 | 43.63622 | 47.65056 | 266.9044 |
| #1 | .0000441 | -.000015 | -.017822 | -.000205 | -.000141 | .0003664 | -.001154 |
| #2 | .0000534 | .000078 | -.009274 | .000083 | -.000204 | .0001956 | .002550 |
| #3 | .0000941 | -.000023 | -.005645 | -.000169 | -.000080 | .0005483 | -.006526 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000478 | .0109648 | -.000223 | .0007192 | .0114586 | -.001024 | -.000564 |
| Stddev | .0001262 | .0125769 | .000091 | .0002189 | .0079425 | .000366 | .000395 |
| %RSD | 264.1083 | 114.7023 | 40.96949 | 30.43078 | 69.31418 | 35.79265 | 70.13534 |
| #1 | -.000017 | .0197162 | -.000323 | .0004944 | .0121726 | -.001421 | -.000494 |
| #2 | -.000033 | .0166259 | -.000146 | .0007316 | .0031833 | -.000951 | -.000208 |
| #3 | .000193 | -.003448 | -.000199 | .0009316 | .0190200 | -.000699 | -.000989 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0782580 | .0073524 | -.000015 | .0003850 | .0006402 | .0090310 | -.002838 |
| Stddev | .0110676 | .0001485 | .000239 | .0007117 | .0005789 | .0032359 | .001179 |
| %RSD | 14.14239 | 2.019142 | 1643.476 | 184.8745 | 90.42218 | 35.83071 | 41.54338 |
| #1 | .0753653 | .0075169 | -.000284 | .0007405 | .0012665 | .0090214 | -.002311 |
| #2 | .0904846 | .0073122 | .000169 | -.000434 | .0005292 | .0058000 | -.004188 |
| #3 | .0689240 | .0072283 | .000071 | .000849 | .0001249 | .0122718 | -.002014 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB01 Acquired: 2/17/2025 12:17:41 Type: Unk
Method: NON EPA-6010-200.7(v2701) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.004386 | -.001764 | -.000022 |
| Stddev | .001859 | .000255 | .000004 |
| %RSD | 42.37495 | 14.47895 | 18.97626 |
| | | | |
| #1 | -.002617 | -.001839 | -.000025 |
| #2 | -.006323 | -.001974 | -.000024 |
| #3 | -.004218 | -.001480 | -.000017 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3232.916 | 68835.58 | 12720.20 | 2218.066 | 4471.882 |
| Stddev | 8.204 | 140.34 | 21.61 | 5.694 | 8.060 |
| %RSD | .2537669 | .2038782 | .1698919 | .2567162 | .1802394 |
| | | | | | |
| #1 | 3227.842 | 68985.77 | 12745.06 | 2224.178 | 4472.855 |
| #2 | 3242.382 | 68707.79 | 12705.94 | 2212.911 | 4479.411 |
| #3 | 3228.526 | 68813.18 | 12709.58 | 2217.110 | 4463.379 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01 Acquired: 2/17/2025 12:23:52 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0954777 | -.098354 | .1263690 | -.083372 | -.006535 | 193.1173 | .5618873 |
| Stddev | .0024565 | .004547 | .0022140 | .001302 | .000834 | 5.4989 | .0130704 |
| %RSD | 2.572810 | 4.623596 | 1.751998 | 1.562218 | 12.76893 | 2.847428 | 2.326160 |
| #1 | .0949185 | -.093110 | .1263886 | -.084505 | -.007462 | 187.5563 | .5469117 |
| #2 | .0933491 | -.100737 | .1285730 | -.081949 | -.006299 | 193.2438 | .5677524 |
| #3 | .0981656 | -.101214 | .1241452 | -.083662 | -.005844 | 198.5519 | .5709978 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0126334 | .0483968 | 36.66879 | .1905494 | .2539202 | .2206360 | 313.7344 |
| Stddev | .0002385 | .0001650 | .85825 | .0007885 | .0006301 | .0032763 | 4.2832 |
| %RSD | 1.887637 | .3409721 | 2.340543 | .4138311 | .2481387 | 1.484937 | 1.365224 |
| #1 | .0123994 | .0485216 | 35.69022 | .1913346 | .2533169 | .2242182 | 309.4746 |
| #2 | .0126244 | .0484590 | 37.02246 | .1905560 | .2545740 | .2198983 | 313.6880 |
| #3 | .0128761 | .0482097 | 37.29369 | .1897576 | .2538697 | .2177913 | 318.0406 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 3.658027 | 31.49199 | .2276344 | -.017907 | 3.703415 | .5051727 | .3731788 |
| Stddev | .084248 | .80334 | .0004299 | .001043 | .010651 | .0132847 | .0001455 |
| %RSD | 2.303089 | 2.550937 | .1888710 | 5.824544 | .2875859 | 2.629725 | .0389800 |
| #1 | 3.562374 | 30.58316 | .2278355 | -.019067 | 3.693277 | .4905399 | .3732453 |
| #2 | 3.690505 | 31.78557 | .2271407 | -.017609 | 3.714513 | .5085023 | .3732791 |
| #3 | 3.721201 | 32.10725 | .2279269 | -.017046 | 3.702453 | .5164758 | .3730120 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.924895 | -.176684 | .0040159 | -.013269 | 9.691099 | 4.955419 | 8.298959 |
| Stddev | .030244 | .010803 | .0002019 | .001604 | .221033 | .034787 | .028296 |
| %RSD | .3047268 | 6.114329 | 5.026965 | 12.09210 | 2.280782 | .7019998 | .3409547 |
| #1 | 9.890517 | -.164269 | .0037847 | -.012505 | 9.440478 | 4.916665 | 8.268732 |
| #2 | 9.947403 | -.183942 | .0041571 | -.015113 | 9.774609 | 4.983949 | 8.303333 |
| #3 | 9.936765 | -.181841 | .0041061 | -.012189 | 9.858210 | 4.965641 | 8.324814 |

Sample Name: Q1366-01 Acquired: 2/17/2025 12:23:52 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 3.709828 | .2094512 | -.186135 |
| Stddev | .002003 | .0033674 | .001931 |
| %RSD | .0539876 | 1.607706 | 1.037367 |
| #1 | 3.708712 | .2056583 | -.185111 |
| #2 | 3.708633 | .2106061 | -.184931 |
| #3 | 3.712141 | .2120891 | -.188362 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 4830.664 | 102741.0 | 20289.08 | 3358.459 | 3828.517 |
| Stddev | 7.937 | 260.7 | 341.70 | 8.422 | 6.388 |
| %RSD | .1643107 | .2537747 | 1.684146 | .2507573 | .1668603 |
| #1 | 4839.311 | 102472.2 | 20676.38 | 3353.620 | 3835.051 |
| #2 | 4828.972 | 102758.0 | 20160.68 | 3353.573 | 3828.213 |
| #3 | 4823.709 | 102992.8 | 20030.19 | 3368.183 | 3822.286 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01DUP Acquired: 2/17/2025 12:28:08 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0963040 | -.101538 | .1290081 | -.084664 | -.005133 | 199.2897 | .5772562 |
| Stddev | .0025958 | .003221 | .0023464 | .002585 | .001123 | .8004 | .0010356 |
| %RSD | 2.695440 | 3.172097 | 1.818761 | 3.053091 | 21.88312 | .4016054 | .1794091 |
| #1 | .0961410 | -.099297 | .1304330 | -.085875 | -.006401 | 200.0117 | .5777168 |
| #2 | .0989774 | -.105229 | .1302912 | -.086422 | -.004734 | 199.4283 | .5779816 |
| #3 | .0937935 | -.100089 | .1263000 | -.081696 | -.004264 | 198.4290 | .5760701 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0120544 | .0474888 | 37.22231 | .1891338 | .2527673 | .2127067 | 323.8080 |
| Stddev | .0000484 | .0004143 | .02686 | .0003854 | .0003702 | .0022695 | 1.6190 |
| %RSD | .4012986 | .8724227 | .0721584 | .2037874 | .1464528 | 1.066981 | .4999871 |
| #1 | .0120293 | .0470110 | 37.23445 | .1895718 | .2523905 | .2121987 | 324.4509 |
| #2 | .0120238 | .0477486 | 37.19152 | .1888467 | .2527810 | .2107342 | 325.0068 |
| #3 | .0121102 | .0477067 | 37.24095 | .1889828 | .2531305 | .2151872 | 321.9663 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 3.692029 | 32.17116 | .2265472 | -.014527 | 3.982910 | .5176632 | .3685716 |
| Stddev | .008018 | .08973 | .0005239 | .000424 | .031387 | .0026106 | .0016297 |
| %RSD | .2171739 | .2789176 | .2312618 | 2.917003 | .7880395 | .5043136 | .4421657 |
| #1 | 3.699259 | 32.20557 | .2259780 | -.014789 | 3.984333 | .5162039 | .3675235 |
| #2 | 3.693423 | 32.06932 | .2266543 | -.014038 | 4.013561 | .5206772 | .3704492 |
| #3 | 3.683406 | 32.23860 | .2270092 | -.014753 | 3.950836 | .5161086 | .3677421 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.46043 | -.162133 | .0039089 | -.012496 | 9.872992 | 5.238644 | 8.377248 |
| Stddev | .03225 | .006229 | .0001843 | .000521 | .006737 | .016961 | .017728 |
| %RSD | .3083179 | 3.842111 | 4.713633 | 4.166697 | .0682361 | .3237670 | .2116239 |
| #1 | 10.48025 | -.159325 | .0041211 | -.011900 | 9.875689 | 5.251447 | 8.356827 |
| #2 | 10.47782 | -.157801 | .0038158 | -.012863 | 9.877963 | 5.245078 | 8.386228 |
| #3 | 10.42321 | -.169272 | .0037897 | -.012724 | 9.865324 | 5.219408 | 8.388690 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01DUP Acquired: 2/17/2025 12:28:08 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 3.774439 | .2159133 | -.193085 |
| Stddev | .014882 | .0005253 | .001258 |
| %RSD | .3942782 | .2432793 | .6516080 |
| #1 | 3.757303 | .2158625 | -.193642 |
| #2 | 3.784110 | .2164621 | -.193969 |
| #3 | 3.781906 | .2154152 | -.191645 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 4769.699 | 103503.3 | 21077.15 | 3326.440 | 3803.594 |
| Stddev | 4.665 | 62.1 | 95.47 | 15.636 | 5.759 |
| %RSD | .0977993 | .0600339 | .4529725 | .4700584 | .1514048 |
| #1 | 4774.321 | 103448.7 | 21090.66 | 3338.269 | 3810.142 |
| #2 | 4764.992 | 103570.9 | 21165.15 | 3308.712 | 3801.324 |
| #3 | 4769.786 | 103490.3 | 20975.65 | 3332.339 | 3799.316 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01LX5 Acquired: 2/17/2025 12:32:27 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0266146 | -.014776 | .0273305 | -.022234 | -.004612 | 57.46890 | .1660617 |
| Stddev | .0013683 | .001076 | .0009003 | .000975 | .000742 | .07010 | .0006990 |
| %RSD | 5.141100 | 7.281934 | 3.294325 | 4.384604 | 16.08573 | .1219727 | .4209350 |
| #1 | .0256307 | -.015974 | .0282400 | -.023258 | -.004393 | 57.52839 | .1653699 |
| #2 | .0260360 | -.013891 | .0264396 | -.022126 | -.005438 | 57.48668 | .1667677 |
| #3 | .0281771 | -.014462 | .0273118 | -.021318 | -.004004 | 57.39162 | .1660476 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0037405 | .0054968 | 11.21990 | .0562437 | .0499698 | .0667792 | 96.89847 |
| Stddev | .0000457 | .0001073 | .01670 | .0003620 | .0001647 | .0005065 | .48000 |
| %RSD | 1.221733 | 1.952239 | .1488464 | .6436809 | .3297010 | .7585131 | .4953675 |
| #1 | .0037575 | .0056011 | 11.22126 | .0565917 | .0501582 | .0669285 | 96.47280 |
| #2 | .0036887 | .0053867 | 11.23587 | .0558691 | .0498528 | .0662148 | 96.80388 |
| #3 | .0037752 | .0055026 | 11.20256 | .0562705 | .0498982 | .0671943 | 97.41872 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.112788 | 9.603836 | .0471932 | -.003494 | 1.093916 | .1534548 | .1078260 |
| Stddev | .004049 | .045752 | .0004870 | .000308 | .022625 | .0011797 | .0003724 |
| %RSD | .3638890 | .4763939 | 1.032024 | 8.813146 | 2.068275 | .7687747 | .3454167 |
| #1 | 1.110087 | 9.628146 | .0477075 | -.003610 | 1.079221 | .1532544 | .1073983 |
| #2 | 1.117444 | 9.632302 | .0467389 | -.003728 | 1.082557 | .1547218 | .1080002 |
| #3 | 1.110832 | 9.551061 | .0471331 | -.003145 | 1.119970 | .1523881 | .1080793 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.913005 | -.041474 | .0011218 | -.002460 | 2.912645 | 1.482874 | 1.673015 |
| Stddev | .006568 | .001557 | .0002298 | .000558 | .004907 | .016467 | .009123 |
| %RSD | .2254797 | 3.755100 | 20.48573 | 22.69036 | .1684797 | 1.110459 | .5452764 |
| #1 | 2.910776 | -.041195 | .0009110 | -.002589 | 2.907482 | 1.465171 | 1.677599 |
| #2 | 2.907842 | -.043152 | .0013668 | -.001849 | 2.917248 | 1.485716 | 1.662509 |
| #3 | 2.920398 | -.040075 | .0010875 | -.002943 | 2.913206 | 1.497734 | 1.678936 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01LX5 Acquired: 2/17/2025 12:32:27 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .7362223 | .0614007 | -.058582 |
| Stddev | .0047431 | .0017285 | .000447 |
| %RSD | .6442548 | 2.815068 | .7625799 |
| | | | |
| #1 | .7412141 | .0596037 | -.058145 |
| #2 | .7356779 | .0615471 | -.058563 |
| #3 | .7317748 | .0630514 | -.059038 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3520.645 | 75516.38 | 14712.98 | 2442.940 | 4162.802 |
| Stddev | 11.658 | 76.71 | 73.31 | 8.650 | 11.261 |
| %RSD | .3311439 | .1015841 | .4982939 | .3540626 | .2705070 |
| | | | | | |
| #1 | 3524.325 | 75514.31 | 14672.54 | 2452.678 | 4163.730 |
| #2 | 3530.020 | 75594.11 | 14668.79 | 2439.994 | 4173.570 |
| #3 | 3507.591 | 75440.73 | 14797.61 | 2436.148 | 4151.106 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01MS Acquired: 2/17/2025 12:36:40 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5694170 | 1.779324 | 1.031258 | 1.021619 | .1827178 | 197.0136 |
| Stddev | .0009046 | .002801 | .005775 | .005969 | .0014237 | .7609 |
| %RSD | .1588617 | .1574210 | .5599597 | .5842271 | .7791794 | .3862359 |
| #1 | .5701625 | 1.782315 | 1.032771 | 1.027178 | .1816009 | 196.1875 |
| #2 | .5684106 | 1.778894 | 1.036125 | 1.015311 | .1843209 | 197.6859 |
| #3 | .5696778 | 1.776763 | 1.024877 | 1.022369 | .1822315 | 197.1674 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6729388 | .1123646 | .2308458 | 37.98149 | .4145844 | .4256515 |
| Stddev | .0029515 | .0007263 | .0013402 | .14900 | .0016066 | .0014619 |
| %RSD | .4385905 | .6463682 | .5805494 | .3922914 | .3875150 | .3434453 |
| #1 | .6745307 | .1119543 | .2315023 | 37.98906 | .4162702 | .4259589 |
| #2 | .6695332 | .1119362 | .2317311 | 37.82886 | .4130709 | .4269351 |
| #3 | .6747525 | .1132032 | .2293039 | 38.12656 | .4144120 | .4240603 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4193776 | 305.6978 | 3.467783 | 33.26860 | .6888086 | .0307633 |
| Stddev | .0012673 | 1.4050 | .022423 | .13001 | .0023844 | .0001182 |
| %RSD | .3021827 | .4595928 | .6466066 | .3907831 | .3461565 | .3842351 |
| #1 | .4189450 | 305.4837 | 3.465961 | 33.24024 | .6896692 | .0308983 |
| #2 | .4208046 | 304.4122 | 3.446327 | 33.15512 | .6906431 | .0306784 |
| #3 | .4183832 | 307.1975 | 3.491062 | 33.41045 | .6861134 | .0307133 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.942479 | .6537881 | .4863351 | 16.19811 | .1000519 | .2278751 |
| Stddev | .024704 | .0028389 | .0021697 | .11198 | .0033407 | .0004334 |
| %RSD | .4998274 | .4342296 | .4461418 | .6912961 | 3.338953 | .1902135 |
| #1 | 4.965834 | .6535068 | .4867129 | 16.31985 | .1014356 | .2273746 |
| #2 | 4.916618 | .6511003 | .4882912 | 16.09952 | .0962417 | .2281293 |
| #3 | 4.944984 | .6567573 | .4840013 | 16.17496 | .1024785 | .2281214 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01MS Acquired: 2/17/2025 12:36:40 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6242298 | 9.537005 | 5.359955 | F 15.52015 | 2.828213 | .3126469 |
| Stddev | .0025664 | .029762 | .020979 | .05381 | .014551 | .0010666 |
| %RSD | .4111262 | .3120726 | .3914109 | .3467156 | .5145090 | .3411452 |
| #1 | .6261296 | 9.546198 | 5.382013 | 15.51666 | 2.838002 | .3127984 |
| #2 | .6252495 | 9.503730 | 5.340253 | 15.57562 | 2.835145 | .3115128 |
| #3 | .6213103 | 9.561086 | 5.357598 | 15.46817 | 2.811492 | .3136297 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | -.078566 |
| Stddev | .000929 |
| %RSD | 1.182845 |
| #1 | -.077726 |
| #2 | -.078408 |
| #3 | -.079564 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 4941.279 | 106737.8 | 21829.90 | 3448.211 | 3784.027 |
| Stddev | 6.956 | 98.0 | 96.50 | 10.417 | 10.151 |
| %RSD | .1407643 | .0918282 | .4420705 | .3021095 | .2682492 |
| #1 | 4946.161 | 106632.1 | 21919.74 | 3447.892 | 3780.892 |
| #2 | 4944.362 | 106825.7 | 21842.07 | 3437.956 | 3775.815 |
| #3 | 4933.315 | 106755.6 | 21727.89 | 3458.784 | 3795.376 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01MSD Acquired: 2/17/2025 12:40:54 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5616380 | 1.766684 | 1.030798 | 1.001135 | .1806612 | 196.9146 |
| Stddev | .0042945 | .015406 | .004609 | .004096 | .0024752 | 1.2082 |
| %RSD | .7646371 | .8720161 | .4471772 | .4091133 | 1.370068 | .6135572 |
| #1 | .5643300 | 1.774038 | 1.027282 | 1.005827 | .1834638 | 198.2121 |
| #2 | .5566854 | 1.777034 | 1.036017 | .998279 | .1797452 | 195.8220 |
| #3 | .5638985 | 1.748979 | 1.029095 | .999298 | .1787745 | 196.7096 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6590849 | .1189949 | .2327051 | 37.85018 | .4114383 | .4273159 |
| Stddev | .0007571 | .0005411 | .0002679 | .01126 | .0003135 | .0003530 |
| %RSD | .1148652 | .4547470 | .1151209 | .0297556 | .0761960 | .0826017 |
| #1 | .6582474 | .1184214 | .2324660 | 37.84365 | .4111574 | .4270267 |
| #2 | .6597207 | .1194965 | .2326549 | 37.84369 | .4117765 | .4277092 |
| #3 | .6592866 | .1190667 | .2329946 | 37.86318 | .4113810 | .4272116 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4390248 | 285.5436 | 3.459933 | 33.00354 | .6922105 | .0270538 |
| Stddev | .0022160 | .1161 | .007178 | .01544 | .0013066 | .0002143 |
| %RSD | .5047616 | .0406663 | .2074703 | .0467716 | .1887561 | .7922272 |
| #1 | .4365997 | 285.6530 | 3.452616 | 33.01713 | .6907389 | .0268156 |
| #2 | .4395303 | 285.5561 | 3.460219 | 33.00672 | .6932343 | .0272310 |
| #3 | .4409445 | 285.4217 | 3.466964 | 32.98676 | .6926582 | .0271148 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.344705 | .6488189 | .4830735 | 14.77565 | .0575831 | .2279057 |
| Stddev | .004798 | .0021391 | .0003187 | .02398 | .0039166 | .0009949 |
| %RSD | .1104222 | .3296994 | .0659628 | .1623183 | 6.801559 | .4365306 |
| #1 | 4.347023 | .6488428 | .4832549 | 14.75528 | .0619731 | .2290316 |
| #2 | 4.339188 | .6509460 | .4827056 | 14.76958 | .0544473 | .2271452 |
| #3 | 4.347903 | .6466679 | .4832601 | 14.80208 | .0563288 | .2275402 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01MSD Acquired: 2/17/2025 12:40:54 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6227066 | 9.459398 | 4.902814 | F 15.62026 | 2.823427 | .3015580 |
| Stddev | .0007056 | .001014 | .011148 | .02308 | .003358 | .0003264 |
| %RSD | .1133177 | .0107223 | .2273880 | .1477261 | .1189189 | .1082443 |
| #1 | .6219411 | 9.459295 | 4.907841 | 15.64016 | 2.826607 | .3019259 |
| #2 | .6233311 | 9.460460 | 4.890037 | 15.62566 | 2.819916 | .3013030 |
| #3 | .6228476 | 9.458439 | 4.910564 | 15.59496 | 2.823758 | .3014451 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | -.061210 |
| Stddev | .000447 |
| %RSD | .7298194 |
| #1 | -.061654 |
| #2 | -.061216 |
| #3 | -.060761 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 4969.566 | 108901.0 | 20639.58 | 3518.923 | 3790.949 |
| Stddev | 2.655 | 109.7 | 37.29 | 9.263 | 2.302 |
| %RSD | .0534163 | .1007090 | .1806789 | .2632221 | .0607319 |
| #1 | 4967.325 | 108952.8 | 20661.03 | 3508.506 | 3793.555 |
| #2 | 4968.875 | 108975.2 | 20596.52 | 3526.232 | 3789.191 |
| #3 | 4972.497 | 108775.0 | 20661.20 | 3522.032 | 3790.101 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01A Acquired: 2/17/2025 12:45:09 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5657102 | 1.771910 | 1.025980 | 1.012468 | .1814944 | 197.7978 |
| Stddev | .0023864 | .005135 | .000971 | .000532 | .0005584 | 2.0738 |
| %RSD | .4218432 | .2897877 | .0946894 | .0525168 | .3076630 | 1.048448 |
| #1 | .5682508 | 1.770806 | 1.024869 | 1.011963 | .1811972 | 200.1445 |
| #2 | .5653643 | 1.767417 | 1.026672 | 1.012419 | .1811475 | 197.0375 |
| #3 | .5635157 | 1.777507 | 1.026398 | 1.013023 | .1821385 | 196.2115 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6903772 | .1130601 | .2291594 | 38.49993 | .4146769 | .4243663 |
| Stddev | .0040761 | .0007983 | .0011118 | .10222 | .0015595 | .0016731 |
| %RSD | .5904185 | .7060891 | .4851856 | .2655039 | .3760829 | .3942551 |
| #1 | .6948035 | .1138813 | .2288986 | 38.61778 | .4135533 | .4236883 |
| #2 | .6895499 | .1122869 | .2282010 | 38.43528 | .4164575 | .4231386 |
| #3 | .6867783 | .1130122 | .2303784 | 38.44674 | .4140200 | .4262720 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4134420 | 311.6015 | 3.560687 | 33.65559 | .6855747 | .0320885 |
| Stddev | .0033463 | 3.0666 | .014441 | .13232 | .0014996 | .0003973 |
| %RSD | .8093657 | .9841572 | .4055668 | .3931453 | .2187323 | 1.238162 |
| #1 | .4145361 | 311.8433 | 3.577328 | 33.80607 | .6861086 | .0321827 |
| #2 | .4096856 | 314.5401 | 3.551454 | 33.55746 | .6838813 | .0324303 |
| #3 | .4161042 | 308.4211 | 3.553277 | 33.60325 | .6867343 | .0316526 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 5.181904 | .6652646 | .4871443 | 16.47149 | .1103940 | .2274123 |
| Stddev | .022148 | .0010093 | .0008368 | .04702 | .0045330 | .0003234 |
| %RSD | .4274110 | .1517093 | .1717823 | .2854530 | 4.106226 | .1422042 |
| #1 | 5.200614 | .6661110 | .4861877 | 16.46178 | .1066086 | .2270745 |
| #2 | 5.187648 | .6655352 | .4877405 | 16.52260 | .1154175 | .2274432 |
| #3 | 5.157450 | .6641476 | .4875047 | 16.43008 | .1091561 | .2277190 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1366-01A Acquired: 2/17/2025 12:45:09 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6216507 | 9.755635 | 5.797640 | F 15.55396 | 2.826708 | .3212677 |
| Stddev | .0008119 | .027309 | .005231 | .06418 | .007927 | .0012578 |
| %RSD | .1305978 | .2799310 | .0902238 | .4125989 | .2804348 | .3915255 |
| #1 | .6216508 | 9.786923 | 5.792856 | 15.56395 | 2.818179 | .3218696 |
| #2 | .6208388 | 9.743390 | 5.803225 | 15.48537 | 2.828097 | .3221115 |
| #3 | .6224625 | 9.736591 | 5.796838 | 15.61255 | 2.833850 | .3198220 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | -.079773 |
| Stddev | .002813 |
| %RSD | 3.526027 |
| #1 | -.078794 |
| #2 | -.082945 |
| #3 | -.077581 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 4946.718 | 106609.2 | 21733.48 | 3457.539 | 3795.739 |
| Stddev | 7.160 | 298.9 | 78.73 | 21.278 | 8.757 |
| %RSD | .1447337 | .2804068 | .3622508 | .6154090 | .2307058 |
| #1 | 4948.730 | 106790.9 | 21645.17 | 3475.802 | 3798.078 |
| #2 | 4952.656 | 106264.2 | 21796.33 | 3434.174 | 3803.089 |
| #3 | 4938.768 | 106772.4 | 21758.93 | 3462.640 | 3786.050 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166700TB Acquired: 2/17/2025 12:57:47 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.004616 | -.002765 | .0016348 | .0023828 | -.000142 | .0106213 |
| Stddev | .001271 | .002441 | .0006869 | .0026511 | .001273 | .0035091 |
| %RSD | 27.54366 | 88.27430 | 42.01555 | 111.2608 | 895.2380 | 33.03877 |
| #1 | -.004282 | -.004843 | .0009580 | .0024465 | -.000005 | .0084880 |
| #2 | -.003544 | -.000077 | .0016153 | -.000300 | -.001479 | .0087045 |
| #3 | -.006021 | -.003375 | .0023313 | .005001 | .001057 | .0146713 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002212 | -.000076 | -.000102 | .0263770 | .0021250 | -.000283 |
| Stddev | .000278 | .000043 | .000097 | .0030285 | .0005501 | .000101 |
| %RSD | 12.56915 | 56.74286 | 94.64256 | 11.48153 | 25.88941 | 35.59861 |
| #1 | -.001898 | -.000122 | -.000174 | .0298731 | .0027493 | -.000399 |
| #2 | -.002426 | -.000038 | .000008 | .0245595 | .0017114 | -.000226 |
| #3 | -.002313 | -.000067 | -.000140 | .0246984 | .0019142 | -.000223 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0003242 | .0313364 | F .0357199 | .0069843 | .0010315 | .0006190 |
| Stddev | .0001916 | .0011023 | .0005826 | .0099456 | .0002014 | .0003081 |
| %RSD | 59.07732 | 3.517728 | 1.630935 | 142.3994 | 19.52755 | 49.77006 |
| #1 | .0002791 | .0303348 | .0352869 | .0002657 | .0012536 | .0009195 |
| #2 | .0001593 | .0311568 | .0363822 | .0022776 | .0009802 | .0006336 |
| #3 | .0005343 | .0325175 | .0354906 | .0184097 | .0008606 | .0003039 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | F 299.0193 | -.000207 | .0068794 | .1868201 | -.005470 | .0003041 |
| Stddev | 2.3419 | .001065 | .0002919 | .0150832 | .000129 | .0002963 |
| %RSD | .7831959 | 513.1696 | 4.242463 | 8.073626 | 2.361108 | 97.42832 |
| #1 | 297.1917 | -.000719 | .0067110 | .1845289 | -.005456 | .0006047 |
| #2 | 301.6592 | -.000920 | .0067107 | .2029178 | -.005606 | .0000123 |
| #3 | 298.2069 | .001016 | .0072164 | .1730136 | -.005349 | .0002954 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166700TB Acquired: 2/17/2025 12:57:47 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0020039 | .0015335 | .0280030 | .0018547 | F .2018723 | -.004414 |
| Stddev | .0004593 | .0005928 | .0024939 | .0008810 | .0006134 | .000652 |
| %RSD | 22.91833 | 38.65456 | 8.905795 | 47.50070 | .3038672 | 14.77157 |
| #1 | .0014742 | .0012590 | .0252999 | .0009694 | .2011652 | -.004733 |
| #2 | .0022908 | .0011278 | .0302145 | .0027313 | .2022608 | -.004844 |
| #3 | .0022467 | .0022138 | .0284946 | .0018635 | .2021911 | -.003663 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | -.000055 |
| Stddev | .000020 |
| %RSD | 36.54416 |
| #1 | -.000079 |
| #2 | -.000043 |
| #3 | -.000045 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3020.789 | 64432.38 | 12794.21 | 2060.461 | 3944.925 |
| Stddev | 6.967 | 193.33 | 59.19 | 15.235 | 6.817 |
| %RSD | .2306362 | .3000480 | .4626054 | .7393977 | .1727983 |
| #1 | 3014.186 | 64618.87 | 12844.92 | 2074.709 | 3937.123 |
| #2 | 3028.071 | 64232.88 | 12808.54 | 2044.401 | 3949.729 |
| #3 | 3020.111 | 64445.40 | 12729.18 | 2062.273 | 3947.923 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1288-08 Acquired: 2/17/2025 13:02:16 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.001693 | -.003876 | .0334069 | .0014127 | .0007836 | -.059244 | .1725397 |
| Stddev | .001628 | .002241 | .0005289 | .0008835 | .0000389 | .005945 | .0012254 |
| %RSD | 96.14420 | 57.82382 | 1.583153 | 62.54219 | 4.962567 | 10.03453 | .7102130 |
| #1 | -.003552 | -.004439 | .0328186 | .0007835 | .0007449 | -.064287 | .1711955 |
| #2 | -.001011 | -.001407 | .0338430 | .0024228 | .0008226 | -.052689 | .1728293 |
| #3 | -.000517 | -.005782 | .0335591 | .0010318 | .0007833 | -.060757 | .1735944 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000035 | .0008550 | 97.66312 | .0009660 | .0037961 | .0042199 | .0150895 |
| Stddev | .000048 | .0000743 | .66385 | .0003453 | .0001292 | .0004780 | .0013020 |
| %RSD | 135.8334 | 8.692338 | .6797328 | 35.75034 | 3.403209 | 11.32702 | 8.628773 |
| #1 | .000004 | .0008313 | 96.91094 | .0006051 | .0038465 | .0047621 | .0136620 |
| #2 | -.000021 | .0009383 | 97.91132 | .0012934 | .0036493 | .0038595 | .0162118 |
| #3 | -.000089 | .0007955 | 98.16711 | .0009994 | .0038925 | .0040380 | .0153947 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2549346 | 1.958446 | .0027142 | .0004285 | 233.4570 | .0017573 | .1994044 |
| Stddev | .0029412 | .024303 | .0000768 | .0001430 | .3292 | .0006022 | .0014997 |
| %RSD | 1.153725 | 1.240947 | 2.828485 | 33.37976 | .1410313 | 34.27001 | .7520691 |
| #1 | .2515596 | 1.938281 | .0026979 | .0002877 | 233.7633 | .0023192 | .2010396 |
| #2 | .2562942 | 1.951627 | .0027978 | .0005736 | 233.4990 | .0018313 | .1980933 |
| #3 | .2569501 | 1.985431 | .0026469 | .0004242 | 233.1088 | .0011215 | .1990804 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.981037 | .0668440 | .0007801 | -.001532 | -.001257 | 1.242114 | .0603825 |
| Stddev | .010597 | .0009066 | .0001171 | .000720 | .000641 | .007936 | .0017156 |
| %RSD | .5349021 | 1.356340 | 15.00860 | 47.01762 | 50.99732 | .6389342 | 2.841217 |
| #1 | 1.968878 | .0670547 | .0009120 | -.001610 | -.000727 | 1.247747 | .0593453 |
| #2 | 1.985928 | .0658505 | .0006882 | -.002210 | -.001969 | 1.245557 | .0623628 |
| #3 | 1.988305 | .0676267 | .0007401 | -.000776 | -.001073 | 1.233038 | .0594394 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1288-08 Acquired: 2/17/2025 13:02:16 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 3.271449 | -.016997 | .4201831 |
| Stddev | .004561 | .000481 | .0028404 |
| %RSD | .1394043 | 2.832485 | .6759926 |
| | | | |
| #1 | 3.268062 | -.017117 | .4170688 |
| #2 | 3.276635 | -.017407 | .4208495 |
| #3 | 3.269650 | -.016467 | .4226311 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3044.173 | 64438.81 | 12371.89 | 2068.315 | 3972.623 |
| Stddev | 7.624 | 158.11 | 81.62 | 10.155 | 3.409 |
| %RSD | .2504535 | .2453663 | .6597118 | .4909955 | .0858073 |
| | | | | | |
| #1 | 3045.705 | 64257.32 | 12463.52 | 2058.695 | 3973.253 |
| #2 | 3035.899 | 64512.36 | 12345.18 | 2067.318 | 3968.943 |
| #3 | 3050.915 | 64546.75 | 12306.97 | 2078.932 | 3975.673 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV02 Acquired: 2/17/2025 13:06:41 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.817941 | 5.093269 | 4.734281 | 4.852155 | 4.959169 | 9.653975 | 9.269761 |
| Stddev | .008974 | .020463 | .012841 | .007526 | .001657 | .029092 | .069812 |
| %RSD | .1862550 | .4017675 | .2712413 | .1551079 | .0334157 | .3013514 | .7531167 |
| #1 | 4.818916 | 5.085139 | 4.737758 | 4.853528 | 4.959386 | 9.657033 | 9.206319 |
| #2 | 4.808520 | 5.116547 | 4.745026 | 4.858901 | 4.957414 | 9.681418 | 9.258410 |
| #3 | 4.826388 | 5.078119 | 4.720059 | 4.844038 | 4.960707 | 9.623475 | 9.344552 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2354269 | 2.357169 | 23.43163 | .9971855 | 2.370182 | 1.212667 | 4.850201 |
| Stddev | .0012121 | .005434 | .06319 | .0025201 | .004923 | .002275 | .014345 |
| %RSD | .5148448 | .2305295 | .2696704 | .2527202 | .2076858 | .1875818 | .2957664 |
| #1 | .2357527 | 2.357903 | 23.39764 | .9976348 | 2.373334 | 1.214921 | 4.846309 |
| #2 | .2364429 | 2.362200 | 23.50454 | .9994507 | 2.372702 | 1.210372 | 4.838203 |
| #3 | .2340853 | 2.351406 | 23.39271 | .9944709 | 2.364510 | 1.212707 | 4.866090 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.733470 | 23.56190 | 2.358458 | 1.233582 | 24.30618 | 2.388037 | 2.471102 |
| Stddev | .009041 | .09476 | .007481 | .001582 | .08519 | .007277 | .009932 |
| %RSD | .3307596 | .4021812 | .3172027 | .1282441 | .3504682 | .3047362 | .4019215 |
| #1 | 2.743631 | 23.59768 | 2.362528 | 1.233534 | 24.36117 | 2.393458 | 2.482106 |
| #2 | 2.726313 | 23.63357 | 2.363022 | 1.235188 | 24.20805 | 2.390886 | 2.468395 |
| #3 | 2.730468 | 23.45446 | 2.349824 | 1.232025 | 24.34930 | 2.379766 | 2.462804 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 24.71566 | 4.611869 | 5.021936 | 4.769101 | 4.683456 | 5.020918 | 4.813355 |
| Stddev | .05074 | .022357 | .003686 | .009446 | .009620 | .027039 | .016493 |
| %RSD | .2052826 | .4847792 | .0734020 | .1980750 | .2054066 | .5385286 | .3426489 |
| #1 | 24.67027 | 4.629771 | 5.022614 | 4.776145 | 4.693004 | 4.991696 | 4.823621 |
| #2 | 24.70627 | 4.619027 | 5.025237 | 4.772792 | 4.683598 | 5.026007 | 4.822113 |
| #3 | 24.77043 | 4.586809 | 5.017958 | 4.758367 | 4.673766 | 5.045051 | 4.794330 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV02 Acquired: 2/17/2025 13:06:41 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 4.607388 | 4.692494 | 4.706936 |
| Stddev | .001028 | .017032 | .029662 |
| %RSD | .0223135 | .3629599 | .6301726 |
| | | | |
| #1 | 4.608202 | 4.710009 | 4.728072 |
| #2 | 4.607730 | 4.691481 | 4.719709 |
| #3 | 4.606233 | 4.675991 | 4.673028 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3201.851 | 66627.91 | 12461.57 | 2178.210 | 4219.352 |
| Stddev | 8.500 | 90.33 | 72.96 | 8.811 | 14.561 |
| %RSD | .2654817 | .1355809 | .5854627 | .4044966 | .3451047 |
| | | | | | |
| #1 | 3193.399 | 66540.41 | 12398.65 | 2168.108 | 4208.670 |
| #2 | 3201.756 | 66622.48 | 12444.52 | 2184.310 | 4213.447 |
| #3 | 3210.399 | 66720.84 | 12541.55 | 2182.212 | 4235.938 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB02 Acquired: 2/17/2025 13:10:52 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002403 | -.000357 | -.000005 | .0017625 | -.001550 | -.004111 | -.002753 |
| Stddev | .002429 | .001845 | .000258 | .0028780 | .001740 | .005302 | .000444 |
| %RSD | 101.1052 | 516.4318 | 5445.073 | 163.2918 | 112.2725 | 128.9588 | 16.11749 |
| #1 | -.002670 | .000315 | -.000285 | .0041859 | -.002854 | -.008457 | -.002579 |
| #2 | -.004688 | .001058 | .000223 | -.001419 | -.002221 | .001796 | -.002422 |
| #3 | .000149 | -.002445 | .000048 | .002520 | .000426 | -.005674 | -.003257 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000425 | .0000318 | -.009294 | -.000388 | -.000122 | .0002411 | -.003750 |
| Stddev | .0000310 | .0000497 | .005853 | .000499 | .000065 | .0002070 | .002202 |
| %RSD | 72.91995 | 156.5435 | 62.97929 | 128.7035 | 53.39966 | 85.85553 | 58.71462 |
| #1 | .0000550 | -.000026 | -.009189 | -.000826 | -.000197 | .0001144 | -.001270 |
| #2 | .0000653 | .000061 | -.015198 | -.000493 | -.000079 | .0001289 | -.005476 |
| #3 | .0000072 | .000060 | -.003494 | .000156 | -.000089 | .0004799 | -.004502 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0001260 | .0102362 | -.000076 | .0008722 | .0253603 | .0004991 | -.000544 |
| Stddev | .0004153 | .0080282 | .000170 | .0003594 | .0124731 | .0008268 | .000474 |
| %RSD | 329.6309 | 78.42927 | 222.4459 | 41.20505 | 49.18355 | 165.6516 | 87.25789 |
| #1 | -.000333 | .0110683 | -.000268 | .0006872 | .0243223 | .0013564 | -.000555 |
| #2 | .000236 | .0178159 | .000057 | .0006430 | .0134387 | -.000293 | -.000064 |
| #3 | .000475 | .0018244 | -.000019 | .0012865 | .0383200 | .000434 | -.001012 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0514608 | .0034735 | .0000845 | .0006137 | .0008484 | .0088333 | -.002619 |
| Stddev | .0137742 | .0005444 | .0000645 | .0005720 | .0004937 | .0021457 | .001478 |
| %RSD | 26.76635 | 15.67302 | 76.27161 | 93.21224 | 58.19820 | 24.29139 | 56.43627 |
| #1 | .0422234 | .0037011 | .0001511 | .0004557 | .0009110 | .0095859 | -.000962 |
| #2 | .0672925 | .0028522 | .0000801 | .0012481 | .0003263 | .0105013 | -.003094 |
| #3 | .0448665 | .0038671 | .0000224 | .0001373 | .0013078 | .0064126 | -.003800 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB02 Acquired: 2/17/2025 13:10:52 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.004388 | -.000416 | -.000043 |
| Stddev | .001565 | .001077 | .000022 |
| %RSD | 35.66671 | 259.1796 | 51.95079 |
| | | | |
| #1 | -.006195 | .000610 | -.000034 |
| #2 | -.003537 | -.000318 | -.000026 |
| #3 | -.003433 | -.001538 | -.000068 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3198.443 | 70376.65 | 12484.31 | 2235.295 | 4405.728 |
| Stddev | 7.953 | 346.71 | 30.45 | 13.710 | 11.985 |
| %RSD | .2486429 | .4926553 | .2439149 | .6133431 | .2720335 |
| | | | | | |
| #1 | 3203.234 | 69980.59 | 12459.87 | 2222.659 | 4415.368 |
| #2 | 3202.832 | 70524.04 | 12518.42 | 2233.353 | 4409.506 |
| #3 | 3189.263 | 70625.32 | 12474.64 | 2249.872 | 4392.309 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1352-02 Acquired: 2/17/2025 13:15:11 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002640 | -.003832 | .0046426 | .0025900 | .0024445 | .1781294 | .1624096 |
| Stddev | .001545 | .000599 | .0010436 | .0018991 | .0036684 | .0008323 | .0008072 |
| %RSD | 58.49976 | 15.63494 | 22.47745 | 73.32530 | 150.0662 | .4672635 | .4970183 |
| #1 | -.004243 | -.004492 | .0035402 | .0016267 | .0000806 | .1773583 | .1624049 |
| #2 | -.001162 | -.003682 | .0047726 | .0013655 | .0066705 | .1780183 | .1632192 |
| #3 | -.002516 | -.003322 | .0056151 | .0047777 | .0005825 | .1790117 | .1616048 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0001362 | .0000395 | 15.82413 | .0049877 | .0019820 | .0268860 | 1.214184 |
| Stddev | .0000698 | .0000833 | .11501 | .0002237 | .0001574 | .0001506 | .004653 |
| %RSD | 51.29191 | 210.9588 | .7268155 | 4.484658 | 7.940649 | .5600743 | .3832165 |
| #1 | .0002101 | .0000514 | 15.74627 | .0050232 | .0018027 | .0270332 | 1.219091 |
| #2 | .0000713 | -.000049 | 15.95623 | .0047484 | .0020461 | .0268923 | 1.209836 |
| #3 | .0001271 | .000116 | 15.76988 | .0051915 | .0020972 | .0267323 | 1.213624 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1836402 | .7833050 | .0039908 | .0006422 | 286.1978 | .0006906 | .0957813 |
| Stddev | .0002984 | .0054257 | .0004957 | .0005173 | .8109 | .0009928 | .0004207 |
| %RSD | .1625040 | .6926699 | 12.42000 | 80.54374 | .2833280 | 143.7538 | .4392526 |
| #1 | .1835209 | .7774961 | .0034212 | .0008345 | 287.0848 | .0018312 | .0953029 |
| #2 | .1834199 | .7882420 | .0043241 | .0000563 | 285.4946 | .0000210 | .0960935 |
| #3 | .1839799 | .7841768 | .0042272 | .0010358 | 286.0140 | .0002196 | .0959475 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6357096 | .0225414 | .0005519 | -.000062 | .0012993 | 1.751832 | .0072375 |
| Stddev | .0279399 | .0016955 | .0002578 | .000365 | .0001550 | .009394 | .0030007 |
| %RSD | 4.395067 | 7.521703 | 46.70969 | 585.4055 | 11.92908 | .5362529 | 41.46009 |
| #1 | .6146640 | .0214251 | .0008496 | -.000442 | .0011215 | 1.762665 | .0080170 |
| #2 | .6674090 | .0244924 | .0004041 | .000287 | .0013710 | 1.746900 | .0039240 |
| #3 | .6250558 | .0217066 | .0004021 | -.000032 | .0014055 | 1.745930 | .0097714 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1352-02 Acquired: 2/17/2025 13:15:11 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .6981917 | -.002970 | .0333357 |
| Stddev | .0053495 | .000540 | .0000564 |
| %RSD | .7661929 | 18.18008 | .1691836 |
| #1 | .6977659 | -.002427 | .0332734 |
| #2 | .6930679 | -.002977 | .0333504 |
| #3 | .7037414 | -.003506 | .0333833 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3040.712 | 65224.88 | 13128.80 | 2088.836 | 3983.317 |
| Stddev | 7.063 | 110.00 | 145.29 | 6.175 | 10.154 |
| %RSD | .2322774 | .1686528 | 1.106683 | .2956145 | .2549171 |
| #1 | 3039.622 | 65128.51 | 13263.25 | 2093.553 | 3978.733 |
| #2 | 3048.256 | 65344.72 | 12974.67 | 2091.109 | 3994.955 |
| #3 | 3034.257 | 65201.41 | 13148.50 | 2081.847 | 3976.263 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-01 Acquired: 2/17/2025 13:19:38 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.004479 | -.004026 | .0009174 | .0010425 | -.000024 | .0158574 | .2104880 |
| Stddev | .001484 | .002788 | .0006657 | .0016050 | .000244 | .0047771 | .0009400 |
| %RSD | 33.12782 | 69.26127 | 72.56006 | 153.9658 | 1033.030 | 30.12543 | .4465761 |
| #1 | -.005271 | -.007218 | .0002493 | .0012781 | .000237 | .0131321 | .2094109 |
| #2 | -.005398 | -.002062 | .0009222 | .0025166 | -.000246 | .0213735 | .2111428 |
| #3 | -.002767 | -.002798 | .0015806 | -.000667 | -.000062 | .0130668 | .2109103 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000046 | .0007289 | 21.08586 | .0045162 | -.000329 | .0075618 | .0181139 |
| Stddev | .000033 | .0000395 | .04088 | .0003518 | .000099 | .0001169 | .0035514 |
| %RSD | 71.46289 | 5.413486 | .1938782 | 7.789596 | 29.94228 | 1.545956 | 19.60564 |
| #1 | -.000080 | .0007188 | 21.04428 | .0042958 | -.000435 | .0076948 | .0144682 |
| #2 | -.000015 | .0007724 | 21.12601 | .0043308 | -.000241 | .0074751 | .0215627 |
| #3 | -.000042 | .0006954 | 21.08727 | .0049219 | -.000311 | .0075155 | .0183109 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5895663 | 2.180961 | .0871110 | .0006508 | 274.3447 | -.000674 | .4789427 |
| Stddev | .0033918 | .017554 | .0004239 | .0004745 | 3.2943 | .000577 | .0025404 |
| %RSD | .5753012 | .8048837 | .4866811 | 72.92050 | 1.200781 | 85.62448 | .5304249 |
| #1 | .5866929 | 2.165947 | .0867635 | .0009095 | 275.1631 | -.000495 | .4818711 |
| #2 | .5933078 | 2.176674 | .0869860 | .0009397 | 270.7184 | -.001320 | .4773293 |
| #3 | .5886982 | 2.200261 | .0875834 | .0001031 | 277.1526 | -.000207 | .4776278 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6799644 | .1242568 | .0000197 | -.001002 | -.000436 | 2.133351 | .0161431 |
| Stddev | .0204928 | .0013325 | .0001577 | .000348 | .000222 | .015672 | .0011638 |
| %RSD | 3.013798 | 1.072366 | 799.2803 | 34.76529 | 50.97230 | .7346399 | 7.209341 |
| #1 | .6936633 | .1228695 | .0001787 | -.001366 | -.000386 | 2.150695 | .0168366 |
| #2 | .6898246 | .1243741 | .0000172 | -.000969 | -.000678 | 2.129154 | .0167932 |
| #3 | .6564054 | .1255268 | -.000137 | -.000671 | -.000242 | 2.120205 | .0147995 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-01 Acquired: 2/17/2025 13:19:38 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .2200255 | -.004415 | .2466530 |
| Stddev | .0050449 | .001089 | .0009109 |
| %RSD | 2.292850 | 24.66898 | .3692897 |
| | | | |
| #1 | .2154976 | -.003506 | .2460858 |
| #2 | .2191154 | -.005622 | .2477037 |
| #3 | .2254635 | -.004117 | .2461695 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3031.231 | 65593.25 | 13247.43 | 2111.940 | 3950.272 |
| Stddev | 3.393 | 88.93 | 70.07 | 19.192 | 5.680 |
| %RSD | .1119431 | .1355788 | .5289069 | .9087314 | .1437784 |
| | | | | | |
| #1 | 3031.804 | 65490.94 | 13328.15 | 2089.782 | 3953.239 |
| #2 | 3034.301 | 65652.08 | 13202.29 | 2122.703 | 3953.854 |
| #3 | 3027.588 | 65636.72 | 13211.86 | 2123.335 | 3943.724 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-03 Acquired: 2/17/2025 13:24:03 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.003577 | -.003348 | .0014285 | .0024828 | -.000346 | .1470730 | .4707313 |
| Stddev | .003166 | .002236 | .0005058 | .0020490 | .001831 | .0027126 | .0015879 |
| %RSD | 88.51703 | 66.79667 | 35.40972 | 82.53117 | 529.6609 | 1.844354 | .3373265 |
| #1 | -.003263 | -.005018 | .0008497 | .0042946 | -.001948 | .1487624 | .4703489 |
| #2 | -.000580 | -.000807 | .0017858 | .0028946 | -.000740 | .1485123 | .4693696 |
| #3 | -.006889 | -.004218 | .0016499 | .0002590 | .001651 | .1439441 | .4724755 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000653 | .0012419 | 48.00421 | .0127647 | .0121296 | .0237751 | .1270991 |
| Stddev | .0000186 | .0000245 | .20044 | .0004272 | .0001381 | .0004132 | .0031654 |
| %RSD | 28.49559 | 1.974028 | .4175539 | 3.347022 | 1.138629 | 1.738175 | 2.490517 |
| #1 | .0000687 | .0012676 | 47.86507 | .0132029 | .0120577 | .0236106 | .1280157 |
| #2 | .0000452 | .0012187 | 47.91360 | .0127419 | .0120422 | .0234695 | .1235765 |
| #3 | .0000820 | .0012395 | 48.23396 | .0123493 | .0122888 | .0242453 | .1297051 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6303178 | 4.636200 | .0318296 | .0004164 | 291.5119 | .0015335 | .1843652 |
| Stddev | .0050991 | .024779 | .0000395 | .0001414 | .5217 | .0008257 | .0009542 |
| %RSD | .8089779 | .5344739 | .1242267 | 33.96079 | .1789655 | 53.84809 | .5175787 |
| #1 | .6281697 | 4.623188 | .0318384 | .0002592 | 290.9960 | .0024249 | .1840228 |
| #2 | .6266442 | 4.620638 | .0318639 | .0005332 | 291.5005 | .0007948 | .1854434 |
| #3 | .6361395 | 4.664775 | .0317863 | .0004568 | 292.0392 | .0013807 | .1836294 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.002426 | .0127251 | .0005232 | -.000698 | .0000760 | 2.002908 | .0059837 |
| Stddev | .021964 | .0002419 | .0001897 | .000486 | .0002923 | .006373 | .0010611 |
| %RSD | 2.191101 | 1.901078 | 36.26607 | 69.58320 | 384.7378 | .3182026 | 17.73241 |
| #1 | .984594 | .0124480 | .0007238 | -.000796 | .0002445 | 2.006400 | .0071469 |
| #2 | 1.026960 | .0128943 | .0003465 | -.001129 | .0002450 | 2.006773 | .0057353 |
| #3 | .995723 | .0128329 | .0004993 | -.000171 | -.000262 | 1.995552 | .0050689 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-03 Acquired: 2/17/2025 13:24:03 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .6576406 | -.009769 | .1698088 |
| Stddev | .0044779 | .000426 | .0009847 |
| %RSD | .6809034 | 4.363415 | .5798648 |
| | | | |
| #1 | .6624059 | -.009948 | .1691767 |
| #2 | .6535200 | -.009282 | .1693063 |
| #3 | .6569959 | -.010076 | .1709433 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3001.759 | 64557.10 | 12715.10 | 2099.030 | 3870.811 |
| Stddev | 13.270 | 310.10 | 27.32 | 18.252 | 14.795 |
| %RSD | .4420581 | .4803559 | .2148285 | .8695365 | .3822115 |
| | | | | | |
| #1 | 3012.210 | 64351.39 | 12738.28 | 2089.917 | 3876.645 |
| #2 | 3006.238 | 64406.14 | 12722.04 | 2087.128 | 3881.800 |
| #3 | 2986.830 | 64913.78 | 12684.98 | 2120.043 | 3853.989 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166702TB Acquired: 2/17/2025 13:28:27 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002337 | -.002890 | .0013973 | .0022529 | .0006513 | .0102728 |
| Stddev | .002244 | .001776 | .0015304 | .0018808 | .0009903 | .0079945 |
| %RSD | 96.03896 | 61.46802 | 109.5251 | 83.48433 | 152.0479 | 77.82161 |
| #1 | -.004874 | -.001135 | .0021415 | .0011200 | .0015914 | .0112105 |
| #2 | -.000612 | -.004687 | .0024134 | .0044240 | -.000382 | .0177571 |
| #3 | -.001524 | -.002848 | -.000363 | .0012147 | .000745 | .0018509 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000349 | -.000046 | -.000090 | .0284041 | .0020464 | -.000296 |
| Stddev | .001230 | .000027 | .000102 | .0006342 | .0004960 | .000054 |
| %RSD | 352.1123 | 59.75489 | 113.3452 | 2.232724 | 24.23667 | 18.25737 |
| #1 | -.001619 | -.000022 | -.000147 | .0291335 | .0024821 | -.000318 |
| #2 | -.000265 | -.000040 | .000028 | .0279833 | .0015066 | -.000335 |
| #3 | .000836 | -.000076 | -.000150 | .0280956 | .0021504 | -.000234 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000157 | .0322833 | F .0367867 | .0165463 | .0011270 | .0004914 |
| Stddev | .0001399 | .0009361 | .0003967 | .0054626 | .0001770 | .0003027 |
| %RSD | 893.3814 | 2.899649 | 1.078431 | 33.01383 | 15.70914 | 61.59301 |
| #1 | -.000119 | .0332466 | .0370598 | .0219550 | .0012467 | .0001473 |
| #2 | .000006 | .0322262 | .0369686 | .0110314 | .0012107 | .0007164 |
| #3 | .000160 | .0313770 | .0363316 | .0166524 | .0009237 | .0006105 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | F 313.4090 | -.000203 | .0069921 | .1153842 | -.005971 | .0001218 |
| Stddev | 2.7793 | .000779 | .0003057 | .0036020 | .000778 | .0001287 |
| %RSD | .8868065 | 382.8993 | 4.372753 | 3.121699 | 13.03165 | 105.6291 |
| #1 | 310.2115 | -.000619 | .0073443 | .1124058 | -.005233 | -.000010 |
| #2 | 314.7700 | -.000687 | .0067957 | .1143592 | -.006784 | .000247 |
| #3 | 315.2455 | .000695 | .0068361 | .1193875 | -.005897 | .000129 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166702TB Acquired: 2/17/2025 13:28:27 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0011857 | .0015736 | .0308712 | .0032817 | F .1990094 | -.002185 |
| Stddev | .0003595 | .0001162 | .0134113 | .0022624 | .0045937 | .000783 |
| %RSD | 30.32176 | 7.384097 | 43.44264 | 68.93909 | 2.308302 | 35.81521 |
| | | | | | | |
| #1 | .0007791 | .0016870 | .0392024 | .0056765 | .2017216 | -.001895 |
| #2 | .0014614 | .0015790 | .0380108 | .0011805 | .2016011 | -.003072 |
| #3 | .0013168 | .0014548 | .0154005 | .0029880 | .1937054 | -.001589 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | -.000076 |
| Stddev | .000042 |
| %RSD | 55.51576 |
| | |
| #1 | -.000111 |
| #2 | -.000089 |
| #3 | -.000029 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3028.113 | 66445.53 | 12711.72 | 2138.546 | 3950.306 |
| Stddev | 8.485 | 187.74 | 79.81 | 9.908 | 8.497 |
| %RSD | .2802200 | .2825458 | .6278343 | .4633108 | .2150908 |
| | | | | | |
| #1 | 3036.455 | 66568.09 | 12769.72 | 2147.666 | 3958.889 |
| #2 | 3019.491 | 66229.39 | 12744.74 | 2128.004 | 3941.898 |
| #3 | 3028.393 | 66539.10 | 12620.70 | 2139.968 | 3950.132 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04 Acquired: 2/17/2025 13:32:56 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.003517 | -.004359 | -.000327 | .0027145 | .0001992 | -.005329 | .0151409 |
| Stddev | .001950 | .000475 | .001127 | .0025271 | .0011783 | .011342 | .0002872 |
| %RSD | 55.43755 | 10.88770 | 345.2245 | 93.09591 | 591.3836 | 212.8151 | 1.896722 |
| #1 | -.001888 | -.004094 | .000975 | .0032596 | -.000100 | -.001959 | .0149636 |
| #2 | -.005678 | -.004076 | -.000987 | .0049245 | -.000801 | -.017974 | .0149868 |
| #3 | -.002986 | -.004906 | -.000967 | -.000041 | .001498 | .003945 | .0154722 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000065 | -.000038 | 7.866236 | .0006497 | -.000035 | .0005149 | .0136987 |
| Stddev | .000021 | .000054 | .021656 | .0002202 | .000184 | .0002372 | .0018777 |
| %RSD | 32.72609 | 143.5553 | .2752974 | 33.88548 | 523.2582 | 46.06044 | 13.70704 |
| #1 | -.000085 | -.000063 | 7.882917 | .0007346 | -.000060 | .0003287 | .0140632 |
| #2 | -.000043 | -.000075 | 7.874029 | .0008147 | .000160 | .0007819 | .0116655 |
| #3 | -.000066 | .000024 | 7.841763 | .0003997 | -.000205 | .0004341 | .0153675 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2358557 | 1.564742 | .0032909 | .0006596 | 12.54374 | -.001193 | .0050848 |
| Stddev | .0004247 | .005456 | .0003206 | .0002318 | .03693 | .000757 | .0001444 |
| %RSD | .1800640 | .3487051 | 9.741451 | 35.13522 | .2944181 | 63.51825 | 2.840421 |
| #1 | .2362017 | 1.568732 | .0029964 | .0006936 | 12.55261 | -.000613 | .0051807 |
| #2 | .2359837 | 1.566970 | .0032441 | .0004127 | 12.57543 | -.000916 | .0051552 |
| #3 | .2353817 | 1.558524 | .0036324 | .0008725 | 12.50318 | -.002050 | .0049187 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.309985 | .0223010 | .0013616 | .0003408 | .0010335 | .6233797 | .0011470 |
| Stddev | .023844 | .0006183 | .0000475 | .0003556 | .0006953 | .0107826 | .0012792 |
| %RSD | 1.820167 | 2.772419 | 3.487369 | 104.3287 | 67.28174 | 1.729697 | 111.5286 |
| #1 | 1.337396 | .0219761 | .0014089 | -.000065 | .0002306 | .6341193 | .0022234 |
| #2 | 1.298522 | .0230141 | .0013621 | .000491 | .0014311 | .6125546 | .0014848 |
| #3 | 1.294038 | .0219130 | .0013139 | .000597 | .0014387 | .6234652 | -.000267 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04 Acquired: 2/17/2025 13:32:56 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 2.046801 | -.004561 | .0732539 |
| Stddev | .013655 | .001437 | .0002286 |
| %RSD | .6671531 | 31.50892 | .3120337 |
| | | | |
| #1 | 2.041355 | -.005986 | .0734311 |
| #2 | 2.036709 | -.004584 | .0733348 |
| #3 | 2.062339 | -.003112 | .0729959 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3198.209 | 68149.42 | 12626.02 | 2181.897 | 4452.114 |
| Stddev | 12.739 | 52.20 | 22.67 | 13.052 | 13.558 |
| %RSD | .3983059 | .0766027 | .1795860 | .5981740 | .3045329 |
| | | | | | |
| #1 | 3202.192 | 68142.44 | 12600.02 | 2166.966 | 4454.361 |
| #2 | 3208.480 | 68204.76 | 12641.67 | 2191.135 | 4464.408 |
| #3 | 3183.955 | 68101.05 | 12636.37 | 2187.589 | 4437.572 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04DUP Acquired: 2/17/2025 13:37:14 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002774 | -.002949 | .0000582 | .0015655 | -.000905 | .0047076 | .0151037 |
| Stddev | .000906 | .001690 | .0011886 | .0025556 | .000955 | .0035953 | .0003230 |
| %RSD | 32.64873 | 57.29578 | 2043.480 | 163.2464 | 105.5173 | 76.37281 | 2.138275 |
| #1 | -.002421 | -.002825 | .0013990 | .0027114 | -.001888 | .0057183 | .0150332 |
| #2 | -.002099 | -.001325 | -.000866 | -.001363 | .000020 | .0076894 | .0154561 |
| #3 | -.003804 | -.004697 | -.000358 | .003348 | -.000847 | .0007151 | .0148218 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000030 | .0000258 | 7.862700 | .0003462 | .0002166 | .0007397 | .0129578 |
| Stddev | .000050 | .0000302 | .004853 | .0004884 | .0002047 | .0001574 | .0035608 |
| %RSD | 165.0413 | 117.0973 | .0617186 | 141.0640 | 94.48898 | 21.28288 | 27.48035 |
| #1 | -.000028 | .0000156 | 7.862454 | .0000641 | .0003025 | .0006322 | .0099773 |
| #2 | .000019 | .0000020 | 7.857975 | .0009102 | .0003643 | .0006665 | .0119950 |
| #3 | -.000081 | .0000597 | 7.867671 | .0000644 | -.000017 | .0009204 | .0169010 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2353237 | 1.555974 | .0031561 | .0007816 | 13.03668 | -.001475 | .0048570 |
| Stddev | .0013341 | .008529 | .0002090 | .0000850 | .06482 | .001088 | .0001009 |
| %RSD | .5669289 | .5481657 | 6.622912 | 10.86920 | .4972298 | 73.76297 | 2.077127 |
| #1 | .2358990 | 1.563560 | .0029903 | .0007851 | 13.07883 | -.001766 | .0049378 |
| #2 | .2337984 | 1.546741 | .0033909 | .0006949 | 13.06918 | -.000271 | .0048894 |
| #3 | .2362736 | 1.557620 | .0030870 | .0008647 | 12.96204 | -.002388 | .0047439 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.344759 | .0206407 | .0012668 | -.000044 | .0012285 | .6574390 | .0031976 |
| Stddev | .041809 | .0004776 | .0001079 | .000390 | .0002189 | .0005453 | .0013684 |
| %RSD | 3.109034 | 2.314069 | 8.519535 | 883.8925 | 17.81993 | .0829476 | 42.79517 |
| #1 | 1.391912 | .0211781 | .0013824 | -.000362 | .0012707 | .6576510 | .0034370 |
| #2 | 1.312214 | .0202643 | .0012494 | .000392 | .0014233 | .6578464 | .0017253 |
| #3 | 1.330150 | .0204799 | .0011686 | -.000162 | .0009916 | .6568195 | .0044305 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04DUP Acquired: 2/17/2025 13:37:14 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 2.099123 | -.003341 | .0736272 |
| Stddev | .002855 | .000889 | .0000958 |
| %RSD | .1360050 | 26.61138 | .1300929 |
| | | | |
| #1 | 2.096615 | -.002482 | .0736045 |
| #2 | 2.102230 | -.004258 | .0737323 |
| #3 | 2.098523 | -.003284 | .0735449 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3163.811 | 68635.53 | 13027.04 | 2184.468 | 4373.560 |
| Stddev | 1.860 | 69.65 | 37.03 | 5.615 | 3.904 |
| %RSD | .0588050 | .1014829 | .2842597 | .2570283 | .0892637 |
| | | | | | |
| #1 | 3163.965 | 68607.94 | 13050.33 | 2178.761 | 4373.928 |
| #2 | 3161.878 | 68583.89 | 13046.45 | 2189.986 | 4369.485 |
| #3 | 3165.589 | 68714.75 | 12984.34 | 2184.657 | 4377.267 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04LX5 Acquired: 2/17/2025 13:41:32 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000718 | -.001132 | -.000197 | .0016494 | -.000394 | -.003600 | -.000143 |
| Stddev | .001987 | .000754 | .001572 | .0007072 | .000721 | .004187 | .000849 |
| %RSD | 276.5855 | 66.63242 | 797.5844 | 42.87624 | 182.8729 | 116.3014 | 594.4985 |
| #1 | .001474 | -.000899 | .001617 | .0022111 | -.001106 | -.002301 | -.000654 |
| #2 | -.001230 | -.000521 | -.001132 | .0008552 | .000335 | -.000217 | .000837 |
| #3 | -.002400 | -.001975 | -.001076 | .0018820 | -.000412 | -.008282 | -.000612 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000603 | -.000069 | 1.577426 | -.000213 | -.000105 | -.000133 | .0019931 |
| Stddev | .0000270 | .000060 | .011162 | .000156 | .000028 | .000025 | .0046608 |
| %RSD | 44.80850 | 86.67034 | .7076114 | 73.41057 | 26.54359 | 18.75532 | 233.8498 |
| #1 | .0000621 | .000000 | 1.590157 | -.000048 | -.000086 | -.000109 | -.003147 |
| #2 | .0000863 | -.000105 | 1.572805 | -.000359 | -.000137 | -.000131 | .003180 |
| #3 | .0000324 | -.000103 | 1.569317 | -.000231 | -.000092 | -.000159 | .005945 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0478954 | .3142677 | .0007540 | .0007945 | 2.410251 | -.000899 | .0004453 |
| Stddev | .0001397 | .0051355 | .0000515 | .0001025 | .009085 | .000278 | .0001818 |
| %RSD | .2917260 | 1.634112 | 6.827642 | 12.90312 | .3769399 | 30.98303 | 40.82154 |
| #1 | .0477392 | .3140187 | .0006968 | .0006765 | 2.402635 | -.000652 | .0006116 |
| #2 | .0479385 | .3092613 | .0007965 | .0008612 | 2.407812 | -.001200 | .0002512 |
| #3 | .0480085 | .3195232 | .0007688 | .0008460 | 2.420307 | -.000844 | .0004731 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2937400 | .0003349 | .0004237 | .0001136 | .0001818 | .1299890 | -.001698 |
| Stddev | .0100663 | .0008252 | .0000409 | .0003352 | .0001367 | .0083747 | .001625 |
| %RSD | 3.426956 | 246.3918 | 9.642969 | 295.1828 | 75.19499 | 6.442604 | 95.69321 |
| #1 | .3004622 | -.000597 | .0004696 | .0004498 | .0001814 | .1384581 | -.000610 |
| #2 | .2821667 | .000630 | .0003913 | -.000221 | .0000453 | .1217121 | -.003566 |
| #3 | .2985910 | .000972 | .0004103 | .000112 | .0003188 | .1297968 | -.000918 |

Sample Name: Q1356-04LX5 Acquired: 2/17/2025 13:41:32 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .4292822 | -.002231 | .0147967 |
| Stddev | .0024206 | .000209 | .0000427 |
| %RSD | .5638684 | 9.362676 | .2887342 |
| | | | |
| #1 | .4307368 | -.002439 | .0148244 |
| #2 | .4264879 | -.002233 | .0147475 |
| #3 | .4306218 | -.002021 | .0148183 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3195.901 | 68379.26 | 12226.63 | 2212.826 | 4407.784 |
| Stddev | 11.895 | 132.48 | 12.36 | 6.681 | 12.418 |
| %RSD | .3721823 | .1937493 | .1010870 | .3019043 | .2817356 |
| | | | | | |
| #1 | 3191.860 | 68277.79 | 12221.65 | 2206.909 | 4403.749 |
| #2 | 3209.290 | 68529.15 | 12240.70 | 2220.071 | 4421.718 |
| #3 | 3186.555 | 68330.86 | 12217.54 | 2211.497 | 4397.885 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04MS Acquired: 2/17/2025 13:45:51 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .8175829 | 2.057899 | .9647287 | 1.923889 | .8226787 | 1.942952 | .2007192 |
| Stddev | .0021632 | .001315 | .0017347 | .007134 | .0040057 | .006855 | .0009902 |
| %RSD | .2645811 | .0638936 | .1798088 | .3708129 | .4869027 | .3527953 | .4933242 |
| #1 | .8153642 | 2.058548 | .9641426 | 1.925096 | .8225059 | 1.949611 | .1999594 |
| #2 | .8176986 | 2.058763 | .9633630 | 1.916228 | .8187623 | 1.943328 | .2003593 |
| #3 | .8196859 | 2.056385 | .9666805 | 1.930342 | .8267680 | 1.935917 | .2018391 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1908773 | .1919136 | 10.54809 | .4173262 | .1961941 | .3058793 | 2.932560 |
| Stddev | .0007469 | .0002955 | .05058 | .0022600 | .0004634 | .0002376 | .011975 |
| %RSD | .3912793 | .1539828 | .4795189 | .5415324 | .2361977 | .0776707 | .4083478 |
| #1 | .1901530 | .1915967 | 10.48980 | .4194792 | .1956661 | .3061379 | 2.943874 |
| #2 | .1916449 | .1919626 | 10.58044 | .4149726 | .1965334 | .3058291 | 2.920018 |
| #3 | .1908341 | .1921816 | 10.57402 | .4175269 | .1963828 | .3056708 | 2.933788 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5088222 | 3.762540 | .4872449 | .0746614 | 18.52331 | .2905495 | .2097594 |
| Stddev | .0035851 | .014161 | .0012334 | .0004670 | .06656 | .0019109 | .0010117 |
| %RSD | .7045944 | .3763747 | .2531460 | .6254441 | .3593323 | .6576952 | .4822949 |
| #1 | .5046890 | 3.746368 | .4869454 | .0749984 | 18.57438 | .2921217 | .2109268 |
| #2 | .5106868 | 3.772719 | .4861887 | .0741283 | 18.44804 | .2884226 | .2091398 |
| #3 | .5110907 | 3.768533 | .4886005 | .0748573 | 18.54752 | .2911043 | .2092116 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 11.18069 | .2841245 | .4259302 | .6764677 | .1875420 | 1.563380 | 5.774123 |
| Stddev | .03882 | .0026580 | .0007805 | .0020732 | .0012517 | .004645 | .008743 |
| %RSD | .3472165 | .9355163 | .1832346 | .3064695 | .6674311 | .2970974 | .1514246 |
| #1 | 11.22047 | .2811258 | .4265878 | .6783882 | .1869286 | 1.562613 | 5.775923 |
| #2 | 11.14290 | .2861903 | .4250678 | .6742698 | .1867154 | 1.559166 | 5.764620 |
| #3 | 11.17869 | .2850574 | .4261350 | .6767452 | .1889821 | 1.568360 | 5.781827 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04MS Acquired: 2/17/2025 13:45:51 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 2.606059 | .1897735 | .2770355 |
| Stddev | .012661 | .0005872 | .0010175 |
| %RSD | .4858443 | .3094233 | .3672739 |
| | | | |
| #1 | 2.601344 | .1891597 | .2759265 |
| #2 | 2.596432 | .1903298 | .2772538 |
| #3 | 2.620401 | .1898311 | .2779260 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3138.656 | 68304.00 | 12517.73 | 2226.948 | 4279.398 |
| Stddev | 6.961 | 307.90 | 30.87 | 10.990 | 8.741 |
| %RSD | .2217740 | .4507851 | .2466272 | .4935043 | .2042547 |
| | | | | | |
| #1 | 3137.456 | 67965.08 | 12540.49 | 2214.274 | 4278.784 |
| #2 | 3146.138 | 68566.49 | 12482.59 | 2232.728 | 4288.430 |
| #3 | 3132.372 | 68380.43 | 12530.10 | 2233.842 | 4270.980 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04MSD Acquired: 2/17/2025 13:49:54 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .8294274 | 2.099731 | .9695864 | 1.956584 | .8323865 | 1.949067 | .2012699 |
| Stddev | .0015746 | .009226 | .0001145 | .008136 | .0021456 | .008135 | .0004698 |
| %RSD | .1898431 | .4393789 | .0118092 | .4158165 | .2577590 | .4173703 | .2334106 |
| #1 | .8279211 | 2.089534 | .9695040 | 1.959780 | .8347804 | 1.942886 | .2009578 |
| #2 | .8310624 | 2.107501 | .9695380 | 1.947335 | .8306370 | 1.946033 | .2010417 |
| #3 | .8292986 | 2.102157 | .9697172 | 1.962636 | .8317420 | 1.958283 | .2018102 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1881133 | .1931645 | 10.54346 | .4204598 | .1969340 | .3089093 | 2.977692 |
| Stddev | .0007256 | .0003606 | .02736 | .0025065 | .0003325 | .0001360 | .005609 |
| %RSD | .3857097 | .1866852 | .2595158 | .5961342 | .1688551 | .0440374 | .1883823 |
| #1 | .1872941 | .1928846 | 10.57389 | .4175809 | .1970208 | .3089211 | 2.977551 |
| #2 | .1886753 | .1930375 | 10.52087 | .4216411 | .1965667 | .3087678 | 2.972154 |
| #3 | .1883704 | .1935715 | 10.53563 | .4221573 | .1972145 | .3090391 | 2.983370 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5083346 | 3.773446 | .4882616 | .0751010 | 19.14600 | .2901983 | .2125521 |
| Stddev | .0008733 | .033430 | .0011284 | .0005268 | .06273 | .0023144 | .0009105 |
| %RSD | .1717916 | .8859337 | .2311072 | .7015068 | .3276254 | .7975353 | .4283641 |
| #1 | .5083894 | 3.740661 | .4872908 | .0750370 | 19.21426 | .2889949 | .2116181 |
| #2 | .5074352 | 3.772192 | .4879943 | .0746091 | 19.09090 | .2887336 | .2134371 |
| #3 | .5091792 | 3.807486 | .4894997 | .0756569 | 19.13283 | .2928665 | .2126010 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 11.49687 | .2804158 | .4289250 | .6813240 | .1878796 | 1.606177 | 5.803213 |
| Stddev | .06000 | .0009624 | .0007950 | .0024188 | .0003859 | .023761 | .002049 |
| %RSD | .5219188 | .3432086 | .1853368 | .3550163 | .2053811 | 1.479330 | .0353127 |
| #1 | 11.56118 | .2794330 | .4292968 | .6834257 | .1882693 | 1.592622 | 5.804231 |
| #2 | 11.44237 | .2813564 | .4280122 | .6786801 | .1878719 | 1.592297 | 5.800854 |
| #3 | 11.48707 | .2804579 | .4294659 | .6818663 | .1874976 | 1.633613 | 5.804554 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04MSD Acquired: 2/17/2025 13:49:54 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 2.626216 | .1906636 | .2778410 |
| Stddev | .007337 | .0004426 | .0006904 |
| %RSD | .2793664 | .2321227 | .2484862 |
| | | | |
| #1 | 2.626504 | .1911630 | .2786260 |
| #2 | 2.618739 | .1903201 | .2775689 |
| #3 | 2.633404 | .1905076 | .2773282 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3116.577 | 67896.78 | 12729.87 | 2194.729 | 4262.459 |
| Stddev | 4.445 | 330.09 | 35.34 | 2.712 | 6.432 |
| %RSD | .1426325 | .4861581 | .2775893 | .1235466 | .1508945 |
| | | | | | |
| #1 | 3118.807 | 68150.75 | 12761.61 | 2197.620 | 4269.633 |
| #2 | 3119.467 | 68015.92 | 12736.21 | 2194.323 | 4260.539 |
| #3 | 3111.459 | 67523.66 | 12691.79 | 2192.243 | 4257.207 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04A Acquired: 2/17/2025 13:53:55 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .8391001 | 2.107753 | .9725957 | 1.984457 | .8389767 | 1.998056 | .2066629 |
| Stddev | .0028685 | .023299 | .0016618 | .003360 | .0017730 | .008126 | .0010145 |
| %RSD | .3418493 | 1.105391 | .1708620 | .1693175 | .2113286 | .4066762 | .4908794 |
| #1 | .8385448 | 2.082588 | .9732576 | 1.980790 | .8386164 | 1.999691 | .2055498 |
| #2 | .8422056 | 2.112096 | .9738245 | 1.987388 | .8409021 | 2.005240 | .2069035 |
| #3 | .8365499 | 2.128574 | .9707049 | 1.985194 | .8374114 | 1.989237 | .2075355 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1858344 | .1939629 | 10.66731 | .4202695 | .1977040 | .3087571 | 3.037109 |
| Stddev | .0008709 | .0004009 | .01158 | .0020219 | .0005042 | .0011970 | .015685 |
| %RSD | .4686207 | .2066949 | .1085480 | .4810974 | .2550077 | .3876947 | .5164548 |
| #1 | .1862103 | .1941217 | 10.67095 | .4191921 | .1982180 | .3077969 | 3.022677 |
| #2 | .1848388 | .1942601 | 10.65434 | .4190144 | .1976839 | .3100983 | 3.034849 |
| #3 | .1864542 | .1935069 | 10.67662 | .4226019 | .1972103 | .3083761 | 3.053802 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5157268 | 3.844755 | .4891433 | .0752400 | 20.20778 | .2952676 | .2125964 |
| Stddev | .0016976 | .021174 | .0015853 | .0005177 | .17715 | .0012453 | .0010980 |
| %RSD | .3291580 | .5507155 | .3241020 | .6880628 | .8766285 | .4217612 | .5164959 |
| #1 | .5142139 | 3.820584 | .4904803 | .0756118 | 20.00740 | .2946704 | .2118885 |
| #2 | .5154039 | 3.860028 | .4895576 | .0746487 | 20.34358 | .2944334 | .2120394 |
| #3 | .5175626 | 3.853652 | .4873920 | .0754594 | 20.27235 | .2966990 | .2138613 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 11.79648 | .2768915 | .4315568 | .6837144 | .1909113 | 1.659828 | 5.770233 |
| Stddev | .06673 | .0009828 | .0009367 | .0045305 | .0007580 | .022600 | .013764 |
| %RSD | .5657189 | .3549246 | .2170582 | .6626291 | .3970338 | 1.361562 | .2385278 |
| #1 | 11.72472 | .2771983 | .4310313 | .6854677 | .1912298 | 1.636566 | 5.755782 |
| #2 | 11.85668 | .2757920 | .4326383 | .6871063 | .1914581 | 1.661216 | 5.783186 |
| #3 | 11.80803 | .2776843 | .4310008 | .6785693 | .1900460 | 1.681702 | 5.771732 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-04A Acquired: 2/17/2025 13:53:55 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 2.632598 | .1972718 | .2820850 |
| Stddev | .007256 | .0007464 | .0009991 |
| %RSD | .2756168 | .3783428 | .3541817 |
| | | | |
| #1 | 2.624328 | .1965425 | .2809458 |
| #2 | 2.635566 | .1980341 | .2828122 |
| #3 | 2.637898 | .1972388 | .2824970 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3100.973 | 67798.55 | 12855.40 | 2161.116 | 4249.786 |
| Stddev | 4.527 | 343.41 | 57.68 | 15.026 | 11.758 |
| %RSD | .1459925 | .5065174 | .4486860 | .6953117 | .2766723 |
| | | | | | |
| #1 | 3100.553 | 68093.11 | 12833.27 | 2171.997 | 4246.484 |
| #2 | 3096.670 | 67881.18 | 12920.87 | 2167.381 | 4240.033 |
| #3 | 3105.695 | 67421.36 | 12812.06 | 2143.971 | 4262.842 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV03 Acquired: 2/17/2025 13:57:55 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 5.030019 | 5.212778 | 4.854750 | 5.117774 | 5.152969 | 9.627872 | 9.050297 |
| Stddev | .028206 | .033791 | .023345 | .022346 | .032569 | .040597 | .155855 |
| %RSD | .5607573 | .6482282 | .4808669 | .4366261 | .6320439 | .4216635 | 1.722099 |
| #1 | 5.001257 | 5.214630 | 4.829481 | 5.099274 | 5.130170 | 9.660080 | 9.188767 |
| #2 | 5.031165 | 5.178100 | 4.859254 | 5.111447 | 5.138466 | 9.641264 | 9.080613 |
| #3 | 5.057635 | 5.245605 | 4.875514 | 5.142600 | 5.190270 | 9.582270 | 8.881512 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2326271 | 2.421982 | 23.33103 | 1.006829 | 2.420432 | 1.241084 | 4.804731 |
| Stddev | .0016915 | .012279 | .08872 | .005500 | .014258 | .007248 | .020028 |
| %RSD | .7271294 | .5069970 | .3802532 | .5462706 | .5890632 | .5840409 | .4168456 |
| #1 | .2345636 | 2.409794 | 23.42302 | 1.010375 | 2.406858 | 1.234293 | 4.805882 |
| #2 | .2318795 | 2.421801 | 23.32406 | 1.009618 | 2.419149 | 1.240241 | 4.824159 |
| #3 | .2314382 | 2.434351 | 23.24600 | 1.000493 | 2.435287 | 1.248717 | 4.784152 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.649252 | 23.62888 | 2.383778 | 1.227443 | 23.70695 | 2.366172 | 2.471932 |
| Stddev | .012678 | .12689 | .013893 | .004339 | .12326 | .011908 | .006589 |
| %RSD | .4785563 | .5370194 | .5828082 | .3534881 | .5199281 | .5032609 | .2665430 |
| #1 | 2.662272 | 23.75307 | 2.368947 | 1.228493 | 23.70233 | 2.379575 | 2.473793 |
| #2 | 2.648539 | 23.63412 | 2.385900 | 1.231161 | 23.83245 | 2.362132 | 2.477390 |
| #3 | 2.636946 | 23.49945 | 2.396488 | 1.222676 | 23.58606 | 2.356810 | 2.464613 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 24.62323 | 4.536091 | 5.066009 | 4.869920 | 4.632689 | 5.078158 | 4.924803 |
| Stddev | .08404 | .030146 | .027882 | .027278 | .022927 | .020768 | .018706 |
| %RSD | .3412861 | .6645737 | .5503700 | .5601230 | .4948965 | .4089696 | .3798269 |
| #1 | 24.61847 | 4.570900 | 5.039455 | 4.840399 | 4.657144 | 5.077002 | 4.907948 |
| #2 | 24.70955 | 4.518868 | 5.063521 | 4.875171 | 4.629243 | 5.099481 | 4.921533 |
| #3 | 24.54168 | 4.518506 | 5.095051 | 4.894190 | 4.611681 | 5.057993 | 4.944929 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV03 Acquired: 2/17/2025 13:57:55 Type: Unk
Method: NON EPA-6010-200.7(v2702) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 4.834166 | 4.625727 | 4.619186 |
| Stddev | .021126 | .022430 | .033407 |
| %RSD | .4370073 | .4848929 | .7232312 |
| #1 | 4.810553 | 4.651083 | 4.655241 |
| #2 | 4.840670 | 4.617623 | 4.613038 |
| #3 | 4.851275 | 4.608476 | 4.589280 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3048.335 | 65566.42 | 12400.62 | 2093.354 | 4012.495 |
| Stddev | 10.622 | 367.08 | 106.58 | 11.523 | 13.812 |
| %RSD | .3484419 | .5598652 | .8594856 | .5504586 | .3442253 |
| #1 | 3059.913 | 65314.44 | 12280.63 | 2085.455 | 4027.800 |
| #2 | 3046.051 | 65397.23 | 12436.90 | 2088.032 | 4008.726 |
| #3 | 3039.041 | 65987.59 | 12484.32 | 2106.577 | 4000.958 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB03 Acquired: 2/17/2025 14:06:42 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000926 | -.001154 | .0005485 | .0018784 | .0012144 | .0033802 | -.004814 |
| Stddev | .001038 | .000798 | .0007826 | .0014962 | .0004679 | .0064053 | .000300 |
| %RSD | 112.0911 | 69.09790 | 142.6890 | 79.65172 | 38.53072 | 189.4963 | 6.237708 |
| #1 | -.000418 | -.000436 | .0014464 | .0001572 | .0017529 | .0032972 | -.004839 |
| #2 | -.000240 | -.001013 | .0001880 | .0028684 | .0009078 | .0098266 | -.005101 |
| #3 | -.002119 | -.002013 | .0000110 | .0026097 | .0009823 | -.002983 | -.004502 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000601 | .0000059 | -.005762 | -.000164 | -.000031 | -.000033 | -.001746 |
| Stddev | .0000580 | .0001068 | .006767 | .000465 | .000061 | .000396 | .002408 |
| %RSD | 96.50009 | 1812.062 | 117.4422 | 282.7056 | 196.7284 | 1185.543 | 137.8585 |
| #1 | -.000005 | -.000012 | -.008691 | .000004 | .000034 | -.000128 | .000706 |
| #2 | .000079 | .000121 | .001976 | .000193 | -.000040 | -.000374 | -.001838 |
| #3 | .000106 | -.000091 | -.010572 | -.000690 | -.000086 | .000402 | -.004107 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000154 | .0049968 | -.000350 | .0005976 | .0030536 | .0003671 | -.000492 |
| Stddev | .000144 | .0074087 | .000045 | .0003760 | .0061843 | .0012486 | .000302 |
| %RSD | 93.59488 | 148.2708 | 12.95630 | 62.91628 | 202.5220 | 340.1742 | 61.31985 |
| #1 | -.000082 | .0131007 | -.000363 | .0008224 | .0008262 | .0002413 | -.000488 |
| #2 | -.000321 | .0033183 | -.000388 | .0008070 | -.001708 | .0016738 | -.000192 |
| #3 | -.000060 | -.001429 | -.000300 | .0001635 | .010043 | -.000814 | -.000795 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0432447 | .0022690 | .0001608 | .0002759 | .0010730 | .0037329 | -.003866 |
| Stddev | .0335097 | .0002924 | .0000425 | .0002156 | .0003244 | .0038105 | .001235 |
| %RSD | 77.48850 | 12.88719 | 26.42044 | 78.13700 | 30.23526 | 102.0798 | 31.94064 |
| #1 | .0050811 | .0026067 | .0002032 | .0004490 | .0014028 | -.000665 | -.004738 |
| #2 | .0678541 | .0020987 | .0001182 | .0003442 | .0007543 | .005805 | -.004407 |
| #3 | .0567990 | .0021017 | .0001610 | .0000344 | .0010620 | .006058 | -.002453 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB03 Acquired: 2/17/2025 14:06:42 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.002608 | .0007745 | -.000015 |
| Stddev | .001181 | .0006374 | .000055 |
| %RSD | 45.28855 | 82.30508 | 376.0383 |
| | | | |
| #1 | -.003141 | .0001337 | .000041 |
| #2 | -.003430 | .0014085 | -.000068 |
| #3 | -.001255 | .0007812 | -.000016 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3160.587 | 68405.33 | 11438.06 | 2248.118 | 4322.340 |
| Stddev | 2.957 | 118.59 | 9.37 | 2.686 | 4.934 |
| %RSD | .0935654 | .1733613 | .0819451 | .1194821 | .1141475 |
| | | | | | |
| #1 | 3162.124 | 68391.16 | 11429.84 | 2251.161 | 4322.379 |
| #2 | 3162.458 | 68530.37 | 11436.07 | 2246.077 | 4327.254 |
| #3 | 3157.178 | 68294.46 | 11448.27 | 2247.116 | 4317.386 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-05 Acquired: 2/17/2025 14:10:59 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.003131 | -.001903 | .0000740 | .0029400 | .0001864 | .0140632 | .0321705 |
| Stddev | .000813 | .000273 | .0004623 | .0033522 | .0014711 | .0041962 | .0005917 |
| %RSD | 25.97234 | 14.35484 | 624.8966 | 114.0215 | 789.3937 | 29.83777 | 1.839397 |
| #1 | -.003256 | -.001587 | .0005618 | .0020992 | .0018471 | .0092304 | .0326122 |
| #2 | -.002263 | -.002050 | .0000178 | .0000882 | -.000335 | .0161786 | .0314982 |
| #3 | -.003875 | -.002070 | -.000358 | .0066326 | -.000953 | .0167806 | .0324012 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000065 | -.000043 | .1139188 | .0007778 | -.000217 | .0005070 | .0171204 |
| Stddev | .000053 | .000032 | .0064462 | .0001034 | .000098 | .0004483 | .0019522 |
| %RSD | 81.29374 | 74.98055 | 5.658581 | 13.29218 | 45.15992 | 88.42509 | 11.40269 |
| #1 | -.000103 | -.000010 | .1180019 | .0008879 | -.000263 | .0003030 | .0165473 |
| #2 | -.000005 | -.000074 | .1064875 | .0007629 | -.000282 | .0010211 | .0192950 |
| #3 | -.000087 | -.000045 | .1172671 | .0006827 | -.000104 | .0001970 | .0155189 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0054041 | .0286834 | -.000009 | .0007131 | .4856322 | -.000152 | .0025053 |
| Stddev | .0007133 | .0024838 | .000201 | .0003063 | .0050832 | .001968 | .0001817 |
| %RSD | 13.19939 | 8.659379 | 2213.151 | 42.94753 | 1.046712 | 1296.076 | 7.253579 |
| #1 | .0055171 | .0276375 | -.000057 | .0010121 | .4887869 | -.001989 | .0025078 |
| #2 | .0046410 | .0315191 | -.000182 | .0007272 | .4797683 | -.000392 | .0026857 |
| #3 | .0060542 | .0268935 | .000212 | .0004000 | .4883413 | .001926 | .0023223 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0030349 | -.000092 | .0000345 | .0008890 | .0003489 | .0288813 | .0028396 |
| Stddev | .0183355 | .000103 | .0000145 | .0003527 | .0000875 | .0069111 | .0016658 |
| %RSD | 604.1619 | 111.9441 | 41.87678 | 39.67170 | 25.06578 | 23.92946 | 58.66358 |
| #1 | -.014875 | .000027 | .0000433 | .0012789 | .0002659 | .0285769 | .0012682 |
| #2 | .002212 | -.000146 | .0000178 | .0007961 | .0003406 | .0359397 | .0026646 |
| #3 | .021768 | -.000156 | .0000425 | .0005921 | .0004402 | .0221274 | .0045861 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-05 Acquired: 2/17/2025 14:10:59 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .1666163 | -.002702 | .0011398 |
| Stddev | .0027802 | .000150 | .0000730 |
| %RSD | 1.668621 | 5.541796 | 6.405389 |
| | | | |
| #1 | .1668667 | -.002770 | .0010893 |
| #2 | .1692627 | -.002530 | .0011066 |
| #3 | .1637193 | -.002806 | .0012235 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3272.546 | 71171.94 | 13042.33 | 2271.061 | 4580.140 |
| Stddev | 6.811 | 95.48 | 47.31 | 1.830 | 13.040 |
| %RSD | .2081207 | .1341583 | .3627145 | .0805646 | .2847168 |
| | | | | | |
| #1 | 3276.979 | 71108.26 | 13031.82 | 2272.672 | 4588.635 |
| #2 | 3275.955 | 71125.83 | 13094.01 | 2271.440 | 4586.661 |
| #3 | 3264.704 | 71281.73 | 13001.16 | 2269.072 | 4565.126 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-06 Acquired: 2/17/2025 14:15:19 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002804 | -.004899 | .0004229 | .0031476 | -.000159 | -.000893 | .0315626 |
| Stddev | .001432 | .001315 | .0004557 | .0021424 | .000751 | .004544 | .0009677 |
| %RSD | 51.08329 | 26.85096 | 107.7728 | 68.06500 | 473.2958 | 508.6297 | 3.066128 |
| #1 | -.001386 | -.004963 | .0007837 | .0010813 | -.000058 | -.006127 | .0326690 |
| #2 | -.004251 | -.003553 | .0005743 | .0030028 | .000537 | .002055 | .0311451 |
| #3 | -.002774 | -.006181 | -.000089 | .0053588 | -.000956 | .001392 | .0308736 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000075 | -.000041 | 9.480940 | .0004113 | .0068930 | -.000025 | .6578624 |
| Stddev | .000036 | .000057 | .060146 | .0003725 | .0002202 | .000235 | .0028099 |
| %RSD | 48.11656 | 139.3752 | .6343896 | 90.55046 | 3.194352 | 928.7406 | .4271258 |
| #1 | -.000085 | .000005 | 9.527181 | .0001726 | .0069539 | -.000200 | .6562086 |
| #2 | -.000035 | -.000104 | 9.502696 | .0008405 | .0070763 | .000242 | .6562718 |
| #3 | -.000104 | -.000023 | 9.412943 | .0002209 | .0066487 | -.000118 | .6611068 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .9078892 | 1.782171 | .0256738 | .0008647 | 12.22524 | -.000293 | .0130739 |
| Stddev | .0022632 | .018960 | .0003246 | .0000745 | .08386 | .000750 | .0000962 |
| %RSD | .2492803 | 1.063846 | 1.264221 | 8.617142 | .6859377 | 255.6172 | .7360776 |
| #1 | .9074508 | 1.798352 | .0260483 | .0008345 | 12.14083 | -.001138 | .0129642 |
| #2 | .9103396 | 1.786851 | .0254994 | .0008100 | 12.30853 | .000293 | .0131438 |
| #3 | .9058774 | 1.761310 | .0254737 | .0009495 | 12.22635 | -.000034 | .0131138 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.298375 | .0878977 | .0031105 | .0001371 | .0009339 | .8823564 | -.002458 |
| Stddev | .016996 | .0011377 | .0001706 | .0006056 | .0003317 | .0022591 | .000957 |
| %RSD | 1.308987 | 1.294313 | 5.483664 | 441.6950 | 35.52124 | .2560340 | 38.92981 |
| #1 | 1.317580 | .0890264 | .0029135 | .0007853 | .0006090 | .8849062 | -.002037 |
| #2 | 1.292268 | .0879155 | .0032088 | .0000400 | .0009205 | .8815586 | -.001784 |
| #3 | 1.285277 | .0867513 | .0032091 | -.000414 | .0012721 | .8806045 | -.003553 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-06 Acquired: 2/17/2025 14:15:19 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 2.220448 | -.004239 | .0871917 |
| Stddev | .015690 | .000396 | .0005225 |
| %RSD | .7066337 | 9.353745 | .5992254 |
| #1 | 2.229378 | -.004595 | .0873993 |
| #2 | 2.229635 | -.003811 | .0875785 |
| #3 | 2.202331 | -.004310 | .0865974 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3157.461 | 68175.48 | 12872.25 | 2182.055 | 4385.416 |
| Stddev | 10.986 | 206.34 | 100.83 | 10.392 | 19.427 |
| %RSD | .3479441 | .3026542 | .7832856 | .4762428 | .4429848 |
| #1 | 3153.036 | 68216.24 | 12755.97 | 2188.243 | 4375.560 |
| #2 | 3149.378 | 68358.39 | 12925.34 | 2187.864 | 4372.893 |
| #3 | 3169.970 | 67951.80 | 12935.43 | 2170.057 | 4407.795 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-07 Acquired: 2/17/2025 14:19:36 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.001402 | -.003227 | .0001725 | .0030392 | .0003428 | .0040992 | .0306507 |
| Stddev | .002434 | .001198 | .0007789 | .0022595 | .0005507 | .0055103 | .0009324 |
| %RSD | 173.6021 | 37.13687 | 451.5325 | 74.34798 | 160.6481 | 134.4209 | 3.041876 |
| #1 | .001233 | -.003360 | -.000727 | .0053533 | .0002774 | .0101408 | .0317272 |
| #2 | -.003567 | -.001968 | .000621 | .0029257 | .0009233 | -.000650 | .0301170 |
| #3 | -.001872 | -.004353 | .000623 | .0008385 | -.000172 | .002807 | .0301078 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000119 | .0000239 | 10.14788 | .0005118 | .0003756 | .0005315 | .0063556 |
| Stddev | .000084 | .0000369 | .02852 | .0005627 | .0001557 | .0001298 | .0025523 |
| %RSD | 70.78791 | 154.0143 | .2810282 | 109.9394 | 41.47290 | 24.42282 | 40.15822 |
| #1 | -.000210 | .0000412 | 10.16568 | .0000369 | .0005551 | .0005292 | .0089551 |
| #2 | -.000044 | .0000490 | 10.16297 | .0003653 | .0002944 | .0004029 | .0062583 |
| #3 | -.000102 | -.000018 | 10.11498 | .0011332 | .0002772 | .0006625 | .0038533 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .3567003 | 1.971300 | .0083463 | .0007923 | 17.10822 | -.000453 | .0044819 |
| Stddev | .0039861 | .006195 | .0001533 | .0002149 | .08808 | .001063 | .0001457 |
| %RSD | 1.117503 | .3142708 | 1.836620 | 27.11815 | .5148339 | 234.7903 | 3.249945 |
| #1 | .3601202 | 1.973052 | .0084009 | .0009759 | 17.11671 | -.000660 | .0043520 |
| #2 | .3576582 | 1.964418 | .0084648 | .0005560 | 17.19175 | .000699 | .0046394 |
| #3 | .3523225 | 1.976431 | .0081732 | .0008452 | 17.01620 | -.001397 | .0044541 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.680194 | .0287682 | .0017626 | .0244544 | .0010234 | .7306197 | .0027904 |
| Stddev | .014915 | .0005166 | .0001148 | .0005685 | .0003598 | .0049155 | .0014668 |
| %RSD | .8876843 | 1.795815 | 6.513260 | 2.324678 | 35.15483 | .6727890 | 52.56376 |
| #1 | 1.662993 | .0290006 | .0016879 | .0240291 | .0010075 | .7250052 | .0012757 |
| #2 | 1.688069 | .0281762 | .0017052 | .0242340 | .0013909 | .7327059 | .0028917 |
| #3 | 1.689522 | .0291278 | .0018948 | .0251001 | .0006719 | .7341482 | .0042039 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-07 Acquired: 2/17/2025 14:19:36 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 2.656538 | -.004311 | .0954317 |
| Stddev | .004165 | .002075 | .0007972 |
| %RSD | .1567690 | 48.13458 | .8353204 |
| | | | |
| #1 | 2.659774 | -.002017 | .0961515 |
| #2 | 2.658000 | -.006057 | .0955687 |
| #3 | 2.651839 | -.004858 | .0945749 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3196.856 | 69118.34 | 13084.87 | 2217.183 | 4416.474 |
| Stddev | 8.137 | 208.59 | 55.33 | 10.099 | 15.975 |
| %RSD | .2545381 | .3017914 | .4228807 | .4555032 | .3617238 |
| | | | | | |
| #1 | 3191.434 | 69358.47 | 13022.79 | 2209.106 | 4404.863 |
| #2 | 3192.920 | 69014.51 | 13102.79 | 2228.507 | 4409.866 |
| #3 | 3206.213 | 68982.04 | 13129.02 | 2213.937 | 4434.693 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-08 Acquired: 2/17/2025 14:23:55 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002557 | -.003550 | .0000243 | .0013705 | .0002019 | .0092321 | .0222467 |
| Stddev | .001107 | .001557 | .0011067 | .0032238 | .0015744 | .0016331 | .0006146 |
| %RSD | 43.27685 | 43.86549 | 4545.024 | 235.2388 | 779.8476 | 17.68959 | 2.762814 |
| #1 | -.003358 | -.005290 | -.000905 | .0028520 | -.001046 | .0106768 | .0227777 |
| #2 | -.001294 | -.003076 | .001249 | -.002328 | -.000319 | .0074601 | .0215734 |
| #3 | -.003018 | -.002286 | -.000270 | .003587 | .001971 | .0095593 | .0223890 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000050 | -.000092 | .0899805 | .0007655 | -.000377 | .0000611 | .0081521 |
| Stddev | .000022 | .000044 | .0103797 | .0003776 | .000024 | .0002628 | .0008738 |
| %RSD | 43.45070 | 48.00502 | 11.53545 | 49.32506 | 6.413558 | 430.2949 | 10.71825 |
| #1 | -.000065 | -.000138 | .0992231 | .0005021 | -.000371 | .0003526 | .0071808 |
| #2 | -.000025 | -.000088 | .0787510 | .0005963 | -.000356 | -.000158 | .0084013 |
| #3 | -.000060 | -.000050 | .0919674 | .0011981 | -.000403 | -.000012 | .0088742 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0033373 | .0311884 | .0000433 | .0007256 | .4272280 | -.001199 | .0024571 |
| Stddev | .0002005 | .0133792 | .0002586 | .0002374 | .0029088 | .000868 | .0003270 |
| %RSD | 6.008190 | 42.89800 | 597.1417 | 32.72069 | .6808593 | 72.39269 | 13.30710 |
| #1 | .0031121 | .0210964 | .0003232 | .0005829 | .4257040 | -.002186 | .0023456 |
| #2 | .0034033 | .0463644 | -.000007 | .0009996 | .4253979 | -.000551 | .0022004 |
| #3 | .0034965 | .0261045 | -.000187 | .0005942 | .4305822 | -.000861 | .0028252 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0137952 | -.002417 | .0002983 | .0001057 | .0009328 | .0175642 | .0012623 |
| Stddev | .0178363 | .000296 | .0001620 | .0003059 | .0004351 | .0049159 | .0017446 |
| %RSD | 129.2932 | 12.24280 | 54.29407 | 289.3890 | 46.64861 | 27.98835 | 138.2090 |
| #1 | .0011324 | -.002354 | .0003531 | .0000431 | .0013999 | .0188257 | -.000241 |
| #2 | .0341934 | -.002158 | .0004257 | -.000164 | .0005390 | .0217265 | .003175 |
| #3 | .0060599 | -.002739 | .0001160 | .000438 | .0008594 | .0121405 | .000853 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-08 Acquired: 2/17/2025 14:23:55 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .1247139 | -.003662 | .0007155 |
| Stddev | .0008687 | .000448 | .0000095 |
| %RSD | .6965911 | 12.22612 | 1.323279 |
| | | | |
| #1 | .1250976 | -.003777 | .0007075 |
| #2 | .1253247 | -.003168 | .0007130 |
| #3 | .1237194 | -.004041 | .0007259 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3215.592 | 70509.46 | 13045.07 | 2277.116 | 4450.513 |
| Stddev | 4.501 | 105.38 | 53.07 | 7.503 | 4.254 |
| %RSD | .1399589 | .1494487 | .4068516 | .3294923 | .0955814 |
| | | | | | |
| #1 | 3217.809 | 70395.55 | 13061.61 | 2271.633 | 4453.431 |
| #2 | 3218.554 | 70603.46 | 13087.90 | 2285.667 | 4452.477 |
| #3 | 3210.413 | 70529.38 | 12985.69 | 2274.050 | 4445.633 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-09 Acquired: 2/17/2025 14:28:15 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.003364 | -.003318 | .0002286 | .0010162 | -.000121 | .0037451 | .0175550 |
| Stddev | .001733 | .000911 | .0008039 | .0016366 | .001543 | .0026796 | .0008170 |
| %RSD | 51.52205 | 27.45945 | 351.7148 | 161.0463 | 1273.639 | 71.55008 | 4.653848 |
| #1 | -.005350 | -.003889 | -.000198 | .0000460 | .001557 | .0028719 | .0167587 |
| #2 | -.002158 | -.003797 | -.000272 | .0000969 | -.001480 | .0016110 | .0183912 |
| #3 | -.002584 | -.002267 | .001156 | .0029057 | -.000441 | .0067524 | .0175152 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000066 | -.000123 | .0813770 | .0006248 | -.000365 | -.000105 | .0058914 |
| Stddev | .000043 | .000039 | .0091082 | .0001564 | .000291 | .000217 | .0028710 |
| %RSD | 65.07582 | 31.38150 | 11.19260 | 25.03039 | 79.62430 | 206.2466 | 48.73279 |
| #1 | -.000080 | -.000128 | .0916431 | .0007955 | -.000324 | -.000354 | .0026804 |
| #2 | -.000101 | -.000083 | .0742654 | .0004883 | -.000097 | .000043 | .0067825 |
| #3 | -.000018 | -.000160 | .0782224 | .0005907 | -.000674 | -.000004 | .0082112 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0056947 | .0312776 | .0000200 | .0007566 | .2860263 | -.001552 | .0054173 |
| Stddev | .0001029 | .0081370 | .0002702 | .0002117 | .0109877 | .000638 | .0001996 |
| %RSD | 1.807678 | 26.01531 | 1353.558 | 27.98576 | 3.841491 | 41.11182 | 3.684520 |
| #1 | .0058134 | .0346607 | -.000168 | .0005983 | .2811800 | -.001088 | .0053156 |
| #2 | .0056302 | .0371772 | -.000101 | .0006743 | .2782950 | -.001288 | .0052891 |
| #3 | .0056405 | .0219948 | .000330 | .0009970 | .2986040 | -.002280 | .0056473 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0115355 | -.003498 | .0000375 | .0008433 | .0006012 | .0247704 | .0023156 |
| Stddev | .0232192 | .000313 | .0001993 | .0008726 | .0003665 | .0040004 | .0007785 |
| %RSD | 201.2845 | 8.951210 | 531.6679 | 103.4725 | 60.95583 | 16.14979 | 33.61986 |
| #1 | .0044762 | -.003521 | .0001159 | .0017001 | .0003604 | .0287971 | .0030153 |
| #2 | .0374651 | -.003174 | -.000189 | -.000044 | .0004203 | .0247173 | .0024546 |
| #3 | -.007335 | -.003798 | .000186 | .000874 | .0010230 | .0207969 | .0014770 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: Q1356-09 Acquired: 2/17/2025 14:28:15 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | .0958947 | -.003736 | .0006327 |
| Stddev | .0026263 | .000182 | .0000411 |
| %RSD | 2.738705 | 4.874006 | 6.498408 |
| | | | |
| #1 | .0938164 | -.003762 | .0006067 |
| #2 | .0988464 | -.003543 | .0006800 |
| #3 | .0950214 | -.003905 | .0006112 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3233.909 | 70436.96 | 12651.31 | 2278.759 | 4471.767 |
| Stddev | 7.248 | 201.45 | 41.04 | 11.261 | 8.523 |
| %RSD | .2241318 | .2860038 | .3244238 | .4941791 | .1905961 |
| | | | | | |
| #1 | 3232.410 | 70327.69 | 12675.18 | 2285.072 | 4468.615 |
| #2 | 3241.790 | 70669.44 | 12674.84 | 2285.448 | 4481.417 |
| #3 | 3227.528 | 70313.76 | 12603.92 | 2265.758 | 4465.269 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166715BL Acquired: 2/17/2025 14:32:35 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.001401 | -.000604 | .0025606 | .0050523 | .0019022 | .0119047 |
| Stddev | .001426 | .001618 | .0003530 | .0006627 | .0003520 | .0113929 |
| %RSD | 101.7981 | 267.6438 | 13.78774 | 13.11764 | 18.50680 | 95.70089 |
| #1 | -.002985 | .000237 | .0021965 | .0056650 | .0019598 | .0229520 |
| #2 | -.001001 | -.002469 | .0029015 | .0051430 | .0015249 | .0125670 |
| #3 | -.000218 | .000420 | .0025837 | .0043488 | .0022219 | .0001951 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002800 | .0003792 | .0003785 | .0142327 | .0012485 | .0001049 |
| Stddev | .000452 | .0000315 | .0000662 | .0056857 | .0003419 | .0001243 |
| %RSD | 16.15528 | 8.296527 | 17.49235 | 39.94790 | 27.38373 | 118.5735 |
| #1 | -.002951 | .0004154 | .0003689 | .0077820 | .0013751 | .0000835 |
| #2 | -.003158 | .0003584 | .0003176 | .0185156 | .0015090 | -.000007 |
| #3 | -.002292 | .0003638 | .0004489 | .0164005 | .0008614 | .000238 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0006521 | .0137433 | .0020551 | .0110119 | .0010676 | .0009367 |
| Stddev | .0001526 | .0050915 | .0001178 | .0068932 | .0001682 | .0001631 |
| %RSD | 23.40592 | 37.04730 | 5.729571 | 62.59736 | 15.75131 | 17.40908 |
| #1 | .0007131 | .0174367 | .0019420 | .0037191 | .0012386 | .0010952 |
| #2 | .0007649 | .0079352 | .0021770 | .0118967 | .0010617 | .0007694 |
| #3 | .0004784 | .0158581 | .0020463 | .0174201 | .0009025 | .0009457 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.028321 | -.000349 | .0021159 | .0082449 | -.006807 | .0012290 |
| Stddev | .009808 | .000059 | .0004055 | .0197334 | .000169 | .0002977 |
| %RSD | 34.63117 | 16.90399 | 19.16624 | 239.3406 | 2.481275 | 24.22050 |
| #1 | -.017105 | -.000417 | .0020114 | -.013442 | -.006992 | .0010464 |
| #2 | -.032566 | -.000315 | .0017728 | .025145 | -.006662 | .0010681 |
| #3 | -.035290 | -.000315 | .0025634 | .013032 | -.006767 | .0015725 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166715BL Acquired: 2/17/2025 14:32:35 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0016513 | .0010198 | -.003508 | F .0101529 | .0073966 | -.002998 |
| Stddev | .0005982 | .0005691 | .002861 | .0006300 | .0029993 | .000191 |
| %RSD | 36.22389 | 55.80541 | 81.55839 | 6.204888 | 40.54954 | 6.357249 |
| #1 | .0011378 | .0014059 | -.000221 | .0095770 | .0043441 | -.002780 |
| #2 | .0023082 | .0012874 | -.004868 | .0108257 | .0075061 | -.003133 |
| #3 | .0015080 | .0003662 | -.005437 | .0100560 | .0103397 | -.003081 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0003229 |
| Stddev | .0000290 |
| %RSD | 8.970759 |
| #1 | .0002995 |
| #2 | .0003139 |
| #3 | .0003553 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3202.796 | 69895.60 | 12596.41 | 2239.543 | 4435.767 |
| Stddev | 6.550 | 283.68 | 46.45 | 12.966 | 12.200 |
| %RSD | .2044948 | .4058648 | .3687829 | .5789719 | .2750273 |
| #1 | 3199.838 | 69595.21 | 12550.60 | 2233.074 | 4426.586 |
| #2 | 3210.303 | 70158.94 | 12643.48 | 2254.471 | 4449.610 |
| #3 | 3198.247 | 69932.64 | 12595.15 | 2231.085 | 4431.106 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166715BS Acquired: 2/17/2025 14:36:56 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .7961640 | 2.015830 | .9343960 | 1.887376 | .8095202 | 1.879925 |
| Stddev | .0024773 | .011213 | .0007324 | .002077 | .0034067 | .000831 |
| %RSD | .3111586 | .5562539 | .0783818 | .1100358 | .4208341 | .0441872 |
| #1 | .7943491 | 2.028352 | .9348621 | 1.889719 | .8109764 | 1.878984 |
| #2 | .7951567 | 2.012424 | .9335519 | 1.886648 | .8056274 | 1.880235 |
| #3 | .7989864 | 2.006715 | .9347741 | 1.885761 | .8119569 | 1.880556 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1734788 | .1771273 | .1846278 | .9575122 | .4011993 | .1881440 |
| Stddev | .0003270 | .0012949 | .0000168 | .0034436 | .0007626 | .0002362 |
| %RSD | .1884980 | .7310627 | .0090974 | .3596378 | .1900872 | .1255307 |
| #1 | .1733274 | .1785055 | .1846465 | .9614598 | .4019819 | .1879498 |
| #2 | .1732550 | .1769403 | .1846227 | .9559508 | .4004584 | .1880752 |
| #3 | .1738541 | .1759360 | .1846141 | .9551259 | .4011574 | .1884069 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2974866 | 2.787141 | .1885545 | 1.858167 | .4633828 | .0711475 |
| Stddev | .0003230 | .016200 | .0008284 | .016335 | .0006211 | .0000758 |
| %RSD | .1085858 | .5812488 | .4393175 | .8791190 | .1340244 | .1065522 |
| #1 | .2974117 | 2.778304 | .1894684 | 1.855808 | .4628561 | .0711940 |
| #2 | .2978405 | 2.777281 | .1883418 | 1.843138 | .4640676 | .0710600 |
| #3 | .2972076 | 2.805838 | .1878532 | 1.875553 | .4632246 | .0711885 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.554665 | .2768759 | .1927383 | 9.235401 | F .2310119 | .4141729 |
| Stddev | .008807 | .0017156 | .0006808 | .047818 | .0027030 | .0006080 |
| %RSD | .3447317 | .6196374 | .3532521 | .5177694 | 1.170049 | .1468102 |
| #1 | 2.552157 | .2788231 | .1928005 | 9.196064 | .2328516 | .4145228 |
| #2 | 2.564453 | .2755866 | .1920285 | 9.221512 | .2322754 | .4134708 |
| #3 | 2.547384 | .2762181 | .1933860 | 9.288626 | .2279086 | .4145251 |

Sample Name: PB166715BS Acquired: 2/17/2025 14:36:56 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6569453 | .1816112 | .7959916 | 5.282508 | F -.007494 | .1823520 |
| Stddev | .0022213 | .0004012 | .0071805 | .011654 | .001464 | .0005137 |
| %RSD | .3381324 | .2208919 | .9020794 | .2206137 | 19.52876 | .2817109 |
| #1 | .6592841 | .1811717 | .7901478 | 5.292976 | -.006515 | .1827810 |
| #2 | .6566880 | .1817044 | .7938198 | 5.284598 | -.009177 | .1817827 |
| #3 | .6548638 | .1819576 | .8040073 | 5.269951 | -.006791 | .1824924 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .1779960 |
| Stddev | .0002161 |
| %RSD | .1214003 |
| #1 | .1780652 |
| #2 | .1777537 |
| #3 | .1781689 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3155.730 | 70617.61 | 12914.39 | 2221.704 | 4361.738 |
| Stddev | 1.910 | 11.42 | 77.66 | 5.431 | 7.024 |
| %RSD | .0605186 | .0161693 | .6013355 | .2444348 | .1610442 |
| #1 | 3157.162 | 70607.83 | 12846.85 | 2225.640 | 4366.233 |
| #2 | 3153.561 | 70630.15 | 12897.07 | 2223.963 | 4353.643 |
| #3 | 3156.466 | 70614.83 | 12999.24 | 2215.508 | 4365.337 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166731BL Acquired: 2/17/2025 14:40:58 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.001689 | -.002304 | .0003726 | .0019492 | .0002383 | .0056454 | -.000597 |
| Stddev | .001364 | .001922 | .0003818 | .0017861 | .0016581 | .0044768 | .000174 |
| %RSD | 80.72428 | 83.41563 | 102.4623 | 91.63208 | 695.6270 | 79.29917 | 29.15688 |
| #1 | -.003263 | -.003505 | .0007306 | .0007465 | .0007463 | .0095035 | -.000735 |
| #2 | -.000925 | -.000087 | -.000029 | .0040015 | -.001614 | .0066960 | -.000654 |
| #3 | -.000879 | -.003319 | .000417 | .0010996 | .001583 | .0007368 | -.000401 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000495 | .0000009 | -.013723 | -.000178 | .0000064 | .0000403 | .0037517 |
| Stddev | .0000268 | .0000566 | .004059 | .000169 | .0002282 | .0003281 | .0027771 |
| %RSD | 54.15416 | 6367.865 | 29.57964 | 94.94788 | 3541.968 | 815.1056 | 74.02159 |
| #1 | .0000552 | .0000523 | -.017195 | .000015 | -.000151 | .0001475 | .0021670 |
| #2 | .0000731 | -.000060 | -.009260 | -.000297 | -.000098 | -.000328 | .0021298 |
| #3 | .0000203 | .000010 | -.014714 | -.000252 | .000268 | .000301 | .0069583 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000288 | .0050802 | -.000039 | .0010971 | .0033569 | -.000752 | .0009611 |
| Stddev | .000284 | .0008703 | .000271 | .0001064 | .0103642 | .000746 | .0003576 |
| %RSD | 98.48401 | 17.13164 | 690.4240 | 9.697964 | 308.7416 | 99.27106 | 37.20672 |
| #1 | -.000264 | .0044798 | -.000275 | .0010501 | -.008470 | -.000620 | .0006818 |
| #2 | -.000583 | .0046826 | -.000099 | .0010223 | .007688 | -.001555 | .0008373 |
| #3 | -.000017 | .0060784 | .000257 | .0012189 | .010853 | -.000080 | .0013641 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0263270 | -.006229 | .0000940 | -.000058 | .0008877 | .0039505 | -.003285 |
| Stddev | .0170556 | .000217 | .0000627 | .001070 | .0004530 | .0056109 | .001067 |
| %RSD | 64.78353 | 3.482089 | 66.74640 | 1841.062 | 51.02943 | 142.0285 | 32.47230 |
| #1 | .0082963 | -.006406 | .0001037 | .001023 | .0006964 | -.000966 | -.002938 |
| #2 | .0284822 | -.005987 | .0001514 | -.001116 | .0014050 | .010063 | -.002435 |
| #3 | .0422026 | -.006294 | .0000270 | -.000081 | .0005617 | .002754 | -.004482 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166731BL Acquired: 2/17/2025 14:40:58 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.005334 | -.000376 | -.000115 |
| Stddev | .001822 | .001448 | .000037 |
| %RSD | 34.15533 | 385.3575 | 32.50767 |
| | | | |
| #1 | -.006006 | -.002027 | -.000095 |
| #2 | -.006723 | .000229 | -.000092 |
| #3 | -.003271 | .000671 | -.000159 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3184.762 | 68426.65 | 13006.97 | 2191.338 | 4395.256 |
| Stddev | 6.328 | 187.56 | 39.53 | 2.192 | 5.075 |
| %RSD | .1986845 | .2741066 | .3039267 | .1000406 | .1154725 |
| | | | | | |
| #1 | 3188.341 | 68599.68 | 12967.43 | 2193.728 | 4400.773 |
| #2 | 3177.456 | 68452.92 | 13046.50 | 2189.420 | 4390.786 |
| #3 | 3188.489 | 68227.33 | 13006.98 | 2190.867 | 4394.210 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166731BS Acquired: 2/17/2025 14:49:38 Type: Unk
Method: NON EPA-6010-200.7(v2703) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .8083211 | 2.063803 | .9657610 | 1.989254 | .8035482 | 1.901718 |
| Stddev | .0059456 | .007977 | .0038405 | .009808 | .0023170 | .007196 |
| %RSD | .7355425 | .3864955 | .3976626 | .4930553 | .2883452 | .3783881 |
| #1 | .8093230 | 2.061812 | .9674742 | 1.985696 | .8031541 | 1.906220 |
| #2 | .8019383 | 2.057011 | .9613621 | 1.981721 | .8014536 | 1.893419 |
| #3 | .8137021 | 2.072586 | .9684467 | 2.000345 | .8060370 | 1.905514 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2174841 | .1915769 | .1928316 | .9477121 | .4037080 | .1930093 |
| Stddev | .0007011 | .0009960 | .0005514 | .0141371 | .0022430 | .0004394 |
| %RSD | .3223887 | .5198773 | .2859717 | 1.491708 | .5555938 | .2276831 |
| #1 | .2169309 | .1927162 | .1929220 | .9575996 | .4036016 | .1929511 |
| #2 | .2182726 | .1908716 | .1922406 | .9315195 | .4060023 | .1926018 |
| #3 | .2172487 | .1911430 | .1933323 | .9540171 | .4015201 | .1934749 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .3045468 | 2.836575 | .2203869 | 1.863623 | .4800211 | .0743973 |
| Stddev | .0010499 | .020810 | .0005039 | .018019 | .0013320 | .0002875 |
| %RSD | .3447295 | .7336352 | .2286230 | .9668801 | .2774965 | .3863977 |
| #1 | .3050307 | 2.831107 | .2200781 | 1.844693 | .4812523 | .0740704 |
| #2 | .3033422 | 2.859573 | .2201142 | 1.865609 | .4786071 | .0745108 |
| #3 | .3052674 | 2.819045 | .2209683 | 1.880567 | .4802038 | .0746106 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.644565 | .2801726 | .1999388 | 9.340963 | .2638275 | .4003223 |
| Stddev | .012934 | .0012153 | .0006130 | .053898 | .0005221 | .0009398 |
| %RSD | .4890731 | .4337732 | .3065809 | .5770077 | .1979123 | .2347511 |
| #1 | 2.629706 | .2793629 | .1995736 | 9.317538 | .2644290 | .4007524 |
| #2 | 2.650699 | .2795850 | .1995963 | 9.402610 | .2635626 | .3992445 |
| #3 | 2.653291 | .2815701 | .2006465 | 9.302742 | .2634908 | .4009701 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: PB166731BS Acquired: 2/17/2025 14:49:38 Type: Unk
Method: NON EPA-6010-200.7(v2703) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6644108 | .1800277 | .7926602 | 5.731640 | F -.013580 | .1894728 |
| Stddev | .0016098 | .0009390 | .0070313 | .007273 | .001909 | .0010941 |
| %RSD | .2422827 | .5215830 | .8870507 | .1268974 | 14.05951 | .5774569 |
| #1 | .6652837 | .1799294 | .7852525 | 5.735570 | -.011667 | .1900566 |
| #2 | .6625531 | .1810121 | .7992422 | 5.723247 | -.015486 | .1901512 |
| #3 | .6653955 | .1791418 | .7934859 | 5.736103 | -.013586 | .1882106 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .1803253 |
| Stddev | .0005066 |
| %RSD | .2809482 |
| #1 | .1800383 |
| #2 | .1809102 |
| #3 | .1800273 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3177.115 | 68731.30 | 12534.09 | 2250.512 | 4308.052 |
| Stddev | 7.590 | 448.70 | 92.37 | 6.112 | 8.134 |
| %RSD | .2388879 | .6528333 | .7369848 | .2715640 | .1888098 |
| #1 | 3172.318 | 68465.28 | 12438.37 | 2247.064 | 4299.344 |
| #2 | 3185.865 | 68479.27 | 12541.20 | 2246.903 | 4315.454 |
| #3 | 3173.161 | 69249.35 | 12622.70 | 2257.568 | 4309.357 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV04 Acquired: 2/17/2025 14:53:40 Type: Unk
Method: NON EPA-6010-200.7(v2703) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.851456 | 5.103446 | 4.737654 | 4.903364 | 4.995268 | 9.612273 |
| Stddev | .016785 | .052190 | .005542 | .021722 | .007013 | .058550 |
| %RSD | .3459801 | 1.022647 | .1169876 | .4430116 | .1403882 | .6091192 |
| #1 | 4.838217 | 5.044898 | 4.732722 | 4.890321 | 4.990898 | 9.652447 |
| #2 | 4.845817 | 5.120356 | 4.736586 | 4.891332 | 4.991550 | 9.639277 |
| #3 | 4.870335 | 5.145085 | 4.743652 | 4.928441 | 5.003357 | 9.545094 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.70144 | .2303166 | 2.364008 | 23.26435 | .9850798 | 2.361648 |
| Stddev | .09330 | .0023324 | .004377 | .14672 | .0026564 | .002770 |
| %RSD | .8718469 | 1.012701 | .1851440 | .6306569 | .2696642 | .1173009 |
| #1 | 10.64706 | .2311800 | 2.359771 | 23.29009 | .9820777 | 2.358486 |
| #2 | 10.80917 | .2320943 | 2.363741 | 23.39649 | .9871260 | 2.362808 |
| #3 | 10.64809 | .2276756 | 2.368512 | 23.10646 | .9860356 | 2.363649 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.206739 | 4.677170 | 2.638388 | 23.61315 | 2.334755 | 1.188823 |
| Stddev | .001358 | .025087 | .013072 | .19705 | .004830 | .000996 |
| %RSD | .1125554 | .5363661 | .4954590 | .8344959 | .2068551 | .0837513 |
| #1 | 1.207103 | 4.651540 | 2.645382 | 23.63740 | 2.329607 | 1.188946 |
| #2 | 1.205236 | 4.678295 | 2.646475 | 23.79696 | 2.335471 | 1.187772 |
| #3 | 1.207879 | 4.701675 | 2.623306 | 23.40510 | 2.339186 | 1.189752 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 23.10752 | 2.352594 | 2.395655 | 23.73845 | F 4.476974 | 4.987947 |
| Stddev | .07599 | .013071 | .003070 | .11104 | .046625 | .010473 |
| %RSD | .3288565 | .5555846 | .1281481 | .4677483 | 1.041440 | .2099602 |
| #1 | 23.11455 | 2.362038 | 2.396464 | 23.73166 | 4.496278 | 4.981025 |
| #2 | 23.02826 | 2.358068 | 2.398239 | 23.63097 | 4.510847 | 4.982820 |
| #3 | 23.17975 | 2.337677 | 2.392261 | 23.85273 | 4.423797 | 4.999995 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV04 Acquired: 2/17/2025 14:53:40 Type: Unk
Method: NON EPA-6010-200.7(v2703) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | 4.769438 | 4.608513 | 4.904365 | 4.782926 | 4.624651 | 4.619713 |
| Stddev | .013951 | .026755 | .056223 | .016034 | .013316 | .027273 |
| %RSD | .2925069 | .5805535 | 1.146387 | .3352296 | .2879379 | .5903678 |
| #1 | 4.754464 | 4.625488 | 4.860200 | 4.764440 | 4.610054 | 4.643858 |
| #2 | 4.771779 | 4.622380 | 4.885240 | 4.791287 | 4.636134 | 4.625151 |
| #3 | 4.782070 | 4.577671 | 4.967656 | 4.793051 | 4.627765 | 4.590131 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | 4.604121 |
| Stddev | .073540 |
| %RSD | 1.597275 |
| #1 | 4.638416 |
| #2 | 4.654249 |
| #3 | 4.519697 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3134.929 | 67727.88 | 12432.45 | 2147.178 | 4131.996 |
| Stddev | 2.443 | 286.48 | 111.90 | 9.931 | 1.741 |
| %RSD | .0779341 | .4229856 | .9000502 | .4624919 | .0421408 |
| #1 | 3132.474 | 68054.28 | 12414.99 | 2158.286 | 4134.001 |
| #2 | 3137.360 | 67611.20 | 12330.31 | 2144.086 | 4131.116 |
| #3 | 3134.952 | 67518.15 | 12552.05 | 2139.160 | 4130.869 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB04 Acquired: 2/17/2025 14:58:22 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002236 | .0000547 | .0008649 | .0023020 | .0001846 | .0002210 | .0012883 |
| Stddev | .002213 | .0009633 | .0009161 | .0015174 | .0020245 | .0029235 | .0002004 |
| %RSD | 98.95229 | 1761.876 | 105.9242 | 65.91612 | 1096.635 | 1322.798 | 15.55469 |
| #1 | .000084 | -.000422 | .0011041 | .0039296 | .0012031 | .0006263 | .0015170 |
| #2 | -.002468 | -.000578 | -.000147 | .0020501 | .0014977 | .0029207 | .0011431 |
| #3 | -.004323 | .001163 | .001638 | .0009263 | -.002147 | -.002884 | .0012050 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000922 | -.000085 | -.011720 | .0001471 | -.000097 | .0003514 | .0003603 |
| Stddev | .0000069 | .000059 | .005214 | .0002881 | .000151 | .0005797 | .0013080 |
| %RSD | 7.497574 | 69.59700 | 44.48588 | 195.8021 | 154.7666 | 164.9660 | 363.0305 |
| #1 | .0000972 | -.000112 | -.016022 | -.000114 | -.000271 | .0001501 | .0018652 |
| #2 | .0000843 | -.000125 | -.005922 | .000456 | -.000000 | .0010050 | -.000281 |
| #3 | .0000951 | -.000017 | -.013216 | .000099 | -.000021 | -.000101 | -.000503 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000751 | .0087021 | .0000642 | .0009604 | .0210601 | -.000262 | -.000642 |
| Stddev | .0001109 | .0088575 | .0000429 | .0003963 | .0163551 | .001205 | .000099 |
| %RSD | 147.7222 | 101.7855 | 66.81533 | 41.26025 | 77.65928 | 460.3913 | 15.47585 |
| #1 | .0000394 | -.000848 | .0001014 | .0014164 | .0196998 | -.000035 | -.000564 |
| #2 | .0001995 | .010306 | .0000738 | .0007649 | .0054276 | -.001563 | -.000609 |
| #3 | -.000014 | .016648 | .0000173 | .0006999 | .0380528 | .000814 | -.000754 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0448938 | .0036704 | .0001914 | .0003567 | .0009754 | .0138075 | -.003479 |
| Stddev | .0078764 | .0006345 | .0002605 | .0003102 | .0007282 | .0048981 | .000873 |
| %RSD | 17.54458 | 17.28743 | 136.1309 | 86.96863 | 74.65832 | 35.47406 | 25.08815 |
| #1 | .0359578 | .0043119 | .0001070 | .0006146 | .0005107 | .0093656 | -.004429 |
| #2 | .0478960 | .0030431 | .0004836 | .0000124 | .0006008 | .0129964 | -.003296 |
| #3 | .0508277 | .0036560 | -.000016 | .0004431 | .0018147 | .0190604 | -.002712 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB04 Acquired: 2/17/2025 14:58:22 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.005392 | -.000948 | -.000020 |
| Stddev | .001714 | .000469 | .000027 |
| %RSD | 31.78045 | 49.46262 | 131.6054 |
| | | | |
| #1 | -.007332 | -.000486 | -.000011 |
| #2 | -.004087 | -.000935 | -.000051 |
| #3 | -.004756 | -.001423 | .000001 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3187.960 | 68037.78 | 12814.99 | 2187.272 | 4390.919 |
| Stddev | 8.199 | 198.78 | 36.06 | 6.901 | 9.827 |
| %RSD | .2571877 | .2921563 | .2814084 | .3155055 | .2237955 |
| | | | | | |
| #1 | 3187.786 | 68093.77 | 12808.99 | 2189.509 | 4391.642 |
| #2 | 3196.244 | 67817.01 | 12782.31 | 2179.530 | 4400.364 |
| #3 | 3179.849 | 68202.55 | 12853.68 | 2192.776 | 4380.751 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: LR1 Acquired: 2/17/2025 15:02:17 Type: Unk
Method: NON EPA-6010-200.7(v2704) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0527827 | -.025504 | .0368413 | -.208374 | -.007970 | 2004.186 | .0220535 |
| Stddev | .0023023 | .001378 | .0052219 | .012591 | .007724 | 11.858 | .0002974 |
| %RSD | 4.361939 | 5.403117 | 14.17404 | 6.042493 | 96.91787 | .5916693 | 1.348753 |
| #1 | .0512773 | -.025395 | .0344245 | -.208637 | .000533 | 1990.687 | .0220358 |
| #2 | .0516378 | -.026933 | .0428337 | -.220831 | -.009889 | 2008.947 | .0217653 |
| #3 | .0554331 | -.024183 | .0332656 | -.195654 | -.014553 | 2012.924 | .0223594 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0093451 | .0466669 | 1863.798 | .0054636 | .0243049 | -.699699 | 1093.119 |
| Stddev | .0001577 | .0002169 | 12.566 | .0007875 | .0004032 | .005641 | 7.916 |
| %RSD | 1.687372 | .4647003 | .6741884 | 14.41398 | 1.658899 | .8062109 | .7242072 |
| #1 | .0094267 | .0465050 | 1856.637 | .0052165 | .0247222 | -.696904 | 1091.593 |
| #2 | .0091633 | .0469133 | 1856.449 | .0063451 | .0242750 | -.696001 | 1086.076 |
| #3 | .0094452 | .0465823 | 1878.307 | .0048294 | .0239174 | -.706192 | 1101.687 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.111558 | 1656.234 | .0196294 | -.004495 | 1843.256 | .0152975 | .0276424 |
| Stddev | .000547 | 5.182 | .0012582 | .000903 | 21.730 | .0026429 | .0013328 |
| %RSD | .4901622 | .3128902 | 6.409539 | 20.09899 | 1.178912 | 17.27667 | 4.821678 |
| #1 | -.110933 | 1650.753 | .0208204 | -.003766 | 1818.443 | .0178429 | .0262809 |
| #2 | -.111949 | 1661.053 | .0183134 | -.005506 | 1858.895 | .0154828 | .0289445 |
| #3 | -.111793 | 1656.897 | .0197543 | -.004214 | 1852.428 | .0125669 | .0277020 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1237.708 | ^ ***** | .0096606 | -.000962 | -.035892 | .1621527 | .0560510 |
| Stddev | 2.063 | ----- | .0007758 | .002076 | .000469 | .0129921 | .0046676 |
| %RSD | .1666560 | ----- | 8.030645 | 215.7290 | 1.306708 | 8.012246 | 8.327316 |
| #1 | 1235.347 | ^ ----- | .0088306 | .001418 | -.035932 | .1578014 | .0514559 |
| #2 | 1239.161 | ^ ----- | .0097837 | -.002402 | -.036340 | .1518948 | .0559095 |
| #3 | 1238.615 | ^ ----- | .0103675 | -.001903 | -.035404 | .1767619 | .0607877 |

Sample Name: LR1 Acquired: 2/17/2025 15:02:17 Type: Unk
Method: NON EPA-6010-200.7(v2704) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.253219 | .1422213 | -1.08244 |
| Stddev | .016961 | .0014976 | .00789 |
| %RSD | 6.698059 | 1.052986 | .7292046 |
| | | | |
| #1 | -.272040 | .1439436 | -1.08098 |
| #2 | -.248496 | .1414939 | -1.07537 |
| #3 | -.239120 | .1412264 | -1.09096 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2189.817 | 47709.27 | 10866.65 | 1500.007 | 2554.293 |
| Stddev | 9.789 | 193.98 | 17.14 | 7.778 | 11.079 |
| %RSD | .4470068 | .4065896 | .1576922 | .5185041 | .4337385 |
| | | | | | |
| #1 | 2197.225 | 47882.41 | 10885.09 | 1507.563 | 2564.496 |
| #2 | 2193.507 | 47745.75 | 10863.65 | 1500.434 | 2555.876 |
| #3 | 2178.720 | 47499.63 | 10851.21 | 1492.026 | 2542.508 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: LR2 Acquired: 2/17/2025 15:07:15 Type: Unk
Method: NON EPA-6010-200.7(v2704) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0094552 | .0025699 | 260.2811 | .0060987 | .0008290 | .1620844 | 95.65749 |
| Stddev | .0004562 | .0018862 | .1113 | .0038471 | .0018784 | .0039847 | 1.04901 |
| %RSD | 4.824649 | 73.39308 | .0427722 | 63.08131 | 226.5854 | 2.458423 | 1.096635 |
| #1 | .0095104 | .0020863 | 260.1650 | .0017554 | .0008087 | .1665830 | 96.81092 |
| #2 | .0098812 | .0046508 | 260.3869 | .0090781 | -.001039 | .1589986 | 95.40116 |
| #3 | .0089739 | .0009727 | 260.2915 | .0074625 | .002717 | .1606716 | 94.76041 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.003250 | -.004306 | .1968481 | .0097461 | -.006398 | 244.1950 | .0177240 |
| Stddev | .000032 | .000096 | .0017848 | .0004149 | .000202 | 1.0256 | .0087543 |
| %RSD | .9966761 | 2.229731 | .9067071 | 4.257629 | 3.150950 | .4199920 | 49.39260 |
| #1 | -.003238 | -.004303 | .1977294 | .0092715 | -.006222 | 244.0222 | .0255283 |
| #2 | -.003286 | -.004403 | .1947941 | .0100405 | -.006618 | 245.2959 | .0082579 |
| #3 | -.003225 | -.004211 | .1980209 | .0099263 | -.006355 | 243.2667 | .0193858 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 48.82154 | -.063903 | 48.81515 | .0034322 | .1509522 | -.010516 | 32.10413 |
| Stddev | .45244 | .007414 | .03549 | .0001777 | .0129522 | .000947 | .14261 |
| %RSD | .9267224 | 11.60199 | .0727055 | 5.175945 | 8.580348 | 9.009569 | .4442014 |
| #1 | 48.73135 | -.072149 | 48.84848 | .0033944 | .1632413 | -.009515 | 31.96088 |
| #2 | 48.42099 | -.057787 | 48.77784 | .0036257 | .1374256 | -.011399 | 32.10543 |
| #3 | 49.31229 | -.061774 | 48.81914 | .0032765 | .1521896 | -.010633 | 32.24608 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2886917 | -.004612 | -.007194 | -.003066 | -.032914 | -.003104 | .2304847 |
| Stddev | .0330283 | .000362 | .000401 | .000174 | .000881 | .000624 | .0016203 |
| %RSD | 11.44070 | 7.857931 | 5.571367 | 5.664756 | 2.675858 | 20.11953 | .7029861 |
| #1 | .3265713 | -.004318 | -.007219 | -.002984 | -.033499 | -.002653 | .2287136 |
| #2 | .2735886 | -.005016 | -.007581 | -.002948 | -.033341 | -.003816 | .2308478 |
| #3 | .2659150 | -.004501 | -.006781 | -.003265 | -.031901 | -.002842 | .2318926 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: LR2 Acquired: 2/17/2025 15:07:15 Type: Unk
Method: NON EPA-6010-200.7(v2704) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.027763 | -.002529 | .0012598 |
| Stddev | .003938 | .001473 | .0000270 |
| %RSD | 14.18475 | 58.23654 | 2.140851 |
| | | | |
| #1 | -.023998 | -.004028 | .0012459 |
| #2 | -.027439 | -.002476 | .0012427 |
| #3 | -.031854 | -.001084 | .0012909 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2865.666 | 66918.24 | 12380.02 | 2081.308 | 4255.938 |
| Stddev | 7.107 | 262.44 | 64.55 | 14.224 | 9.976 |
| %RSD | .2479883 | .3921818 | .5213659 | .6833995 | .2344002 |
| | | | | | |
| #1 | 2858.641 | 67057.39 | 12454.55 | 2096.666 | 4249.256 |
| #2 | 2865.507 | 66615.53 | 12343.36 | 2068.588 | 4251.153 |
| #3 | 2872.851 | 67081.82 | 12342.15 | 2078.671 | 4267.405 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV05 Acquired: 2/17/2025 15:12:03 Type: Unk
Method: NON EPA-6010-200.7(v2705) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.873196 | 5.002113 | 4.733510 | 4.947725 | 4.994588 | 9.359863 |
| Stddev | .015239 | .011679 | .005655 | .015470 | .021023 | .002986 |
| %RSD | .3127003 | .2334785 | .1194760 | .3126618 | .4209167 | .0319047 |
| #1 | 4.864690 | 4.988854 | 4.727758 | 4.938248 | 4.990168 | 9.359638 |
| #2 | 4.864110 | 5.006608 | 4.733710 | 4.939350 | 4.976126 | 9.362955 |
| #3 | 4.890789 | 5.010876 | 4.739063 | 4.965576 | 5.017469 | 9.356996 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.77072 | .2452451 | 2.359783 | 22.54875 | .9796123 | 2.364218 |
| Stddev | .20409 | .0006826 | .002442 | .12076 | .0012628 | .003199 |
| %RSD | 1.894877 | .2783228 | .1034895 | .5355358 | .1289120 | .1352918 |
| #1 | 10.75290 | .2447414 | 2.357811 | 22.59390 | .9781543 | 2.362532 |
| #2 | 10.57612 | .2449720 | 2.359024 | 22.41192 | .9803217 | 2.362215 |
| #3 | 10.98313 | .2460220 | 2.362515 | 22.64042 | .9803609 | 2.367907 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.218359 | 4.865861 | 2.554642 | 22.65327 | 2.350152 | 1.202171 |
| Stddev | .004637 | .009849 | .011022 | .09237 | .004193 | .001901 |
| %RSD | .3806046 | .2024068 | .4314432 | .4077668 | .1784175 | .1581000 |
| #1 | 1.216335 | 4.855069 | 2.552261 | 22.69516 | 2.347524 | 1.200199 |
| #2 | 1.215078 | 4.868151 | 2.545005 | 22.54737 | 2.347944 | 1.203991 |
| #3 | 1.223664 | 4.874364 | 2.566660 | 22.71728 | 2.354987 | 1.202323 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 22.61045 | 2.284659 | 2.380547 | 26.61287 | 4.778260 | 4.956997 |
| Stddev | .07332 | .004916 | .008216 | .02747 | .003419 | .015003 |
| %RSD | .3242744 | .2151829 | .3451165 | .1032237 | .0715616 | .3026579 |
| #1 | 22.59621 | 2.290163 | 2.389152 | 26.63530 | 4.774433 | 4.948122 |
| #2 | 22.54529 | 2.280703 | 2.379703 | 26.58223 | 4.779335 | 4.948550 |
| #3 | 22.68984 | 2.283111 | 2.372785 | 26.62107 | 4.781013 | 4.974319 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCV05 Acquired: 2/17/2025 15:12:03 Type: Unk
Method: NON EPA-6010-200.7(v2705) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.765929 | F 4.464151 | 4.524668 | 4.834211 | 4.726704 | F 4.358129 |
| Stddev | .000803 | .018858 | .015208 | .006747 | .011045 | .016961 |
| %RSD | .0168534 | .4224418 | .3361203 | .1395733 | .2336756 | .3891715 |
| #1 | 4.765701 | 4.463280 | 4.511364 | 4.831557 | 4.720918 | 4.352096 |
| #2 | 4.765265 | 4.445743 | 4.521392 | 4.829194 | 4.719755 | 4.345010 |
| #3 | 4.766822 | 4.483430 | 4.541247 | 4.841881 | 4.739440 | 4.377282 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | F 4.426462 |
| Stddev | .042631 |
| %RSD | .9630864 |
| #1 | 4.412107 |
| #2 | 4.392862 |
| #3 | 4.474418 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3150.456 | 67742.80 | 11914.96 | 2195.494 | 4126.926 |
| Stddev | 10.924 | 117.74 | 51.79 | 5.304 | 8.754 |
| %RSD | .3467333 | .1737982 | .4346853 | .2416064 | .2121194 |
| #1 | 3155.605 | 67807.78 | 11946.62 | 2189.625 | 4131.846 |
| #2 | 3157.853 | 67813.73 | 11943.07 | 2196.912 | 4132.113 |
| #3 | 3137.909 | 67606.90 | 11855.19 | 2199.946 | 4116.819 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB05 Acquired: 2/17/2025 15:15:59 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002008 | -.001275 | .0002032 | .0015206 | .0001067 | -.001880 | -.000805 |
| Stddev | .000338 | .000614 | .0015265 | .0027348 | .0015958 | .005219 | .000276 |
| %RSD | 16.82873 | 48.12181 | 751.1072 | 179.8504 | 1495.510 | 277.5675 | 34.35905 |
| #1 | -.001671 | -.000764 | .0017290 | .0029022 | -.001689 | .001617 | -.000485 |
| #2 | -.002006 | -.001955 | -.001324 | -.001629 | .000646 | -.007880 | -.000965 |
| #3 | -.002347 | -.001105 | .000205 | .003289 | .001363 | .000622 | -.000963 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000229 | .0000005 | -.011150 | -.000215 | -.000134 | .0006275 | .0010067 |
| Stddev | .0000116 | .0000714 | .000969 | .000578 | .000208 | .0002158 | .0016274 |
| %RSD | 50.71463 | 13469.62 | 8.688714 | 268.8662 | 154.8610 | 34.38310 | 161.6557 |
| #1 | .0000219 | .0000780 | -.010223 | -.000864 | -.000303 | .0008378 | .0028789 |
| #2 | .0000118 | -.000062 | -.011072 | .000242 | .000098 | .0006381 | .0002110 |
| #3 | .0000350 | -.000014 | -.012156 | -.000022 | -.000199 | .0004067 | -.000070 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0001395 | -.002185 | -.000082 | .0003847 | .1085305 | -.000608 | -.000419 |
| Stddev | .0003524 | .004853 | .000148 | .0003282 | .0058090 | .000943 | .000106 |
| %RSD | 252.5591 | 222.1404 | 180.2624 | 85.31766 | 5.352453 | 154.9745 | 25.30802 |
| #1 | -.000258 | -.006461 | .000076 | .0000178 | .1066278 | .000167 | -.000540 |
| #2 | .000413 | -.003183 | -.000104 | .0004860 | .1039114 | -.001658 | -.000380 |
| #3 | .000264 | .003090 | -.000217 | .0006502 | .1150522 | -.000335 | -.000339 |

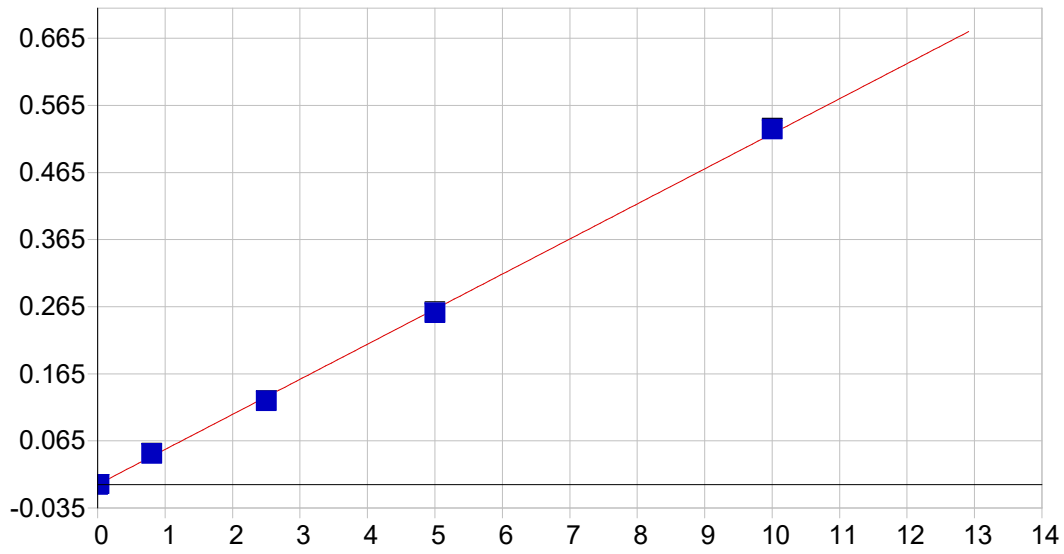
| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0939942 | .0014905 | .0001326 | .0004770 | .0005028 | .0121237 | -.002550 |
| Stddev | .0294581 | .0005331 | .0001999 | .0002714 | .0002151 | .0015958 | .000300 |
| %RSD | 31.34035 | 35.76923 | 150.7765 | 56.89411 | 42.78749 | 13.16295 | 11.74839 |
| #1 | .0697193 | .0018553 | .0003623 | .0005247 | .0007446 | .0133566 | -.002238 |
| #2 | .1267672 | .0017375 | .0000376 | .0007213 | .0004311 | .0103212 | -.002575 |
| #3 | .0854961 | .0008787 | -.000002 | .0001849 | .0003326 | .0126933 | -.002836 |

Reviewed By:Janvi
On:2/21/2025 4:44:46 PM
Inst Id :P4
LB :LB134738

Sample Name: CCB05 Acquired: 2/17/2025 15:15:59 Type: Unk
Method: NON EPA-6010-200.7(v2699) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.005036 | .0016371 | .0000411 |
| Stddev | .003757 | .0003930 | .0000285 |
| %RSD | 74.60133 | 24.00599 | 69.34788 |
| | | | |
| #1 | -.002640 | .0016477 | .0000145 |
| #2 | -.009366 | .0012389 | .0000711 |
| #3 | -.003102 | .0020247 | .0000375 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3283.414 | 70221.81 | 13274.77 | 2260.923 | 4563.152 |
| Stddev | 8.565 | 292.10 | 46.59 | 9.497 | 7.308 |
| %RSD | .2608475 | .4159708 | .3509741 | .4200322 | .1601437 |
| | | | | | |
| #1 | 3288.097 | 69887.08 | 13253.37 | 2251.217 | 4566.457 |
| #2 | 3288.616 | 70425.10 | 13328.21 | 2270.195 | 4568.224 |
| #3 | 3273.529 | 70353.24 | 13242.71 | 2261.358 | 4554.776 |

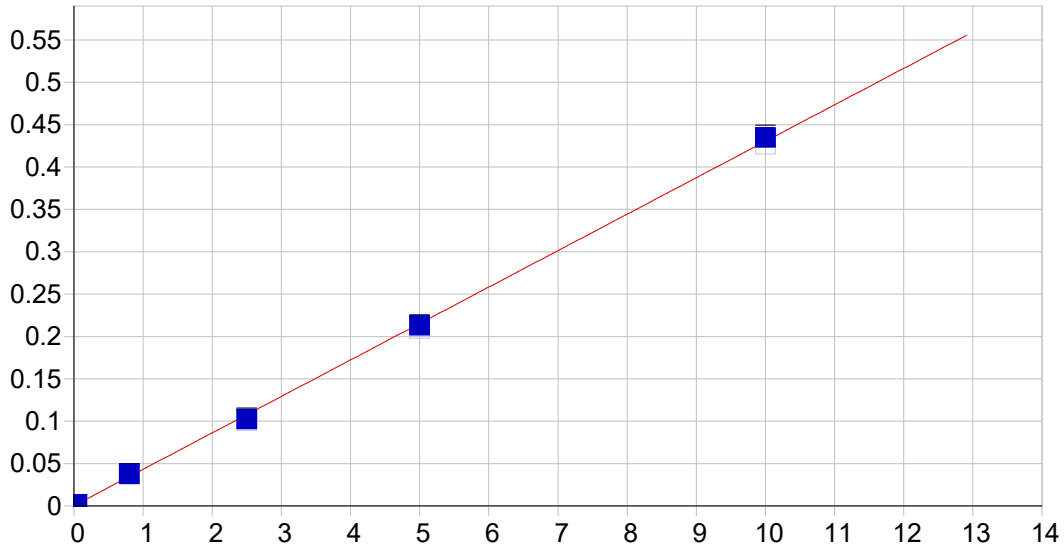



**As 189.042 {479}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000136 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.052292 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999515 | Status: | OK. |
| Std Error of Est: | 0.000038 | | |
| Predicted MDL: | 0.003001 | | |
| Predicted MQL: | 0.010004 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00014 | .000 | 1 |
| S1 | .02000 | .01952 | -.000 | -2.41 | .00088 | .000 | 1 |
| S3 | 2.5000 | 2.3855 | -.114 | -4.58 | .12447 | .000 | 1 |
| S4 | 5.0000 | 4.8984 | -.102 | -2.03 | .25573 | .001 | 1 |
| S5 | 10.000 | 10.133 | .133 | 1.33 | .52919 | .002 | 1 |
| S2 | .80000 | .88322 | .083 | 10.4 | .04600 | .000 | 1 |

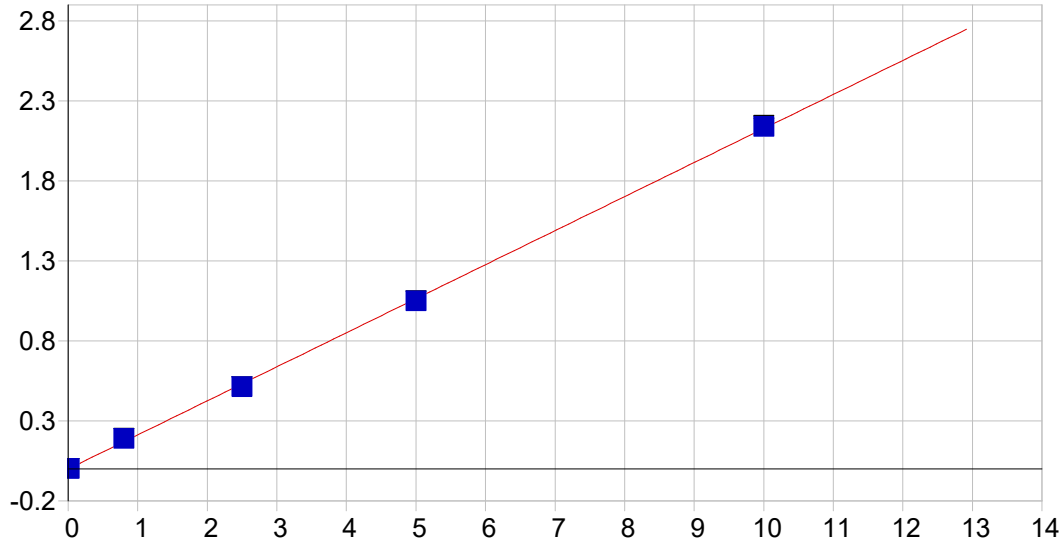



**Tl 190.856 {477}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000209 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.043016 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999571 | Status: | OK. |
| Std Error of Est: | 0.000041 | | |
| Predicted MDL: | 0.002583 | | |
| Predicted MQL: | 0.008611 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .00021 | .000 | 1 |
| S1 | .04000 | .03600 | -.004 | -10.0 | .00165 | .000 | 1 |
| S3 | 2.5000 | 2.3748 | -.125 | -5.01 | .10038 | .001 | 1 |
| S4 | 5.0000 | 4.9508 | -.049 | -.985 | .20921 | .001 | 1 |
| S5 | 10.000 | 10.104 | .104 | 1.04 | .42691 | .003 | 1 |
| S2 | .80000 | .87442 | .074 | 9.30 | .03719 | .000 | 1 |

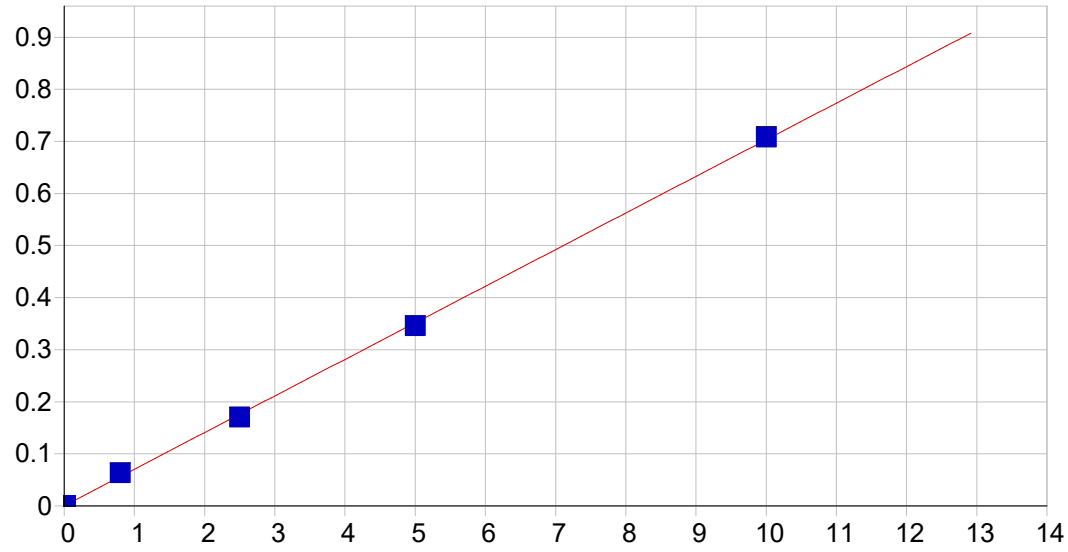



**Pb 220.353 {453}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000123 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.212755 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999577 | Status: | OK. |
| Std Error of Est: | 0.000112 | | |
| Predicted MDL: | 0.001304 | | |
| Predicted MQL: | 0.004346 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00012 | .000 | 1 |
| S1 | .01200 | .01210 | .000 | .829 | .00240 | .000 | 1 |
| S3 | 2.5000 | 2.4127 | -.087 | -3.49 | .51261 | .000 | 1 |
| S4 | 5.0000 | 4.9356 | -.064 | -1.29 | 1.0488 | .001 | 1 |
| S5 | 10.000 | 10.057 | .057 | .566 | 2.1371 | .009 | 1 |
| S2 | .80000 | .89494 | .095 | 11.9 | .19009 | .001 | 1 |

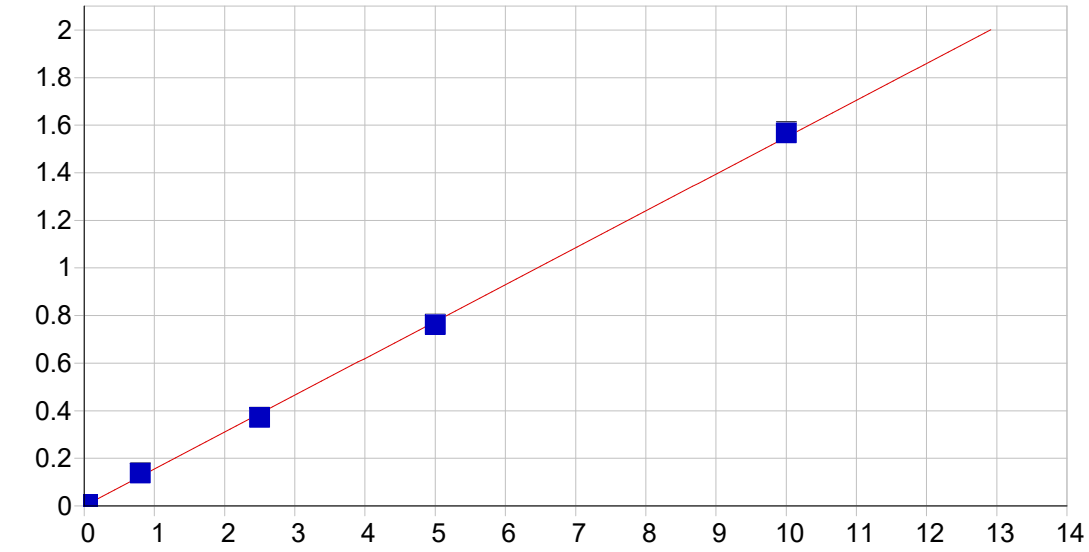



**Se 196.090 {472}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000273 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.070289 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999551 | Status: | OK. |
| Std Error of Est: | 0.000049 | | |
| Predicted MDL: | 0.002981 | | |
| Predicted MQL: | 0.009937 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00027 | .000 | 1 |
| S1 | .02000 | .01888 | -.001 | -5.60 | .00160 | .000 | 1 |
| S3 | 2.5000 | 2.4181 | -.082 | -3.28 | .17019 | .000 | 1 |
| S4 | 5.0000 | 4.9155 | -.085 | -1.69 | .34569 | .001 | 1 |
| S5 | 10.000 | 10.071 | .071 | .705 | .70795 | .001 | 1 |
| S2 | .80000 | .89708 | .097 | 12.1 | .06331 | .001 | 1 |

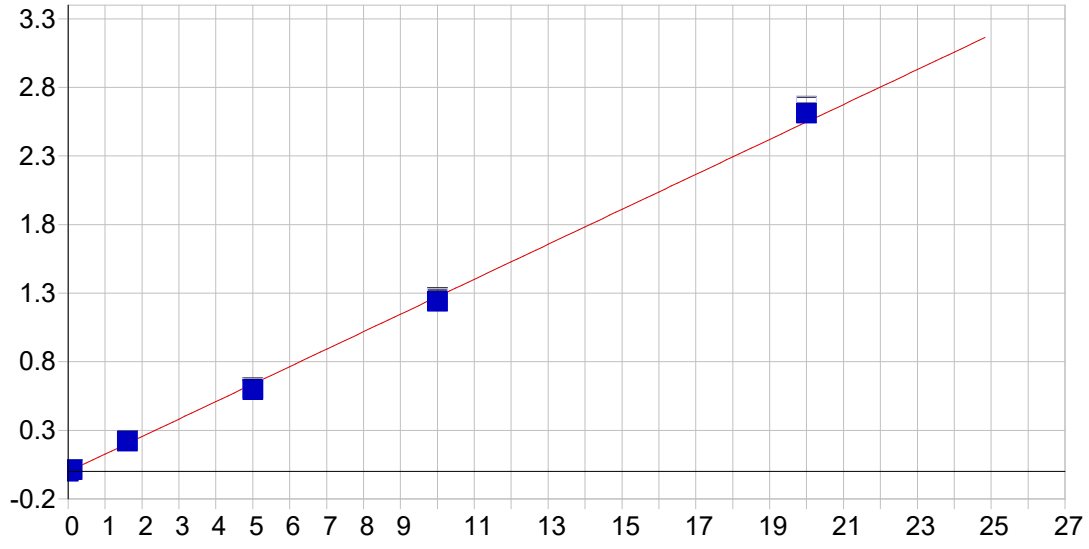



**Sb 206.833 {463}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000431 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.154893 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999543 | Status: | OK. |
| Std Error of Est: | 0.000174 | | |
| Predicted MDL: | 0.001659 | | |
| Predicted MQL: | 0.005531 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00043 | .000 | 1 |
| S1 | .05000 | .05106 | .001 | 2.13 | .00836 | .000 | 1 |
| S3 | 2.5000 | 2.3927 | -.107 | -4.29 | .37210 | .001 | 1 |
| S4 | 5.0000 | 4.9077 | -.092 | -1.85 | .76271 | .002 | 1 |
| S5 | 10.000 | 10.112 | .112 | 1.12 | 1.5710 | .003 | 1 |
| S2 | .80000 | .88609 | .086 | 10.8 | .13802 | .001 | 1 |

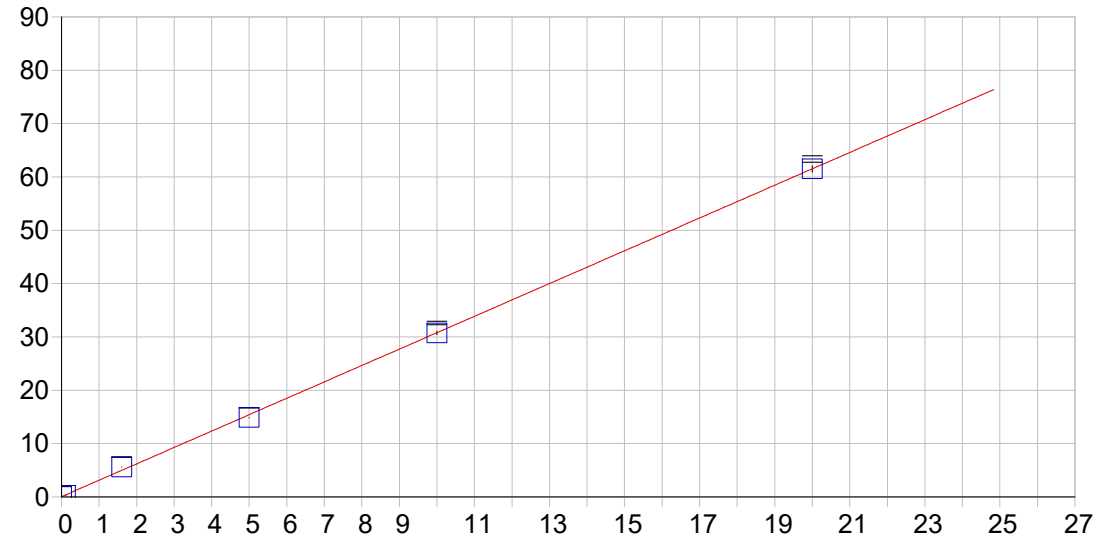



**Al 396.152 { 85}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000114 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.127406 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999327 | Status: | OK. |
| Std Error of Est: | 0.000353 | | |
| Predicted MDL: | 0.005813 | | |
| Predicted MQL: | 0.019377 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | -.00011 | .001 | 1 |
| S1 | .10000 | .09467 | -.005 | -5.33 | .01294 | .000 | 1 |
| S3 | 5.0000 | 4.6684 | -.332 | -6.63 | .60703 | .003 | 1 |
| S4 | 10.000 | 9.7246 | -.275 | -2.75 | 1.2636 | .005 | 1 |
| S5 | 20.000 | 20.489 | .489 | 2.45 | 2.6597 | .003 | 1 |
| S2 | 1.6000 | 1.7236 | .124 | 7.73 | .22344 | .000 | 1 |

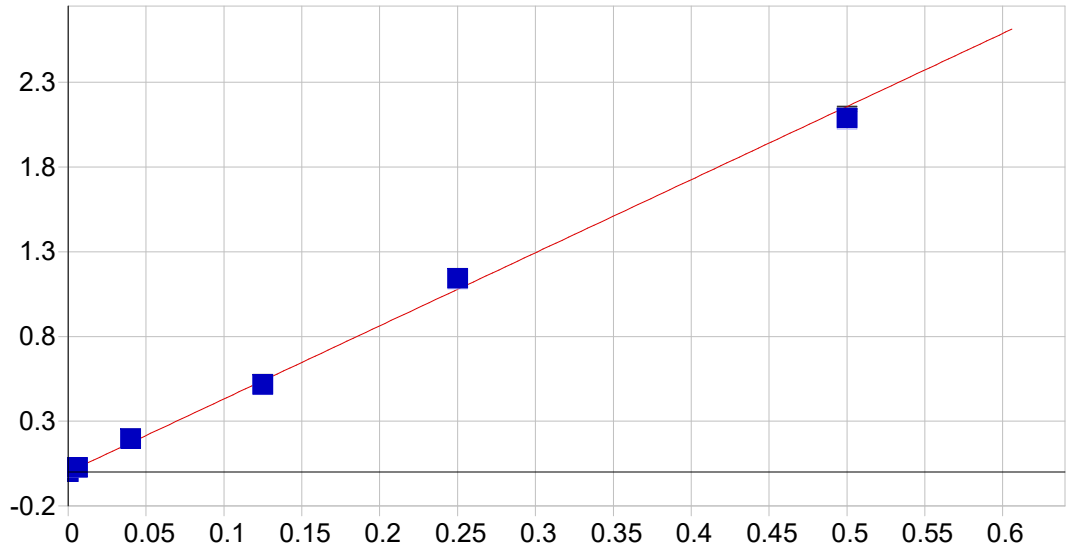



**Ba 493.409 { 68}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.054406 | Re-Slope: | 1.000000 |
| A1 (Gain): | 3.073092 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999562 | Status: | OK. |
| Std Error of Est: | 0.006750 | | |
| Predicted MDL: | 0.000651 | | |
| Predicted MQL: | 0.002170 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .05437 | .001 | 1 |
| S1 | .10000 | .10284 | .003 | 2.84 | .37045 | .002 | 1 |
| S3 | 5.0000 | 4.8179 | -.182 | -3.64 | 14.860 | .050 | 1 |
| S4 | 10.000 | 9.9837 | -.016 | -.163 | 30.735 | .315 | 1 |
| S5 | 20.000 | 19.994 | -.006 | -.032 | 61.497 | .578 | 1 |
| S2 | 1.6000 | 1.8018 | .202 | 12.6 | 5.5916 | .026 | 1 |

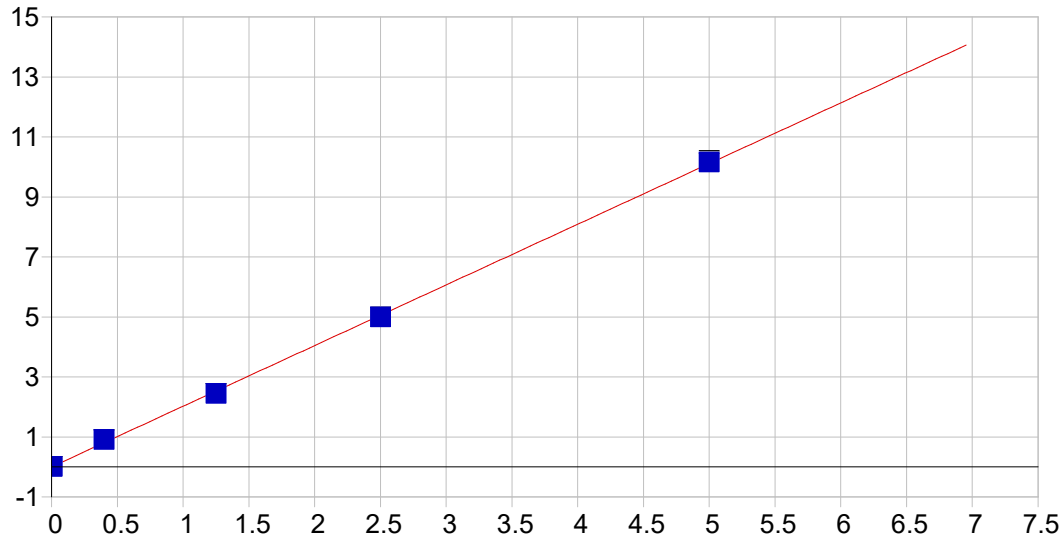



**Be 234.861 {144}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000227 | Re-Slope: | 1.000000 |
| A1 (Gain): | 4.314206 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.998695 | Status: | OK. |
| Std Error of Est: | 0.000632 | | |
| Predicted MDL: | 0.000062 | | |
| Predicted MQL: | 0.000206 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00023 | .000 | 1 |
| S1 | .00600 | .00640 | .000 | 6.70 | .02720 | .000 | 1 |
| S3 | .12500 | .11976 | -.005 | -4.19 | .51404 | .001 | 1 |
| S4 | .25000 | .26477 | .015 | 5.91 | 1.1372 | .001 | 1 |
| S5 | .50000 | .48447 | -.016 | -3.11 | 2.0802 | .010 | 1 |
| S2 | .04000 | .04560 | .006 | 14.0 | .19573 | .001 | 1 |

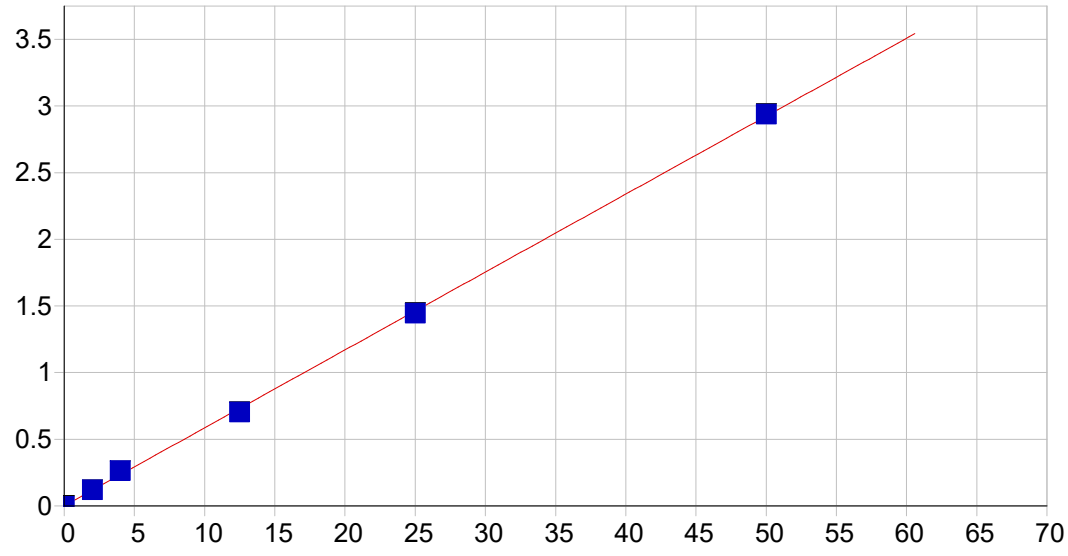



**Cd 226.502 {449}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000032 | Re-Slope: | 1.000000 |
| A1 (Gain): | 2.022261 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999580 | Status: | OK. |
| Std Error of Est: | 0.000533 | | |
| Predicted MDL: | 0.000104 | | |
| Predicted MQL: | 0.000347 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00003 | .000 | 1 |
| S1 | .00600 | .00600 | .000 | .072 | .01217 | .000 | 1 |
| S3 | 1.2500 | 1.2078 | -.042 | -3.38 | 2.4447 | .002 | 1 |
| S4 | 2.5000 | 2.4712 | -.029 | -1.15 | 5.0018 | .007 | 1 |
| S5 | 5.0000 | 5.0226 | .023 | .452 | 10.166 | .042 | 1 |
| S2 | .40000 | .44842 | .048 | 12.1 | .90749 | .004 | 1 |

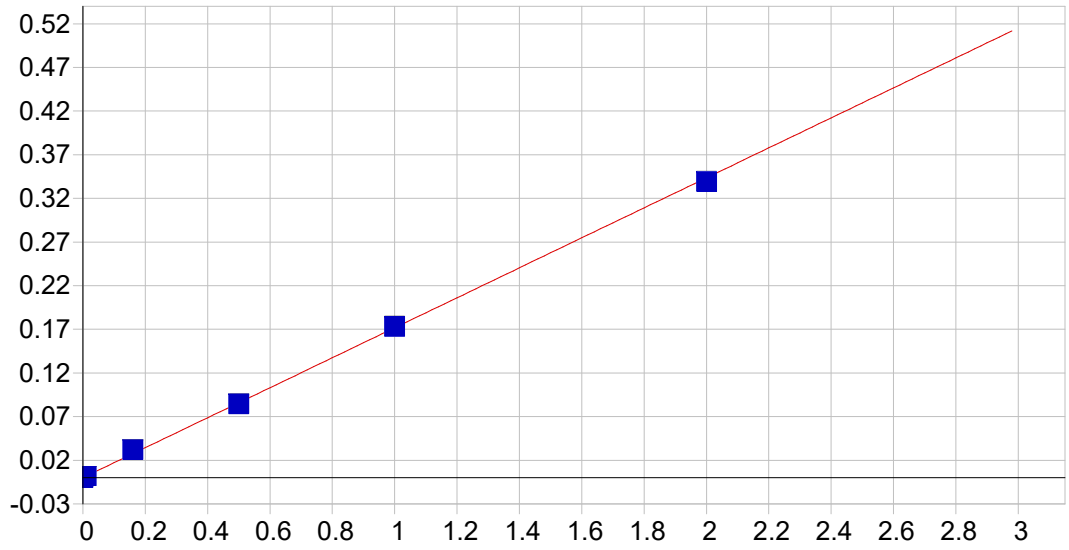



**Ca 373.690 { 90}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001166 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.058448 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999563 | Status: | OK. |
| Std Error of Est: | 0.000914 | | |
| Predicted MDL: | 0.009807 | | |
| Predicted MQL: | 0.032690 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00018 | -.000 | .000 | .00116 | .000 | 1 |
| S2 | 4.0000 | 4.4797 | .480 | 12.0 | .26300 | .001 | 1 |
| S3 | 12.500 | 12.009 | -.491 | -3.93 | .70307 | .003 | 1 |
| S4 | 25.000 | 24.721 | -.279 | -1.11 | 1.4461 | .004 | 1 |
| S5 | 50.000 | 50.262 | .262 | .524 | 2.9389 | .004 | 1 |
| S1 | 2.0000 | 2.0277 | .028 | 1.38 | .11968 | .001 | 1 |

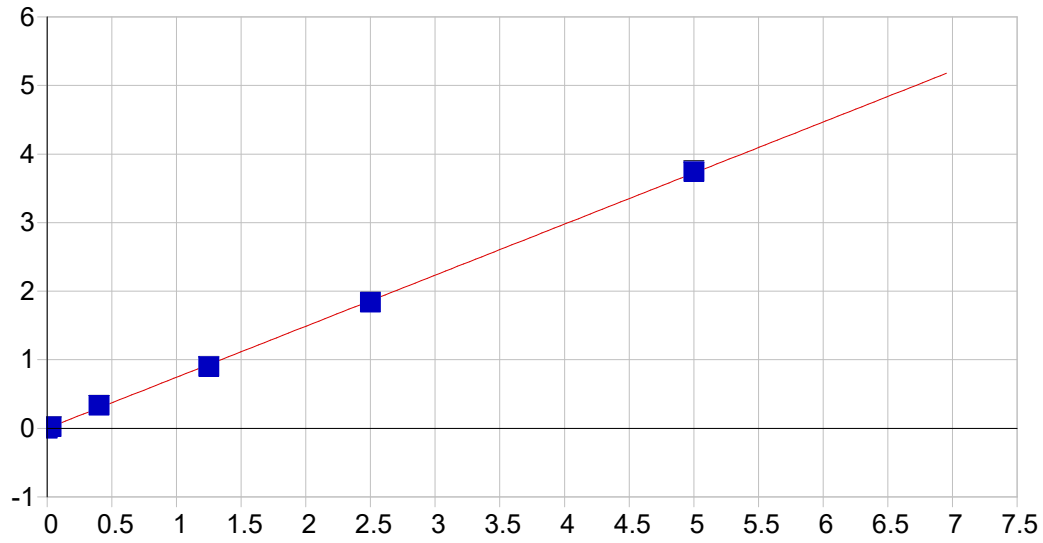



**Cr 267.716 {126}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000007 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.171744 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999391 | Status: | OK. |
| Std Error of Est: | 0.000044 | | |
| Predicted MDL: | 0.000506 | | |
| Predicted MQL: | 0.001685 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00001 | .000 | 1 |
| S1 | .01000 | .00998 | -.000 | -.216 | .00172 | .000 | 1 |
| S3 | .50000 | .49215 | -.008 | -1.57 | .08456 | .000 | 1 |
| S4 | 1.0000 | 1.0072 | .007 | .716 | .17303 | .000 | 1 |
| S5 | 2.0000 | 1.9754 | -.025 | -1.23 | .33937 | .000 | 1 |
| S2 | .16000 | .18530 | .025 | 15.8 | .03184 | .000 | 1 |

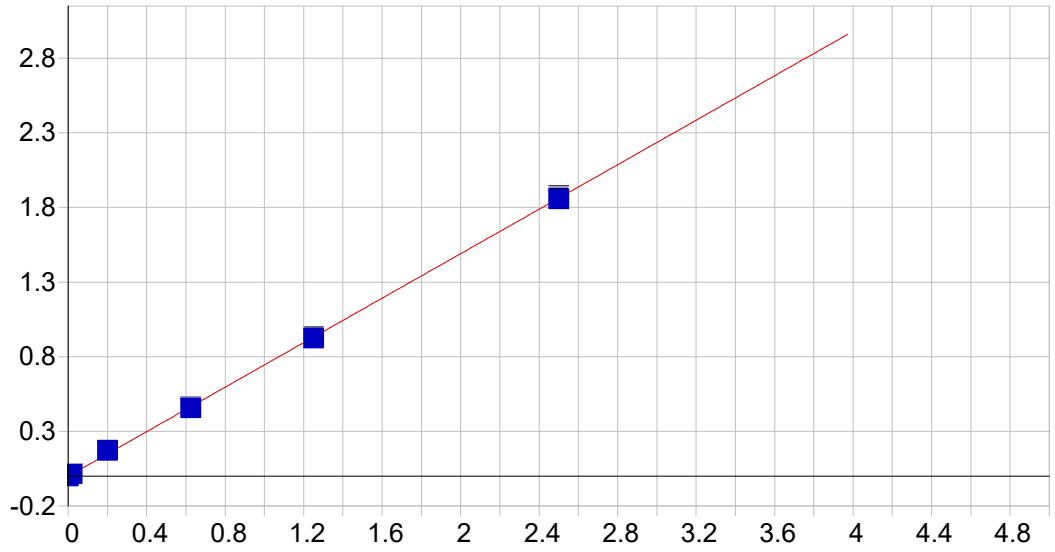



**Co 228.616 {448}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000114 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.744455 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999567 | Status: | OK. |
| Std Error of Est: | 0.000446 | | |
| Predicted MDL: | 0.000250 | | |
| Predicted MQL: | 0.000834 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00011 | .000 | 1 |
| S1 | .03000 | .02955 | -.000 | -1.51 | .02202 | .000 | 1 |
| S3 | 1.2500 | 1.2069 | -.043 | -3.45 | .90017 | .002 | 1 |
| S4 | 2.5000 | 2.4672 | -.033 | -1.31 | 1.8400 | .003 | 1 |
| S5 | 5.0000 | 5.0277 | .028 | .554 | 3.7493 | .012 | 1 |
| S2 | .40000 | .44861 | .049 | 12.2 | .33459 | .002 | 1 |

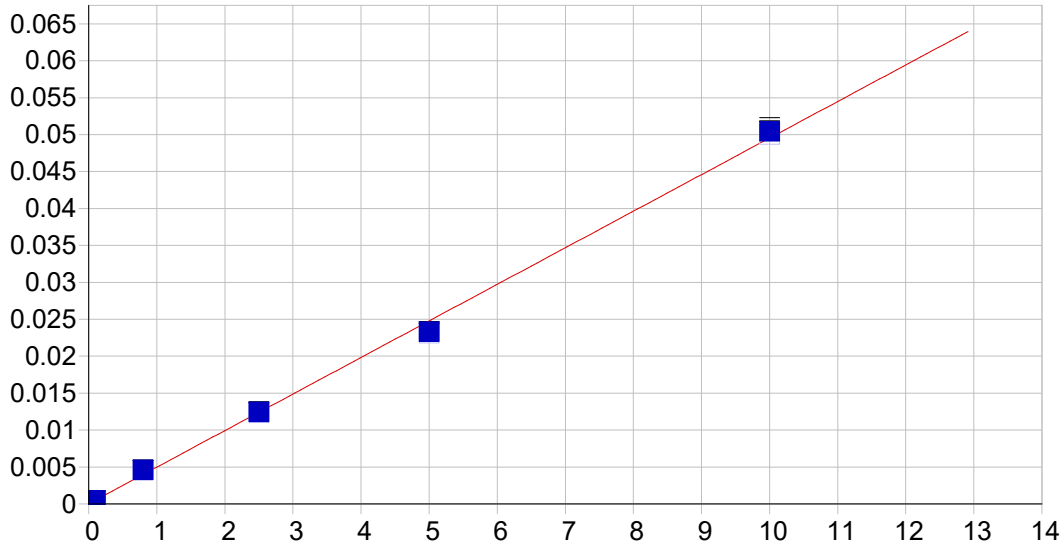



**Cu 224.700 {450}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000288 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.745365 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999492 | Status: | OK. |
| Std Error of Est: | 0.000282 | | |
| Predicted MDL: | 0.000455 | | |
| Predicted MQL: | 0.001517 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00029 | .000 | 1 |
| S1 | .02000 | .02109 | .001 | 5.47 | .01564 | .000 | 1 |
| S3 | .62500 | .61318 | -.012 | -1.89 | .46157 | .000 | 1 |
| S4 | 1.2500 | 1.2390 | -.011 | -.883 | .93281 | .002 | 1 |
| S5 | 2.5000 | 2.4922 | -.008 | -.312 | 1.8766 | .005 | 1 |
| S2 | .20000 | .22955 | .030 | 14.8 | .17235 | .001 | 1 |

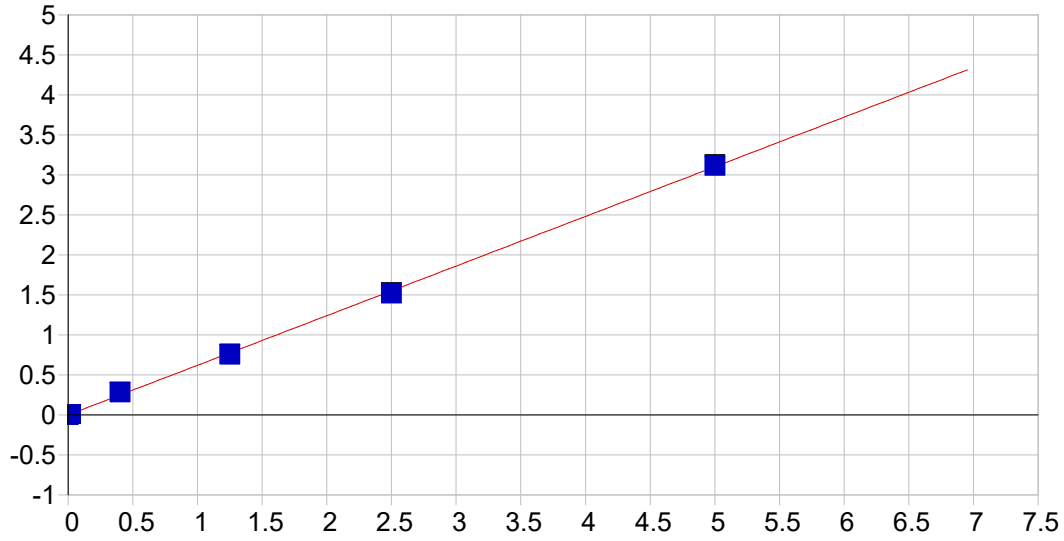



**Fe 240.488 {140}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000025 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.004950 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.998901 | Status: | OK. |
| Std Error of Est: | 0.000012 | | |
| Predicted MDL: | 0.005712 | | |
| Predicted MQL: | 0.019041 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00003 | .000 | 1 |
| S1 | .10000 | .09019 | -.010 | -9.81 | .00047 | .000 | 1 |
| S3 | 2.5000 | 2.5079 | .008 | .317 | .01233 | .000 | 1 |
| S4 | 5.0000 | 4.7009 | -.299 | -5.98 | .02309 | .000 | 1 |
| S5 | 10.000 | 10.182 | .182 | 1.82 | .05001 | .001 | 1 |
| S2 | .80000 | .91876 | .119 | 14.8 | .00454 | .000 | 1 |

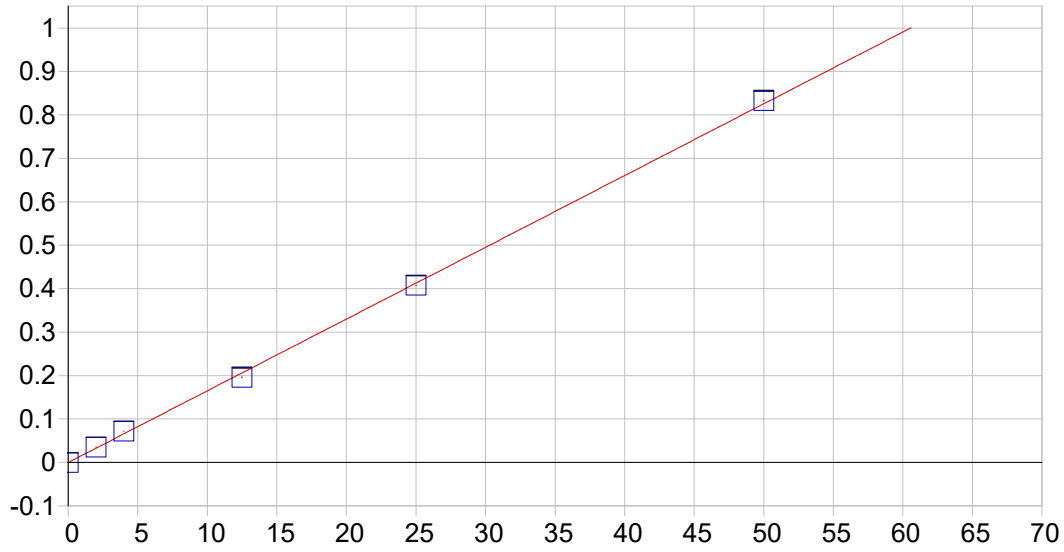



**Mn 257.610 {131}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000112 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.620383 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999497 | Status: | OK. |
| Std Error of Est: | 0.000326 | | |
| Predicted MDL: | 0.000362 | | |
| Predicted MQL: | 0.001206 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00011 | .000 | 1 |
| S1 | .02000 | .02092 | .001 | 4.58 | .01287 | .000 | 1 |
| S3 | 1.2500 | 1.2211 | -.029 | -2.31 | .75758 | .003 | 1 |
| S4 | 2.5000 | 2.4520 | -.048 | -1.92 | 1.5214 | .005 | 1 |
| S5 | 5.0000 | 5.0212 | .021 | .423 | 3.1155 | .011 | 1 |
| S2 | .40000 | .45483 | .055 | 13.7 | .28211 | .001 | 1 |

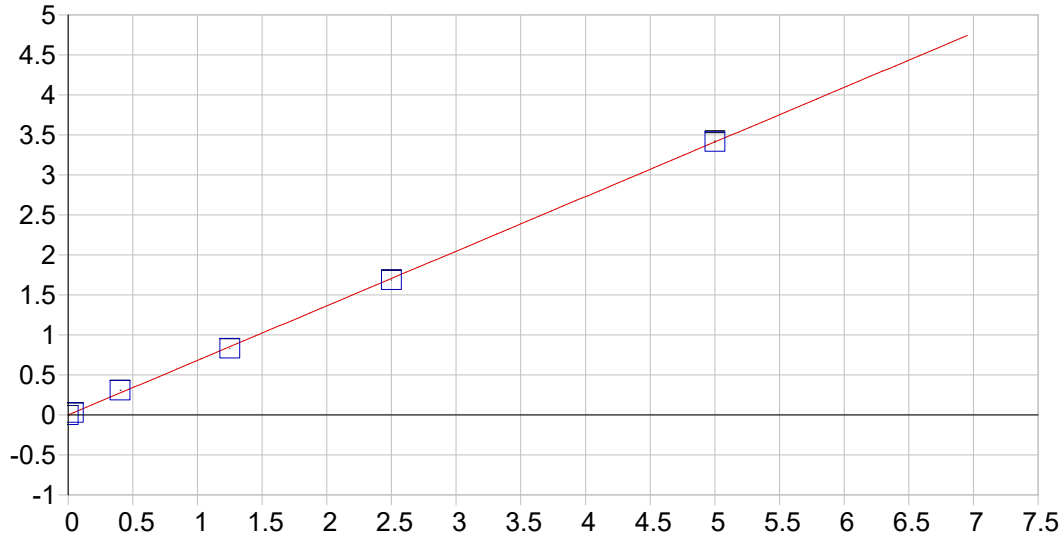



**Mg 279.079 {121}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000228 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.016517 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999549 | Status: | OK. |
| Std Error of Est: | 0.000263 | | |
| Predicted MDL: | 0.014749 | | |
| Predicted MQL: | 0.049162 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00021 | -.000 | .000 | -.00023 | .000 | 1 |
| S2 | 4.0000 | 4.3695 | .370 | 9.24 | .07194 | .000 | 1 |
| S3 | 12.500 | 11.860 | -.640 | -5.12 | .19566 | .001 | 1 |
| S4 | 25.000 | 24.690 | -.310 | -1.24 | .40757 | .001 | 1 |
| S5 | 50.000 | 50.442 | .442 | .883 | .83291 | .001 | 1 |
| S1 | 2.0000 | 2.1391 | .139 | 6.96 | .03510 | .000 | 1 |

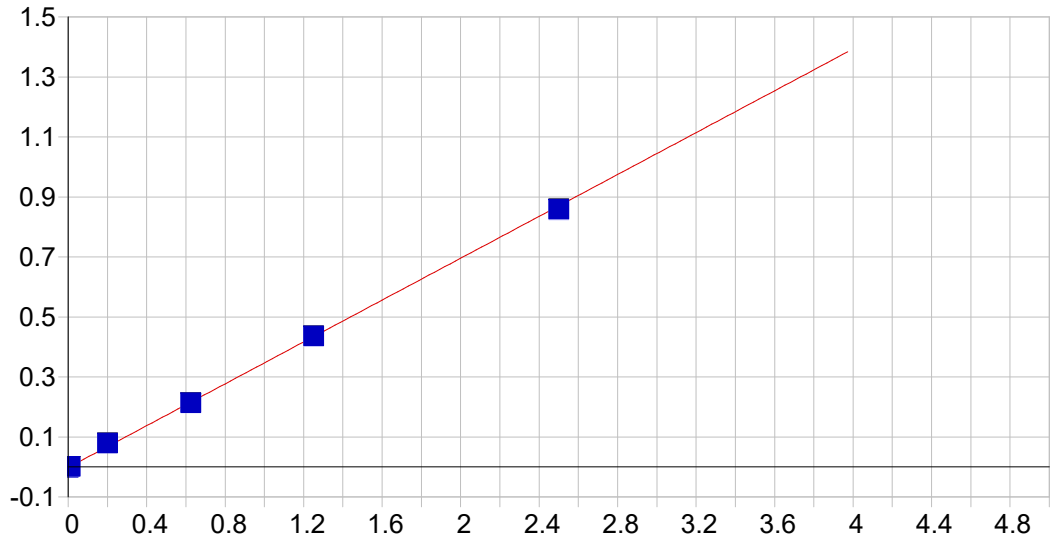



**Ni 231.604 {446}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000213 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.682269 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999563 | Status: | OK. |
| Std Error of Est: | 0.000473 | | |
| Predicted MDL: | 0.000331 | | |
| Predicted MQL: | 0.001103 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00022 | .000 | 1 |
| S1 | .04000 | .03990 | -.000 | -.258 | .02701 | .000 | 1 |
| S3 | 1.2500 | 1.2175 | -.033 | -2.60 | .83043 | .001 | 1 |
| S4 | 2.5000 | 2.4723 | -.028 | -1.11 | 1.6865 | .002 | 1 |
| S5 | 5.0000 | 5.0080 | .008 | .159 | 3.4166 | .011 | 1 |
| S2 | .40000 | .45240 | .052 | 13.1 | .30844 | .001 | 1 |

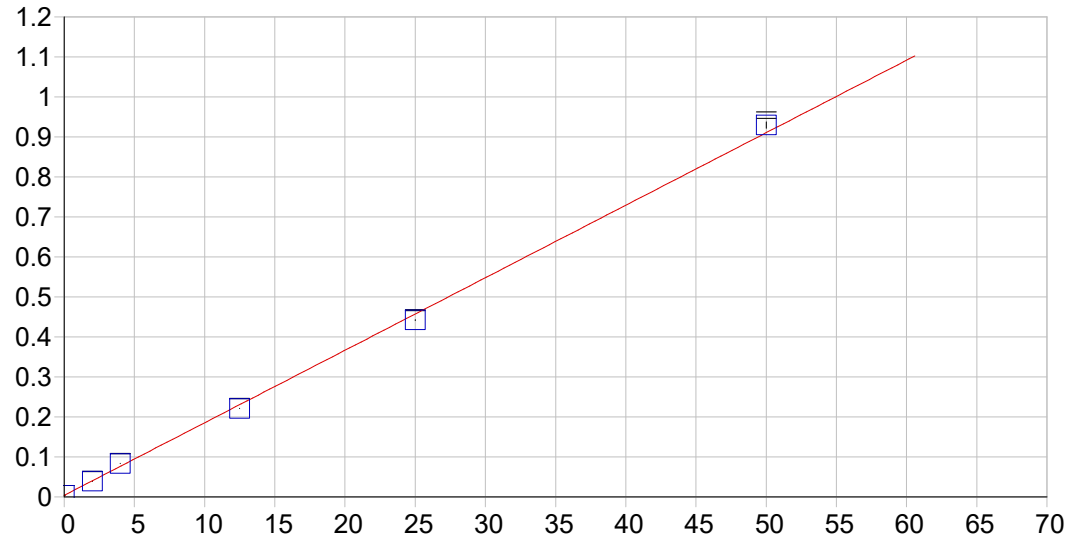



**Ag 328.068 {103}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.002089 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.348853 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999338 | Status: | OK. |
| Std Error of Est: | 0.000105 | | |
| Predicted MDL: | 0.000377 | | |
| Predicted MQL: | 0.001258 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00209 | .000 | 1 |
| S1 | .01000 | .01038 | .000 | 3.80 | .00151 | .000 | 1 |
| S3 | .62500 | .61679 | -.008 | -1.31 | .21222 | .000 | 1 |
| S4 | 1.2500 | 1.2560 | .006 | .477 | .43433 | .000 | 1 |
| S5 | 2.5000 | 2.4687 | -.031 | -1.25 | .85567 | .000 | 1 |
| S2 | .20000 | .23313 | .033 | 16.6 | .07896 | .000 | 1 |

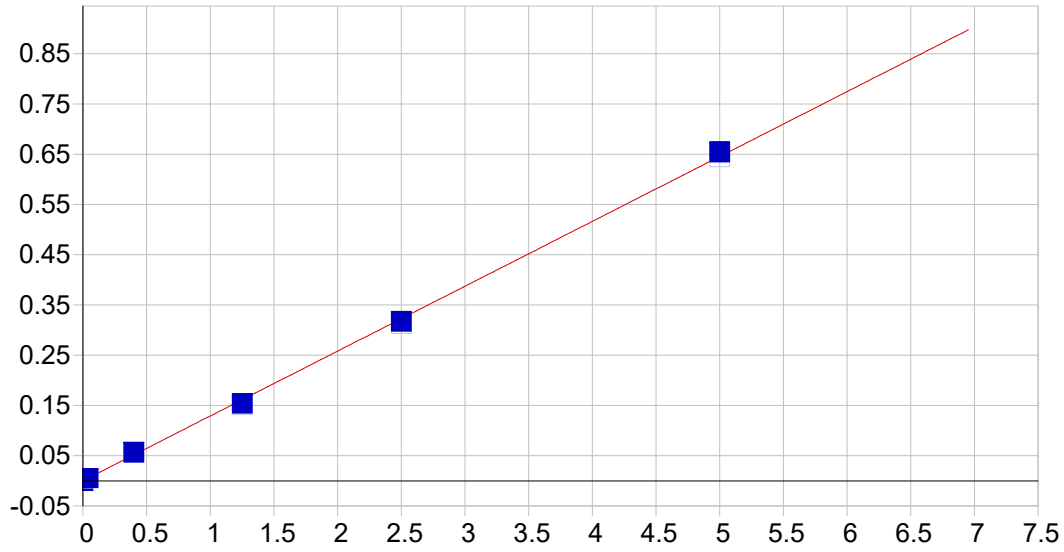



**Na 589.592 { 57}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.004109 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.018127 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999405 | Status: | OK. |
| Std Error of Est: | 0.000331 | | |
| Predicted MDL: | 0.013029 | | |
| Predicted MQL: | 0.043432 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00411 | .000 | 1 |
| S2 | 4.0000 | 4.3796 | .380 | 9.49 | .08350 | .000 | 1 |
| S3 | 12.500 | 11.971 | -.529 | -4.23 | .22110 | .001 | 1 |
| S4 | 25.000 | 24.170 | -.830 | -3.32 | .44223 | .001 | 1 |
| S5 | 50.000 | 51.056 | 1.06 | 2.11 | .92959 | .008 | 1 |
| S1 | 2.0000 | 1.9233 | -.077 | -3.83 | .03897 | .001 | 1 |

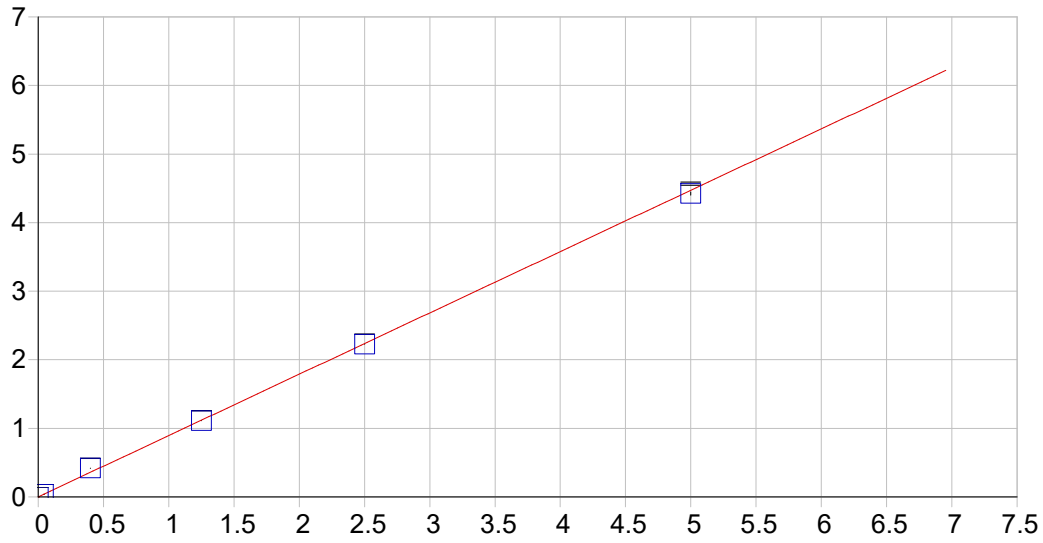



**V 292.402 {115}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000079 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.129128 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999544 | Status: | OK. |
| Std Error of Est: | 0.000090 | | |
| Predicted MDL: | 0.001951 | | |
| Predicted MQL: | 0.006503 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00008 | .000 | 1 |
| S1 | .04000 | .04041 | .000 | 1.02 | .00495 | .000 | 1 |
| S3 | 1.2500 | 1.1897 | -.060 | -4.82 | .15119 | .000 | 1 |
| S4 | 2.5000 | 2.4564 | -.044 | -1.75 | .31240 | .000 | 1 |
| S5 | 5.0000 | 5.0655 | .065 | 1.31 | .64460 | .001 | 1 |
| S2 | .40000 | .43805 | .038 | 9.51 | .05573 | .000 | 1 |

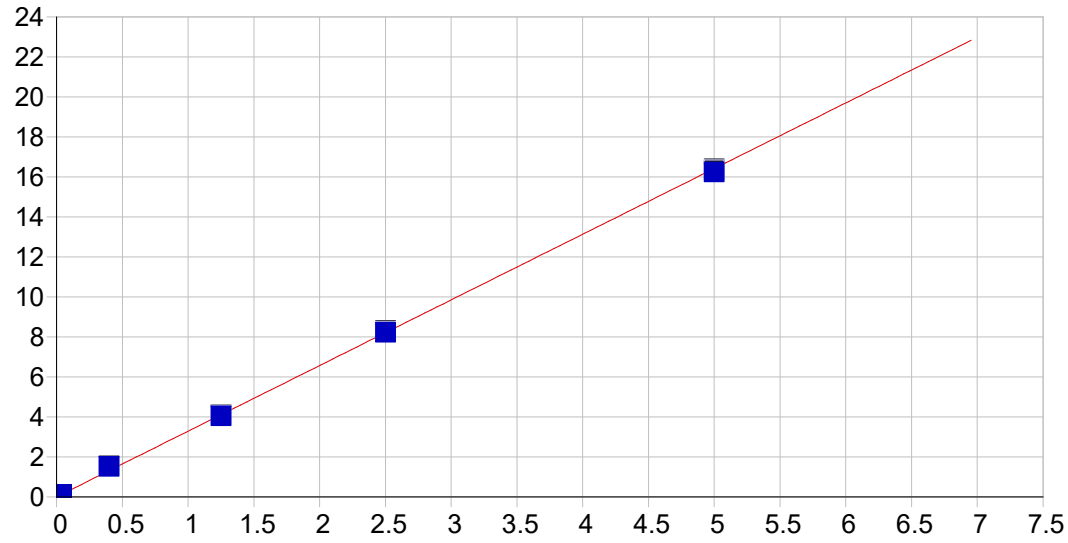



**Zn 206.200 {464}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000579 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.894307 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999334 | Status: | OK. |
| Std Error of Est: | 0.000766 | | |
| Predicted MDL: | 0.000232 | | |
| Predicted MQL: | 0.000773 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00057 | .000 | 1 |
| S1 | .04000 | .04185 | .002 | 4.63 | .03801 | .000 | 1 |
| S3 | 1.2500 | 1.2429 | -.007 | -.569 | 1.1121 | .001 | 1 |
| S4 | 2.5000 | 2.4906 | -.009 | -.377 | 2.2279 | .003 | 1 |
| S5 | 5.0000 | 4.9468 | -.053 | -1.06 | 4.4245 | .023 | 1 |
| S2 | .40000 | .46787 | .068 | 17.0 | .41900 | .001 | 1 |

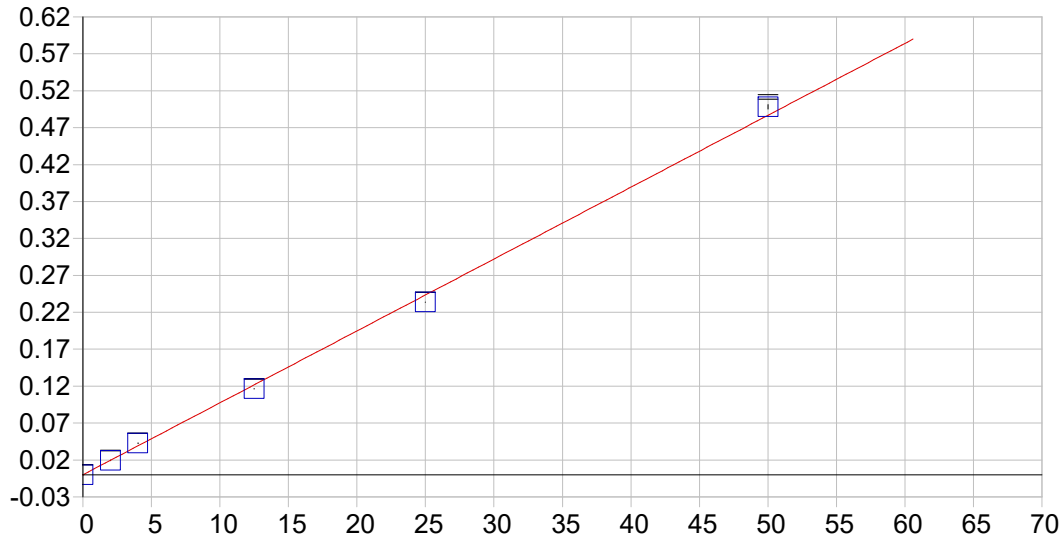



**Zn 213.856 {158}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.003030 | Re-Slope: | 1.000000 |
| A1 (Gain): | 3.282763 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999404 | Status: | OK. |
| Std Error of Est: | 0.002680 | | |
| Predicted MDL: | 0.000271 | | |
| Predicted MQL: | 0.000905 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00301 | .001 | 1 |
| S1 | .04000 | .04166 | .002 | 4.14 | .14070 | .001 | 1 |
| S3 | 1.2500 | 1.2343 | -.016 | -1.26 | 4.0833 | .015 | 1 |
| S4 | 2.5000 | 2.5046 | .005 | .182 | 8.2820 | .036 | 1 |
| S5 | 5.0000 | 4.9455 | -.054 | -1.09 | 16.352 | .050 | 1 |
| S2 | .40000 | .46403 | .064 | 16.0 | 1.5355 | .005 | 1 |

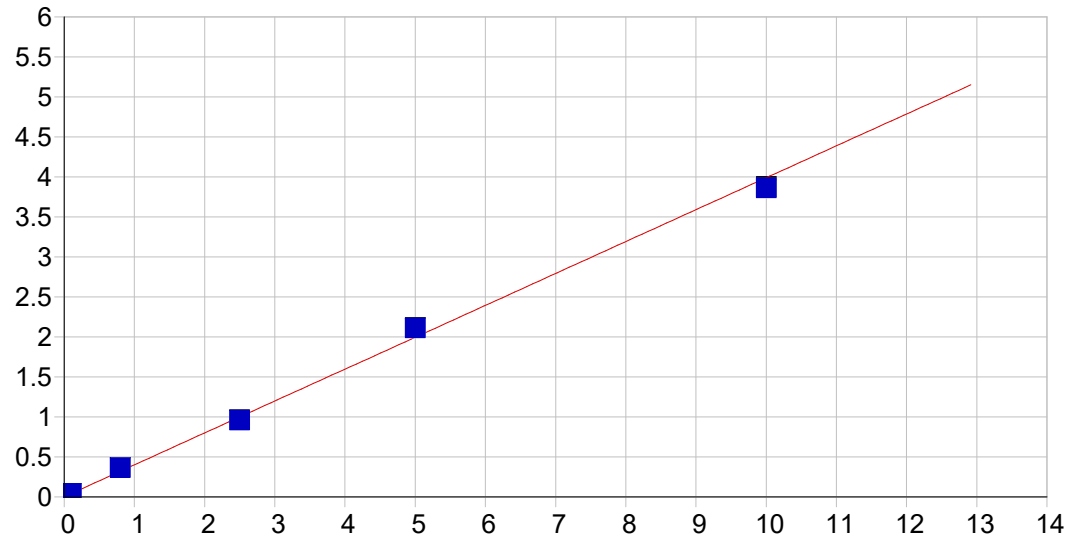



**K 766.490 { 44}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000055 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.009734 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999300 | Status: | OK. |
| Std Error of Est: | 0.000193 | | |
| Predicted MDL: | 0.029259 | | |
| Predicted MQL: | 0.097530 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00005 | -.000 | .000 | .00005 | .000 | 1 |
| S2 | 4.0000 | 4.3952 | .395 | 9.88 | .04284 | .000 | 1 |
| S3 | 12.500 | 11.948 | -.552 | -4.42 | .11636 | .001 | 1 |
| S4 | 25.000 | 24.009 | -.991 | -3.97 | .23376 | .000 | 1 |
| S5 | 50.000 | 51.179 | 1.18 | 2.36 | .49825 | .003 | 1 |
| S1 | 2.0000 | 1.9690 | -.031 | -1.55 | .01922 | .000 | 1 |

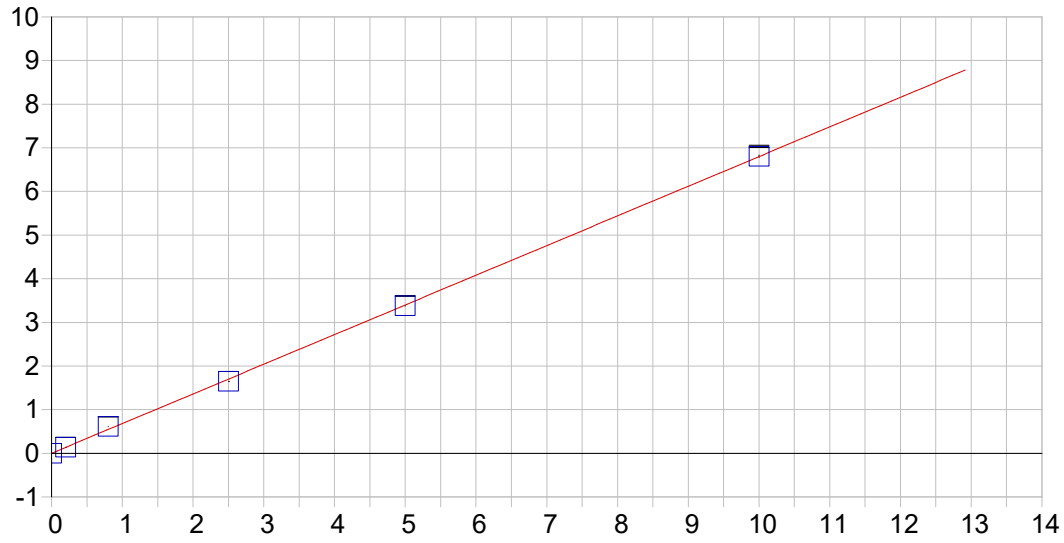



**B 249.678 {135}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.002150 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.398690 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.998697 | Status: | OK. |
| Std Error of Est: | 0.001068 | | |
| Predicted MDL: | 0.000836 | | |
| Predicted MQL: | 0.002787 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00002 | -.000 | .000 | .00214 | .000 | 1 |
| S1 | .10000 | .11065 | .011 | 10.6 | .04609 | .000 | 1 |
| S3 | 2.5000 | 2.4020 | -.098 | -3.92 | .95784 | .001 | 1 |
| S4 | 5.0000 | 5.2942 | .294 | 5.88 | 2.1090 | .003 | 1 |
| S5 | 10.000 | 9.6821 | -.318 | -3.18 | 3.8545 | .019 | 1 |
| S2 | .80000 | .91120 | .111 | 13.9 | .36481 | .001 | 1 |

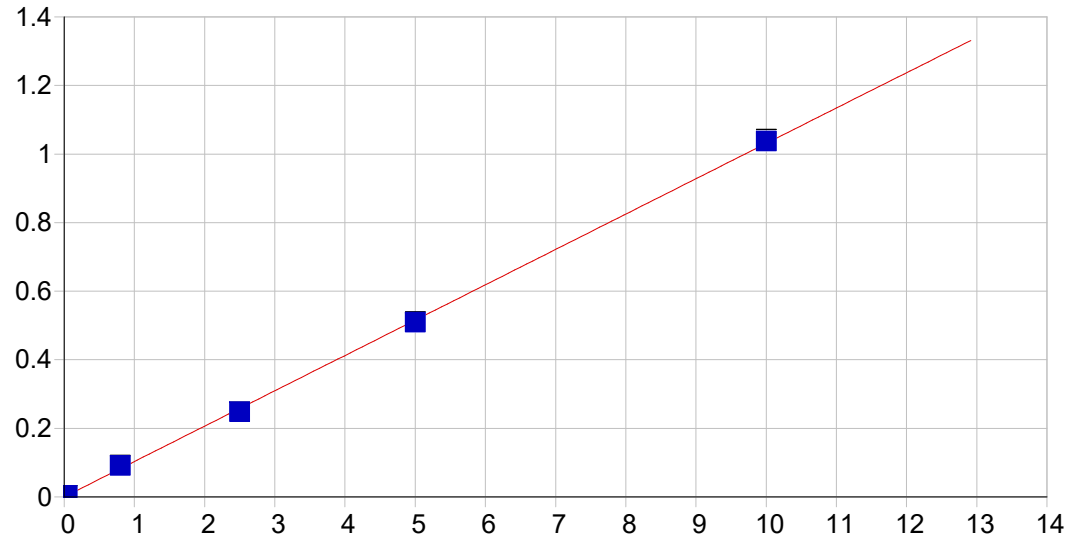



**Mo 202.030 {467}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000028 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.679938 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999578 | Status: | OK. |
| Std Error of Est: | 0.001471 | | |
| Predicted MDL: | 0.000320 | | |
| Predicted MQL: | 0.001068 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00002 | -.000 | .000 | -.00004 | .000 | 1 |
| S1 | .20000 | .19992 | -.000 | -.042 | .13590 | .000 | 1 |
| S3 | 2.5000 | 2.4219 | -.078 | -3.12 | 1.6467 | .002 | 1 |
| S4 | 5.0000 | 4.9662 | -.034 | -.676 | 3.3767 | .007 | 1 |
| S5 | 10.000 | 10.010 | .010 | .102 | 6.8063 | .023 | 1 |
| S2 | .80000 | .90175 | .102 | 12.7 | .61311 | .003 | 1 |

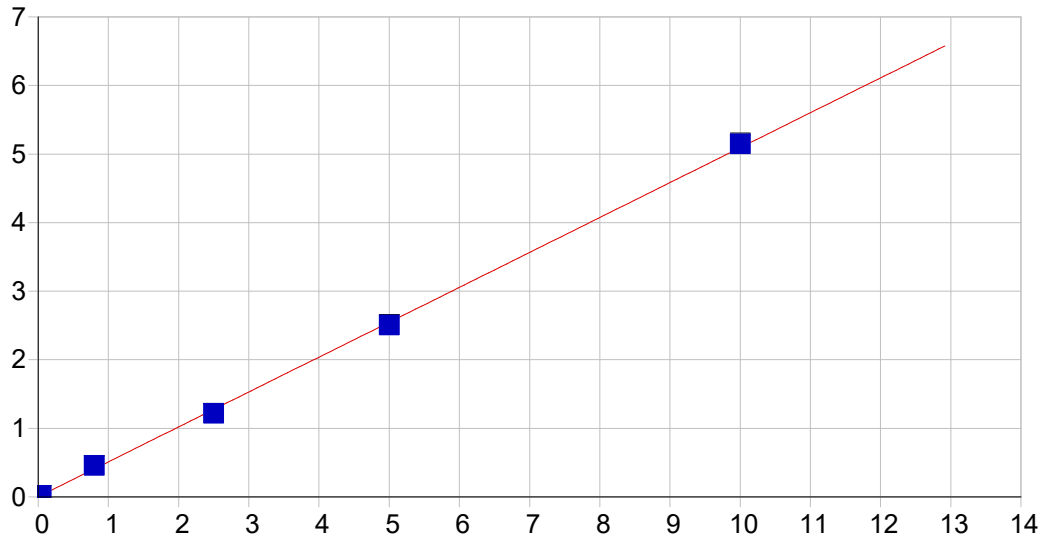



**Sn 189.989 {478}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000131 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.103092 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999611 | Status: | OK. |
| Std Error of Est: | 0.000095 | | |
| Predicted MDL: | 0.000936 | | |
| Predicted MQL: | 0.003119 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00013 | .000 | 1 |
| S1 | .04000 | .03840 | -.002 | -4.00 | .00409 | .000 | 1 |
| S3 | 2.5000 | 2.4073 | -.093 | -3.71 | .24804 | .000 | 1 |
| S4 | 5.0000 | 4.9397 | -.060 | -1.21 | .50885 | .001 | 1 |
| S5 | 10.000 | 10.067 | .067 | .671 | 1.0369 | .005 | 1 |
| S2 | .80000 | .88751 | .088 | 10.9 | .09154 | .001 | 1 |

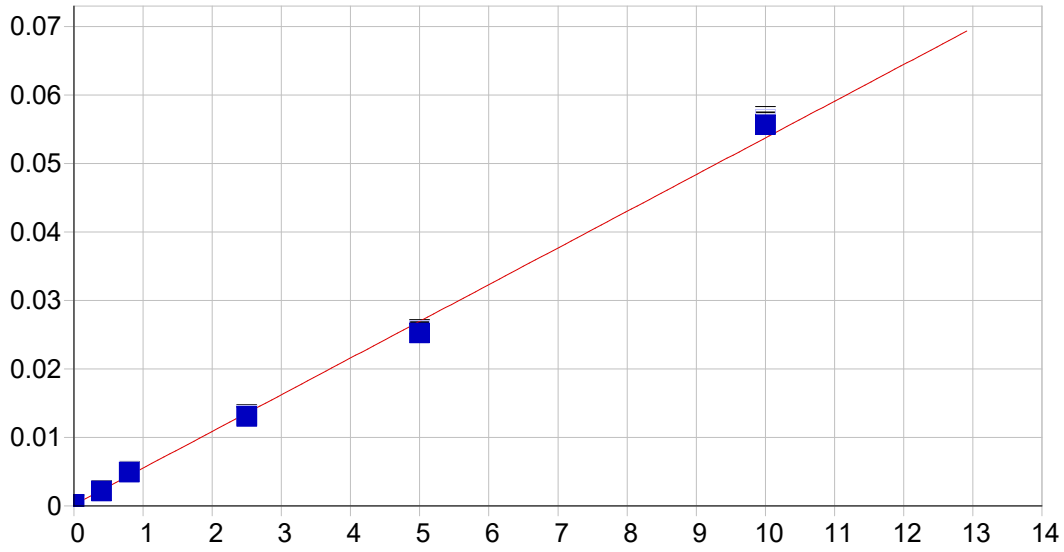



**Ti 336.121 {100}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.002253 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.509027 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999515 | Status: | OK. |
| Std Error of Est: | 0.000526 | | |
| Predicted MDL: | 0.000743 | | |
| Predicted MQL: | 0.002476 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00225 | .000 | 1 |
| S1 | .04000 | .04008 | .000 | .195 | .02264 | .000 | 1 |
| S3 | 2.5000 | 2.3878 | -.112 | -4.49 | 1.2173 | .002 | 1 |
| S4 | 5.0000 | 4.9142 | -.086 | -1.72 | 2.5028 | .006 | 1 |
| S5 | 10.000 | 10.108 | .108 | 1.08 | 5.1456 | .012 | 1 |
| S2 | .80000 | .89004 | .090 | 11.3 | .45516 | .001 | 1 |

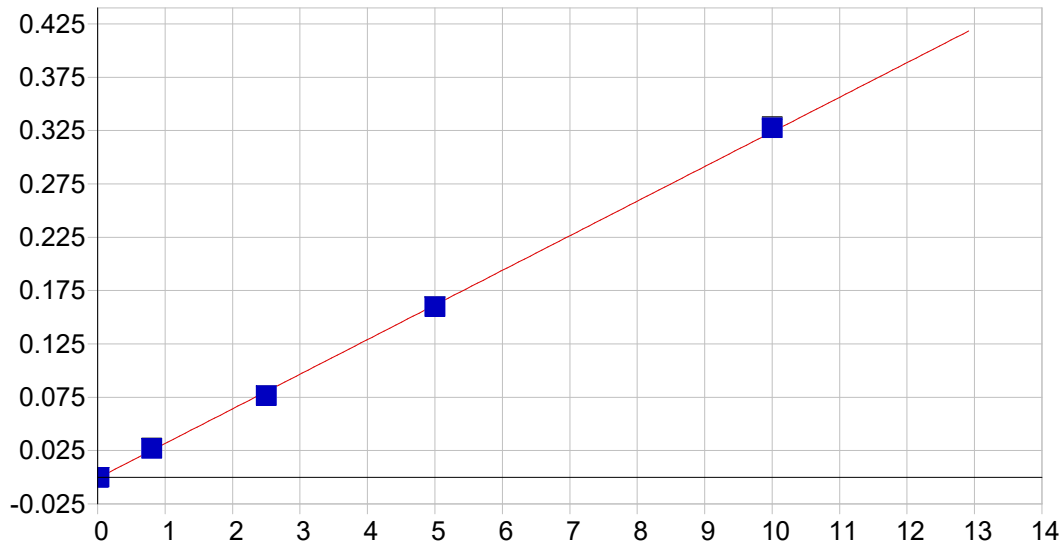



**Si 288.158 {117}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000167 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.005357 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.998746 | Status: | OK. |
| Std Error of Est: | 0.000029 | | |
| Predicted MDL: | 0.009570 | | |
| Predicted MQL: | 0.031898 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00001 | .000 | .000 | .00017 | .000 | 1 |
| S1 | .40000 | .37421 | -.026 | -6.45 | .00218 | .000 | 1 |
| S3 | 2.5000 | 2.4041 | -.096 | -3.84 | .01325 | .000 | 1 |
| S4 | 5.0000 | 4.6781 | -.322 | -6.44 | .02563 | .000 | 1 |
| S5 | 10.000 | 10.355 | .355 | 3.55 | .05645 | .000 | 1 |
| S2 | .80000 | .88797 | .088 | 11.0 | .00499 | .000 | 1 |

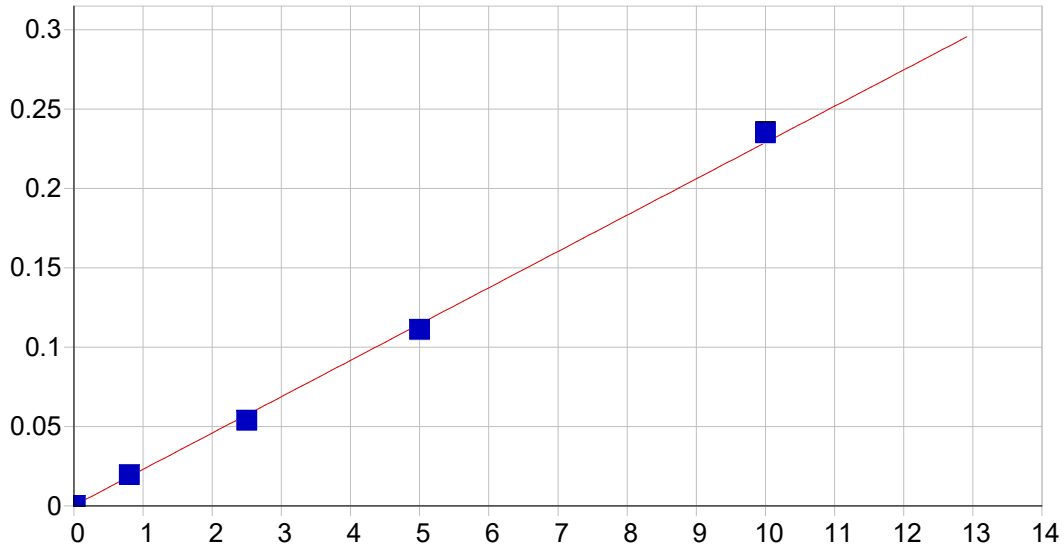



**P 177.495 {490}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000821 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.032457 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999676 | Status: | OK. |
| Std Error of Est: | 0.000019 | | |
| Predicted MDL: | 0.002717 | | |
| Predicted MQL: | 0.009055 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00082 | .000 | 1 |
| S1 | .02000 | .02044 | .000 | 2.19 | -.00016 | .000 | 1 |
| S3 | 2.5000 | 2.3807 | -.119 | -4.77 | .07644 | .000 | 1 |
| S4 | 5.0000 | 4.9456 | -.054 | -1.09 | .15967 | .000 | 1 |
| S5 | 10.000 | 10.115 | .115 | 1.15 | .32742 | .001 | 1 |
| S2 | .80000 | .85832 | .058 | 7.29 | .02703 | .000 | 1 |

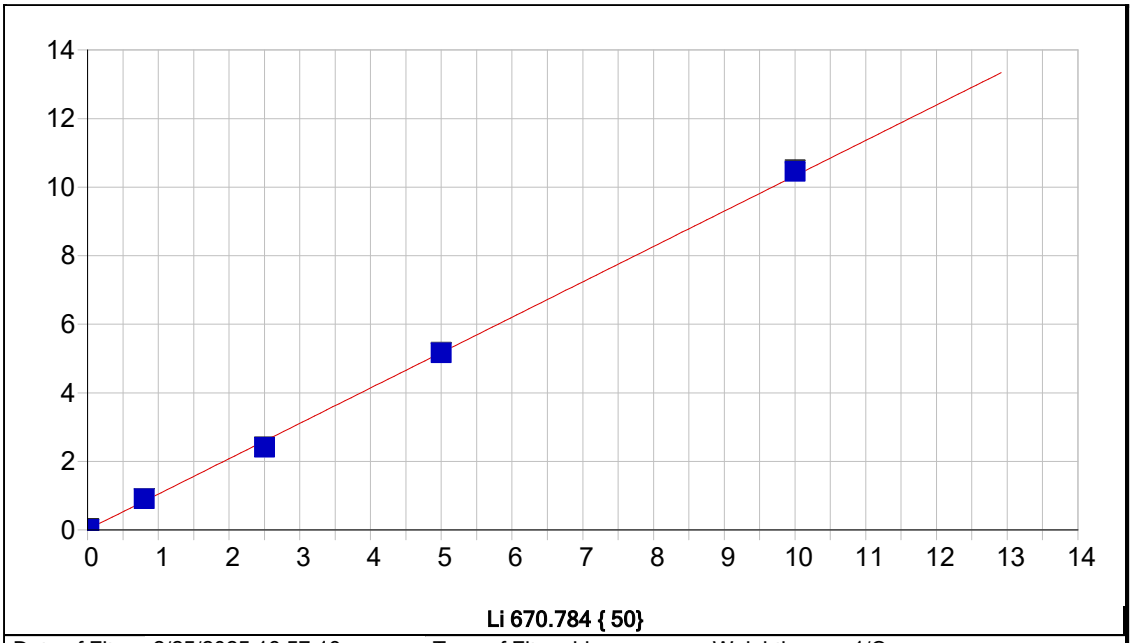



**S 182.034 {485}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000181 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.022880 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999319 | Status: | OK. |
| Std Error of Est: | 0.000020 | | |
| Predicted MDL: | 0.003895 | | |
| Predicted MQL: | 0.012982 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .00018 | .000 | 1 |
| S1 | .02000 | .01745 | -.003 | -12.8 | .00056 | .000 | 1 |
| S3 | 2.5000 | 2.3423 | -.158 | -6.31 | .05362 | .000 | 1 |
| S4 | 5.0000 | 4.8470 | -.153 | -3.06 | .11078 | .000 | 1 |
| S5 | 10.000 | 10.265 | .265 | 2.65 | .23446 | .001 | 1 |
| S2 | .80000 | .84777 | .048 | 5.97 | .01953 | .000 | 1 |

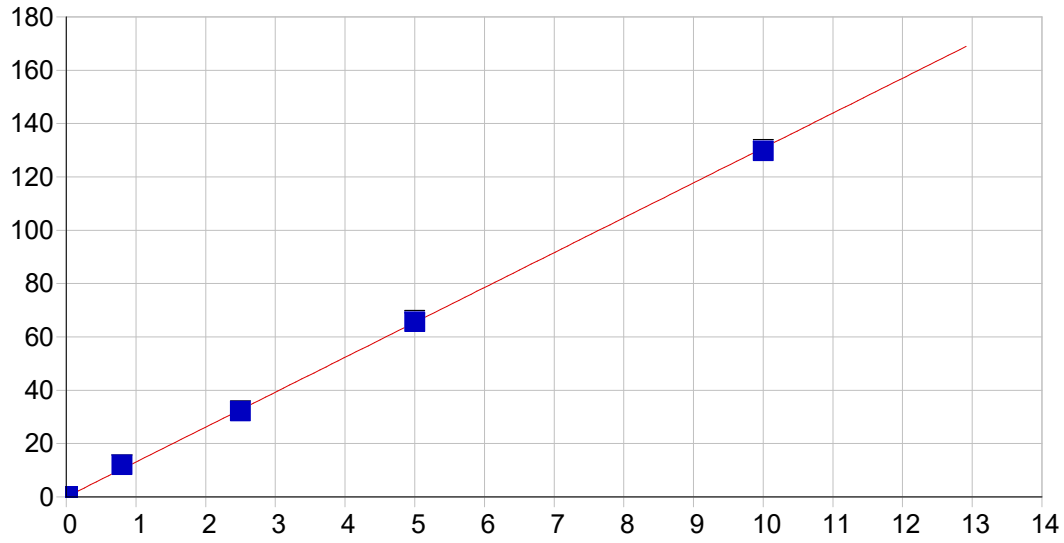



**Li 670.784 { 50}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.012907 | Re-Slope: | 1.000000 |
| A1 (Gain): | 1.031871 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999449 | Status: | OK. |
| Std Error of Est: | 0.000803 | | |
| Predicted MDL: | 0.001138 | | |
| Predicted MQL: | 0.003794 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .01291 | .000 | 1 |
| S5 | 10.000 | 10.121 | .121 | 1.21 | 10.461 | .039 | 1 |
| S4 | 5.0000 | 4.9902 | -.010 | -.197 | 5.1647 | .015 | 1 |
| S3 | 2.5000 | 2.3221 | -.178 | -7.11 | 2.4104 | .004 | 1 |
| S1 | .02000 | .01814 | -.002 | -9.30 | .03196 | .001 | 1 |
| S2 | .80000 | .86886 | .069 | 8.61 | .90987 | .002 | 1 |

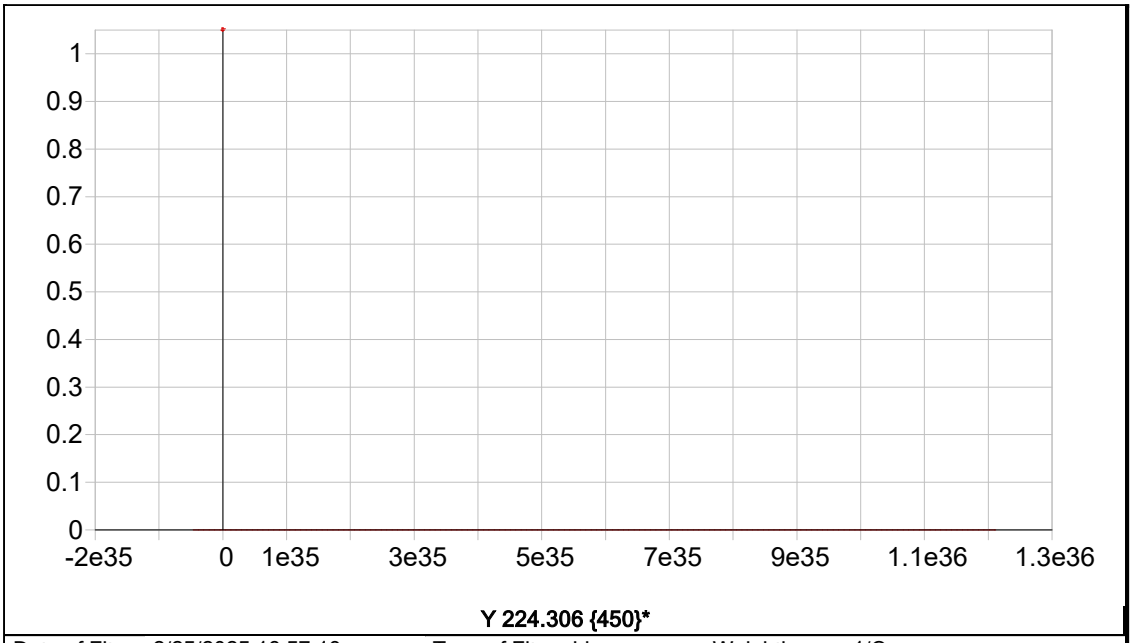



**Sr 407.771 { 83}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000773 | Re-Slope: | 1.000000 |
| A1 (Gain): | 13.083515 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999491 | Status: | OK. |
| Std Error of Est: | 0.009791 | | |
| Predicted MDL: | 0.000051 | | |
| Predicted MQL: | 0.000172 | | |

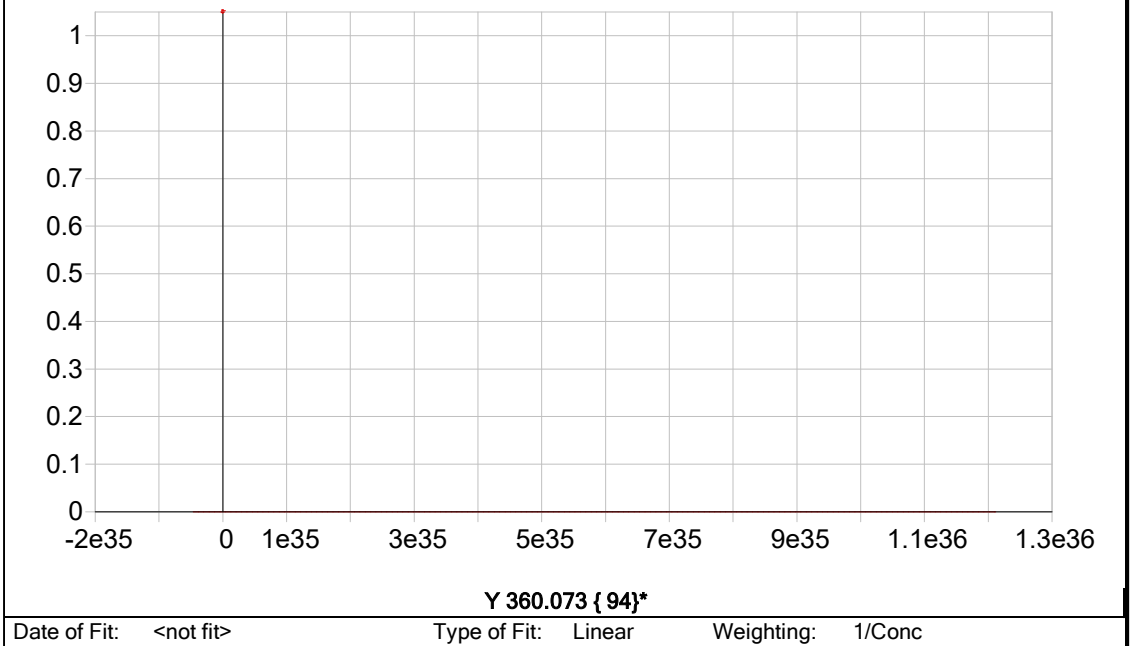
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00073 | .000 | 1 |
| S1 | .02000 | .02062 | .001 | 3.09 | .27183 | .002 | 1 |
| S3 | 2.5000 | 2.4536 | -.046 | -1.86 | 32.135 | .192 | 1 |
| S4 | 5.0000 | 5.0131 | .013 | .262 | 65.655 | .555 | 1 |
| S5 | 10.000 | 9.9159 | -.084 | -.841 | 129.87 | .418 | 1 |
| S2 | .80000 | .91683 | .117 | 14.6 | 12.007 | .053 | 1 |




**Y 224.306 {450}***

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 2/25/2025 16:57:19 | 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 |
|---|---|---|---|---|---|---|---|

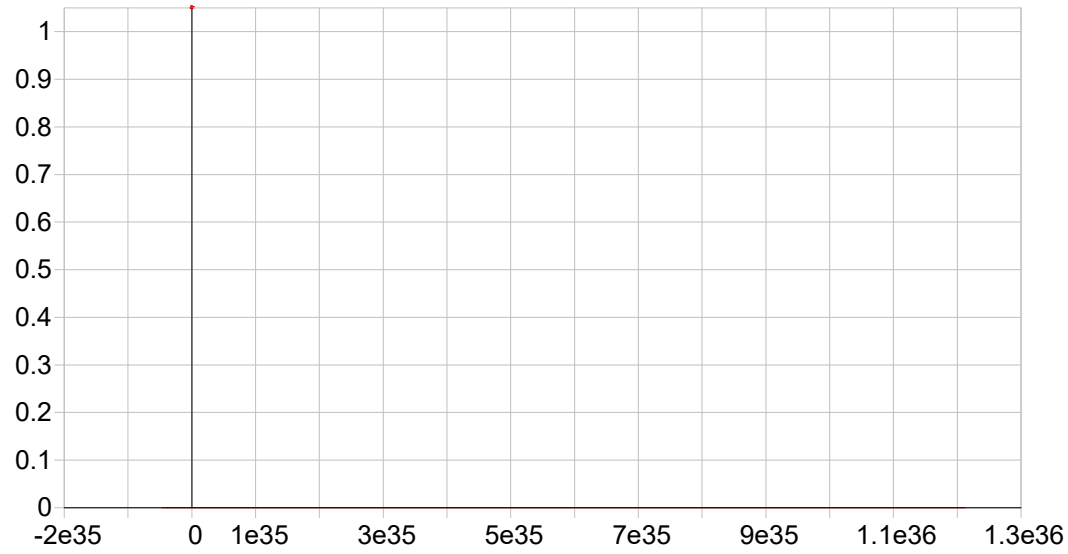



**Y 360.073 { 94}***

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

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

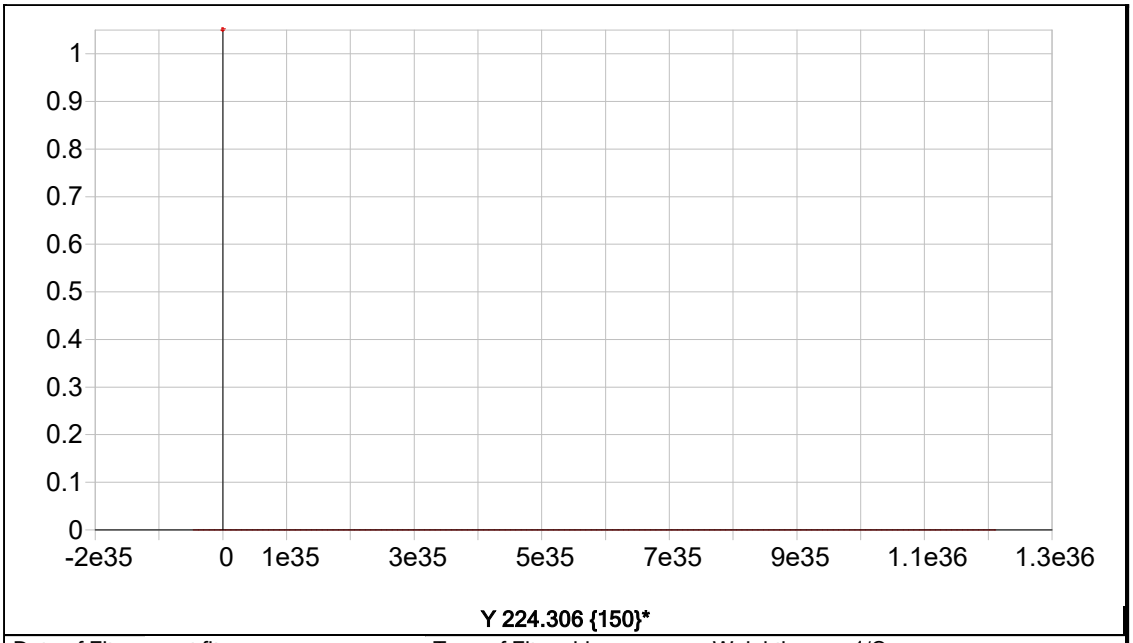
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|




**Y 371.030 { 91}***

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

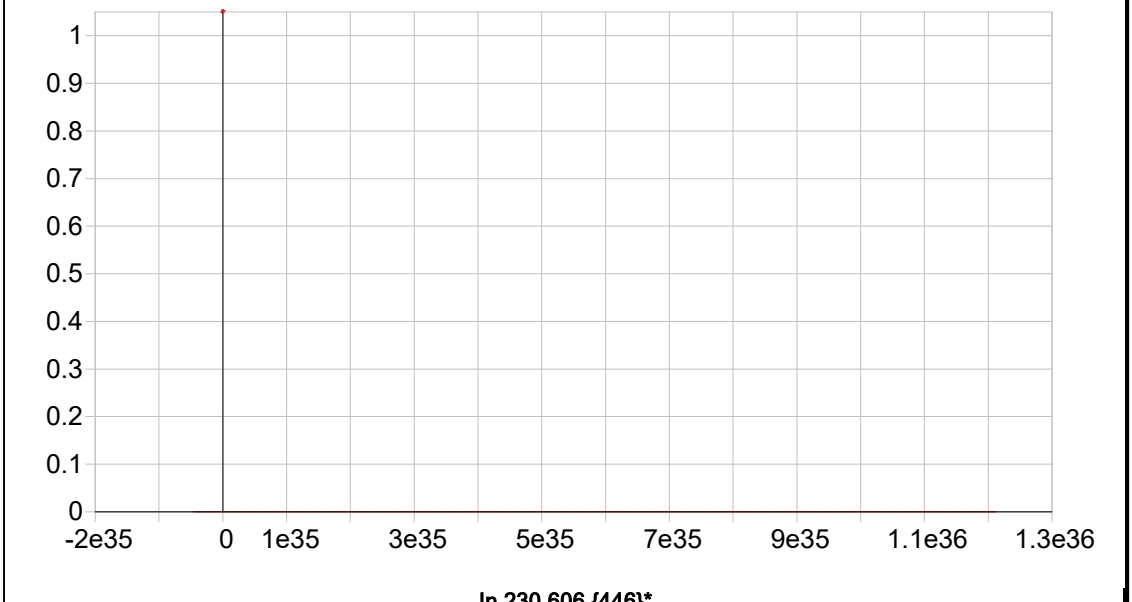
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|




**Y 224.306 {150}***

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

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




**In 230.606 {446}***

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

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

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S0 Acquired: 2/25/2025 15:31:55 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | -.00014 | .00021 | -.00012 | .00027 | .00043 | -.00011 | .05437 | -.00023 |
| Stddev | .00008 | .00006 | .00019 | .00002 | .00015 | .00052 | .00097 | .00015 |
| %RSD | 59.399 | 27.636 | 154.88 | 7.5928 | 34.704 | 455.59 | 1.7801 | 66.756 |
| #1 | -.00012 | .00014 | -.00034 | .00030 | .00037 | -.00028 | .05410 | -.00006 |
| #2 | -.00022 | .00024 | .00002 | .00027 | .00032 | .00046 | .05544 | -.00029 |
| #3 | -.00007 | .00024 | -.00005 | .00025 | .00060 | -.00052 | .05357 | -.00035 |

| 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 | -.00003 | .00116 | .00001 | .00011 | -.00029 | .00003 | -.00011 | -.00023 |
| Stddev | .00004 | .00031 | .00007 | .00012 | .00006 | .00001 | .00020 | .00020 |
| %RSD | 114.69 | 27.117 | 1031.1 | 105.66 | 19.849 | 45.247 | 171.58 | 86.405 |
| #1 | -.00007 | .00122 | .00001 | .00008 | -.00035 | .00003 | -.00007 | -.00039 |
| #2 | -.00004 | .00143 | -.00006 | .00001 | -.00028 | .00001 | .00006 | -.00030 |
| #3 | .00001 | .00082 | .00007 | .00024 | -.00024 | .00003 | -.00033 | -.00001 |

| 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 | -.00022 | -.00209 | .00411 | -.00008 | .00301 | .00005 | .00214 | -.00004 |
| Stddev | .00010 | .00005 | .00007 | .00012 | .00111 | .00008 | .00016 | .00003 |
| %RSD | 45.235 | 2.5379 | 1.7295 | 146.60 | 36.896 | 155.51 | 7.2479 | 67.596 |
| #1 | -.00019 | -.00203 | .00419 | .00005 | .00321 | .00015 | .00210 | -.00007 |
| #2 | -.00032 | -.00213 | .00405 | -.00014 | .00181 | .00000 | .00201 | -.00003 |
| #3 | -.00013 | -.00211 | .00409 | -.00015 | .00400 | .00001 | .00231 | -.00002 |

| 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 | .00013 | .00225 | .00017 | -.00082 | .00018 | .01291 | .00073 |
| Stddev | .00007 | .00016 | .00001 | .00001 | .00004 | .00047 | .00026 |
| %RSD | 57.298 | 7.2665 | 4.8603 | 1.5388 | 23.849 | 3.6119 | 35.636 |
| #1 | .00014 | .00233 | .00017 | -.00083 | .00020 | .01270 | .00073 |
| #2 | .00020 | .00236 | .00016 | -.00081 | .00021 | .01259 | .00100 |
| #3 | .00005 | .00206 | .00018 | -.00083 | .00013 | .01344 | .00048 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S0 Acquired: 2/25/2025 15:31:55 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 2593.4 | 54126. | 10354. | 1923.6 | 4396.6 |
| Stddev | 1.2 | 123. | 40. | 6.8 | 2.4 |
| %RSD | .04789 | .22710 | .38178 | .35233 | .05362 |
| #1 | 2592.5 | 54177. | 10332. | 1926.7 | 4398.5 |
| #2 | 2594.8 | 54214. | 10400. | 1928.4 | 4397.2 |
| #3 | 2592.9 | 53985. | 10331. | 1915.9 | 4393.9 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S1 Acquired: 2/25/2025 15:36:22 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .00088 | .00165 | .00240 | .00160 | .00836 | .01294 | .37045 | .02720 |
| Stddev | .00010 | .00002 | .00020 | .00020 | .00029 | .00022 | .00153 | .00015 |
| %RSD | 11.157 | .99428 | 8.5254 | 12.695 | 3.4460 | 1.6627 | .41345 | .54721 |
| #1 | .00094 | .00164 | .00217 | .00160 | .00827 | .01286 | .36886 | .02704 |
| #2 | .00093 | .00163 | .00246 | .00140 | .00868 | .01318 | .37191 | .02723 |
| #3 | .00077 | .00166 | .00257 | .00181 | .00813 | .01277 | .37059 | .02733 |

| 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 | .01217 | .11968 | .00172 | .02202 | .01564 | .00047 | .01287 | .03510 |
| Stddev | .00013 | .00069 | .00014 | .00020 | .00007 | .00003 | .00009 | .00032 |
| %RSD | 1.0481 | .57753 | 8.3947 | .91959 | .43669 | 5.6438 | .68612 | .91881 |
| #1 | .01232 | .11999 | .00171 | .02220 | .01557 | .00045 | .01295 | .03547 |
| #2 | .01208 | .11889 | .00187 | .02204 | .01571 | .00050 | .01278 | .03489 |
| #3 | .01213 | .12017 | .00159 | .02180 | .01564 | .00045 | .01287 | .03495 |

| 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 | .02701 | .00151 | .03897 | .00495 | .14070 | .01922 | .04609 | .13590 |
| Stddev | .00029 | .00001 | .00060 | .00023 | .00051 | .00041 | .00017 | .00036 |
| %RSD | 1.0777 | .92788 | 1.5348 | 4.6739 | .36601 | 2.1287 | .37084 | .26389 |
| #1 | .02699 | .00152 | .03828 | .00501 | .14106 | .01883 | .04590 | .13616 |
| #2 | .02731 | .00151 | .03937 | .00513 | .14011 | .01918 | .04617 | .13605 |
| #3 | .02673 | .00150 | .03926 | .00469 | .14093 | .01965 | .04622 | .13549 |

| 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 | .00409 | .02264 | .00218 | -.00016 | .00056 | .03196 | .27183 |
| Stddev | .00005 | .00025 | .00004 | .00005 | .00002 | .00090 | .00155 |
| %RSD | 1.2585 | 1.1152 | 2.0473 | 33.035 | 3.4649 | 2.8214 | .56859 |
| #1 | .00414 | .02291 | .00222 | -.00010 | .00056 | .03293 | .27005 |
| #2 | .00408 | .02241 | .00218 | -.00018 | .00058 | .03115 | .27261 |
| #3 | .00403 | .02260 | .00213 | -.00019 | .00054 | .03178 | .27283 |

Sample Name: S1 Acquired: 2/25/2025 15:36:22 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 2582.3 | 53600. | 9767.4 | 1863.6 | 4380.6 |
| Stddev | 12.1 | 115. | 33.7 | 8.1 | 20.5 |
| %RSD | .46705 | .21532 | .34519 | .43529 | .46881 |
| | | | | | |
| #1 | 2571.0 | 53646. | 9729.4 | 1859.3 | 4363.3 |
| #2 | 2580.8 | 53684. | 9793.7 | 1873.0 | 4375.2 |
| #3 | 2595.0 | 53468. | 9779.1 | 1858.5 | 4403.3 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S2 Acquired: 2/25/2025 15:40:46 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .04600 | .03719 | .19009 | .06331 | .13802 | .22344 | 5.5916 | .19573 |
| Stddev | .00043 | .00049 | .00078 | .00069 | .00099 | .00041 | .0262 | .00098 |
| %RSD | .93616 | 1.3285 | .41230 | 1.0931 | .71408 | .18174 | .46944 | .50192 |
| #1 | .04551 | .03672 | .18939 | .06252 | .13704 | .22375 | 5.6050 | .19654 |
| #2 | .04629 | .03714 | .18995 | .06371 | .13800 | .22360 | 5.6085 | .19464 |
| #3 | .04622 | .03770 | .19094 | .06371 | .13901 | .22298 | 5.5614 | .19600 |

| 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 | .90749 | .26300 | .03184 | .33459 | .17235 | .00454 | .28211 | .07194 |
| Stddev | .00390 | .00090 | .00005 | .00162 | .00074 | .00001 | .00083 | .00009 |
| %RSD | .42944 | .34116 | .15929 | .48511 | .42747 | .25587 | .29340 | .11886 |
| #1 | .90340 | .26398 | .03178 | .33272 | .17150 | .00454 | .28306 | .07185 |
| #2 | .90791 | .26281 | .03186 | .33543 | .17269 | .00453 | .28162 | .07195 |
| #3 | .91117 | .26221 | .03187 | .33562 | .17285 | .00455 | .28164 | .07203 |

| 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 | .30844 | .07896 | .08350 | .05573 | 1.5355 | .04284 | .36481 | .61311 |
| Stddev | .00146 | .00004 | .00033 | .00036 | .0049 | .00002 | .00132 | .00346 |
| %RSD | .47292 | .05213 | .39135 | .64419 | .31896 | .04103 | .36184 | .56364 |
| #1 | .30679 | .07897 | .08313 | .05547 | 1.5317 | .04284 | .36538 | .60920 |
| #2 | .30899 | .07891 | .08377 | .05614 | 1.5337 | .04286 | .36330 | .61439 |
| #3 | .30955 | .07899 | .08358 | .05559 | 1.5410 | .04282 | .36575 | .61574 |

| 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 | .09154 | .45516 | .00499 | .02703 | .01953 | .90987 | 12.007 |
| Stddev | .00071 | .00140 | .00004 | .00028 | .00011 | .00212 | .053 |
| %RSD | .77018 | .30720 | .77321 | 1.0534 | .55925 | .23312 | .44557 |
| #1 | .09080 | .45507 | .00495 | .02672 | .01947 | .91201 | 12.040 |
| #2 | .09163 | .45660 | .00503 | .02709 | .01946 | .90985 | 12.035 |
| #3 | .09220 | .45381 | .00499 | .02729 | .01966 | .90776 | 11.945 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S2 Acquired: 2/25/2025 15:40:46 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 2563.4 | 53656. | 10320. | 1854.7 | 4293.1 |
| Stddev | 7.6 | 121. | 42. | 6.2 | 16.5 |
| %RSD | .29528 | .22614 | .40240 | .33515 | .38476 |
| #1 | 2571.8 | 53734. | 10286. | 1860.4 | 4309.3 |
| #2 | 2561.1 | 53717. | 10366. | 1855.6 | 4293.8 |
| #3 | 2557.2 | 53516. | 10309. | 1848.1 | 4276.3 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S3 Acquired: 2/25/2025 15:44:54 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .12447 | .10038 | .51261 | .17019 | .37210 | .60703 | 14.860 | .51404 |
| Stddev | .00019 | .00133 | .00012 | .00021 | .00063 | .00269 | .050 | .00076 |
| %RSD | .15260 | 1.3288 | .02386 | .12438 | .16837 | .44253 | .33345 | .14709 |
| #1 | .12460 | .09929 | .51275 | .17032 | .37245 | .60523 | 14.830 | .51350 |
| #2 | .12425 | .09998 | .51259 | .16995 | .37138 | .61011 | 14.918 | .51491 |
| #3 | .12455 | .10187 | .51251 | .17031 | .37247 | .60573 | 14.833 | .51372 |

| 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 | 2.4447 | .70307 | .08456 | .90017 | .46157 | .01233 | .75758 | .19566 |
| Stddev | .0023 | .00291 | .00013 | .00172 | .00049 | .00002 | .00305 | .00106 |
| %RSD | .09578 | .41410 | .14920 | .19090 | .10529 | .18389 | .40201 | .54194 |
| #1 | 2.4465 | .69971 | .08454 | .90215 | .46213 | .01236 | .75407 | .19445 |
| #2 | 2.4456 | .70465 | .08444 | .89918 | .46128 | .01231 | .75912 | .19615 |
| #3 | 2.4420 | .70486 | .08469 | .89918 | .46129 | .01234 | .75954 | .19639 |

| 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 | .83043 | .21222 | .22110 | .15119 | 4.0833 | .11636 | .95784 | 1.6467 |
| Stddev | .00110 | .00011 | .00059 | .00041 | .0151 | .00051 | .00139 | .0019 |
| %RSD | .13205 | .05053 | .26650 | .27367 | .37031 | .43525 | .14463 | .11351 |
| #1 | .83116 | .21234 | .22124 | .15078 | 4.0721 | .11596 | .95627 | 1.6452 |
| #2 | .83097 | .21217 | .22046 | .15119 | 4.1005 | .11619 | .95890 | 1.6462 |
| #3 | .82917 | .21214 | .22162 | .15161 | 4.0773 | .11693 | .95834 | 1.6488 |

| 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 | .24804 | 1.2173 | .01325 | .07644 | .05362 | 2.4104 | 32.135 |
| Stddev | .00036 | .0016 | .00008 | .00021 | .00021 | .0040 | .192 |
| %RSD | .14323 | .12853 | .61445 | .27930 | .38894 | .16643 | .59679 |
| #1 | .24830 | 1.2162 | .01326 | .07619 | .05345 | 2.4071 | 32.223 |
| #2 | .24764 | 1.2191 | .01316 | .07652 | .05356 | 2.4091 | 32.266 |
| #3 | .24818 | 1.2165 | .01333 | .07660 | .05385 | 2.4148 | 31.915 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S3 Acquired: 2/25/2025 15:44:54 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 2525.2 | 54124. | 10496. | 1838.4 | 4189.4 |
| Stddev | .7 | 53. | 17. | 6.1 | 4.1 |
| %RSD | .02836 | .09875 | .16265 | .33076 | .09671 |
| | | | | | |
| #1 | 2524.4 | 54141. | 10513. | 1842.0 | 4184.7 |
| #2 | 2525.7 | 54167. | 10479. | 1831.4 | 4191.1 |
| #3 | 2525.6 | 54064. | 10497. | 1841.8 | 4192.2 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S4 Acquired: 2/25/2025 15:49:06 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .25573 | .20921 | 1.0488 | .34569 | .76271 | 1.2636 | 30.735 | 1.1372 |
| Stddev | .00135 | .00068 | .0009 | .00098 | .00156 | .0049 | .315 | .0010 |
| %RSD | .52620 | .32329 | .08918 | .28207 | .20442 | .38850 | 1.0244 | .08391 |
| #1 | .25479 | .20965 | 1.0496 | .34531 | .76218 | 1.2678 | 31.027 | 1.1380 |
| #2 | .25513 | .20843 | 1.0478 | .34496 | .76148 | 1.2582 | 30.777 | 1.1361 |
| #3 | .25727 | .20954 | 1.0490 | .34680 | .76446 | 1.2647 | 30.401 | 1.1375 |

| 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 | 5.0018 | 1.4461 | .17303 | 1.8400 | .93281 | .02309 | 1.5214 | .40757 |
| Stddev | .0069 | .0036 | .00043 | .0028 | .00199 | .00004 | .0054 | .00065 |
| %RSD | .13902 | .24798 | .24846 | .15200 | .21384 | .17046 | .35604 | .16013 |
| #1 | 4.9972 | 1.4464 | .17353 | 1.8375 | .93086 | .02304 | 1.5223 | .40727 |
| #2 | 4.9984 | 1.4424 | .17283 | 1.8395 | .93274 | .02311 | 1.5156 | .40712 |
| #3 | 5.0098 | 1.4495 | .17274 | 1.8430 | .93485 | .02311 | 1.5263 | .40832 |

| Elem | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 1.6865 | .43433 | .44223 | .31240 | 8.2820 | .23376 | 2.1090 | 3.3767 |
| Stddev | .0024 | .00026 | .00129 | .00042 | .0364 | .00013 | .0029 | .0067 |
| %RSD | .14229 | .06062 | .29274 | .13348 | .43964 | .05606 | .13597 | .19991 |
| #1 | 1.6843 | .43460 | .44270 | .31280 | 8.2513 | .23391 | 2.1063 | 3.3746 |
| #2 | 1.6862 | .43430 | .44076 | .31197 | 8.3222 | .23372 | 2.1120 | 3.3712 |
| #3 | 1.6891 | .43408 | .44321 | .31244 | 8.2724 | .23366 | 2.1087 | 3.3842 |

| 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 | .50885 | 2.5028 | .02563 | .15967 | .11078 | 5.1647 | 65.655 |
| Stddev | .00126 | .0057 | .00012 | .00035 | .00025 | .0148 | .555 |
| %RSD | .24797 | .22981 | .45774 | .21942 | .22576 | .28686 | .84477 |
| #1 | .50773 | 2.5047 | .02550 | .15943 | .11057 | 5.1670 | 65.937 |
| #2 | .50859 | 2.4963 | .02573 | .15950 | .11072 | 5.1489 | 65.016 |
| #3 | .51022 | 2.5074 | .02567 | .16007 | .11106 | 5.1782 | 66.013 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S4 Acquired: 2/25/2025 15:49:06 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 2493.6 | 52779. | 9563.8 | 1763.2 | 4095.3 |
| Stddev | 5.5 | 66. | 11.9 | 3.2 | 6.9 |
| %RSD | .21870 | .12508 | .12466 | .17879 | .16831 |
| #1 | 2494.2 | 52705. | 9555.1 | 1759.8 | 4097.2 |
| #2 | 2498.8 | 52831. | 9577.4 | 1763.8 | 4101.0 |
| #3 | 2487.9 | 52802. | 9559.0 | 1766.0 | 4087.7 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S5 Acquired: 2/25/2025 15:53:17 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | .52919 | .42691 | 2.1371 | .70795 | 1.5710 | 2.6597 | 61.497 | 2.0802 |
| Stddev | .00158 | .00310 | .0090 | .00108 | .0029 | .0033 | .578 | .0096 |
| %RSD | .29834 | .72634 | .42050 | .15252 | .18391 | .12439 | .93918 | .46283 |
| #1 | .52799 | .42480 | 2.1304 | .70722 | 1.5687 | 2.6634 | 60.917 | 2.0795 |
| #2 | .52860 | .42546 | 2.1336 | .70743 | 1.5701 | 2.6569 | 62.072 | 2.0902 |
| #3 | .53097 | .43047 | 2.1473 | .70919 | 1.5742 | 2.6589 | 61.501 | 2.0709 |

| 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 | 10.166 | 2.9389 | .33937 | 3.7493 | 1.8766 | .05001 | 3.1155 | .83291 |
| Stddev | .042 | .0042 | .00009 | .0125 | .0045 | .00051 | .0109 | .00126 |
| %RSD | .41115 | .14217 | .02704 | .33257 | .24053 | 1.0123 | .35004 | .15135 |
| #1 | 10.126 | 2.9437 | .33948 | 3.7379 | 1.8742 | .05030 | 3.1275 | .83220 |
| #2 | 10.162 | 2.9371 | .33931 | 3.7475 | 1.8737 | .04942 | 3.1062 | .83437 |
| #3 | 10.209 | 2.9359 | .33934 | 3.7626 | 1.8818 | .05030 | 3.1129 | .83218 |

| Elem | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 3.4166 | .85567 | .92959 | .64460 | 16.352 | .49825 | 3.8545 | 6.8063 |
| Stddev | .0110 | .00044 | .00767 | .00114 | .050 | .00313 | .0194 | .0228 |
| %RSD | .32071 | .05097 | .82510 | .17759 | .30278 | .62841 | .50395 | .33513 |
| #1 | 3.4062 | .85613 | .93532 | .64591 | 16.351 | .49975 | 3.8566 | 6.7917 |
| #2 | 3.4155 | .85564 | .92088 | .64379 | 16.402 | .49465 | 3.8728 | 6.7946 |
| #3 | 3.4280 | .85526 | .93257 | .64410 | 16.303 | .50034 | 3.8341 | 6.8326 |

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 1.0369 | 5.1456 | .05645 | .32742 | .23446 | 10.461 | 129.87 |
| Stddev | .0052 | .0120 | .00045 | .00104 | .00082 | .039 | .42 |
| %RSD | .50254 | .23360 | .79366 | .31733 | .35062 | .37288 | .32156 |
| #1 | 1.0321 | 5.1586 | .05615 | .32725 | .23376 | 10.504 | 130.33 |
| #2 | 1.0363 | 5.1349 | .05624 | .32649 | .23424 | 10.427 | 129.53 |
| #3 | 1.0424 | 5.1432 | .05697 | .32854 | .23537 | 10.453 | 129.73 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: S5 Acquired: 2/25/2025 15:53:17 Type: Cal
Method: NON EPA-6010-200.7(v2725) Mode: IR Corr. Factor: 1.000000
User: Kareem 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 | 2357.8 | 52140. | 9951.4 | 1653.7 | 3811.4 |
| Stddev | 10.3 | 128. | 42.7 | 4.6 | 18.7 |
| %RSD | .43504 | .24470 | .42950 | .27753 | .48961 |
| #1 | 2363.9 | 52027. | 9917.1 | 1648.5 | 3826.3 |
| #2 | 2363.5 | 52278. | 9937.9 | 1657.2 | 3817.4 |
| #3 | 2345.9 | 52115. | 9999.3 | 1655.3 | 3790.5 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: ICV01 Acquired: 2/25/2025 15:57:35 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.056320 | 1.021568 | 1.019903 | 1.047411 | 1.023083 | 2.455715 |
| Stddev | .005795 | .006316 | .003685 | .004936 | .000905 | .005227 |
| %RSD | .5485672 | .6183051 | .3613019 | .4712136 | .0884793 | .2128473 |
| #1 | 1.054549 | 1.016519 | 1.023900 | 1.047729 | 1.024093 | 2.460184 |
| #2 | 1.051617 | 1.028650 | 1.016641 | 1.052180 | 1.022813 | 2.449968 |
| #3 | 1.062793 | 1.019534 | 1.019169 | 1.042325 | 1.022344 | 2.456993 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4787499 | .5047911 | .5115635 | 9.582450 | .5402739 | .5098170 |
| Stddev | .0012594 | .0024508 | .0005184 | .014985 | .0028862 | .0005599 |
| %RSD | .2630545 | .4855028 | .1013424 | .1563780 | .5342151 | .1098268 |
| #1 | .4782745 | .5073100 | .5119354 | 9.599662 | .5435753 | .5101941 |
| #2 | .4777974 | .5024146 | .5117837 | 9.572310 | .5390179 | .5091737 |
| #3 | .4801778 | .5046487 | .5109713 | 9.575379 | .5382284 | .5100833 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5215360 | 9.731093 | .4809005 | 5.588621 | .5134364 | .2626786 |
| Stddev | .0005903 | .021519 | .0003713 | .037613 | .0005273 | .0000491 |
| %RSD | .1131778 | .2211359 | .0772181 | .6730314 | .1027085 | .0186766 |
| #1 | .5220413 | 9.707820 | .4811572 | 5.589542 | .5139349 | .2626517 |
| #2 | .5216794 | 9.735191 | .4810696 | 5.550555 | .5134900 | .2627352 |
| #3 | .5208873 | 9.750269 | .4804747 | 5.625765 | .5128843 | .2626488 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.312582 | .4683614 | 1.039249 | 9.814912 | 2.304156 | 2.432789 |
| Stddev | .037702 | .0017446 | .001979 | .039894 | .016996 | .001063 |
| %RSD | .4048469 | .3724953 | .1904149 | .4064658 | .7376251 | .0437088 |
| #1 | 9.269170 | .4667434 | 1.037294 | 9.771828 | 2.320826 | 2.431931 |
| #2 | 9.331467 | .4681311 | 1.041250 | 9.850575 | 2.286852 | 2.433978 |
| #3 | 9.337110 | .4702097 | 1.039201 | 9.822332 | 2.304788 | 2.432457 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: ICV01 Acquired: 2/25/2025 15:57:35 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | 2.368239 | 2.261651 | F 2.100947 | F .0005086 | F -.007232 | F -.002039 |
| Stddev | .006158 | .004749 | .000693 | .0013168 | .002293 | .001153 |
| %RSD | .2600124 | .2099609 | .0329672 | 258.8944 | 31.70201 | 56.57243 |
| #1 | 2.365246 | 2.256521 | 2.100765 | -.000076 | -.005596 | -.003260 |
| #2 | 2.375321 | 2.262538 | 2.100364 | .002016 | -.006247 | -.001889 |
| #3 | 2.364151 | 2.265893 | 2.101713 | -.000415 | -.009852 | -.000968 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | F -.008356 |
| Stddev | .000057 |
| %RSD | .6765342 |
| #1 | -.008391 |
| #2 | -.008387 |
| #3 | -.008291 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2497.756 | 52394.53 | 10464.43 | 1727.902 | 4216.351 |
| Stddev | 2.724 | 146.85 | 30.58 | 5.703 | 2.212 |
| %RSD | .1090701 | .2802690 | .2922205 | .3300469 | .0524613 |
| #1 | 2499.920 | 52432.30 | 10429.12 | 1728.312 | 4215.243 |
| #2 | 2498.652 | 52232.48 | 10482.05 | 1722.005 | 4218.898 |
| #3 | 2494.697 | 52518.79 | 10482.11 | 1733.388 | 4214.913 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: LLICV01 Acquired: 2/25/2025 16:02:16 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0199536 | .0395130 | .0117078 | .0208547 | .0501753 | .1131069 |
| Stddev | .0020704 | .0039226 | .0009682 | .0029316 | .0024152 | .0038860 |
| %RSD | 10.37598 | 9.927466 | 8.269459 | 14.05716 | 4.813610 | 3.435645 |
| #1 | .0223268 | .0425303 | .0105909 | .0186117 | .0474022 | .1144959 |
| #2 | .0185172 | .0409300 | .0123090 | .0241718 | .0518180 | .1087174 |
| #3 | .0190168 | .0350788 | .0122234 | .0197805 | .0513059 | .1161075 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0917966 | .0059657 | .0060545 | 1.976215 | .0101702 | .0292280 |
| Stddev | .0004097 | .0000503 | .0000687 | .013132 | .0004496 | .0000592 |
| %RSD | .4462683 | .8430581 | 1.134748 | .6645196 | 4.421040 | .2025393 |
| #1 | .0922123 | .0060232 | .0061222 | 1.971247 | .0102730 | .0292847 |
| #2 | .0917840 | .0059297 | .0059848 | 1.991107 | .0105596 | .0291666 |
| #3 | .0913933 | .0059443 | .0060565 | 1.966292 | .0096781 | .0292327 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0215692 | .0956886 | .0194681 | 2.035338 | .0392735 | .0107981 |
| Stddev | .0004088 | .0039935 | .0002622 | .015790 | .0003263 | .0002976 |
| %RSD | 1.895106 | 4.173469 | 1.346704 | .7757780 | .8308718 | 2.755728 |
| #1 | .0218794 | .1002305 | .0196410 | 2.037744 | .0395084 | .0105347 |
| #2 | .0211060 | .0927273 | .0191664 | 2.049786 | .0389009 | .0111209 |
| #3 | .0217221 | .0941080 | .0195969 | 2.018483 | .0394112 | .0107387 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.736622 | .0390440 | .0472584 | 1.918311 | .1153082 | .2028035 |
| Stddev | .010542 | .0022269 | .0004288 | .006852 | .0005458 | .0002986 |
| %RSD | .6070384 | 5.703645 | .9074317 | .3571757 | .4733068 | .1472452 |
| #1 | 1.733860 | .0387010 | .0475278 | 1.911030 | .1149369 | .2028347 |
| #2 | 1.727736 | .0414225 | .0474836 | 1.924633 | .1159348 | .2030853 |
| #3 | 1.748270 | .0370085 | .0467639 | 1.919270 | .1150529 | .2024905 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: LLICV01 Acquired: 2/25/2025 16:02:16 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0400474 | .0386458 | .3716171 | .0167048 | .0234885 | F .0142783 |
| Stddev | .0006921 | .0002588 | .0120273 | .0023186 | .0007934 | .0007201 |
| %RSD | 1.728065 | .6696248 | 3.236482 | 13.87987 | 3.377666 | 5.043049 |
| #1 | .0393871 | .0386242 | .3848970 | .0193790 | .0226485 | .0135052 |
| #2 | .0399879 | .0383985 | .3614571 | .0152566 | .0235917 | .0149298 |
| #3 | .0407673 | .0389147 | .3684972 | .0154788 | .0242252 | .0144000 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0194541 |
| Stddev | .0000627 |
| %RSD | .3221049 |
| #1 | .0195256 |
| #2 | .0194087 |
| #3 | .0194281 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2555.865 | 53054.96 | 10418.99 | 1765.215 | 4360.550 |
| Stddev | 1.610 | 222.96 | 52.73 | 10.338 | 5.734 |
| %RSD | .0630003 | .4202509 | .5060873 | .5856548 | .1315017 |
| #1 | 2557.715 | 52799.50 | 10381.90 | 1753.281 | 4353.932 |
| #2 | 2554.780 | 53155.01 | 10395.73 | 1771.452 | 4364.034 |
| #3 | 2555.101 | 53210.38 | 10479.35 | 1770.911 | 4363.685 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: ICB01 Acquired: 2/25/2025 16:06:34 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | .0006870 | -.000693 | -.001494 | .0025251 | -.000783 | -.000518 | -.000203 |
| Stddev | .0002028 | .002568 | .000969 | .0008794 | .000913 | .002569 | .000397 |
| %RSD | 29.51561 | 370.6267 | 64.83811 | 34.82570 | 116.7306 | 495.9427 | 195.7142 |
| #1 | .0007063 | -.001113 | -.002613 | .0022119 | .000262 | -.002936 | .000154 |
| #2 | .0004753 | -.003025 | -.000941 | .0035182 | -.001178 | -.000797 | -.000132 |
| #3 | .0008795 | .002060 | -.000929 | .0018452 | -.001431 | .002179 | -.000631 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000439 | .0000058 | -.005449 | .0001334 | -.000243 | -.000030 | -.010569 |
| Stddev | .0000087 | .0000786 | .004094 | .0003219 | .000184 | .000597 | .002318 |
| %RSD | 19.73176 | 1352.306 | 75.13164 | 241.3781 | 75.91184 | 2013.624 | 21.93076 |
| #1 | .0000494 | .0000932 | -.003308 | .0004982 | -.000455 | -.000642 | -.013244 |
| #2 | .0000339 | -.000059 | -.010169 | -.000111 | -.000135 | .000002 | -.009291 |
| #3 | .0000484 | -.000016 | -.002869 | .000013 | -.000138 | .000551 | -.009171 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000031 | .0002899 | .0001392 | .0002842 | -.121232 | .0024660 | -.000492 |
| Stddev | .000246 | .0119151 | .0003408 | .0000615 | .007207 | .0018035 | .000168 |
| %RSD | 793.3924 | 4110.269 | 244.7760 | 21.62931 | 5.944576 | 73.13382 | 34.22674 |
| #1 | .000234 | .0139865 | -.000056 | .0002138 | -.129483 | .0015944 | -.000368 |
| #2 | -.000253 | -.005431 | -.000059 | .0003276 | -.118037 | .0045397 | -.000424 |
| #3 | -.000074 | -.007686 | .000533 | .0003110 | -.116174 | .0012639 | -.000683 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.064796 | .0106120 | .0003062 | -.000321 | .0004707 | -.000004 | -.002308 |
| Stddev | .011654 | .0010262 | .0002750 | .000446 | .0003260 | .007572 | .001276 |
| %RSD | 17.98574 | 9.669841 | 89.83104 | 139.0501 | 69.26632 | 183186.9 | 55.28139 |
| #1 | -.078195 | .0094647 | -.000009 | .000194 | .0000943 | .008732 | -.001012 |
| #2 | -.059178 | .0114420 | .000431 | -.000600 | .0006644 | -.004674 | -.003562 |
| #3 | -.057016 | .0109293 | .000497 | -.000555 | .0006533 | -.004070 | -.002348 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: ICB01 Acquired: 2/25/2025 16:06:34 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.000218 | -.006012 | .0000077 |
| Stddev | .002584 | .000467 | .0000253 |
| %RSD | 1185.286 | 7.773014 | 329.7018 |
| | | | |
| #1 | -.003153 | -.005891 | .0000352 |
| #2 | .000785 | -.006528 | .0000024 |
| #3 | .001714 | -.005617 | -.000015 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2559.940 | 53406.58 | 10781.56 | 1777.093 | 4384.030 |
| Stddev | 2.732 | 49.69 | 12.66 | 5.656 | 6.099 |
| %RSD | .1067031 | .0930495 | .1173916 | .3182654 | .1391168 |
| | | | | | |
| #1 | 2562.120 | 53412.73 | 10772.41 | 1770.616 | 4391.051 |
| #2 | 2560.824 | 53354.10 | 10776.26 | 1779.603 | 4380.039 |
| #3 | 2556.876 | 53452.92 | 10796.00 | 1781.059 | 4381.002 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CRI01 Acquired: 2/25/2025 16:10:54 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0214656 | .0370187 | .0113143 | .0187178 | .0516315 | .1085572 |
| Stddev | .0012591 | .0034548 | .0004570 | .0019216 | .0008933 | .0065447 |
| %RSD | 5.865755 | 9.332588 | 4.039368 | 10.26627 | 1.730144 | 6.028769 |
| #1 | .0228612 | .0359592 | .0113910 | .0201939 | .0526543 | .1142253 |
| #2 | .0204149 | .0408792 | .0108237 | .0165450 | .0512358 | .1013945 |
| #3 | .0211206 | .0342177 | .0117281 | .0194145 | .0510043 | .1100519 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0887356 | .0056031 | .0059633 | 1.942519 | .0102590 | .0289403 |
| Stddev | .0014939 | .0000130 | .0000729 | .010620 | .0001175 | .0004536 |
| %RSD | 1.683574 | .2327507 | 1.222370 | .5467208 | 1.144884 | 1.567226 |
| #1 | .0901158 | .0056178 | .0060110 | 1.951166 | .0101520 | .0290220 |
| #2 | .0889417 | .0055984 | .0059995 | 1.945726 | .0103847 | .0293474 |
| #3 | .0871493 | .0055930 | .0058794 | 1.930665 | .0102404 | .0284514 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0219828 | .0986870 | .0193463 | 2.008634 | .0388373 | .0104753 |
| Stddev | .0006277 | .0026454 | .0003966 | .004517 | .0003588 | .0003808 |
| %RSD | 2.855507 | 2.680638 | 2.050102 | .2248728 | .9237869 | 3.634997 |
| #1 | .0221869 | .0958015 | .0189058 | 2.007153 | .0390307 | .0100461 |
| #2 | .0224831 | .1009979 | .0196752 | 2.013706 | .0390579 | .0106071 |
| #3 | .0212785 | .0992615 | .0194580 | 2.005044 | .0384234 | .0107726 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.743505 | .0401644 | .0470715 | 1.925696 | .1002253 | .2024411 |
| Stddev | .029785 | .0010936 | .0004495 | .017588 | .0009411 | .0007107 |
| %RSD | 1.708314 | 2.722889 | .9549507 | .9133205 | .9389828 | .3510859 |
| #1 | 1.738188 | .0408089 | .0472492 | 1.916977 | .1004023 | .2026630 |
| #2 | 1.775590 | .0407826 | .0474049 | 1.945940 | .0992082 | .2030144 |
| #3 | 1.716737 | .0389016 | .0465603 | 1.914171 | .1010653 | .2016459 |

Sample Name: CRI01 Acquired: 2/25/2025 16:10:54 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | .0390064 | .0385022 | .3855776 | .0171967 | .0213385 | F .0118785 |
| Stddev | .0001313 | .0010926 | .0140746 | .0013942 | .0018587 | .0007790 |
| %RSD | .3367132 | 2.837737 | 3.650263 | 8.107419 | 8.710669 | 6.557976 |
| | | | | | | |
| #1 | .0388553 | .0397236 | .3846920 | .0178183 | .0234435 | .0124605 |
| #2 | .0390715 | .0376179 | .4000742 | .0155998 | .0199232 | .0121815 |
| #3 | .0390926 | .0381651 | .3719668 | .0181720 | .0206488 | .0109936 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0188867 |
| Stddev | .0002871 |
| %RSD | 1.519999 |
| | |
| #1 | .0192179 |
| #2 | .0187091 |
| #3 | .0187331 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2540.517 | 52795.49 | 10984.55 | 1750.418 | 4344.021 |
| Stddev | 13.911 | 250.24 | 46.61 | 7.933 | 19.795 |
| %RSD | .5475731 | .4739773 | .4243664 | .4532141 | .4556837 |
| | | | | | |
| #1 | 2530.398 | 52758.70 | 10933.53 | 1746.187 | 4331.570 |
| #2 | 2534.774 | 52565.69 | 11024.91 | 1745.498 | 4333.648 |
| #3 | 2556.381 | 53062.09 | 10995.20 | 1759.570 | 4366.847 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: ICSA01 Acquired: 2/25/2025 16:15:13 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0051375 | -.002028 | .0071087 | -.008515 | -.000726 | 240.5842 |
| Stddev | .0017231 | .002808 | .0022543 | .002275 | .001666 | .2922 |
| %RSD | 33.54061 | 138.4271 | 31.71189 | 26.71468 | 229.4804 | .1214632 |
| #1 | .0047650 | -.005038 | .0071888 | -.007001 | -.001994 | 240.4251 |
| #2 | .0036310 | -.001568 | .0093218 | -.011131 | -.001345 | 240.4061 |
| #3 | .0070163 | .000521 | .0048154 | -.007414 | .001161 | 240.9215 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0050210 | .0013858 | -.001532 | 221.4097 | .0589299 | .0014693 |
| Stddev | .0005208 | .0000812 | .000137 | .3563 | .0003471 | .0001860 |
| %RSD | 10.37311 | 5.858094 | 8.953097 | .1609179 | .5890516 | 12.65938 |
| #1 | .0044369 | .0014774 | -.001514 | 221.8164 | .0587755 | .0013921 |
| #2 | .0051890 | .0013576 | -.001677 | 221.2604 | .0593274 | .0013343 |
| #3 | .0054371 | .0013226 | -.001404 | 221.1524 | .0586867 | .0016815 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0216648 | 91.35297 | .0103401 | 236.4351 | .0021327 | -.003586 |
| Stddev | .0007163 | .73644 | .0006216 | .8802 | .0001689 | .000124 |
| %RSD | 3.306427 | .8061485 | 6.011363 | .3722816 | 7.919697 | 3.446490 |
| #1 | .0224635 | 90.54471 | .0099061 | 237.3933 | .0020308 | -.003445 |
| #2 | .0210793 | 91.98596 | .0100619 | 235.6624 | .0023277 | -.003641 |
| #3 | .0214514 | 91.52825 | .0110521 | 236.2496 | .0020396 | -.003673 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.062695 | .0023137 | .0135384 | -.031269 | F -.174741 | -.000411 |
| Stddev | .002365 | .0020845 | .0001998 | .007006 | .004285 | .000322 |
| %RSD | 3.772672 | 90.09447 | 1.475482 | 22.40678 | 2.451932 | 78.38924 |
| #1 | -.064279 | .0043760 | .0136012 | -.035993 | -.179566 | -.000094 |
| #2 | -.059976 | .0023575 | .0136993 | -.034594 | -.173279 | -.000738 |
| #3 | -.063829 | .0002076 | .0133148 | -.023219 | -.171380 | -.000400 |

Sample Name: ICSA01 Acquired: 2/25/2025 16:15:13 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | -.004350 | -.000362 | .0108619 | .0150072 | F .0444887 | -.005372 |
| Stddev | .000845 | .000060 | .0080246 | .0019928 | .0045781 | .000673 |
| %RSD | 19.42127 | 16.43668 | 73.87829 | 13.27901 | 10.29060 | 12.52902 |
| #1 | -.004303 | -.000370 | .0019723 | .0165465 | .0497710 | -.005919 |
| #2 | -.003529 | -.000418 | .0130427 | .0127563 | .0416681 | -.004620 |
| #3 | -.005217 | -.000299 | .0175708 | .0157187 | .0420269 | -.005577 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0019003 |
| Stddev | .0007681 |
| %RSD | 40.42008 |
| #1 | .0027796 |
| #2 | .0015608 |
| #3 | .0013604 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2285.174 | 47652.58 | 9940.065 | 1545.947 | 3686.600 |
| Stddev | 6.993 | 249.75 | 48.106 | 9.831 | 8.008 |
| %RSD | .3060159 | .5241117 | .4839574 | .6358932 | .2172165 |
| #1 | 2291.706 | 47940.53 | 9885.772 | 1557.132 | 3693.862 |
| #2 | 2286.019 | 47494.84 | 9977.379 | 1538.674 | 3687.927 |
| #3 | 2277.796 | 47522.37 | 9957.042 | 1542.036 | 3678.012 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: ICSAB01 Acquired: 2/25/2025 16:19:31 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1098649 | .0891269 | .0556257 | .0419915 | .6069862 | 242.3587 |
| Stddev | .0017953 | .0019893 | .0015934 | .0015971 | .0029484 | 1.0286 |
| %RSD | 1.634107 | 2.231978 | 2.864602 | 3.803366 | .4857512 | .4244250 |
| #1 | .1078516 | .0875054 | .0564847 | .0433961 | .6103152 | 241.3377 |
| #2 | .1112994 | .0885285 | .0566054 | .0402543 | .6059395 | 242.3436 |
| #3 | .1104436 | .0913467 | .0537871 | .0423240 | .6047040 | 243.3948 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4446198 | .4798415 | .9676569 | 219.9821 | .5738528 | .4879181 |
| Stddev | .0010132 | .0008748 | .0016276 | .6268 | .0017571 | .0003724 |
| %RSD | .2278714 | .1823078 | .1682023 | .2849440 | .3061889 | .0763313 |
| #1 | .4452359 | .4795230 | .9689792 | 220.6388 | .5743957 | .4881284 |
| #2 | .4451731 | .4791705 | .9658391 | 219.9174 | .5718884 | .4874881 |
| #3 | .4434505 | .4808309 | .9681523 | 219.3901 | .5752744 | .4881378 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4970914 | 92.92000 | .4386863 | 234.3906 | .9612949 | .2170346 |
| Stddev | .0016315 | .56776 | .0025948 | .4532 | .0008495 | .0003929 |
| %RSD | .3282097 | .6110214 | .5915001 | .1933656 | .0883732 | .1810128 |
| #1 | .4989645 | 93.30842 | .4403636 | 234.8998 | .9622751 | .2174565 |
| #2 | .4963288 | 93.18317 | .4399979 | 234.2407 | .9607706 | .2169680 |
| #3 | .4959808 | 92.26840 | .4356975 | 234.0313 | .9608391 | .2166793 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.074005 | .4431779 | 1.052603 | -.058769 | F .7864494 | 1.085377 |
| Stddev | .005359 | .0016350 | .001377 | .003287 | .0021356 | .004257 |
| %RSD | 7.240830 | .3689148 | .1308113 | 5.593886 | .2715479 | .3921981 |
| #1 | -.074920 | .4450128 | 1.052204 | -.056055 | .7868667 | 1.089201 |
| #2 | -.068248 | .4418757 | 1.054135 | -.062424 | .7841359 | 1.080790 |
| #3 | -.078847 | .4426453 | 1.051469 | -.057827 | .7883455 | 1.086141 |

Sample Name: ICSAB01 Acquired: 2/25/2025 16:19:31 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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 | 1.052205 | .9599970 | .9804734 | F .0035683 | F -.017653 | F -.005230 |
| Stddev | .003937 | .0039475 | .0082039 | .0057535 | .002213 | .000242 |
| %RSD | .3741560 | .4112031 | .8367288 | 161.2404 | 12.53600 | 4.631445 |
| #1 | 1.055409 | .9613139 | .9711291 | .0038917 | -.017676 | -.005377 |
| #2 | 1.047811 | .9631178 | .9864934 | -.002340 | -.019855 | -.005362 |
| #3 | 1.053397 | .9555594 | .9837978 | .009153 | -.015429 | -.004950 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | F -.000356 |
| Stddev | .000380 |
| %RSD | 106.8178 |
| #1 | -.000704 |
| #2 | -.000414 |
| #3 | .000050 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2252.535 | 46467.38 | 10027.90 | 1486.174 | 3654.859 |
| Stddev | 3.821 | 40.81 | 10.55 | 4.246 | 1.717 |
| %RSD | .1696495 | .0878246 | .1052263 | .2856993 | .0469657 |
| #1 | 2248.631 | 46426.17 | 10034.32 | 1487.003 | 3653.914 |
| #2 | 2252.706 | 46468.20 | 10033.65 | 1481.575 | 3653.822 |
| #3 | 2256.268 | 46507.78 | 10015.72 | 1489.945 | 3656.840 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCV01 Acquired: 2/25/2025 16:23:39 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.897939 | 5.030188 | 4.873251 | 4.850749 | 4.919933 | 9.817764 | 9.096900 |
| Stddev | .012020 | .082674 | .011159 | .002236 | .005974 | .008465 | .026682 |
| %RSD | .2454094 | 1.643562 | .2289776 | .0461021 | .1214167 | .0862181 | .2933042 |
| #1 | 4.909400 | 4.940783 | 4.872478 | 4.853079 | 4.925920 | 9.811378 | 9.100798 |
| #2 | 4.898988 | 5.045906 | 4.884775 | 4.848620 | 4.919908 | 9.827365 | 9.121419 |
| #3 | 4.885428 | 5.103875 | 4.862498 | 4.850548 | 4.913972 | 9.814548 | 9.068484 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2314512 | 2.417873 | 23.57649 | 1.021762 | 2.408805 | 1.230486 | 5.111295 |
| Stddev | .0009930 | .002693 | .04325 | .004603 | .005459 | .001676 | .007531 |
| %RSD | .4290441 | .1113669 | .1834374 | .4504941 | .2266182 | .1362091 | .1473438 |
| #1 | .2320042 | 2.416111 | 23.52674 | 1.026695 | 2.406678 | 1.232002 | 5.107481 |
| #2 | .2320447 | 2.420973 | 23.60519 | 1.021011 | 2.415007 | 1.230769 | 5.119970 |
| #3 | .2303048 | 2.416536 | 23.59753 | 1.017582 | 2.404730 | 1.228686 | 5.106433 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.314925 | 23.56967 | 2.407670 | 1.260888 | 24.16403 | 2.386517 | 2.530903 |
| Stddev | .003037 | .09399 | .003741 | .004814 | .04027 | .010446 | .007321 |
| %RSD | .1311781 | .3987831 | .1553757 | .3817847 | .1666646 | .4376926 | .2892481 |
| #1 | 2.311628 | 23.46119 | 2.406350 | 1.265551 | 24.17925 | 2.375704 | 2.531985 |
| #2 | 2.317608 | 23.62093 | 2.411892 | 1.261177 | 24.11837 | 2.387296 | 2.537622 |
| #3 | 2.315538 | 23.62690 | 2.404767 | 1.255937 | 24.19447 | 2.396552 | 2.523102 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 25.11882 | 4.502718 | 4.986321 | 4.868781 | 4.687713 | 5.262607 | 4.787330 |
| Stddev | .05326 | .015587 | .006921 | .005115 | .002335 | .019803 | .010035 |
| %RSD | .2120213 | .3461651 | .1388002 | .1050565 | .0498136 | .3762913 | .2096062 |
| #1 | 25.17997 | 4.510737 | 4.984460 | 4.866767 | 4.690409 | 5.241504 | 4.777184 |
| #2 | 25.09391 | 4.512664 | 4.993983 | 4.874597 | 4.686335 | 5.265536 | 4.797249 |
| #3 | 25.08258 | 4.484755 | 4.980521 | 4.864980 | 4.686394 | 5.280783 | 4.787557 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCV01 Acquired: 2/25/2025 16:23:39 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 4.735753 | 4.587102 | 4.729856 |
| Stddev | .019064 | .008266 | .021190 |
| %RSD | .4025480 | .1802110 | .4479956 |
| #1 | 4.713962 | 4.580553 | 4.753110 |
| #2 | 4.743948 | 4.584362 | 4.711639 |
| #3 | 4.749349 | 4.596391 | 4.724819 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2467.274 | 51159.89 | 10669.05 | 1627.395 | 4102.889 |
| Stddev | 11.390 | 215.01 | 37.60 | 3.534 | 14.910 |
| %RSD | .4616275 | .4202737 | .3524184 | .2171371 | .3633928 |
| #1 | 2459.358 | 51004.16 | 10650.22 | 1624.228 | 4097.812 |
| #2 | 2462.136 | 51070.30 | 10644.59 | 1626.752 | 4091.181 |
| #3 | 2480.327 | 51405.21 | 10712.34 | 1631.206 | 4119.674 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCB01 Acquired: 2/25/2025 16:27:50 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000390 | -.000732 | -.000373 | -.001652 | -.001161 | .0016299 | -.000702 |
| Stddev | .001009 | .002842 | .000451 | .002546 | .001364 | .0045229 | .000282 |
| %RSD | 258.5467 | 388.0522 | 120.8976 | 154.0977 | 117.4790 | 277.4875 | 40.15179 |
| #1 | -.001539 | -.003736 | .000129 | -.004298 | .000283 | -.001761 | -.000436 |
| #2 | .000353 | -.000375 | -.000505 | .000781 | -.002427 | .006765 | -.000997 |
| #3 | .000015 | .001914 | -.000742 | -.001440 | -.001339 | -.000115 | -.000673 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000431 | .0000020 | -.010562 | .0000154 | -.000107 | -.000109 | -.005522 |
| Stddev | .0000129 | .0001243 | .011236 | .0002304 | .000026 | .000228 | .004813 |
| %RSD | 29.90812 | 6163.011 | 106.3794 | 1492.064 | 24.39172 | 208.4849 | 87.16484 |
| #1 | .0000466 | -.000131 | -.012709 | -.000090 | -.000131 | -.000357 | -.000755 |
| #2 | .0000288 | .000115 | .001592 | .000280 | -.000110 | .000092 | -.005430 |
| #3 | .0000538 | .000022 | -.020569 | -.000144 | -.000079 | -.000064 | -.010381 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000110 | -.009945 | -.000116 | .0005597 | -.125971 | .0000677 | -.000521 |
| Stddev | .000133 | .004624 | .000169 | .0001154 | .006109 | .0013743 | .000398 |
| %RSD | 121.5013 | 46.49195 | 145.9455 | 20.61396 | 4.849308 | 2028.789 | 76.41872 |
| #1 | -.000204 | -.005460 | -.000244 | .0006762 | -.132067 | -.000244 | -.000133 |
| #2 | -.000167 | -.009679 | .000076 | .0004455 | -.119850 | .001571 | -.000928 |
| #3 | .000043 | -.014695 | -.000180 | .0005575 | -.125995 | -.001124 | -.000501 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.068184 | .0106735 | .0003728 | .0004398 | .0003425 | .0029890 | -.002950 |
| Stddev | .013716 | .0003102 | .0002123 | .0004915 | .0001811 | .0064434 | .002682 |
| %RSD | 20.11691 | 2.906099 | 56.93190 | 111.7555 | 52.88324 | 215.5733 | 90.91253 |
| #1 | -.076169 | .0108222 | .0005756 | .0007555 | .0005511 | .0072758 | -.005850 |
| #2 | -.076037 | .0108813 | .0001522 | -.000126 | .0002264 | .0061119 | -.002440 |
| #3 | -.052345 | .0103169 | .0003906 | .000690 | .0002499 | -.004421 | -.000560 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCB01 Acquired: 2/25/2025 16:27:50 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.001448 | -.006854 | .0000535 |
| Stddev | .001118 | .000744 | .0000201 |
| %RSD | 77.21102 | 10.85640 | 37.62650 |
| #1 | -.001564 | -.007406 | .0000758 |
| #2 | -.000277 | -.007150 | .0000366 |
| #3 | -.002503 | -.006008 | .0000481 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2541.786 | 54083.14 | 10438.52 | 1744.948 | 4371.868 |
| Stddev | 5.808 | 139.70 | 33.92 | 7.048 | 3.895 |
| %RSD | .2285099 | .2583018 | .3249647 | .4039343 | .0890839 |
| #1 | 2535.148 | 54233.66 | 10402.89 | 1740.401 | 4367.371 |
| #2 | 2544.274 | 53957.65 | 10442.26 | 1741.375 | 4374.189 |
| #3 | 2545.935 | 54058.10 | 10470.42 | 1753.067 | 4374.043 |

Sample Name: PB166715BL Acquired: 2/25/2025 16:32:11 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.001124 | -.000480 | -.000248 | -.001391 | -.000324 | .0022390 | -.000798 |
| Stddev | .001018 | .000660 | .000744 | .002548 | .000408 | .0065041 | .000634 |
| %RSD | 90.54606 | 137.3340 | 299.5451 | 183.0954 | 126.1189 | 290.4901 | 79.47375 |
| #1 | -.000362 | .000184 | -.000536 | .001549 | -.000686 | -.001818 | -.000221 |
| #2 | -.000730 | -.001136 | .000597 | -.002942 | .000119 | -.001206 | -.001476 |
| #3 | -.002281 | -.000489 | -.000806 | -.002781 | -.000404 | .009741 | -.000696 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000257 | -.000044 | -.007535 | .0000697 | -.000285 | -.000036 | -.005839 |
| Stddev | .0000229 | .000026 | .006458 | .0004728 | .000076 | .000076 | .001641 |
| %RSD | 89.08481 | 58.80450 | 85.71163 | 678.1542 | 26.54164 | 212.4354 | 28.10654 |
| #1 | .0000255 | -.000014 | -.007671 | .0006107 | -.000260 | -.000023 | -.007364 |
| #2 | .0000487 | -.000060 | -.013923 | -.000137 | -.000225 | -.000117 | -.006049 |
| #3 | .0000029 | -.000057 | -.001009 | -.000264 | -.000370 | .000033 | -.004102 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000041 | .0052715 | .0000576 | .0000543 | -.136765 | .0007924 | -.000299 |
| Stddev | .000232 | .0067088 | .0004256 | .0002655 | .010664 | .0006111 | .000203 |
| %RSD | 558.2484 | 127.2642 | 739.2519 | 488.7791 | 7.797488 | 77.11449 | 67.85561 |
| #1 | .000112 | -.002353 | .0003037 | .0002632 | -.148606 | .0001466 | -.000373 |
| #2 | -.000308 | .007899 | .0003028 | -.000244 | -.127919 | .0013615 | -.000069 |
| #3 | .000071 | .010269 | -.000434 | .000144 | -.133768 | .0008691 | -.000454 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.092008 | .0049844 | .0001613 | -.000034 | .0005201 | -.000857 | -.002270 |
| Stddev | .014808 | .0007546 | .0001348 | .000764 | .0002113 | .002267 | .001493 |
| %RSD | 16.09404 | 15.13859 | 83.57740 | 2271.191 | 40.62884 | 264.5284 | 65.78290 |
| #1 | -.084836 | .0042893 | .0001005 | -.000343 | .0004056 | -.001626 | -.003001 |
| #2 | -.109037 | .0048769 | .0000676 | .000837 | .0007640 | .001695 | -.003256 |
| #3 | -.082152 | .0057869 | .0003158 | -.000594 | .0003908 | -.002640 | -.000552 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: PB166715BL Acquired: 2/25/2025 16:32:11 Type: Unk
Method: NON EPA-6010-200.7(v2725) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.001795 | -.006712 | -.000020 |
| Stddev | .004003 | .001019 | .000050 |
| %RSD | 222.9395 | 15.17758 | 242.2746 |
| | | | |
| #1 | -.002354 | -.006926 | -.000070 |
| #2 | .002457 | -.005603 | -.000020 |
| #3 | -.005489 | -.007606 | .000029 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2534.394 | 52762.50 | 10460.58 | 1717.798 | 4363.551 |
| Stddev | 6.864 | 181.55 | 9.77 | 4.179 | 9.845 |
| %RSD | .2708287 | .3440911 | .0933869 | .2432542 | .2256188 |
| | | | | | |
| #1 | 2532.821 | 52939.34 | 10471.54 | 1721.972 | 4359.048 |
| #2 | 2541.908 | 52576.58 | 10452.80 | 1713.615 | 4374.842 |
| #3 | 2528.454 | 52771.59 | 10457.39 | 1717.809 | 4356.763 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: PB166715BS Acquired: 2/25/2025 16:48:04 Type: Unk
Method: NON EPA-6010-200.7(v2726) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .7969263 | 2.022440 | .9644803 | 1.916180 | .7934466 | 1.888876 |
| Stddev | .0002789 | .011685 | .0042090 | .003663 | .0004653 | .010612 |
| %RSD | .0349985 | .5777807 | .4363987 | .1911560 | .0586478 | .5617909 |
| #1 | .7971415 | 2.022876 | .9632428 | 1.911961 | .7933886 | 1.885051 |
| #2 | .7966112 | 2.033902 | .9610287 | 1.918546 | .7930130 | 1.880708 |
| #3 | .7970260 | 2.010543 | .9691692 | 1.918034 | .7939382 | 1.900870 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2012253 | .1811257 | .1906548 | .9343497 | .4068153 | .1897427 |
| Stddev | .0010212 | .0005342 | .0002576 | .0106658 | .0010958 | .0001496 |
| %RSD | .5074878 | .2949301 | .1350859 | 1.141523 | .2693686 | .0788302 |
| #1 | .2002121 | .1816395 | .1907349 | .9266675 | .4068723 | .1898000 |
| #2 | .2012096 | .1811644 | .1903668 | .9465273 | .4078814 | .1895730 |
| #3 | .2022543 | .1805732 | .1908629 | .9298543 | .4056920 | .1898552 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .3016128 | 2.963711 | .2164533 | 1.779845 | .4752142 | .0758750 |
| Stddev | .0010310 | .010176 | .0002897 | .010604 | .0006365 | .0001221 |
| %RSD | .3418291 | .3433610 | .1338313 | .5957855 | .1339337 | .1609740 |
| #1 | .3020192 | 2.952297 | .2163930 | 1.775106 | .4755157 | .0759506 |
| #2 | .3004405 | 2.971837 | .2161985 | 1.791992 | .4744830 | .0757341 |
| #3 | .3023787 | 2.966997 | .2167684 | 1.772436 | .4756439 | .0759404 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 3.013380 | .2740673 | .2053519 | 9.458384 | .2540420 | .3980120 |
| Stddev | .030003 | .0020988 | .0013304 | .048078 | .0006782 | .0003622 |
| %RSD | .9956495 | .7658118 | .6478657 | .5083058 | .2669494 | .0910062 |
| #1 | 2.995887 | .2724265 | .2048573 | 9.403778 | .2547922 | .3984160 |
| #2 | 2.996229 | .2764323 | .2068588 | 9.494351 | .2538612 | .3979038 |
| #3 | 3.048024 | .2733429 | .2043396 | 9.477023 | .2534725 | .3977163 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: PB166715BS Acquired: 2/25/2025 16:48:04 Type: Unk
Method: NON EPA-6010-200.7(v2726) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6645672 | .1805059 | .8338733 | 5.562094 | F -.008126 | .1749619 |
| Stddev | .0020374 | .0010308 | .0039911 | .006782 | .000672 | .0009176 |
| %RSD | .3065725 | .5710635 | .4786197 | .1219332 | 8.268963 | .5244621 |
| #1 | .6664698 | .1805433 | .8299357 | 5.569869 | -.008608 | .1739032 |
| #2 | .6624176 | .1794569 | .8337685 | 5.559020 | -.007358 | .1754532 |
| #3 | .6648144 | .1815175 | .8379158 | 5.557395 | -.008411 | .1755291 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .1796819 |
| Stddev | .0008603 |
| %RSD | .4787754 |
| #1 | .1787597 |
| #2 | .1798232 |
| #3 | .1804628 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2498.832 | 52176.48 | 10984.51 | 1681.197 | 4285.824 |
| Stddev | 3.908 | 61.07 | 28.59 | 10.020 | 7.421 |
| %RSD | .1564130 | .1170422 | .2603191 | .5959895 | .1731487 |
| #1 | 2494.467 | 52144.22 | 10951.70 | 1690.800 | 4278.361 |
| #2 | 2502.007 | 52138.30 | 10997.75 | 1670.807 | 4293.202 |
| #3 | 2500.023 | 52246.91 | 11004.09 | 1681.985 | 4285.909 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCV02 Acquired: 2/25/2025 16:54:05 Type: Unk
Method: NON EPA-6010-200.7(v2727) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.891325 | 5.061355 | 4.837733 | 4.820566 | 4.944982 | 9.742768 | 9.059400 |
| Stddev | .015901 | .060807 | .009154 | .007174 | .006724 | .017927 | .083415 |
| %RSD | .3250938 | 1.201406 | .1892108 | .1488309 | .1359824 | .1839986 | .9207591 |
| #1 | 4.880104 | 4.996749 | 4.829335 | 4.812776 | 4.938610 | 9.747861 | 9.094106 |
| #2 | 4.909522 | 5.069845 | 4.847490 | 4.822017 | 4.952010 | 9.722846 | 8.964235 |
| #3 | 4.884348 | 5.117471 | 4.836374 | 4.826903 | 4.944327 | 9.757598 | 9.119859 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2349621 | 2.380443 | 23.08522 | 1.005183 | 2.373651 | 1.230132 | 4.695451 |
| Stddev | .0010428 | .003841 | .01558 | .003068 | .003532 | .001905 | .041331 |
| %RSD | .4438161 | .1613569 | .0674939 | .3051985 | .1487999 | .1548874 | .8802301 |
| #1 | .2340876 | 2.379133 | 23.07059 | 1.007045 | 2.372063 | 1.228682 | 4.691911 |
| #2 | .2346824 | 2.384767 | 23.08345 | 1.006862 | 2.377699 | 1.232290 | 4.738439 |
| #3 | .2361162 | 2.377427 | 23.10160 | 1.001642 | 2.371193 | 1.229424 | 4.656005 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.689633 | 22.85636 | 2.368122 | 1.246554 | 23.21389 | 2.324516 | 2.499467 |
| Stddev | .008652 | .07195 | .002717 | .003232 | .17112 | .005909 | .006416 |
| %RSD | .3216941 | .3148026 | .1147383 | .2592468 | .7371282 | .2542238 | .2566830 |
| #1 | 2.681027 | 22.80312 | 2.366699 | 1.249722 | 23.28359 | 2.331163 | 2.501659 |
| #2 | 2.698332 | 22.82774 | 2.371255 | 1.246677 | 23.33916 | 2.319855 | 2.492243 |
| #3 | 2.689539 | 22.93822 | 2.366412 | 1.243262 | 23.01893 | 2.322531 | 2.504499 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 24.34639 | 4.528130 | 4.955555 | 4.810574 | 4.602578 | 4.964025 | 4.807399 |
| Stddev | .06738 | .017432 | .005879 | .003971 | .000087 | .030430 | .013381 |
| %RSD | .2767385 | .3849648 | .1186258 | .0825406 | .0018793 | .6130120 | .2783344 |
| #1 | 24.35494 | 4.518207 | 4.950116 | 4.807805 | 4.602675 | 4.957319 | 4.792044 |
| #2 | 24.40908 | 4.517925 | 4.961792 | 4.815123 | 4.602511 | 4.997249 | 4.813590 |
| #3 | 24.27515 | 4.548258 | 4.954759 | 4.808793 | 4.602547 | 4.937508 | 4.816562 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCV02 Acquired: 2/25/2025 16:54:05 Type: Unk
Method: NON EPA-6010-200.7(v2727) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | 4.736326 | 4.606285 | 4.690000 |
| Stddev | .012655 | .004504 | .027962 |
| %RSD | .2671807 | .0977769 | .5962080 |
| #1 | 4.721751 | 4.603009 | 4.657728 |
| #2 | 4.742715 | 4.611421 | 4.705260 |
| #3 | 4.744512 | 4.604426 | 4.707011 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2442.559 | 51221.77 | 10330.93 | 1618.596 | 4066.743 |
| Stddev | 5.980 | 188.02 | 23.81 | 8.183 | 8.995 |
| %RSD | .2448222 | .3670724 | .2304356 | .5055738 | .2211912 |
| #1 | 2443.271 | 51031.16 | 10328.30 | 1609.504 | 4070.103 |
| #2 | 2436.255 | 51227.06 | 10355.95 | 1625.370 | 4056.551 |
| #3 | 2448.151 | 51407.09 | 10308.56 | 1620.914 | 4073.574 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCB02 Acquired: 2/25/2025 16:58:14 Type: Unk
Method: NON EPA-6010-200.7(v2727) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 | Ba4934 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000470 | -.002613 | -.000808 | .0006377 | -.000495 | .0012253 | -.003069 |
| Stddev | .001485 | .001177 | .000808 | .0027049 | .000655 | .0059714 | .000764 |
| %RSD | 315.9728 | 45.05157 | 99.96916 | 424.1399 | 132.3642 | 487.3603 | 24.88346 |
| #1 | .001168 | -.002923 | -.001196 | -.002406 | -.000573 | .0018438 | -.002216 |
| #2 | -.000851 | -.001312 | -.001348 | .001554 | .000196 | -.005031 | -.003689 |
| #3 | -.001727 | -.003604 | .000121 | .002766 | -.001107 | .006863 | -.003302 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000593 | -.000009 | -.013226 | .0004348 | -.000163 | -.000017 | -.009545 |
| Stddev | .0000618 | .000086 | .009086 | .0002092 | .000004 | .000191 | .004432 |
| %RSD | 104.1692 | 988.9623 | 68.69613 | 48.10579 | 2.369792 | 1151.131 | 46.43239 |
| #1 | .0000326 | .000067 | -.013678 | .0004737 | -.000160 | .000054 | -.004688 |
| #2 | .0001300 | -.000102 | -.022078 | .0002089 | -.000161 | .000129 | -.013369 |
| #3 | .0000154 | .000009 | -.003923 | .0006218 | -.000167 | -.000233 | -.010577 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000023 | -.000065 | .0000546 | .0008087 | -.151052 | .0004360 | -.000502 |
| Stddev | .000112 | .015401 | .0000534 | .0003312 | .001516 | .0003185 | .000166 |
| %RSD | 488.3205 | 23802.52 | 97.79102 | 40.95143 | 1.003797 | 73.06287 | 32.98511 |
| #1 | -.000132 | -.004464 | .0000226 | .0010706 | -.151880 | .0002116 | -.000380 |
| #2 | -.000029 | .017057 | .0000249 | .0004364 | -.151974 | .0002958 | -.000436 |
| #3 | .000092 | -.012787 | .0001162 | .0009192 | -.149302 | .0008005 | -.000690 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.096897 | .0076637 | .0002579 | -.000081 | .0006023 | .0075506 | -.001724 |
| Stddev | .004121 | .0005030 | .0003680 | .000786 | .0005891 | .0082543 | .000562 |
| %RSD | 4.252634 | 6.563355 | 142.7118 | 968.8895 | 97.79915 | 109.3198 | 32.59412 |
| #1 | -.099254 | .0078971 | .0005318 | -.000656 | .0005811 | -.001980 | -.002366 |
| #2 | -.092139 | .0070864 | -.000160 | -.000403 | .0012017 | .012261 | -.001318 |
| #3 | -.099298 | .0080077 | .000402 | .000815 | .0000241 | .012372 | -.001490 |

Reviewed By:JANVI
On:2/27/2025 11:54:25 AM
Inst Id :P4
LB :LB134801

Sample Name: CCB02 Acquired: 2/25/2025 16:58:14 Type: Unk
Method: NON EPA-6010-200.7(v2727) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

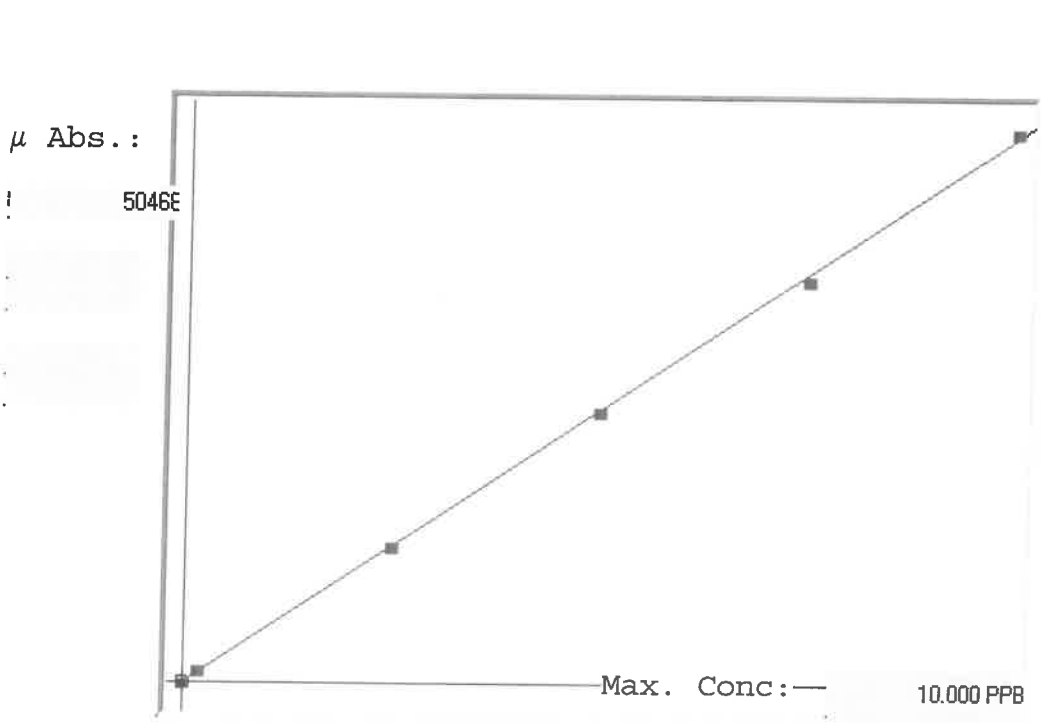
| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.001147 | -.007169 | .0000995 |
| Stddev | .004732 | .000886 | .0000152 |
| %RSD | 412.4833 | 12.35562 | 15.26195 |
| | | | |
| #1 | .003758 | -.007415 | .0001046 |
| #2 | -.001515 | -.006186 | .0001116 |
| #3 | -.005684 | -.007905 | .0000825 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2510.064 | 52544.57 | 10678.16 | 1674.934 | 4356.350 |
| Stddev | 3.108 | 199.80 | 30.87 | 7.103 | 5.527 |
| %RSD | .1238129 | .3802447 | .2890685 | .4240574 | .1268663 |
| | | | | | |
| #1 | 2513.459 | 52318.52 | 10650.92 | 1673.609 | 4361.615 |
| #2 | 2509.374 | 52617.67 | 10671.88 | 1668.587 | 4356.841 |
| #3 | 2507.359 | 52697.53 | 10711.69 | 1682.605 | 4350.594 |

Reviewed By:kareem
On:2/18/2025 11:54:38 AM
Inst Id :CV1
LB :LB134719

LB134719

7470A INSTRUMENT ID: CV1




| Std ID | Conc. | Calc. | Dev. | Mean | SD or %RSD | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | %D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.000 | 0.027 | 0.027 | 83 | 0.000 | 83 | 0 | | | | — |
| 0.2 | 0.200 | 0.221 | 0.021 | 1056 | 0.0 % | 1056 | | | | | 11 |
| 2.5 | 2.500 | 2.488 | -0.012 | 12400 | 0.0 % | 12400 | | | | | 0 |
| 5.0 | 5.000 | 4.987 | -0.013 | 24907 | 0.0 % | 24907 | | | | | 0 |
| 7.5 | 7.500 | 7.382 | -0.118 | 36891 | 0.0 % | 36891 | | | | | -2 |
| 10.0 | 10.000 | 10.095 | 0.095 | 50468 | 0.0 % | 50468 | | | | | 1 |

Reviewed By:kareem
On:2/18/2025 11:54:38 AM
Inst Id :CV1
LB :LB134719

# LB134719 INSTRUMENT ID : CV1

Method: 7470A Operator: Admin Date of Analysis: 14 Feb 2025 10:34:11

| Sample ID | Extended ID | µ Abs. | Conc. | Stnd Conc | Method | Units | Date | Type | Type |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 - 1 | 0 | 83 | - | 0.00000 | 7470A | PPB | 14 Feb 2025 10:45:22 | S | Std |
| 0.2 - 1 | 5V2 | 1056 | - | 0.20000 | 7470A | PPB | 14 Feb 2025 10:47:39 | S | Std |
| 2.5 - 1 | S2.5 | 12400 | - | 2.50000 | 7470A | PPB | 14 Feb 2025 10:49:56 | S | Std |
| 5.0 - 1 | S5 | 24907 | - | 5.00000 | 7470A | PPB | 14 Feb 2025 10:52:13 | S | Std |
| 7.5 - 1 | S7.5 | 36891 | - | 7.50000 | 7470A | PPB | 14 Feb 2025 10:54:30 | S | Std |
| 10.0 - 1 | S10 | 50468 | - | 10.00000 | 7470A | PPB | 14 Feb 2025 10:56:49 | S | Std |
| ICV05 - 1 | ICV05 | 18102 | 3.6274 | | 7470A | PPB | 14 Feb 2025 11:01:31 | U | SMPL |
| ICB05 - 1 | ICB05 | -164 | -0.0227 | | 7470A | PPB | 14 Feb 2025 11:03:45 | U | SMPL |
| CCV72 - 1 | CCV72 | 25057 | 5.0172 | | 7470A | PPB | 14 Feb 2025 11:06:02 | U | SMPL |
| CCB72 - 1 | CCB72 | -251 | -0.0401 | | 7470A | PPB | 14 Feb 2025 11:08:17 | U | SMPL |
| CRA - 1 | CRA | 998 | 0.2095 | | 7470A | PPB | 14 Feb 2025 11:10:34 | U | SMPL |
| HighStd - 1 | HighStd | 50283 | 10.0581 | | 7470A | PPB | 14 Feb 2025 11:12:49 | U | SMPL |
| ChkStd - 1 | ChkStd | 32716 | 6.5477 | | 7470A | PPB | 14 Feb 2025 11:15:05 | U | SMPL |
| PB166720BL - 1 | PBW | -426 | -0.0750 | | 7470A | PPB | 14 Feb 2025 11:17:24 | U | SMPL |
| PB166720BS - 1 | LCSW | 17970 | 3.6010 | | 7470A | PPB | 14 Feb 2025 11:22:21 | U | SMPL |
| Q1352-02 - 1 | TAP-IDW-SOIL-021025 | -237 | -0.0373 | | 7470A | PPB | 14 Feb 2025 11:24:37 | U | SMPL |
| Q1353-02 - 1 | 346 | -18 | 0.0065 | | 7470A | PPB | 14 Feb 2025 11:26:55 | U | SMPL |
| Q1356-01 - 1 | CARBON-SOLID | 52 | 0.0205 | | 7470A | PPB | 14 Feb 2025 11:29:12 | U | SMPL |
| Q1356-03 - 1 | SOIL-PILE | 78 | 0.0257 | | 7470A | PPB | 14 Feb 2025 11:31:30 | U | SMPL |
| Q1356-03DUP - 1 | SOIL-PILEDUP | 77 | 0.0255 | | 7470A | PPB | 14 Feb 2025 11:33:45 | U | SMPL |
| CCV73 - 1 | CCV73 | 24015 | 4.8090 | | 7470A | PPB | 14 Feb 2025 11:36:00 | U | SMPL |
| CCB73 - 1 | CCB73 | -317 | -0.0533 | | 7470A | PPB | 14 Feb 2025 11:38:16 | U | SMPL |
| Q1356-03MS - 1 | SOIL-PILEMS | 16008 | 3.2089 | | 7470A | PPB | 14 Feb 2025 11:40:33 | U | SMPL |
| Q1356-03MSD - 1 | SOIL-PILEMSD | 16495 | 3.3063 | | 7470A | PPB | 14 Feb 2025 11:45:48 | U | SMPL |
| PB166721BL - 1 | PBW | -166 | -0.0231 | | 7470A | PPB | 14 Feb 2025 11:48:04 | U | SMPL |
| PB166721BS - 1 | LCSW | 17840 | 3.5750 | | 7470A | PPB | 14 Feb 2025 11:50:21 | U | SMPL |
| Q1356-04 - 1 | CARBON-WATER | -204 | -0.0307 | | 7470A | PPB | 14 Feb 2025 11:52:38 | U | SMPL |
| Q1356-04DUP - 1 | CARBON-WATERDUP | 167 | 0.0435 | | 7470A | PPB | 14 Feb 2025 11:54:57 | U | SMPL |
| Q1356-04MS - 1 | CARBON-WATERMS | 14650 | 2.9376 | | 7470A | PPB | 14 Feb 2025 11:57:14 | U | SMPL |
| Q1356-04MSD - 1 | CARBON-WATERMSD | 14684 | 2.9444 | | 7470A | PPB | 14 Feb 2025 11:59:33 | U | SMPL |
| Q1356-05 - 1 | CARBON-FB | -23 | 0.0055 | | 7470A | PPB | 14 Feb 2025 12:01:52 | U | SMPL |
| Q1356-06 - 1 | WATER-A | 341 | 0.0782 | | 7470A | PPB | 14 Feb 2025 12:04:10 | U | SMPL |
| CCV74 - 1 | CCV74 | 23694 | 4.7448 | | 7470A | PPB | 14 Feb 2025 12:06:25 | U | SMPL |
| CCB74 - 1 | CCB74 | -262 | -0.0423 | | 7470A | PPB | 14 Feb 2025 12:08:41 | U | SMPL |
| Q1356-07 - 1 | WATER-B | 387 | 0.0874 | | 7470A | PPB | 14 Feb 2025 12:10:59 | U | SMPL |
| Q1356-08 - 1 | WATER-FB | 417 | 0.0934 | | 7470A | PPB | 14 Feb 2025 12:13:14 | U | SMPL |
| Q1356-09 - 1 | SOIL-FB | 58 | 0.0217 | | 7470A | PPB | 14 Feb 2025 12:15:29 | U | SMPL |
| PB166700TB - 1 | | 110 | 0.0321 | | 7470A | PPB | 14 Feb 2025 12:17:45 | U | SMPL |
| PB166702TB - 1 | | 61 | 0.0223 | | 7470A | PPB | 14 Feb 2025 12:20:01 | U | SMPL |
| Q1356-03LX5 - 1 | | 59 | 0.0219 | | 7470A | PPB | 14 Feb 2025 12:22:17 | U | SMPL |
| Q1356-03A - 1 | | 15516 | 3.1106 | | 7470A | PPB | 14 Feb 2025 12:24:33 | U | SMPL |
| Q1356-04LX5 - 1 | | -148 | -0.0195 | | 7470A | PPB | 14 Feb 2025 12:29:32 | U | SMPL |
| Q1356-04A - 1 | | 15958 | 3.1990 | | 7470A | PPB | 14 Feb 2025 12:31:50 | U | SMPL |
| CCV75 - 1 | CCV75 | 24142 | 4.8344 | | 7470A | PPB | 14 Feb 2025 12:36:41 | U | SMPL |
| CCB75 - 1 | CCB75 | -345 | -0.0589 | | 7470A | PPB | 14 Feb 2025 12:38:59 | U | SMPL |

Alliance TECHNICAL GROUP

**Water Metals Preparation Sheet**

PB166715

**SOP ID :** M3010A-Digestion-17

**SDG No :** N/A

**Matrix :** WATER

**Pippete ID:** ICP A

**Balance ID :** N/A

**Filter paper ID :** N/A

**pH Strip ID :** M6069

**Hood ID :** #3

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

**Start Digest Date:** 02/13/2025 **Time :** 12:05 **Temp :** 96 °C

**End Digest Date:** 02/13/2025 **Time :** 15:10 **Temp :** 96 °C

**Digestion tube ID:** M5595

**Block thermometer ID:** MET-DIG. #1

**Dig Technician Signature:** SLD.

**Supervisor Signature:** NB

**Temp :** 1. 96°C 2. N/A

| Standared Name | MLS USED | STD REF. # FROM LOG |
|---|---|---|
| LFS-1 | 0.25 | M6002 |
| LFS-1 | 0.25 | M6011 |
| 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 | M6126 |
| 1:1 HCL | 5.00 | MP84297 |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |

**Extraction Conformance/Non-Conformance Comments:**

HOT BLOCK # 1 CELL 55 Temp :96 C

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|---|---|---|
| 02/13/25 16:10 | SLD. met. dig. | NB. metals Lab |
| | Preparation Group | Analysis Group |

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

**PB166715**

| Lab Sample ID | Client Sample ID | pH | Initial Vol (ml) | Final Vol (ml) | Color Before | Color After | Clarity Before | Clarity After | Comment | Prep Pos |
|---|---|---|---|---|---|---|---|---|---|---|
| PB166700TB | PB166700TB | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 1 |
| PB166702TB | PB166702TB | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 2 |
| PB166715BL | PBW715 | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 3 |
| PB166715BS | LCS715 | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | M6002,M6011 | 4 |
| Q1288-08 | HR-04-020425 | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 5 |
| Q1352-02 | TAP-IDW-SOIL-021025 | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 6 |
| Q1353-02 | 346 | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 7 |
| Q1356-01 | CARBON-SOLID | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 8 |
| Q1356-03 | SOIL-PILE | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 9 |
| Q1356-04 | CARBON-WATER | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 10 |
| Q1356-04DUP | CARBON-WATERDUP | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 11 |
| Q1356-04MS | CARBON-WATERMS | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | M6002,M6011 | 12 |
| Q1356-04MSD | CARBON-WATERMSD | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | M6002,M6011 | 13 |
| Q1356-05 | CARBON-FB | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 14 |
| Q1356-06 | WATER-A | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 15 |
| Q1356-07 | WATER-B | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 16 |
| Q1356-08 | WATER-FB | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 17 |
| Q1356-09 | SOIL-FB | <2 | 5 | 25 | Colorless | Colorless | Clear | Clear | N/A | 18 |

Alliance TECHNICAL GROUP

## TCLP EXTRACTION LOGPAGE

PB166700

| Sample ID | ClientID | TCLP Vessel ID | Sample Wt (g) | Volume Extraction Fluid #1 (mL) | Multi phasic | Phase Miscible | Phases Combined | Final Leachate PH | Metals Leachate Adj. PH | P |
|---|---|---|---|---|---|---|---|---|---|---|
| PB166700TB | LEB700 | 06 | N/A | 2000 | N/A | N/A | N/A | 4.94 | 1.5 | T |
| Q1288-08 | HR-04-020425 | 01 | 100.02 | 2000 | N/A | N/A | N/A | 6.2 | 1.0 | T- |
| Q1352-02 | TAP-IDW-SOIL-021025 | 02 | 100.03 | 2000 | N/A | N/A | N/A | 8.2 | 1.5 | T- |
| Q1353-02 | 346 | 03 | 100.02 | 2000 | N/A | N/A | N/A | 3.0 | 1.0 | T- |
| Q1356-01 | CARBON-SOLID | 04 | 100.03 | 2000 | N/A | N/A | N/A | 5.6 | 1.5 | T- |
| Q1356-03 | SOIL-PILE | 05 | 100.04 | 2000 | N/A | N/A | N/A | 6.0 | 1.0 | T- |

Alliance TECHNICAL GROUP

**TCLP EXTRACTION LOGPAGE**

PB166702

| Sample ID | ClientID | TCLP Vessel ID | Sample Wt (g) | Volume Extraction Fluid #1 (mL) | Multi phasic | Phase Miscible | Phases Combined | Final Leachate PH | Metals Leachate Adj. PH | Pre- Po |
|---|---|---|---|---|---|---|---|---|---|---|
| PB166702TB | LEB702 | N/A | N/A | N/A | N/A | N/A | N/A | 4.94 | 1.0 | N/A |
| Q1356-04 | CARBON-WATER | N/A | N/A | N/A | N/A | N/A | N/A | 7.0 | 1.0 | N/A |
| Q1356-05 | CARBON-FB | N/A | N/A | N/A | N/A | N/A | N/A | 6.0 | 1.5 | N/A |
| Q1356-06 | WATER-A | N/A | N/A | N/A | N/A | N/A | N/A | 6.6 | 1.0 | N/A |
| Q1356-07 | WATER-B | N/A | N/A | N/A | N/A | N/A | N/A | 7.6 | 1.5 | N/A |
| Q1356-08 | WATER-FB | N/A | N/A | N/A | N/A | N/A | N/A | 6.6 | 1.0 | N/A |
| Q1356-09 | SOIL-FB | N/A | N/A | N/A | N/A | N/A | N/A | 6.2 | 1.5 | N/A |

Alliance TECHNICAL GROUP

# Water Mercury Preparation Sheet

PB166720

**SOP ID :** M7470A-Mercury-19

**SDG No :** NA

**Matrix :** WATER

**Pippete ID:** HG A

**Balance ID :** N/A

**Filter paper ID :** NA

**pH Strip ID :** M6069

**Hood ID :** #1

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

**Start Digest Date:** 02/13/2025 **Time :** 11:25 **Temp :** 94 °C

**End Digest Date:** 02/13/2025 **Time :** 13:25 **Temp :** 95 °C

**Digestion tube ID:** M5595

**Block thermometer ID:** HG-DIG#3

**Dig Technician Signature:** MB

**Supervisor Signature:** 12

**Temp :** 1. 94°C 2. N/A

| Standared Name | MLS USED | STD REF. # FROM LOG |
|---|---|---|
| ICV | 30mL | MP845 |
| CCV | 30mL | MP84504 |
| CRA | 30mL | MP84506 |
| Blank Spike | N/A | MP84494 |
| Matrix Spike | 0.48mL | MP84494 |

| Chemical Used | ML/SAMPLE USED | Lot Number |
|---|---|---|
| HNO3/H2SO4(1:2) | 2.5mL | MP83691 |
| KMnO4 (5%) | 4.5mL | MP83692 |
| K2S2O8 (5%) | 2.5mL | MP83693 |
| Hydroxylamine HCL (12%) | 2.0mL | MP83694 |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |

| LAB SAMPLE ID | CLIENT SAMPLE ID | Wt(g)/Vol(ml) | Comment |
|---|---|---|---|
| 0.0 ppb | S0 | 30mL | MP84495 |
| 0.05 ppb | S0.05 | N/A | N/A |
| 0.2 ppb | S0.2 | 30mL | MP84497 |
| 2.5 ppb | S2.5 | 30mL | MP84498 |
| 5.0 ppb | S5.0 | 30mL | MP84499 |
| 7.5 ppb | S7.5 | 30mL | MP84500 |
| 10.0 ppb | S10.0 | 30mL | MP84501 |
| ICV | ICV | 30mL | MP84502 |
| ICB | ICB | 30mL | MP84503 |
| CCV | CCV | 30mL | MP84504 |
| CCB | CCB | 30mL | MP84505 |
| CRI | CRI | 30mL | MP84506 |
| CHK STD | CHK STD | 30mL | MP84507 |

**Extraction Conformance/Non-Conformance Comments:**

N/A

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|---|---|---|
| 2/13/25 @ 13:50 | MB - DIG. LAB | MB - ANCHOR LAB |
| | Preparation Group | Analysis Group |

Alliance TECHNICAL GROUP

## Water Mercury Preparation Sheet

## PB166720

| Lab Sample ID | Client Sample ID | Initial Vol (ml) | Final Vol (ml) | pH | Comment | Prep Pos |
|---|---|---|---|---|---|---|
| PB166700TB | PB166700TB | 3 | 30 | <2 | N/A | 3-1 |
| PB166720BL | PBW720 | 30 | 30 | <2 | N/A | 2 |
| PB166720BS | LCS720 | 30 | 30 | <2 | MP84494 | 3 |
| Q1352-02 | TAP-IDW-SOIL-021025 | 3 | 30 | <2 | N/A | 4 |
| Q1353-02 | 346 | 3 | 30 | <2 | N/A | 5 |
| Q1356-01 | CARBON-SOLID | 3 | 30 | <2 | N/A | 6 |
| Q1356-03 | SOIL-PILE | 3 | 30 | <2 | N/A | 7 |
| Q1356-03DUP | SOIL-PILEDUP | 3 | 30 | <2 | N/A | 8 |
| Q1356-03MS | SOIL-PILEMS | 3 | 30 | <2 | MP84494 | 9 |
| Q1356-03MSD | SOIL-PILEMSD | 3 | 30 | <2 | MP84494 | 10 |

Alliance TECHNICAL GROUP

## TCLP EXTRACTION LOGPAGE

PB166700

**SOP ID :** M1311-TCLP-15

**SDG No :** N/A

**Weigh By :** JP

**Balance ID :** WC SC-7

**pH Meter ID :** WC PH METER-1

**Extraction By :** JP

**Filter By :** JP

**Pippete ID :** WC

**Tumbler ID :** T-1

**TCLP Filter ID :** 115525

**Start Prep Date :** 02/12/2025 **Time :** 14:00

**End Prep Date :** 02/13/2025 **Time :** 07:15

**Combination Ratio :** 20

**ZHE Cleaning Batch :** N/A

**Initial Room Temperature:** 23 °C

**Final Room Temperature:** 22 °C

**TCLP Technician Signature :** JP

**Supervisor By :** [illegible]

| Standared Name | MLS USED | STD REF. # FROM LOG |
|---|---|---|
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |

| Chemical Used | ML/SAMPLE U | Lot Number |
|---|---|---|
| TCLP-FLUID-1 | N/A | WP110801 |
| HCL-TCLP,1N | N/A | WP110803 |
| HNO3-TCLP,1N | N/A | WP110804 |
| pH Strips | N/A | W1931,W1934,W3171,W3172 |
| pH Strips | W1941,W1942 | W3166,W1938,W1939,W1940, |
| 1 Liter Amber | N/A | 90424-08 |
| 120ml Plastic bottle | N/A | 405130101 |
| 1:1 HNO3 | N/A | MP84041 |

**Extraction Conformance/Non-Conformance Comments:**

Matrix spikes are added after fiftration and before preservation. TUMBLER T-1 checked,30 rpm. Partial size reduction in not required. p1356-03 is used for MS-MSD.

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|---|---|---|
| 02/13/25 0830 | JP TCLP Room | [illegible] |
| | Preparation Group | Analysis Group Metals |

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Fax : 908 789 8922

**Instrument ID:** CV1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB134719

| | | | |
|---|---|---|---|
| Review By | Mohan | Review On | 2/18/2025 11:32:33 AM |
| Supervise By | kareem | Supervise On | 2/18/2025 11:54:38 AM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP84495,MP84497,MP84498,MP84499,MP84500,MP84501 |
| ICV Standard | MP84502 |
| CCV Standard | MP84504 |
| ICSA Standard | |
| CRI Standard | MP84506 |
| LCS Standard | |
| Chk Standard | MP84503,MP84505,MP84507,MP84529 |

| Sr# | SampleId | ClientID | QcType | Date | Comment | Operator | Status |
|---|---|---|---|---|---|---|---|
| 1 | S0 | S0 | CAL1 | 02/14/25 10:45 | | Mohan | OK |
| 2 | S0.2 | S0.2 | CAL2 | 02/14/25 10:47 | | Mohan | OK |
| 3 | S2.5 | S2.5 | CAL3 | 02/14/25 10:49 | | Mohan | OK |
| 4 | S5 | S5 | CAL4 | 02/14/25 10:52 | | Mohan | OK |
| 5 | S7.5 | S7.5 | CAL5 | 02/14/25 10:54 | | Mohan | OK |
| 6 | S10 | S10 | CAL6 | 02/14/25 10:56 | | Mohan | OK |
| 7 | ICV05 | ICV05 | ICV | 02/14/25 11:01 | | Mohan | OK |
| 8 | ICB05 | ICB05 | ICB | 02/14/25 11:03 | | Mohan | OK |
| 9 | CCV72 | CCV72 | CCV | 02/14/25 11:06 | | Mohan | OK |
| 10 | CCB72 | CCB72 | CCB | 02/14/25 11:08 | | Mohan | OK |
| 11 | CRA | CRA | CRDL | 02/14/25 11:10 | | Mohan | OK |
| 12 | HighStd | HighStd | HIGH STD | 02/14/25 11:12 | | Mohan | OK |
| 13 | ChkStd | ChkStd | SAM | 02/14/25 11:15 | | Mohan | OK |
| 14 | PB166720BL | PB166720BL | MB | 02/14/25 11:17 | | Mohan | OK |
| 15 | PB166720BS | PB166720BS | LCS | 02/14/25 11:22 | | Mohan | OK |
| 16 | Q1352-02 | TAP-IDW-SOIL-02102 | SAM | 02/14/25 11:24 | | Mohan | OK |
| 17 | Q1353-02 | 346 | SAM | 02/14/25 11:26 | | Mohan | OK |
| 18 | Q1356-01 | CARBON-SOLID | SAM | 02/14/25 11:29 | | Mohan | OK |

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**Instrument ID:** CV1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB134719

| | | | |
|---|---|---|---|
| Review By | Mohan | Review On | 2/18/2025 11:32:33 AM |
| Supervise By | kareem | Supervise On | 2/18/2025 11:54:38 AM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP84495,MP84497,MP84498,MP84499,MP84500,MP84501 |
| ICV Standard | MP84502 |
| CCV Standard | MP84504 |
| ICSA Standard | |
| CRI Standard | MP84506 |
| LCS Standard | |
| Chk Standard | MP84503,MP84505,MP84507,MP84529 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19 | Q1356-03 | SOIL-PILE | SAM | 02/14/25 11:31 | | Mohan | OK |
| 20 | Q1356-03DUP | SOIL-PILEDUP | DUP | 02/14/25 11:33 | | Mohan | OK |
| 21 | CCV73 | CCV73 | CCV | 02/14/25 11:36 | | Mohan | OK |
| 22 | CCB73 | CCB73 | CCB | 02/14/25 11:38 | | Mohan | OK |
| 23 | Q1356-03MS | SOIL-PILEMS | MS | 02/14/25 11:40 | | Mohan | OK |
| 24 | Q1356-03MSD | SOIL-PILEMSD | MSD | 02/14/25 11:45 | | Mohan | OK |
| 25 | PB166721BL | PB166721BL | MB | 02/14/25 11:48 | | Mohan | OK |
| 26 | PB166721BS | PB166721BS | LCS | 02/14/25 11:50 | | Mohan | OK |
| 27 | Q1356-04 | CARBON-WATER | SAM | 02/14/25 11:52 | | Mohan | OK |
| 28 | Q1356-04DUP | CARBON-WATERDUI | DUP | 02/14/25 11:54 | | Mohan | OK |
| 29 | Q1356-04MS | CARBON-WATERMS | MS | 02/14/25 11:57 | | Mohan | OK |
| 30 | Q1356-04MSD | CARBON-WATERMSI | MSD | 02/14/25 11:59 | | Mohan | OK |
| 31 | Q1356-05 | CARBON-FB | SAM | 02/14/25 12:01 | | Mohan | OK |
| 32 | Q1356-06 | WATER-A | SAM | 02/14/25 12:04 | | Mohan | OK |
| 33 | CCV74 | CCV74 | CCV | 02/14/25 12:06 | | Mohan | OK |
| 34 | CCB74 | CCB74 | CCB | 02/14/25 12:08 | | Mohan | OK |
| 35 | Q1356-07 | WATER-B | SAM | 02/14/25 12:10 | | Mohan | OK |
| 36 | Q1356-08 | WATER-FB | SAM | 02/14/25 12:13 | | Mohan | OK |
| 37 | Q1356-09 | SOIL-FB | SAM | 02/14/25 12:15 | | Mohan | OK |
| 38 | PB166700TB | PB166700TB | MB | 02/14/25 12:17 | | Mohan | OK |

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**Instrument ID:** CV1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB134719

| | | | |
|---|---|---|---|
| Review By | Mohan | Review On | 2/18/2025 11:32:33 AM |
| Supervise By | kareem | Supervise On | 2/18/2025 11:54:38 AM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP84495,MP84497,MP84498,MP84499,MP84500,MP84501 |
| ICV Standard | MP84502 |
| CCV Standard | MP84504 |
| ICSA Standard | |
| CRI Standard | MP84506 |
| LCS Standard | |
| Chk Standard | MP84503,MP84505,MP84507,MP84529 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 39 | PB166702TB | PB166702TB | MB | 02/14/25 12:20 | | Mohan | OK |
| 40 | Q1356-03L | SOIL-PILEL | SD | 02/14/25 12:22 | | Mohan | OK |
| 41 | Q1356-03A | SOIL-PILEA | PS | 02/14/25 12:24 | | Mohan | OK |
| 42 | Q1356-04L | CARBON-WATERL | SD | 02/14/25 12:29 | | Mohan | OK |
| 43 | Q1356-04A | CARBON-WATERA | PS | 02/14/25 12:31 | | Mohan | OK |
| 44 | CCV75 | CCV75 | CCV | 02/14/25 12:36 | | Mohan | OK |
| 45 | CCB75 | CCB75 | CCB | 02/14/25 12:38 | | Mohan | OK |

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**Instrument ID:** P4

## Daily Analysis Runlog For Sequence/QCBatch ID # LB134738

| | | | |
|---|---|---|---|
| Review By | kareem | Review On | 2/18/2025 2:00:41 PM |
| Supervise By | Janvi | Supervise On | 2/21/2025 4:44:46 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP84204,MP84223,MP84224,MP84225,MP84226,MP84228 |
| ICV Standard | MP84446 |
| CCV Standard | MP84232 |
| ICSA Standard | MP84230,MP84231 |
| CRI Standard | MP84228 |
| LCS Standard | MP84387 |
| Chk Standard | MP84218,MP84219 |

| Sr# | SampleId | ClientID | QcType | Date | Comment | Operator | Status |
|---|---|---|---|---|---|---|---|
| 1 | S0 | S0 | CAL1 | 02/17/25 10:53 | | Kareem | OK |
| 2 | S1 | S1 | CAL2 | 02/17/25 10:57 | | Kareem | OK |
| 3 | S2 | S2 | CAL3 | 02/17/25 11:02 | | Kareem | OK |
| 4 | S3 | S3 | CAL4 | 02/17/25 11:06 | | Kareem | OK |
| 5 | S4 | S4 | CAL5 | 02/17/25 11:10 | | Kareem | OK |
| 6 | S5 | S5 | CAL6 | 02/17/25 11:14 | | Kareem | OK |
| 7 | ICV01 | ICV01 | ICV | 02/17/25 11:46 | | Kareem | OK |
| 8 | LLICV01 | LLICV01 | LLICV | 02/17/25 11:50 | | Kareem | OK |
| 9 | ICB01 | ICB01 | ICB | 02/17/25 11:56 | | Kareem | OK |
| 10 | CRI01 | CRI01 | CRDL | 02/17/25 12:00 | | Kareem | OK |
| 11 | ICSA01 | ICSA01 | ICSA | 02/17/25 12:05 | | Kareem | OK |
| 12 | ICSAB01 | ICSAB01 | ICSAB | 02/17/25 12:09 | | Kareem | OK |
| 13 | CCV01 | CCV01 | CCV | 02/17/25 12:13 | | Kareem | OK |
| 14 | CCB01 | CCB01 | CCB | 02/17/25 12:17 | | Kareem | OK |
| 15 | Q1366-01 | HD-01-2132025 | SAM | 02/17/25 12:23 | MS/MSD fail for more than 50% parameters | Kareem | Not Ok |
| 16 | Q1366-01DUP | HD-01-2132025DUP | DUP | 02/17/25 12:28 | MS/MSD fail for more than 50% parameters | Kareem | Not Ok |
| 17 | Q1366-01L | HD-01-2132025L | SD | 02/17/25 12:32 | MS/MSD fail for more than 50% parameters | Kareem | Not Ok |
| | | | | | | | |

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**Instrument ID:** P4

## Daily Analysis Runlog For Sequence/QCBatch ID # LB134738

| | | | |
|---|---|---|---|
| Review By | kareem | Review On | 2/18/2025 2:00:41 PM |
| Supervise By | Janvi | Supervise On | 2/21/2025 4:44:46 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP84204,MP84223,MP84224,MP84225,MP84226,MP84228 |
| ICV Standard | MP84446 |
| CCV Standard | MP84232 |
| ICSA Standard | MP84230,MP84231 |
| CRI Standard | MP84228 |
| LCS Standard | MP84387 |
| Chk Standard | MP84218,MP84219 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 18 | Q1366-01MS | HD-01-2132025MS | MS | 02/17/25 12:36 | MS/MSD fail for more than 50% parameters | Kareem | Not Ok |
| 19 | Q1366-01MSD | HD-01-2132025MSD | MSD | 02/17/25 12:40 | MS/MSD fail for more than 50% parameters | Kareem | Not Ok |
| 20 | Q1366-01A | HD-01-2132025A | PS | 02/17/25 12:45 | MS/MSD fail for more than 50% parameters | Kareem | Not Ok |
| 21 | PB166700TB | PB166700TB | MB | 02/17/25 12:57 | | Kareem | OK |
| 22 | Q1288-08 | HR-04-020425 | SAM | 02/17/25 13:02 | | Kareem | OK |
| 23 | CCV02 | CCV02 | CCV | 02/17/25 13:06 | | Kareem | OK |
| 24 | CCB02 | CCB02 | CCB | 02/17/25 13:10 | | Kareem | OK |
| 25 | Q1352-02 | TAP-IDW-SOIL-02102 | SAM | 02/17/25 13:15 | | Kareem | OK |
| 26 | Q1356-01 | CARBON-SOLID | SAM | 02/17/25 13:19 | | Kareem | OK |
| 27 | Q1356-03 | SOIL-PILE | SAM | 02/17/25 13:24 | | Kareem | OK |
| 28 | PB166702TB | PB166702TB | MB | 02/17/25 13:28 | | Kareem | OK |
| 29 | Q1356-04 | CARBON-WATER | SAM | 02/17/25 13:32 | | Kareem | OK |
| 30 | Q1356-04DUP | CARBON-WATERDUI | DUP | 02/17/25 13:37 | | Kareem | OK |
| 31 | Q1356-04L | CARBON-WATERL | SD | 02/17/25 13:41 | | Kareem | OK |
| 32 | Q1356-04MS | CARBON-WATERMS | MS | 02/17/25 13:45 | 0.1 ML M6010 AND M6001 WERE ADDED TO 10 ML OF SAMPLE | Kareem | OK |
| 33 | Q1356-04MSD | CARBON-WATERMS | MSD | 02/17/25 13:49 | 0.1 ML M6010 AND M6001 WERE ADDED TO 10 ML OF SAMPLE | Kareem | OK |
| 34 | Q1356-04A | CARBON-WATERA | PS | 02/17/25 13:53 | 0.1 ML M6010 AND M6001 WERE ADDED TO 10 ML OF SAMPLE | Kareem | OK |

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**Instrument ID:** P4

## Daily Analysis Runlog For Sequence/QCBatch ID # LB134738

| | | | |
|---|---|---|---|
| Review By | kareem | Review On | 2/18/2025 2:00:41 PM |
| Supervise By | Janvi | Supervise On | 2/21/2025 4:44:46 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP84204,MP84223,MP84224,MP84225,MP84226,MP84228 |
| ICV Standard | MP84446 |
| CCV Standard | MP84232 |
| ICSA Standard | MP84230,MP84231 |
| CRI Standard | MP84228 |
| LCS Standard | MP84387 |
| Chk Standard | MP84218,MP84219 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 35 | CCV03 | CCV03 | CCV | 02/17/25 13:57 | | Kareem | OK |
| 36 | CCB03 | CCB03 | CCB | 02/17/25 14:06 | | Kareem | OK |
| 37 | Q1356-05 | CARBON-FB | SAM | 02/17/25 14:10 | | Kareem | OK |
| 38 | Q1356-06 | WATER-A | SAM | 02/17/25 14:15 | | Kareem | OK |
| 39 | Q1356-07 | WATER-B | SAM | 02/17/25 14:19 | | Kareem | OK |
| 40 | Q1356-08 | WATER-FB | SAM | 02/17/25 14:23 | | Kareem | OK |
| 41 | Q1356-09 | SOIL-FB | SAM | 02/17/25 14:28 | | Kareem | OK |
| 42 | PB166715BL | PB166715BL | MB | 02/17/25 14:32 | Not Use | Kareem | Not Ok |
| 43 | PB166715BS | PB166715BS | LCS | 02/17/25 14:36 | Not Use | Kareem | Not Ok |
| 44 | PB166731BL | PB166731BL | MB | 02/17/25 14:40 | | Kareem | OK |
| 45 | PB166731BS | PB166731BS | LCS | 02/17/25 14:49 | 0.1 ML M6010 AND M6001 WERE ADDED TO 10 ML OF SAMPLE | Kareem | OK |
| 46 | CCV04 | CCV04 | CCV | 02/17/25 14:53 | | Kareem | OK |
| 47 | CCB04 | CCB04 | CCB | 02/17/25 14:58 | | Kareem | OK |
| 48 | LR1 | LR1 | HIGH STD | 02/17/25 15:02 | | Kareem | OK |
| 49 | LR2 | LR2 | HIGH STD | 02/17/25 15:07 | | Kareem | OK |
| 50 | CCV05 | CCV05 | CCV | 02/17/25 15:12 | | Kareem | OK |
| 51 | CCB05 | CCB05 | CCB | 02/17/25 15:15 | | Kareem | OK |

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**Instrument ID:** P4

## Daily Analysis Runlog For Sequence/QCBatch ID # LB134801

| | | | |
|---|---|---|---|
| Review By | kareem | Review On | 2/26/2025 7:18:21 PM |
| Supervise By | JANVI | Supervise On | 2/27/2025 11:54:25 AM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP84636,MP84637,MP84638,MP84639,MP84640,MP84642 |
| ICV Standard | MP84643 |
| CCV Standard | MP84646 |
| ICSA Standard | MP84644,MP84645 |
| CRI Standard | MP84642 |
| LCS Standard | |
| Chk Standard | MP84649,MP84650 |

| Sr# | SampleId | ClientID | QcType | Date | Comment | Operator | Status |
|---|---|---|---|---|---|---|---|
| 1 | S0 | S0 | CAL1 | 02/25/25 15:31 | | Kareem | OK |
| 2 | S1 | S1 | CAL2 | 02/25/25 15:36 | | Kareem | OK |
| 3 | S2 | S2 | CAL3 | 02/25/25 15:40 | | Kareem | OK |
| 4 | S3 | S3 | CAL4 | 02/25/25 15:44 | | Kareem | OK |
| 5 | S4 | S4 | CAL5 | 02/25/25 15:49 | | Kareem | OK |
| 6 | S5 | S5 | CAL6 | 02/25/25 15:53 | | Kareem | OK |
| 7 | ICV01 | ICV01 | ICV | 02/25/25 15:57 | | Kareem | OK |
| 8 | LLICV01 | LLICV01 | LLICV | 02/25/25 16:02 | | Kareem | OK |
| 9 | ICB01 | ICB01 | ICB | 02/25/25 16:06 | | Kareem | OK |
| 10 | CRI01 | CRI01 | CRDL | 02/25/25 16:10 | | Kareem | OK |
| 11 | ICSA01 | ICSA01 | ICSA | 02/25/25 16:15 | | Kareem | OK |
| 12 | ICSAB01 | ICSAB01 | ICSAB | 02/25/25 16:19 | | Kareem | OK |
| 13 | CCV01 | CCV01 | CCV | 02/25/25 16:23 | | Kareem | OK |
| 14 | CCB01 | CCB01 | CCB | 02/25/25 16:27 | | Kareem | OK |
| 15 | PB166715BL | PB166715BL | MB | 02/25/25 16:32 | | Kareem | OK |
| 16 | PB166715BS | PB166715BS | LCS | 02/25/25 16:48 | 0.1 ML OF M6010 AND M6001 WERE ADDED TO 10 ML OF SAMPLE | Kareem | OK |
| 17 | CCV02 | CCV02 | CCV | 02/25/25 16:54 | | Kareem | OK |
| 18 | CCB02 | CCB02 | CCB | 02/25/25 16:58 | | Kareem | OK |

Alliance TECHNICAL GROUP

## TCLP EXTRACTION LOGPAGE

PB166700

**SOP ID :** M1311-TCLP-15

**SDG No :** N/A

**Start Prep Date :** 02/12/2025 **Time :** 14:00

**Weigh By :** JP

**End Prep Date :** 02/13/2025 **Time :** 07:15

**Balance ID :** WC SC-7

**Combination Ratio :** 20

**pH Meter ID :** WC PH METER-1

**ZHE Cleaning Batch :** N/A

**Extraction By :** JP

**Initial Room Temperature:** 23 °C

**Filter By :** JP

**Final Room Temperature:** 22 °C

**Pippete ID :** WC

**TCLP Technician Signature :** JP

**Tumbler ID :** T-1

**Supervisor By :** JC

**TCLP Filter ID :** 115525

| Standared Name | MLS USED | STD REF. # FROM LOG |
|---|---|---|
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |

| Chemical Used | ML/SAMPLE U | Lot Number |
|---|---|---|
| TCLP-FLUID-1 | N/A | WP110801 |
| HCL-TCLP,1N | N/A | WP110803 |
| HNO3-TCLP,1N | N/A | WP110804 |
| pH Strips | N/A | W1931,W1934,W3171,W3172 |
| pH Strips | W1941,W1942 | W3166,W1938,W1939,W1940, |
| 1 Liter Amber | N/A | 90424-08 |
| 120ml Plastic bottle | N/A | 405130101 |
| 1:1 HNO3 | N/A | MP84041 |

**Extraction Conformance/Non-Conformance Comments:**

Matrix spikes are added after fiftration and before preservation. TUMBLER T-1 checked,30 rpm. Partial size reduction in not required. p1356-03 is used for MS-MSD.

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|---|---|---|
| 02/13/25 0830 | JP TCLP Room | SGB. / Ext |
| | Preparation Group | Analysis Group Metals |

Alliance TECHNICAL GROUP

**TCLP EXTRACTION LOGPAGE**

PB166700

| Sample ID | ClientID | TCLP Vessel ID | Sample Wt (g) | Volume Extraction Fluid #1 (mL) | Multi phasic | Phase Miscible | Phases Combined | Final Leachate PH | Metals Leachate Adj. PH | Prep Pos |
|---|---|---|---|---|---|---|---|---|---|---|
| PB166700TB | LEB700 | 06 | N/A | 2000 | N/A | N/A | N/A | 4.94 | 1.5 | T-1 |
| Q1288-08 | HR-04-020425 | 01 | 100.02 | 2000 | N/A | N/A | N/A | 6.2 | 1.0 | T-1 |
| Q1352-02 | TAP-IDW-SOIL-021025 | 02 | 100.03 | 2000 | N/A | N/A | N/A | 8.2 | 1.5 | T-1 |
| Q1353-02 | 346 | 03 | 100.02 | 2000 | N/A | N/A | N/A | 3.0 | 1.0 | T-1 |
| Q1356-01 | CARBON-SOLID | 04 | 100.03 | 2000 | N/A | N/A | N/A | 5.6 | 1.5 | T-1 |
| Q1356-03 | SOIL-PILE | 05 | 100.04 | 2000 | N/A | N/A | N/A | 6.0 | 1.0 | T-1 |

| SampleID | ClientID | Sample Weight (g) | Filter Weight (g) | Filtrate (mL) | Filter + Solid (After 100°C) | % solids | % Dry Solids |
|---|---|---|---|---|---|---|---|
| PB166700TB | LEB700 | N/A | N/A | N/A | N/A | N/A | N/A |
| Q1288-08 | HR-04-020425 | N/A | N/A | N/A | N/A | 100 | N/A |
| Q1352-02 | TAP-IDW-SOIL-021025 | N/A | N/A | N/A | N/A | 100 | N/A |
| Q1353-02 | 346 | N/A | N/A | N/A | N/A | 100 | N/A |
| Q1356-01 | CARBON-SOLID | N/A | N/A | N/A | N/A | 100 | N/A |
| Q1356-03 | SOIL-PILE | N/A | N/A | N/A | N/A | 100 | N/A |

Alliance TECHNICAL GROUP

**TCLP Fluid Determination**

PB166700

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

**Thermometer ID :** FLASHPOINT

| SampleID | ClientID | Sample Weight (g) | Volume DI Water (mL) | PH after 5 min stir | PH after 10 min stir | Extraction Fluid 1 or 2 | pH Extraction Fluid |
|---|---|---|---|---|---|---|---|
| PB166700TB | LEB700 | N/A | N/A | N/A | N/A | #1 | 4.94 |
| Q1288-08 | HR-04-020425 | 5.02 | 96.5 | 8.6 | 3.0 | #1 | 4.94 |
| Q1352-02 | TAP-IDW-SOIL-021025 | 5.03 | 96.5 | 10.0 | 4.5 | #1 | 4.94 |
| Q1353-02 | 346 | 5.03 | 96.5 | 5.8 | 1.5 | #1 | 4.94 |
| Q1356-01 | CARBON-SOLID | 5.02 | 96.5 | 7.2 | 2.0 | #1 | 4.94 |
| Q1356-03 | SOIL-PILE | 5.02 | 96.5 | 8.6 | 3.0 | #1 | 4.94 |

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# Prep Standard - Chemical Standard Summary

**Order ID :** Q1352

**Test :** TCLP ICP Metals,TCLP Mercury

**Prepbatch ID :** PB166715,PB166720,

**Sequence ID/Qc Batch ID:** LB134719,LB134738,LB134738,LB134801,

**Standard ID :**
MP83691,MP83692,MP83693,MP83694,MP84204,MP84218,MP84219,MP84223,MP84224,MP84225,MP84226,MP84227,MP84228,MP84230,MP84231,MP84232,MP84297,MP84387,MP84446,MP84494,MP84495,MP84497,MP84498,MP84499,MP845,MP84500,MP84501,MP84502,MP84503,MP84504,MP84505,MP84506,MP84507,MP84529,MP84636,MP84637,MP84638,MP84639,MP84640,MP84641,MP84642,MP84643,MP84644,MP84645,MP84646,MP84649,MP84650,

**Chemical ID :**
M4371,M4465,M4884,M4916,M5062,M5130,M5192,M5218,M5223,M5288,M5296,M5298,M5393,M5395,M5429,M5467,M5472,M5476,M5496,M5497,M5498,M5519,M5532,M5658,M5697,M5747,M5748,M5751,M5789,M5792,M5798,M5799,M5800,M5801,M5802,M5811,M5814,M5815,M5816,M5817,M5819,M5820,M5875,M5882,M5884,M5959,M5961,M5962,M5970,M5977,M5978,M5985,M6002,M6011,M6021,M6023,M6025,M6028,M6030,M6032,M6041,M6077,M6121,M6126,M6127,M6128,M6144,M6145,M6146,M6150,M6152,W3112,

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3965 | 2:1 H2SO4 : HNO3 | MP83691 | 12/18/2024 | 06/03/2025 | Mohan Bera | None | None | Sarabjit Jaswal 12/18/2024 |

**FROM** 1600.00000ml of M6041 + 800.00000ml of M6126 = Final Quantity: 3200.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 65 | POTASSIUM PERMANGANATE SOLUTION 5 % | MP83692 | 12/18/2024 | 06/18/2025 | Mohan Bera | METALS_SCALE_3 (M SC-3) | None | Sarabjit Jaswal 12/18/2024 |

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

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 66 | POTASSIUM PERSULFATE SOLUTION 5 % | MP83693 | 12/18/2024 | 06/18/2025 | Mohan Bera | METALS_SCALE_3 (M SC-3) | None | Sarabjit Jaswal 12/18/2024 |

**FROM** 100.00000ml of M4465 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 67 | SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION | MP83694 | 12/18/2024 | 06/18/2025 | Mohan Bera | METALS_SCALE_3 (M SC-3) | None | Sarabjit Jaswal 12/18/2024 |

**FROM** 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 902 | ICP AES CAL BLK ( SO/ICB/CCB) | MP84204 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/27/2025 |

**FROM** 125.00000ml of M6121 + 2350.00000ml of W3112 + 25.00000ml of M6126 = Final Quantity: 2500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 919 | ICP AES INTERNAL STD | MP84218 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/27/2025 |

**FROM** 1.00000ml of M5959 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6126 = Final Quantity: 2000.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 903 | ICP AES RINSE SOLN | MP84219 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/27/2025 |

**FROM** 200.00000ml of M6126 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 907 | ICP AES STD S ( S5 ) | MP84223 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 5.00000ml of M5393 + 5.00000ml of M5467 + 5.00000ml of M5472 + 5.00000ml of M5802 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M6077 + 455.00000ml of MP84204 = Final Quantity: 500.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 910 | ICP AES STD S4 | MP84224 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 50.00000ml of MP84204 + 50.00000ml of MP84223 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 909 | ICP AES STD S3 | MP84225 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 25.00000ml of MP84223 + 75.00000ml of MP84204 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3913 | ICP AES STD S2 | MP84226 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 16.00000ml of MP84223 + 184.00000ml of MP84204 = Final Quantity: 200.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 2950 | ICP AES S1/CRI STOCK STD | MP84227 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 0.00200ml of M5816 + 0.00400ml of M5978 + 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5298 + 0.05000ml of M5496 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.06000ml of M5747 + 0.10000ml of M5472 + 0.10000ml of M5697 + 0.10000ml of M5801 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5819 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.25000ml of M5467 + 0.25000ml of M5802 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M6127 + 1.00000ml of M6144 + 2.00000ml of M4884 + 77.68000ml of MP84204 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 2951 | ICP AES S1/CRI WORK STD | MP84228 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 2.00000ml of MP84227 + 98.00000ml of MP84204 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 904 | ICP AES ICSA SOLN | MP84230 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 25.00000ml of M5130 + 225.00000ml of MP84204 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3494 | ICP AES ICSAB SOLN-1 | MP84231 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 0.01000ml of M5815 + 0.01000ml of M5817 + 0.10000ml of M5472 + 0.10000ml of M5970 + 0.10000ml of M6077 + 10.00000ml of M5130 + 10.00000ml of M5223 + 79.50000ml of MP84204 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 911 | ICP AES CCV SOLN | MP84232 | 01/24/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 01/28/2025 |

**FROM** 50.00000ml of MP84204 + 50.00000ml of MP84223 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 170 | 1:1HCL | MP84297 | 01/31/2025 | 02/28/2025 | Eman Mughal | None | None | Sarabjit Jaswal 01/31/2025 |

**FROM** 1250.00000ml of M6121 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 994 | ICPAES ISM01.2 S1 (CONC.) | MP84387 | 01/27/2025 | 02/24/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/10/2025 |

**FROM** 0.02000ml of M5815 + 0.03000ml of M5429 + 0.10000ml of M5798 + 0.10000ml of M6028 + 0.14000ml of M5799 + 0.20000ml of M5476 + 0.20000ml of M5658 + 0.20000ml of M5801 + 0.20000ml of M5811 + 0.20000ml of M5817 + 0.20000ml of M5977 + 0.20000ml of M6025 + 0.20000ml of M6030 + 0.30000ml of M6128 + 0.40000ml of M5496 + 0.50000ml of M5697 + 0.50000ml of M6023 + 0.70000ml of M5962 + 0.80000ml of M5961 + 1.00000ml of M5800 + 1.00000ml of M6021 + 1.20000ml of M6145 + 1.20000ml of M6146 + 10.00000ml of M4884 + 10.00000ml of M5498 + 10.00000ml of M5519 + 10.00000ml of M6127 + 10.00000ml of M6144 + 2.00000ml of M5978 + 4.00000ml of M6032 + 34.24000ml of MP84204 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 912 | ICP AES ICV SOLN | MP84446 | 01/27/2025 | 02/24/2025 | Kareem Khairalla | None | None | Janvi Patel 02/12/2025 |

**FROM** 0.02500ml of M5429 + 0.02500ml of M5815 + 0.02500ml of M5817 + 0.10000ml of M5467 + 0.25000ml of M5218 + 0.25000ml of M5472 + 10.00000ml of M6150 + 87.77500ml of MP84204 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 871 | MERCURY INTERMEDIATE B 250PPB WORKING STD. | MP84494 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 1.00000ml of M6126 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1340 | Hg 0.00 PPB STD | MP84495 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1341 | Hg 0.2 PPB STD | MP84497 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP84494 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1342 | Hg 2.5 PPB STD | MP84498 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 245.00000ml of W3112 + 2.50000ml of MP84494 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1343 | Hg 5.0 PPB STD | MP84499 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 242.50000ml of W3112 + 5.00000ml of MP84494 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1344 | Hg 7.5 PPB STD | MP84500 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 240.00000ml of W3112 + 7.50000ml of MP84494 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1345 | Hg 10.0 PPB STD | MP84501 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 237.50000ml of W3112 + 10.00000ml of MP84494 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1346 | Hg ICV SOLUTION | MP84502 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M5532 + 2.50000ml of M6126 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1351 | ICB (Hg 0.00 PPB SOLUTION) | MP84503 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1358 | CCV (Hg 5.0 PPB SOLUTION) | MP84504 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 485.00000ml of W3112 + 5.00000ml of M6126 + 10.00000ml of MP84494 = Final Quantity: 500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1352 | CCB (Hg 0.00 PPB SOLUTION) | MP84505 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 495.00000ml of W3112 + 5.00000ml of M6126 = Final Quantity: 500.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1349 | CRA/CRI (Hg 0.2 PPB SOLUTION) | MP84506 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP84494 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1350 | CHK STD (Hg 7.0 PPB SOLUTION) | MP84507 | 02/13/2025 | 02/14/2025 | Mohan Bera | None | METALS_PIPETTE_5 (HGA) | Iwona Zarych 02/18/2025 |

**FROM** 2.50000ml of M6126 + 240.50000ml of W3112 + 7.00000ml of MP84494 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 68 | STANNOUS CHLORIDE SOLUTION | MP84529 | 02/14/2025 | 02/15/2025 | Mohan Bera | METALS_SCALE_3 (M SC-3) | None | Iwona Zarych 02/18/2025 |

**FROM** 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6121 = Final Quantity: 500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 902 | ICP AES CAL BLK ( SO/ICB/CCB) | MP84636 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 125.00000ml of M5792 + 2350.00000ml of W3112 + 25.00000ml of M5789 = Final Quantity: 2500.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 907 | ICP AES STD S ( S5 ) | MP84637 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 5.00000ml of M5395 + 5.00000ml of M5467 + 5.00000ml of M5472 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M6077 + 5.00000ml of M6146 + 455.00000ml of MP84636 = Final Quantity: 500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 910 | ICP AES STD S4 | MP84638 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 50.00000ml of MP84636 + 50.00000ml of MP84637 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 909 | ICP AES STD S3 | MP84639 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 25.00000ml of MP84637 + 75.00000ml of MP84636 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3913 | ICP AES STD S2 | MP84640 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 16.00000ml of MP84637 + 184.00000ml of MP84636 = Final Quantity: 200.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 2950 | ICP AES S1/CRI STOCK STD | MP84641 | 02/25/2025 | 03/09/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 0.00200ml of M5816 + 0.00400ml of M5978 + 0.03000ml of M6028 + 0.04000ml of M4884 + 0.05000ml of M5496 + 0.05000ml of M5658 + 0.05000ml of M5811 + 0.05000ml of M6030 + 0.06000ml of M5747 + 0.10000ml of M5472 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5798 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M6127 + 1.00000ml of M6144 + 77.68000ml of MP84636 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 2951 | ICP AES S1/CRI WORK STD | MP84642 | 02/25/2025 | 03/09/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 2.00000ml of MP84641 + 98.00000ml of MP84636 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 912 | ICP AES ICV SOLN | MP84643 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 0.02500ml of M5429 + 0.02500ml of M5815 + 0.02500ml of M5817 + 0.10000ml of M5467 + 0.25000ml of M5218 + 0.25000ml of M5472 + 10.00000ml of M6150 + 89.77500ml of MP84636 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 904 | ICP AES ICSA SOLN | MP84644 | 02/24/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 25.00000ml of M6152 + 225.00000ml of MP84636 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3494 | ICP AES ICSAB SOLN-1 | MP84645 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 0.01000ml of M5815 + 0.01000ml of M5817 + 0.10000ml of M5296 + 0.10000ml of M5472 + 0.10000ml of M5970 + 10.00000ml of M6152 + 79.50000ml of MP84636 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 911 | ICP AES CCV SOLN | MP84646 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 50.00000ml of MP84636 + 50.00000ml of MP84637 = Final Quantity: 100.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 919 | ICP AES INTERNAL STD | MP84649 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 1.00000ml of M5959 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M5789 = Final Quantity: 2000.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 513 | RINSE SOLN | MP84650 | 02/25/2025 | 03/25/2025 | Kareem Khairalla | None | None | Sarabjit Jaswal 02/28/2025 |

**FROM** 200.00000ml of M5789 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

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# CHEMICAL RECEIPT LOG BOOK

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

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57014 / Si, 1000 PPM, 125 ml | 030921 | 03/09/2025 | 08/06/2021 / jaswal | 08/05/2021 / jaswal | M4884 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| 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 # |
|---|---|---|---|---|---|---|
| EPA | PART A / ICSA ( ICP ) STOCK SOLN | ICSA-1211 | 01/31/2025 | 05/20/2024 /bin | 04/20/2021 / bin | M5130 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57042 / Mo, 1000 PPM, 125 ml | 051722 | 05/17/2025 | 07/01/2022 / bin | 06/17/2022 / jaswal | M5192 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti | S2-MEB711674 | 11/02/2026 | 07/01/2022 / bin | 09/10/2021 / bin | M5218 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| EPA | PART B / ICSAB ( ICP ) STOCK SOLN | ICSB-0710 | 01/31/2025 | 05/20/2024 /bin | 04/20/2021 / bin | M5223 |

| 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 | 071122 | 07/11/2025 | 09/01/2022 / jaswal | 07/21/2022 / jaswal | M5288 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | Z9651Q / CHEM-CLP-4/.25L | S2-MEB711673 | 11/02/2026 | 09/19/2022 / jaswal | 08/20/2022 / jaswal | M5296 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58126 / Fe, 10000 PPM, 500 ml | 020422 | 02/04/2025 | 05/02/2023 / jaswal | 06/15/2022 / jaswal | M5298 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL | T2-MEB714159 | 01/13/2027 | 10/12/2022 / bin | 09/19/2022 / bin | M5393 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL | T2-MEB714159 | 01/13/2027 | 01/30/2024 / bin | 09/19/2022 / bin | M5395 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57103 / Li, 10000 PPM, 125 ml | 070622 | 07/06/2025 | 01/30/2023 / bin | 01/26/2023 / bin | M5429 |

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57038 / Sr, 1000 PPM, 125 ml | 082922 | 08/29/2025 | 01/14/2025 / Jaswal | 03/16/2023 / jaswal | M5472 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57138 / Sr, 10000 PPM, 125 ml | 082922 | 08/29/2025 | 07/29/2024 /jaswal | 03/16/2023 / jaswal | M5476 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58113 / Al, 10000 PPM, 500 ml | 011623 | 01/16/2026 | 08/15/2023 / jaswal | 03/17/2023 / bin | M5496 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58120 / Ca, 10000 PPM, 500 ml | 031523 | 03/15/2026 | 03/18/2023 / bin | 03/17/2023 / bin | M5497 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58120 / Ca, 10000 PPM, 500 ml | 031523 | 03/15/2026 | 08/15/2023 / jaswal | 03/17/2023 / bin | M5498 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57119 / Potassium (K) 10,000PPM | 120822 | 12/08/2025 | 01/08/2024 / bin | 03/17/2023 / bin | M5519 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| EPA | ICV-5 / ICV ( HG ) STOCK SOLN | ICV5-0415 | 02/28/2025 | 01/02/2025 /mohan | 03/30/2023 / mohan | M5532 |

| 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 |

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# CHEMICAL RECEIPT LOG BOOK

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | / Lead (Pb) 1000PPM | 100923 | 10/09/2026 | 05/20/2024 / Jaswal | 12/20/2023 / jaswal | M5747 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | / Nickel (Ni) 1000PPM | 091223 | 09/12/2026 | 01/02/2024 / bin | 12/20/2023 / jaswal | M5748 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 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 # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L) | 23G1262003 | 07/30/2025 | 02/08/2024 / Al-Terek | 06/26/2023 / Al-Terek | M5789 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 22D1462006 | 08/05/2025 | 02/05/2024 / Al-Terek | 02/24/2022 / Al-Terek | M5792 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 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 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57051 / Sb, 1000 PPM, 125 ml | 120523 | 12/05/2026 | 08/07/2024 / jaswal | 01/03/2024 / jaswal | M5802 |

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

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 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. | 57115 / P, 10000 PPM, 125 ml | 041723 | 04/17/2026 | 05/21/2024 / Jaswal | 02/09/2024 / jaswal | M5815 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57016 / S, 1000 PPM, 125 ml | 122923 | 12/29/2026 | 05/20/2024 / Jaswal | 02/09/2024 / jaswal | M5816 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57116 / S, 10000 PPM, 125 ml | 071123 | 07/11/2026 | 03/01/2024 / jaswal | 02/09/2024 / jaswal | M5817 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58030 / Zinc, Zn, 500 ml, 1000 PPM | 111623 | 11/16/2026 | 03/20/2024 / jaswal | 02/09/2024 / jaswal | M5819 |

| 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 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL | T2-MEB714417 | 01/27/2027 | 04/19/2024 / jaswal | 02/22/2024 / jaswal | M5875 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-3980-01 / Stannous Chloride (cs/4x500g) | 232820 | 08/31/2028 | 04/30/2024 / mohan | 04/25/2024 / mohan | M5882 |

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CGY10-1 / YTTRIUM 125mL 10,000ug/mL | V2-Y740548 | 02/20/2029 | 07/01/2024 / Jaswal | 06/14/2024 / Jaswal | M5959 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57028 / Ni, 1000 PPM, 125 ml | 041124 | 04/11/2027 | 07/02/2024 / Jaswal | 06/11/2024 / Jaswal | M5961 |

| 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 |

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Fax : 908 789 8922

# CHEMICAL RECEIPT LOG BOOK

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CGMO1-1 / MOLYBDENUM 125mL 1000ug/mL | T2-MO720876 | 07/17/2027 | 01/16/2025 / JANVI | 02/22/2024 / Jaswal | M5977 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CGTI1-1 / TITANIUM 125mL 1000ug/mL | T2-TI719972 | 06/17/2027 | 08/07/2024 / jaswal | 02/22/2024 / Jaswal | M5978 |

| 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 | WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml | T2-MEB723367 | 07/14/2025 | 01/14/2025 / Eman | 05/14/2024 / Jaswal | M6002 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml | U2-MEB731108 | 07/14/2025 | 01/14/2025 / Eman | 05/14/2024 / Jaswal | M6011 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57023 / V, 1000 PPM, 125 ml | 062424 | 06/24/2027 | 09/28/2024 / jaswal | 08/05/2024 / Jaswal | M6021 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57081 / Tl, 1000 PPM, 125 ml | 0624724 | 06/27/2027 | 08/05/2024 / kareem | 08/05/2024 / Jaswal | M6023 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57082 / Pb, 1000 PPM, 125 ml | 061224 | 11/09/2026 | 08/05/2024 / Jaswal | 08/05/2024 / Jaswal | M6025 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57048 / Cd, 1000 PPM, 125 ml | 070124 | 07/01/2027 | 08/05/2024 / kareem | 08/05/2024 / Jaswal | M6028 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57047 / Ag, 1000 PPM, 125 ml | 122823 | 12/28/2026 | 08/05/2024 / kareem | 08/05/2024 / Jaswal | M6030 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57056 / Ba, 1000 PPM, 125 ml | 010924 | 01/09/2027 | 01/14/2025 / Jaswal | 08/05/2024 / Jaswal | M6032 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L) | 23D2462010 | 03/20/2028 | 08/16/2024 / mohan | 08/16/2024 / mohan | M6041 |

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 0000275677 | 05/13/2025 | 11/13/2024 / Eman | 10/13/2024 / Eman | M6121 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L) | 24D1062002 | 06/03/2025 | 12/03/2024 / Janvi | 11/12/2024 / Janvi | M6126 |

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

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

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58111 / Na, 10000 PPM, 500 ml | 072424 | 07/24/2027 | 01/23/2025 / kareem | 01/13/2025 / Jaswal | M6144 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58030 / Zinc, Zn, 500 ml, 1000 PPM | 121724 | 12/17/2027 | 02/04/2025 /jaswal | 01/13/2025 / Jaswal | M6145 |

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| EPA | ICV-1 / ICV ( ICP/ICPMS ) STOCK SOLN | ICV1-1014 | 07/07/2025 | 02/07/2025 / JANVI | 04/20/2021 / JANVI | M6150 |

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | DIW / DI Water | Daily Lab-Certified | 07/03/2029 | 07/03/2024 / Iwona | 07/03/2024 / Iwona | W3112 |

ThermoFisher SCIENTIFIC



M5882 M3

# Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120633

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

| | | | |
|---|---|---|---|
| Catalog Number | T142 | Quality Test / Release Date | 08/17/2023 |
| Lot Number | 232820 | | |
| Description | STANNOUS CHLORIDE, DIHYDRATE CERTIFIED ACS (Suitable for Mercury Determination) | | |
| Country of Origin | United States | Suggested Retest Date | Aug/2028 |
| Chemical Origin | Inorganic-non animal | | |
| BSE/TSE Comment | No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product. | | |

| N/A | | | |
|---|---|---|---|
| Result Name | Units | Specifications | Test Value |
| APPEARANCE | | REPORT | Clear crystals |
| ASSAY | % | Inclusive Between 98 - 103 | 100.65 |
| CALCIUM | % | <= 0.005 | 0.0017 |
| IDENTIFICATION | PASS/FAIL | = PASS TEST | PASS TEST |
| IRON (Fe) | % | <= 0.003 | 0.0011 |
| LEAD (Pb) | % | <= 0.01 | 0.0006 |
| MERCURY (Hg) | ppm | <= 0.05 | <0.05 |
| POTASSIUM (K) | % | <= 0.005 | 0.0001 |
| SODIUM (Na) | % | <= 0.01 | <0.01 |
| SOLUBILITY IN HCL | PASS/FAIL | = PASS TEST | PASS TEST |
| SULFATE (SO4) | PASS/FAIL | = P.T. (ABOUT 0.003%) | P.T. (ABOUT 0.003%) |

Harout Sahagian - Quality Control Supervisor - Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

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

***Certified Reference Material CRM***

M6032

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

R 8/5/24

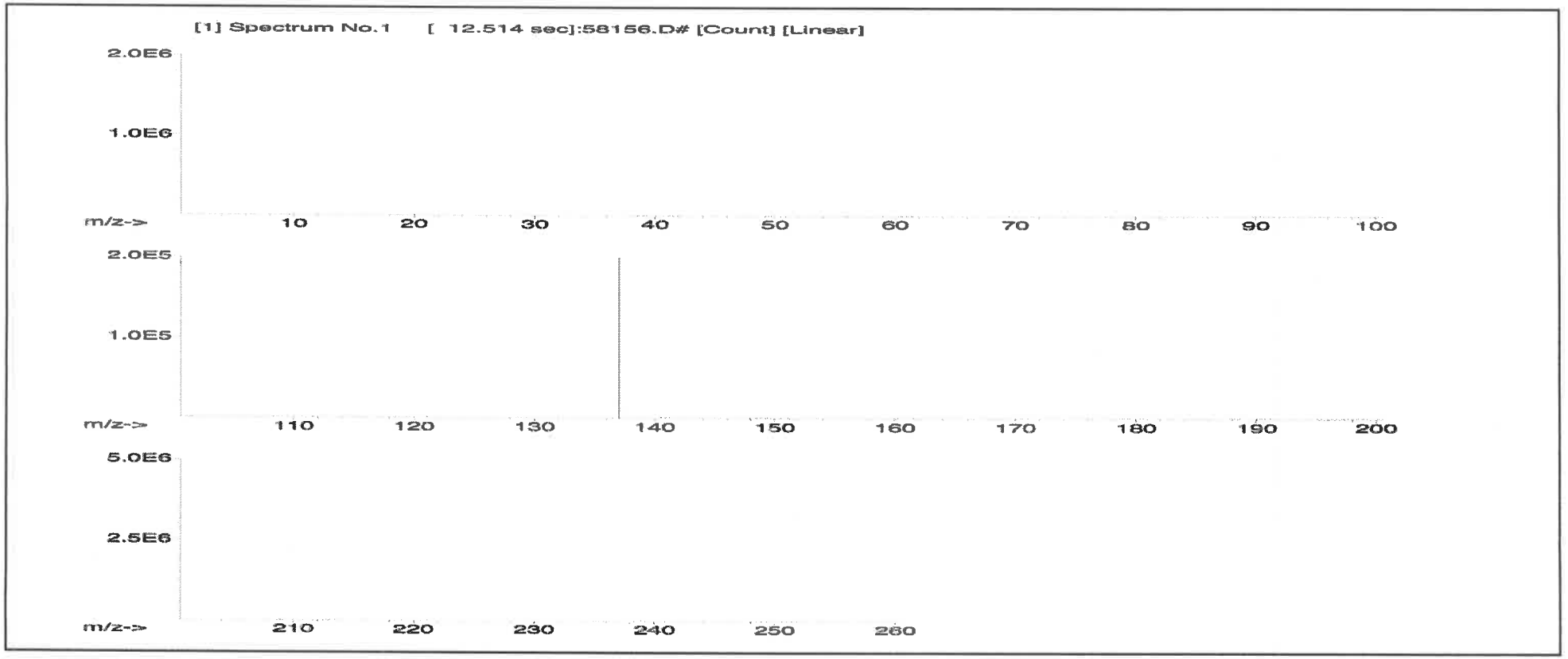
CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **57056** | | **Solvent:** | **Lot #** 24002546 | Nitric Acid |
| **Lot Number:** | **010924** | | | | |
| **Description:** | **Barium (Ba)** | | 2% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 010927 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Weight shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | | |

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 010924 |
| Reviewed By: | Pedro L. Rentas | 010924 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Barium nitrate (Ba) | IN023 | BAD022019A1 | 1000 | 99.999 | 0.10 | 52.3 | 3.82417 | 3.82441 | **1000.1** | **2.0** | 10022-31-8 | 0.5 mg/m3 | orl-rat 355 mg/kg | 3104a |



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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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

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M6028

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## CERTIFIED WEIGHT REPORT:

**Part Number:** 57048
**Lot Number:** 070124
**Description:** Cadmium (Cd)

**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 Flask Uncertainty

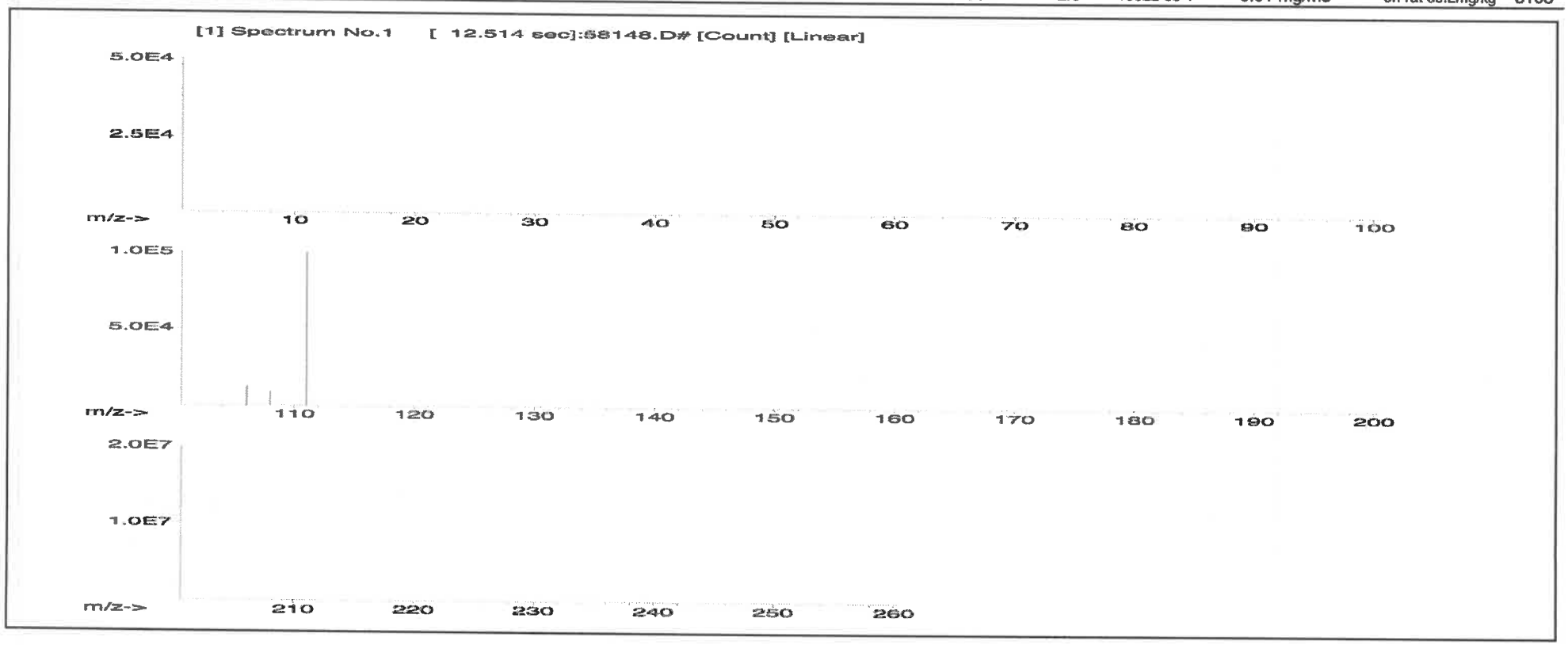
| | | Lot # | |
|---|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid | |
| 2% | 40.0 (mL) | Nitric Acid | |

5E-05 Balance Uncertainty

Aleah O'Brady
Formulated By: Aleah O'Brady 070124

Reviewed By: Pedro L. Rentas 070124

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Cadmium nitrate tetrahydrate (Cd) | IN024 | CDM092021A1 | 1000 | 99.999 | 0.10 | 36.5 | 5.4797 | 5.4804 | **1000.1** | **2.0** | 10022-68-1 | 0.01 mg/m3 | orl-rat 60.2mg/kg | 3108 |



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

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

(T) = Target analyte

**Physical Characterization:**

Certified by:

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

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

INORGANIC VENTURES™
Refine your results. Redefine your industry.

# Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

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

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

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

### Assay Information:

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

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

**Characterization of CRM/RM by Two or More Methods**

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

**Characterization of CRM/RM by One Method**

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

November 02, 2021

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

### 11.2 Lot Expiration Date

- **November 02, 2026**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Michael Booth
Director, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES
Refine your results. Redefine your industry.

# Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | CLPP-CAL-1 |
| Lot Number: | T2-MEB714417 |
| Matrix: | 5% (v/v) HNO3 |
| Value / Analyte(s): | 5 000 µg/mL ea:<br>Calcium, Potassium,<br>Magnesium, Sodium,<br>2 000 µg/mL ea:<br>Aluminum, Barium,<br>1 000 µg/mL ea:<br>Iron,<br>500 µg/mL ea:<br>Nickel, Vanadium,<br>Zinc, Cobalt,<br>Manganese,<br>250 µg/mL ea:<br>Silver, Copper,<br>200 µg/mL ea:<br>Chromium,<br>50 µg/mL ea:<br>Beryllium |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE | CERTIFIED VALUE | ANALYTE | CERTIFIED VALUE |
|---|---|---|---|
| Aluminum, Al | 2 000 ± 7 µg/mL | Barium, Ba | 2 000 ± 9 µg/mL |
| Beryllium, Be | 50.00 ± 0.26 µg/mL | Calcium, Ca | 5 000 ± 22 µg/mL |
| Chromium, Cr | 200.0 ± 1.0 µg/mL | Cobalt, Co | 500.0 ± 2.4 µg/mL |
| Copper, Cu | 250.0 ± 1.0 µg/mL | Iron, Fe | 1 000 ± 4 µg/mL |
| Magnesium, Mg | 5 000 ± 20 µg/mL | Manganese, Mn | 500.0 ± 2.0 µg/mL |
| Nickel, Ni | 500.0 ± 2.2 µg/mL | Potassium, K | 5 000 ± 19 µg/mL |
| Silver, Ag | 250.0 ± 1.1 µg/mL | Sodium, Na | 5 000 ± 18 µg/mL |
| Vanadium, V | 499.7 ± 2.2 µg/mL | Zinc, Zn | 500.0 ± 2.2 µg/mL |

**Density:** 1.118 g/mL (measured at 20 ± 4 ºC)

## Assay Information:

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| Ag | ICP Assay | 3151 | 160729 |
| Ag | Volhard | 999c | 999c |
| Al | ICP Assay | 3101a | 140903 |
| Al | EDTA | 928 | 928 |
| Ba | ICP Assay | 3104a | 140909 |
| Ba | Gravimetric | | See Sec. 4.2 |
| Be | ICP Assay | 3105a | 090514 |
| Be | Calculated | | See Sec. 4.2 |
| Ca | ICP Assay | 3109a | 130213 |
| Ca | EDTA | 928 | 928 |
| Co | ICP Assay | 3113 | 190630 |
| Co | EDTA | 928 | 928 |
| Cr | ICP Assay | 3112a | 170630 |
| Cr | Calculated | | See Sec. 4.2 |
| Cu | ICP Assay | 3114 | 121207 |
| Cu | EDTA | 928 | 928 |
| Fe | ICP Assay | 3126a | 140812 |
| Fe | EDTA | 928 | 928 |
| K | ICP Assay | 3141a | 140813 |
| K | Gravimetric | | See Sec. 4.2 |
| Mg | ICP Assay | 3131a | 140110 |
| Mg | EDTA | 928 | 928 |
| Mn | ICP Assay | 3132 | 050429 |
| Mn | EDTA | 928 | 928 |
| Na | ICP Assay | 3152a | 120715 |
| Na | Gravimetric | | See Sec. 4.2 |
| Ni | ICP Assay | 3136 | 120619 |
| Ni | EDTA | 928 | 928 |
| V | IC Assay | 3165 | 160906 |
| V | EDTA | 928 | 928 |
| Zn | ICP Assay | 3168a | 120629 |
| Zn | EDTA | 928 | 928 |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Note**: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

January 27, 2022

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

### 11.2 Lot Expiration Date

- **January 27, 2027**

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

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

### 11.3 Period of Validity

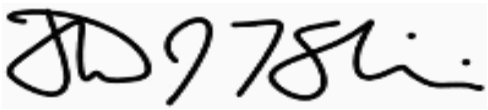
- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



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# Certificate of Analysis

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## 1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | CLPP-CAL-3 |
| Lot Number: | T2-MEB714159 |
| Matrix: | 7% (v/v) HNO3 |
| Value / Analyte(s): | 1 000 µg/mL ea:<br>Arsenic, Lead,<br>Selenium, Thallium,<br><br>500 µg/mL ea:<br>Cadmium |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE | CERTIFIED VALUE | ANALYTE | CERTIFIED VALUE |
|---|---|---|---|
| **Arsenic, As** | **1 000 ± 8 µg/mL** | **Cadmium, Cd** | **500.0 ± 2.1 µg/mL** |
| **Lead, Pb** | **1 000 ± 5 µg/mL** | **Selenium, Se** | **1 000 ± 8 µg/mL** |
| **Thallium, Tl** | **1 000 ± 7 µg/mL** | | |

**Density:** 1.043 g/mL (measured at 20 ± 4 ºC)

### Assay Information:

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| As | ICP Assay | 3103a | 100818 |
| Cd | ICP Assay | 3108 | 130116 |
| Cd | EDTA | 928 | 928 |
| Pb | ICP Assay | 3128 | 101026 |
| Pb | EDTA | 928 | 928 |
| Se | ICP Assay | 3149 | 100901 |
| Tl | ICP Assay | 3158 | 151215 |

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

**Characterization of CRM/RM by Two or More Methods**

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

**Characterization of CRM/RM by One Method**

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

January 13, 2022

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

### 11.2 Lot Expiration Date

- **January 13, 2027**

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

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

### 11.3 Period of Validity

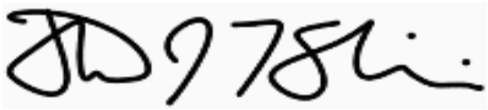
- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



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# Certificate of Analysis

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## 1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | CLPP-CAL-3 |
| Lot Number: | T2-MEB714159 |
| Matrix: | 7% (v/v) HNO3 |
| Value / Analyte(s): | 1 000 µg/mL ea:<br>Arsenic, Lead,<br>Selenium, Thallium,<br><br>500 µg/mL ea:<br>Cadmium |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE | CERTIFIED VALUE | ANALYTE | CERTIFIED VALUE |
|---|---|---|---|
| **Arsenic, As** | **1 000 ± 8 µg/mL** | **Cadmium, Cd** | **500.0 ± 2.1 µg/mL** |
| **Lead, Pb** | **1 000 ± 5 µg/mL** | **Selenium, Se** | **1 000 ± 8 µg/mL** |
| **Thallium, Tl** | **1 000 ± 7 µg/mL** | | |

**Density:** 1.043 g/mL (measured at 20 ± 4 ºC)

### Assay Information:

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| As | ICP Assay | 3103a | 100818 |
| Cd | ICP Assay | 3108 | 130116 |
| Cd | EDTA | 928 | 928 |
| Pb | ICP Assay | 3128 | 101026 |
| Pb | EDTA | 928 | 928 |
| Se | ICP Assay | 3149 | 100901 |
| Tl | ICP Assay | 3158 | 151215 |

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

**Characterization of CRM/RM by Two or More Methods**

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

**Characterization of CRM/RM by One Method**

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

January 13, 2022

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

### 11.2 Lot Expiration Date

- **January 13, 2027**

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

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

### 11.3 Period of Validity

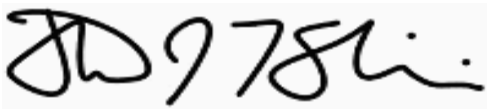
- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



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

*Certified Reference Material CRM*

R : 01/03/24. M5810, M5811

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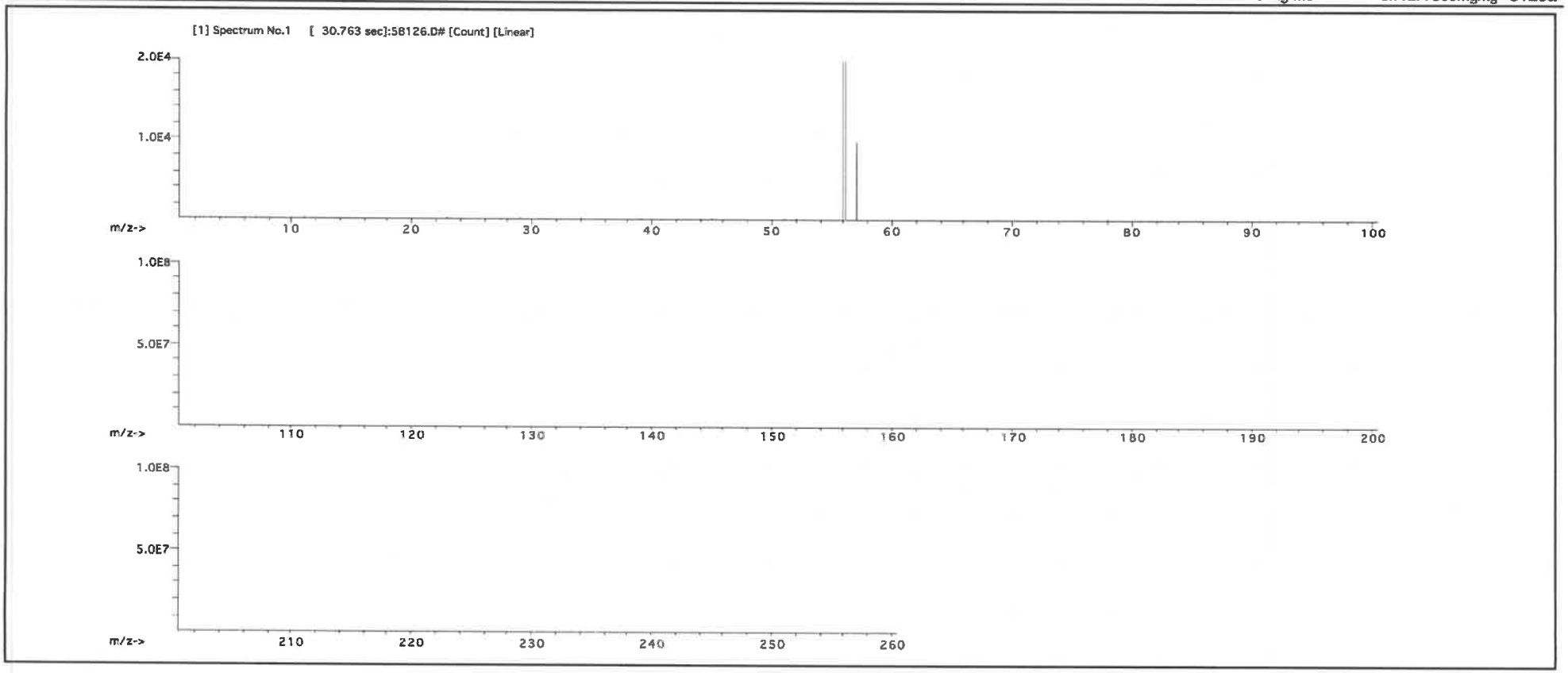
CERTIFIED WEIGHT REPORT:

| | | Lot # | | |
|---|---|---|---|---|
| **Part Number:** | **58126** | **Solvent:** | 21110221 | Nitric Acid |
| **Lot Number:** | **051523** | | | |
| **Description:** | **Iron (Fe)** | 5.0% | 250.0 (mL) | Nitric Acid |
| **Expiration Date:** | 051526 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **10000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Weight shown below was diluted to (mL):** | 5000.1 | 0.12 | Flask Uncertainty | |

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 051523 |
| Reviewed By: | Pedro L. Rentas | 051523 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Iron (Fe) | IN346 | 2302010-500 | 10000 | 99.995 | 0.10 | 100.0 | 50.0034 | 50.0111 | **10001.5** | **20.0** | 7439-89-6 | 5 mg/m3 | orl-rat 7500mg/kg | 3126a |



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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.10 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | <0.2 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.10 | Pd | <0.02 | Rb | <0.02 | Na | <0.2 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.05 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.10 | Ge | <0.10 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.10 |
| B | <0.02 | Cu | <0.10 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

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

Certified by:



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

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

***Certified Reference Material CRM***

R: 8/15/24 M6025

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



CERTIFIED WEIGHT REPORT:

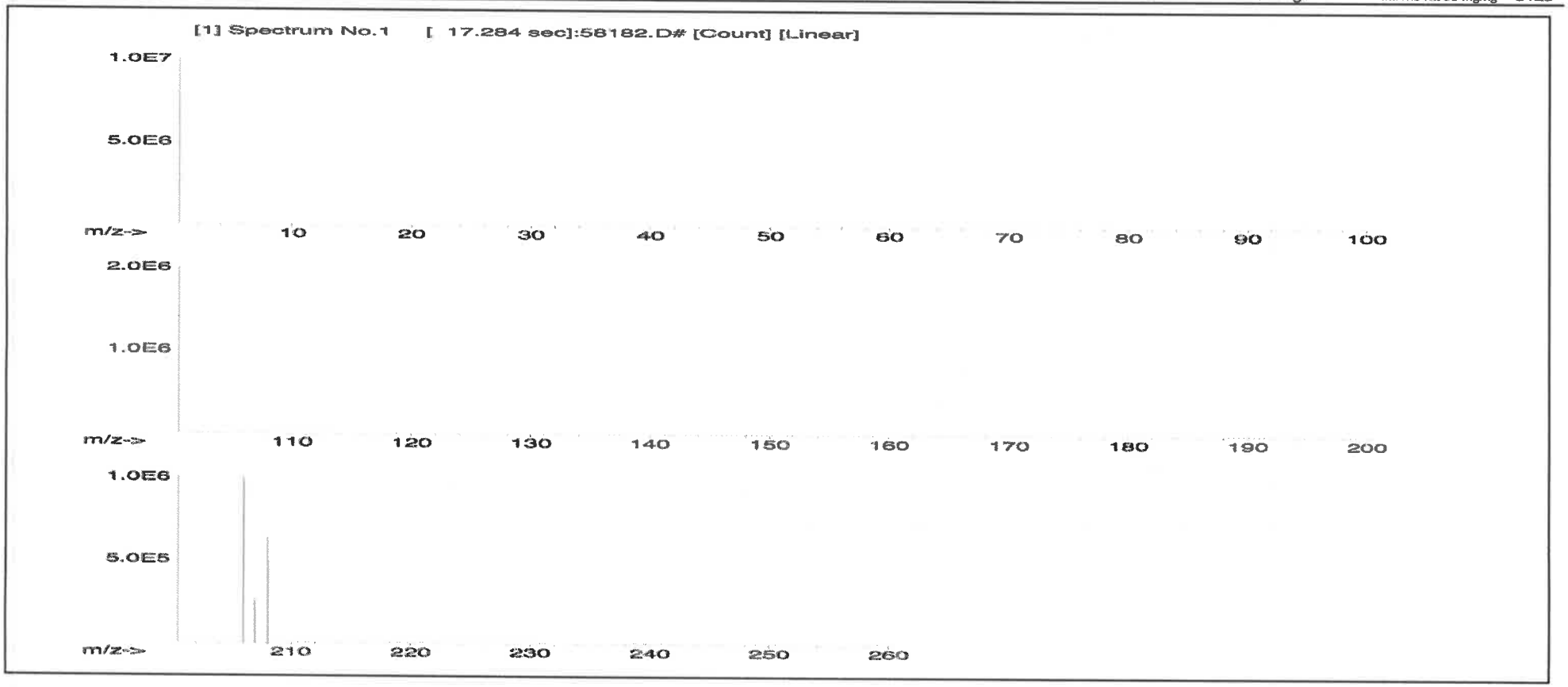
**Part Number:** 57182
**Lot Number:** 110923
**Description:** Lead (Pb)

**Expiration Date:** 110926
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 2000.02

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid | |
| 2% | 40.0 (mL) | Nitric Acid | |
| | 5E-05 | Balance Uncertainty | |
| | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Lawence Barry | 110923 |
| Reviewed By: | Pedro L. Rentas | 110923 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Lead(II) nitrate (Pb) | IN029 | PBD122016A1 | 10000 | 99.999 | 0.10 | 62.5 | 32.0006 | 32.0040 | **10001.1** | **20.0** | 10099-74-8 | 0.05 mg/m3 | intrvns-rat 93 mg/kg | 3128 |



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

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

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

(T)= Target analyte

**Physical Characterization:**

Certified by:

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

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

INORGANIC VENTURES

Refine your results. Redefine your industry.

# Certificate of Analysis

RD:05/14/2024

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).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | WW-LFS-1 |
| Lot Number: | T2-MEB723367 |
| Matrix: | 5% (v/v) HNO3 |

| | | |
|---|---|---|
| Value / Analyte(s): | 1 000 µg/mL ea:<br>Potassium, | |
| | 600 µg/mL ea:<br>Phosphorus, | |
| | 300 µg/mL ea:<br>Sodium, | Iron, |
| | 200 µg/mL ea:<br>Magnesium,<br>Cerium,<br>Thallium, | Aluminum,<br>Selenium, |
| | 100 µg/mL ea:<br>Lead, | Calcium, |
| | 80 µg/mL ea:<br>Arsenic, | |
| | 70 µg/mL ea:<br>Mercury, | |
| | 50 µg/mL ea:<br>Nickel, | |
| | 40 µg/mL ea:<br>Chromium, | |
| | 30 µg/mL ea:<br>Copper,<br>Vanadium, | Boron, |
| | 20 µg/mL ea:<br>Zinc,<br>Barium,<br>Cadmium,<br>Manganese, | Strontium,<br>Beryllium,<br>Cobalt,<br>Lithium, |
| | 7.5 µg/mL ea:<br>Silver | |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE | CERTIFIED VALUE | ANALYTE | CERTIFIED VALUE |
|---|---|---|---|
| Aluminum, Al | 200.0 ± 0.7 µg/mL | Arsenic, As | 80.0 ± 0.7 µg/mL |
| Barium, Ba | 20.00 ± 0.09 µg/mL | Beryllium, Be | 20.00 ± 0.13 µg/mL |
| Boron, B | 30.00 ± 0.18 µg/mL | Cadmium, Cd | 20.00 ± 0.09 µg/mL |
| Calcium, Ca | 100.0 ± 0.4 µg/mL | Cerium, Ce | 200.0 ± 0.8 µg/mL |
| Chromium, Cr | 40.00 ± 0.30 µg/mL | Cobalt, Co | 20.00 ± 0.10 µg/mL |
| Copper, Cu | 30.00 ± 0.13 µg/mL | Iron, Fe | 300.0 ± 1.3 µg/mL |
| Lead, Pb | 100.0 ± 0.4 µg/mL | Lithium, Li | 20.00 ± 0.08 µg/mL |
| Magnesium, Mg | 200.0 ± 0.8 µg/mL | Manganese, Mn | 20.00 ± 0.08 µg/mL |
| Mercury, Hg | 70.0 ± 0.3 µg/mL | Nickel, Ni | 50.00 ± 0.22 µg/mL |
| Phosphorus, P | 600.0 ± 2.7 µg/mL | Potassium, K | 1 000 ± 4 µg/mL |
| Selenium, Se | 200.0 ± 1.3 µg/mL | Silver, Ag | 7.50 ± 0.03 µg/mL |
| Sodium, Na | 300.0 ± 1.4 µg/mL | Strontium, Sr | 20.01 ± 0.08 µg/mL |
| Thallium, Tl | 200.0 ± 1.4 µg/mL | Vanadium, V | 30.00 ± 0.13 µg/mL |
| Zinc, Zn | 20.00 ± 0.09 µg/mL | | |

**Density:** 1.034 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| Ag | ICP Assay | 3151 | 160729 |
| Ag | Volhard | 999c | 999c |
| Ag | Calculated | | See Sec. 4.2 |
| Al | ICP Assay | 3101a | 140903 |
| Al | EDTA | 928 | 928 |
| As | ICP Assay | 3103a | 100818 |
| B | ICP Assay | 3107 | 190605 |
| Ba | ICP Assay | 3104a | 140909 |
| Ba | Gravimetric | | See Sec. 4.2 |
| Be | ICP Assay | 3105a | 090514 |
| Ca | ICP Assay | 3109a | 130213 |
| Ca | EDTA | 928 | 928 |
| Cd | ICP Assay | 3108 | 130116 |
| Cd | EDTA | 928 | 928 |
| Ce | ICP Assay | 3110 | 090504 |
| Ce | EDTA | 928 | 928 |
| Co | ICP Assay | 3113 | 190630 |
| Co | EDTA | 928 | 928 |
| Cr | ICP Assay | 3112a | 170630 |
| Cu | ICP Assay | 3114 | 121207 |
| Cu | EDTA | 928 | 928 |
| Fe | ICP Assay | 3126a | 140812 |
| Fe | EDTA | 928 | 928 |
| Hg | ICP Assay | 3133 | 160921 |
| Hg | EDTA | 928 | 928 |
| K | ICP Assay | 3141a | 140813 |
| K | Gravimetric | | See Sec. 4.2 |
| Li | ICP Assay | 3129a | 100714 |
| Li | Gravimetric | | See Sec. 4.2 |
| Mg | ICP Assay | 3131a | 140110 |
| Mg | EDTA | 928 | 928 |
| Mn | ICP Assay | 3132 | 050429 |
| Mn | EDTA | 928 | 928 |
| Na | ICP Assay | Traceable to 3152A | S2-NA700842 |
| Na | Gravimetric | | See Sec. 4.2 |
| Ni | ICP Assay | 3136 | 120619 |
| Ni | EDTA | 928 | 928 |
| P | ICP Assay | 3139a | 060717 |
| P | Acidimetric | 84L | 84L |
| Pb | ICP Assay | 3128 | 101026 |
| Pb | EDTA | 928 | 928 |
| Se | ICP Assay | 3149 | 100901 |
| Sr | EDTA | 928 | 928 |
| Sr | ICP Assay | Traceable to 3153a | K2-SR650985 |
| Tl | ICP Assay | 3158 | 151215 |
| V | IC Assay | 3165 | 160906 |
| V | EDTA | 928 | 928 |
| Zn | ICP Assay | 3168a | 120629 |
| Zn | EDTA | 928 | 928 |

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

**Characterization of CRM/RM by Two or More Methods**

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

**Characterization of CRM/RM by One Method**

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Low Silver Note:** This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

August 30, 2022

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

### 11.2 Lot Expiration Date

- **August 30, 2026**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES

Refine your results. Redefine your industry.

# Certificate of Analysis

RD:05/14/2024

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).

ACCREDITED Testing Laboratory Certificate 863.01 ACCREDITED Reference Material Producer Certificate 863.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | WW-LFS-2 |
| Lot Number: | U2-MEB731108 |
| Matrix: | 5% (v/v) HNO3<br>tr. HF |
| Value / Analyte(s): | 200 µg/mL ea:<br>Silica,<br>80 µg/mL ea:<br>Antimony,<br>70 µg/mL ea:<br>Tin,<br>40 µg/mL ea:<br>Molybdenum,<br>20 µg/mL ea:<br>Titanium |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE | CERTIFIED VALUE | ANALYTE | CERTIFIED VALUE |
|---|---|---|---|
| Antimony, Sb | 80.1 ± 0.6 µg/mL | Molybdenum, Mo | 40.03 ± 0.18 µg/mL |
| Silica, SiO2 | 200.2 ± 1.3 µg/mL | Tin, Sn | 70.0 ± 0.4 µg/mL |
| Titanium, Ti | 20.01 ± 0.13 µg/mL | | |

**Density:** 1.025 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| Mo | ICP Assay | 3134 | 130418 |
| Mo | Calculated | | See Sec. 4.2 |
| Sb | ICP Assay | 3102a | 140911 |
| SiO2 | ICP Assay | 3150 | 130912 |
| Sn | ICP Assay | 3161a | 140917 |
| Ti | ICP Assay | 3162a | 130925 |
| Ti | Calculated | | See Sec. 4.2 |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

**6.1** This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

**6.2** For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

March 17, 2023

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

### 11.2 Lot Expiration Date

**- March 17, 2028**

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

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

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



M4371

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Rec – 06.07.19

J.T.Baker® | avantor™

Material No.: 2196-01
Batch No.: 0000215387
Manufactured Date: 2018/06/27
Retest Date: 2025/06/25
Revision No: 1

# Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

| Test | Specification | Result |
|---|---|---|
| Assay ($NH_2OH \cdot HCl$) (by $KMnO_4$ titrn) | >= 96.0 % | 99.1 |
| Clarity of Alcohol Solution | Passes Test | PT |
| Residue after Ignition | <= 0.050 % | 0.017 |
| Titrable Free Acid (meq/g) | <= 0.25 | 0.19 |
| Ammonium ($NH_4$) | Passes Test | PT |
| Sulfur Compounds (as $SO_4$) | <= 0.005 % | < 0.003 |
| Trace Impurities - ACS - Heavy Metals (as Pb) | <= 5 ppm | 4 |
| Trace Impurities - Iron (Fe) | <= 5 ppm | < 3 |
| Trace Impurities - Mercury (Hg) | <= 0.050 ppm | < 0.005 |

For Laboratory, Research or Manufacturing Use

Country of Origin: CN
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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

***Certified Reference Material CRM***

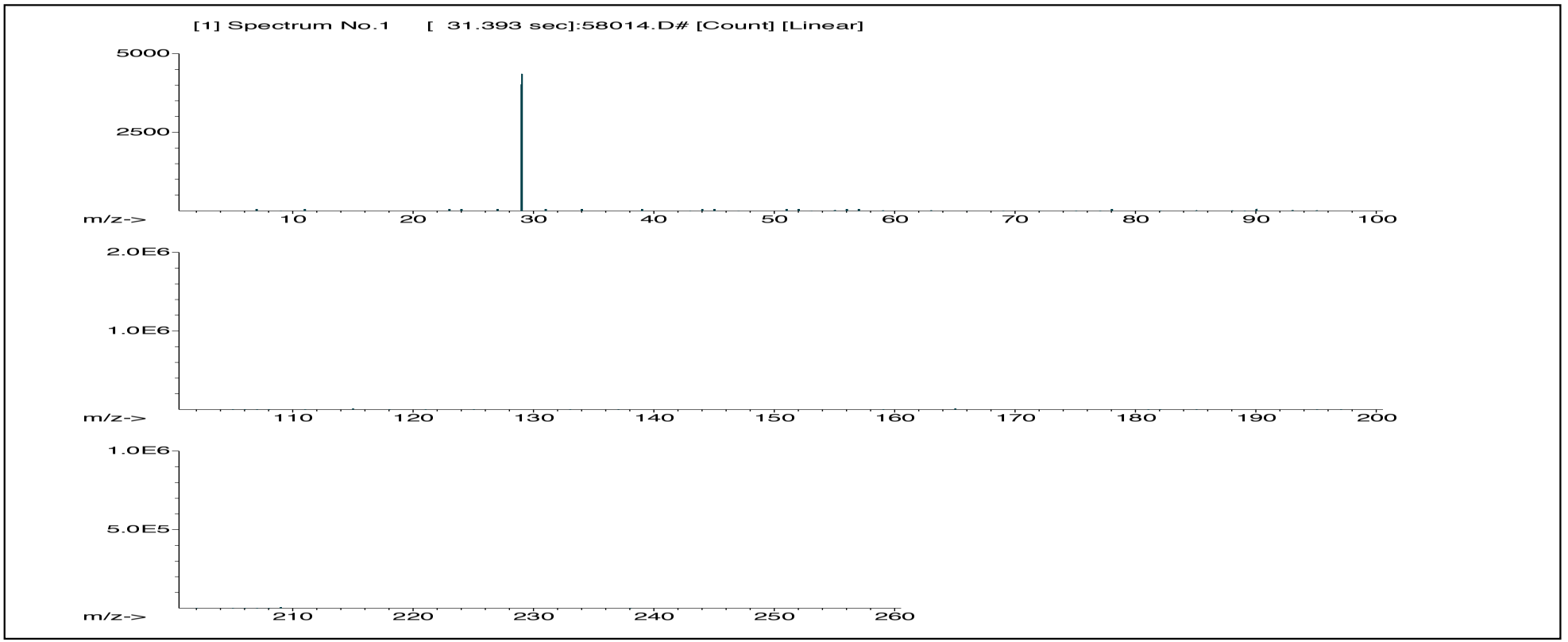
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

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

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

| | Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | **Final Conc. (µg/mL)** | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Ammonium hexafluorosilicate (Si) | 58114 | 070120 | 0.1000 | 300.0 | 0.084 | 1000 | 10000.0 | **1000.0** | **2.1** | 16919-19-0 | 2.50 mg/m3 | orl-rat 70 mg/kg | NA |



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

*Certified Reference Material CRM*

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



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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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

M4913-16
MB



# Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

| | | | |
|---|---|---|---|
| Catalog Number | P279 | Quality Test / Release Date | 01/12/2021 |
| Lot Number | 210306 | | |
| Description | POTASSIUM PERMANGANATE, A.C.S. | | |
| Country of Origin | United States | Suggested Retest Date | Jan/2026 |

| N/A | | | |
|---|---|---|---|
| Result Name | Units | Specifications | Test Value |
| APPEARANCE | | REPORT | Dark purple to purple green crystals |
| ASSAY | % | >= 99 | 99.3 |
| CHLORIDE & CHLORATE | % | <= 0.005 | <0.005 |
| IDENTIFICATION | PASS/FAIL | = PASS TEST | pass test |
| INSOLUBLE MATTER | % | <= 0.2 | <0.2 |
| MERCURY (Hg) | ppm | <= 0.05 | <0.004 |
| SULFATE (SO4) | % | <= 0.02 | <0.02 |

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

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# Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

M5062
M5063
M3

## 1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Single Analyte Mass Spec Solution |
| Catalog Number: | MSHG-10PPM |
| Lot Number: | S2-HG709270 |
| Matrix: | 10% (v/v) HCl |
| Value / Analyte(s): | 10 µg/mL ea: Mercury |
| Starting Material: | Hg metal |
| Starting Material Lot#: | 1959 |
| Starting Material Purity: | 99.9994% |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10.001 ± 0.053 µg/mL

**Density:** 1.020 g/mL (measured at 20 ± 4 °C)

### Assay Information:

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| Hg | ICP Assay | 3133 | 160921 |
| Hg | EDTA | 928 | 928 |
| Hg | Calculated | | See Sec. 4.2 |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/4}$$

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O | Ag | | 0.000011 | M | Eu | < | 0.000201 | O | Na | | 0.000004 | M | Se | < | 0.015915 | O | Zn | < | 0.001510 |
| O | Al | | 0.000001 | O | Fe | | 0.000001 | M | Nb | < | 0.000201 | O | Si | | 0.000005 | M | Zr | < | 0.000201 |
| M | As | < | 0.000402 | M | Ga | < | 0.000201 | M | Nd | < | 0.000201 | M | Sm | < | 0.000201 | | | | |
| M | Au | < | 0.003631 | M | Gd | < | 0.000201 | M | Ni | < | 0.000402 | M | Sn | < | 0.001007 | | | | |
| M | B | < | 0.001208 | M | Ge | < | 0.000201 | M | Os | < | 0.000605 | M | Sr | < | 0.000201 | | | | |
| M | Ba | < | 0.000201 | M | Hf | < | 0.000201 | O | P | < | 0.032370 | M | Ta | < | 0.000201 | | | | |
| M | Be | < | 0.000201 | s | Hg | < | | M | Pb | < | 0.000201 | M | Tb | < | 0.000201 | | | | |
| M | Bi | < | 0.000201 | M | Ho | < | 0.000201 | M | Pd | < | 0.000403 | M | Te | < | 0.002216 | | | | |
| O | Ca | | 0.000007 | M | In | < | 0.000201 | M | Pr | < | 0.000201 | M | Th | < | 0.000201 | | | | |
| M | Cd | < | 0.000201 | M | Ir | < | 0.000201 | M | Pt | < | 0.000402 | M | Ti | < | 0.000402 | | | | |
| M | Ce | < | 0.000201 | O | K | | 0.000020 | M | Rb | < | 0.000201 | O | Tl | < | 0.016508 | | | | |
| M | Co | < | 0.000201 | M | La | < | 0.000201 | M | Re | < | 0.000201 | M | Tm | < | 0.000201 | | | | |
| O | Cr | < | 0.003021 | O | Li | < | 0.000107 | M | Rh | < | 0.000201 | M | U | < | 0.008058 | | | | |
| M | Cs | < | 0.001208 | M | Lu | < | 0.000201 | M | Ru | < | 0.000201 | M | V | < | 0.000201 | | | | |
| M | Cu | < | 0.000402 | O | Mg | | 0.000001 | O | S | < | 0.053950 | M | W | < | 0.000604 | | | | |
| M | Dy | < | 0.000201 | M | Mn | < | 0.000604 | M | Sb | < | 0.001208 | M | Y | < | 0.000201 | | | | |
| M | Er | < | 0.000201 | M | Mo | | 0.000009 | M | Sc | < | 0.000201 | M | Yb | < | 0.000201 | | | | |

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

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution -** 200.59 +2 4 Hg(OH)(aq) 1+

**Chemical Compatibility -** Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

**Stability -** 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.

**Hg Containing Samples (Preparation and Solution) -** Metal (soluble in HNO3 ); Oxide ( Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

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

| **Technique/Line** | **Estimated D.L.** | **Order** | **Interferences** (underlined indicates severe) |
|---|---|---|---|
| ICP-MS 202 amu | 9 ppt | n/a | 186W16O |
| ICP-OES 184.950 nm | 0.03 / 0.005 µg/mL | 1 | |
| ICP-OES 194.227 nm | 0.03 / 0.005 µg/mL | 1 | V |
| ICP-OES 253.652 nm | 0.1 / 0.03 µg/mL | 1 | Ta, Co, Th ,Rh , Fe, U |

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

September 22, 2021

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

### 11.2 Lot Expiration Date

**- September 22, 2026**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Prepared By:**

Uyen Truong
Supervisor, Product Documentation



**Certificate Approved By:**

Michael Booth
Director, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



## 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.

Contains Heavy Metals
**HAZARDOUS MATERIAL**

Safety Data Sheets
Available Upon Request

### (A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

***CAUTION:*** The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

### (B) *BREAKAGE OR MISSING ITEMS*

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

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

### (C) *ANALYSIS OF SAMPLES*

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

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

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

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

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

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

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

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

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

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

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.

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

***Certified Reference Material CRM***

M5192 R: 06/17/22

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



CERTIFIED WEIGHT REPORT:

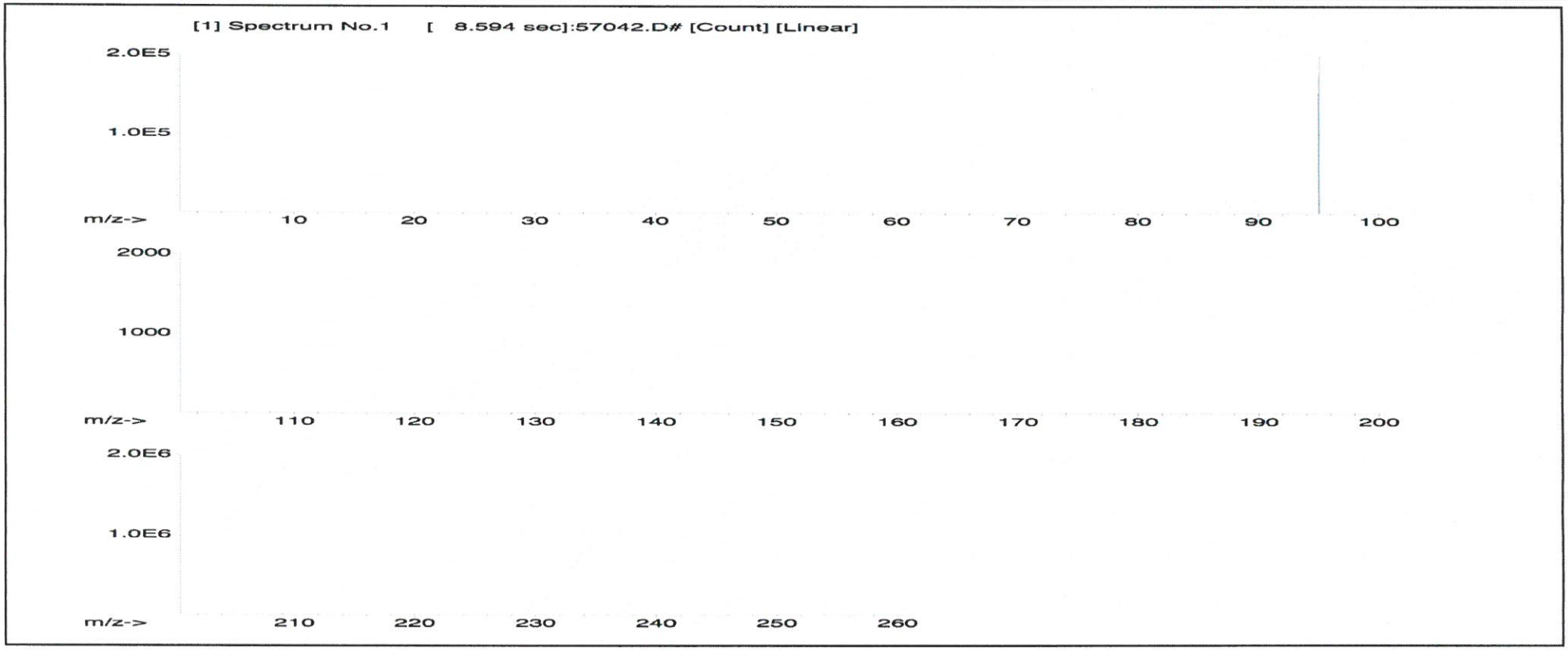
**Part Number:** 57042
**Lot Number:** 051722
**Description:** Molybdenum (Mo)
**Expiration Date:** 051725
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Volume shown below was diluted to (mL):** 3000.41

| Lot # | Solvent: | | |
|---|---|---|---|
| MKBQ8597V | Ammonium hydroxide | | |
| 0.5% | 15.0 (mL) | Ammonium hydroxide | |
| | 5E-05 | Balance Uncertainty | |
| | 0.058 | Flask Uncertainty | |

Formulated By: Lawrence Barry 051722

Reviewed By: Pedro L. Rentas 051722

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium molybdate (Mo) | 58142 | 022222 | 0.1000 | 300.0 | 0.084 | 1000 | 10001.0 | **1000.0** | **2.1** | 13106-76-8 | 5 mg(Mo)/m3 | orl-rat 333 mg/kg | 3134 |



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

*Certified Reference Material CRM*

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



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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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

INORGANIC VENTURES™
Refine your results. Redefine your industry.

# Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | CHEM-QC-4 |
| Lot Number: | S2-MEB711674 |
| Matrix: | 3% (v/v) HNO3<br>3% (v/v) HF |
| Value / Analyte(s): | 1 000 µg/mL ea:<br>Boron, Molybdenum,<br>Silicon, Tin,<br>Titanium |

**Second Source**: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE | CERTIFIED VALUE | ANALYTE | CERTIFIED VALUE |
|---|---|---|---|
| **Boron, B** | **1 000 ± 7 µg/mL** | **Molybdenum, Mo** | **1 000 ± 5 µg/mL** |
| **Silicon, Si** | **1 000 ± 7 µg/mL** | **Tin, Sn** | **1 000 ± 5 µg/mL** |
| **Titanium, Ti** | **1 001 ± 6 µg/mL** | | |

**Density:** 1.032 g/mL (measured at 20 ± 4 ºC)

### Assay Information:

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

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

**Characterization of CRM/RM by Two or More Methods**

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

**Characterization of CRM/RM by One Method**

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

November 02, 2021

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

### 11.2 Lot Expiration Date

- **November 02, 2026**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Michael Booth
Director, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



## 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.

Contains Heavy Metals
**HAZARDOUS MATERIAL**

Safety Data Sheets
Available Upon Request

### (A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

***CAUTION:*** The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

### (B) *BREAKAGE OR MISSING ITEMS*

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

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

### (C) *ANALYSIS OF SAMPLES*

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

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

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

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

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

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

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

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

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

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

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

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M5288 R: 07/21/2022

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CERTIFIED WEIGHT REPORT:

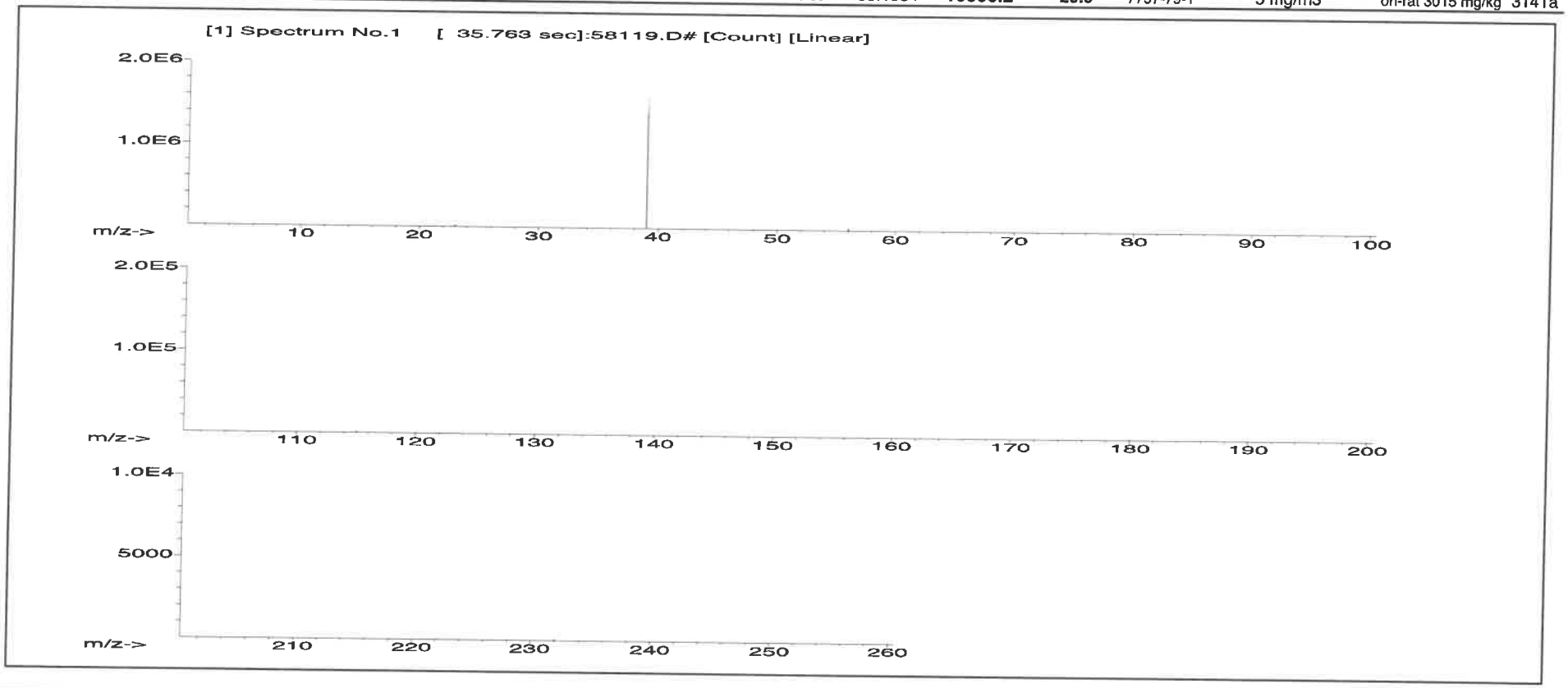
**Part Number:** 58119
**Lot Number:** 071122
**Description:** Potassium (K)

**Expiration Date:** 071125
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 2000.02

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 20510011 | Nitric Acid | |
| 2% | 40.0 (mL) | Nitric Acid | |
| | 5E-05 | Balance Uncertainty | |
| | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 071122 |
| Reviewed By: | Pedro L. Rentas | 071122 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | **Actual Conc. (µg/mL)** | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Potassium nitrate (K) | IN034 | KD022021A1 | 10000 | 99.999 | 0.10 | 37.6 | 53.1925 | 53.1934 | **10000.2** | **20.0** | 7757-79-1 | 5 mg/m3 | orl-rat 3015 mg/kg | 3141a |



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

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

(T)= Target analyte

**Physical Characterization:**

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

**Certified by:**

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

SJ 6/15/22

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CERTIFIED WEIGHT REPORT:

**Part Number:** 58126
**Lot Number:** 020422
**Description:** Iron (Fe)

M5298

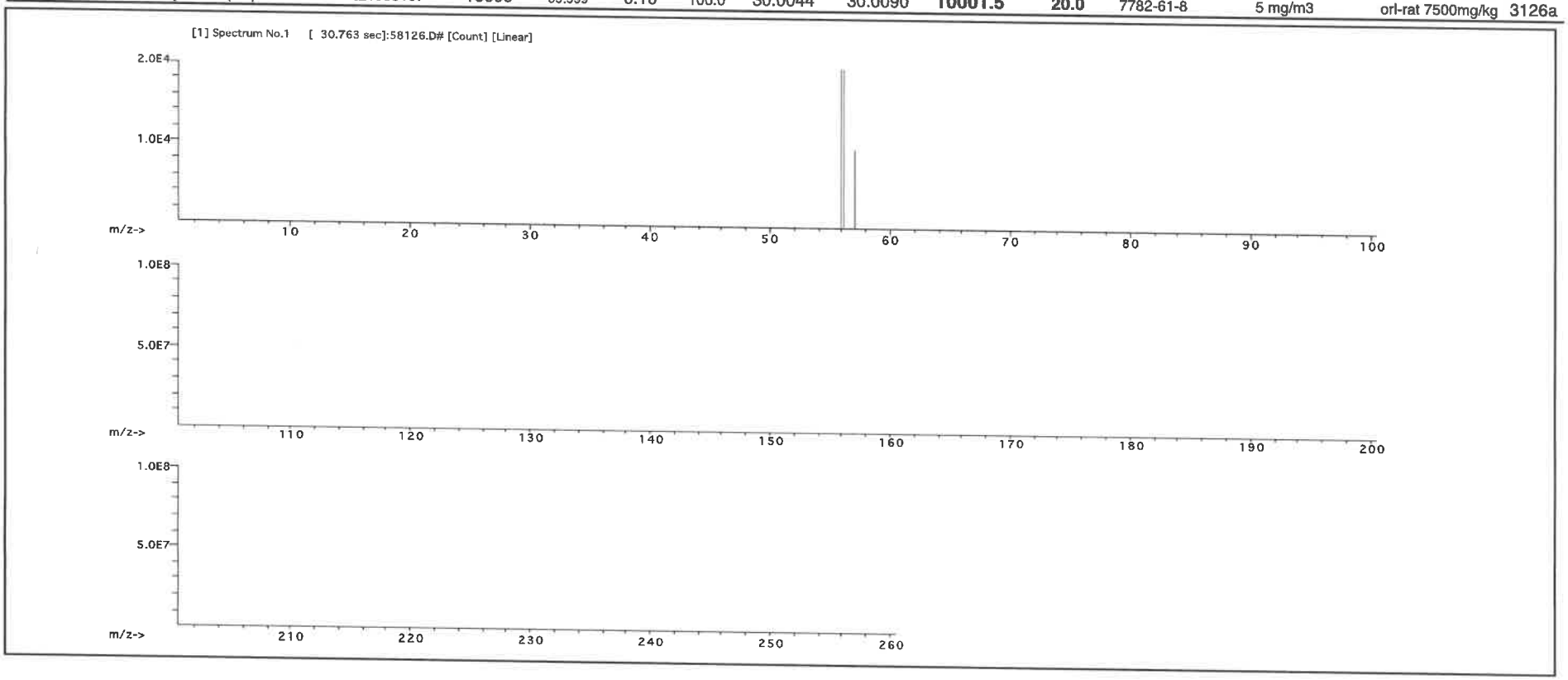
**Expiration Date:** 020425
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.41 0.058 Flask Uncertainty 5E-05 Balance Uncertainty

| | | Lot # | |
|---|---|---|---|
| **Solvent:** | 20370011 | | Nitric Acid |
| 5.0% | 150.0 (mL) | | Nitric Acid |

Giovanni Esposito
Formulated By: Giovanni Esposito 020422

Reviewed By: Pedro L. Rentas 020422

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Iron(III) nitrate nonahydrate (Fe) | IN346 | 221035107 | 10000 | 99.999 | 0.10 | 100.0 | 30.0044 | 30.0090 | **10001.5** | **20.0** | 7782-61-8 | 5 mg/m3 | orl-rat 7500mg/kg | 3126a |



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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.10 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | <0.2 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.10 | Pd | <0.02 | Rb | <0.02 | Na | <0.2 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.5 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.10 | Ge | <0.10 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B | <0.02 | Cu | <0.10 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T)= Target analyte

**Physical Characterization:**

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

Certified by:

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



Part # **58126** Lot # **020422**



Printed: 2/16/2022, 11:15:09 PM

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M5429 R1 01/26/23 BH

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CERTIFIED WEIGHT REPORT:

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

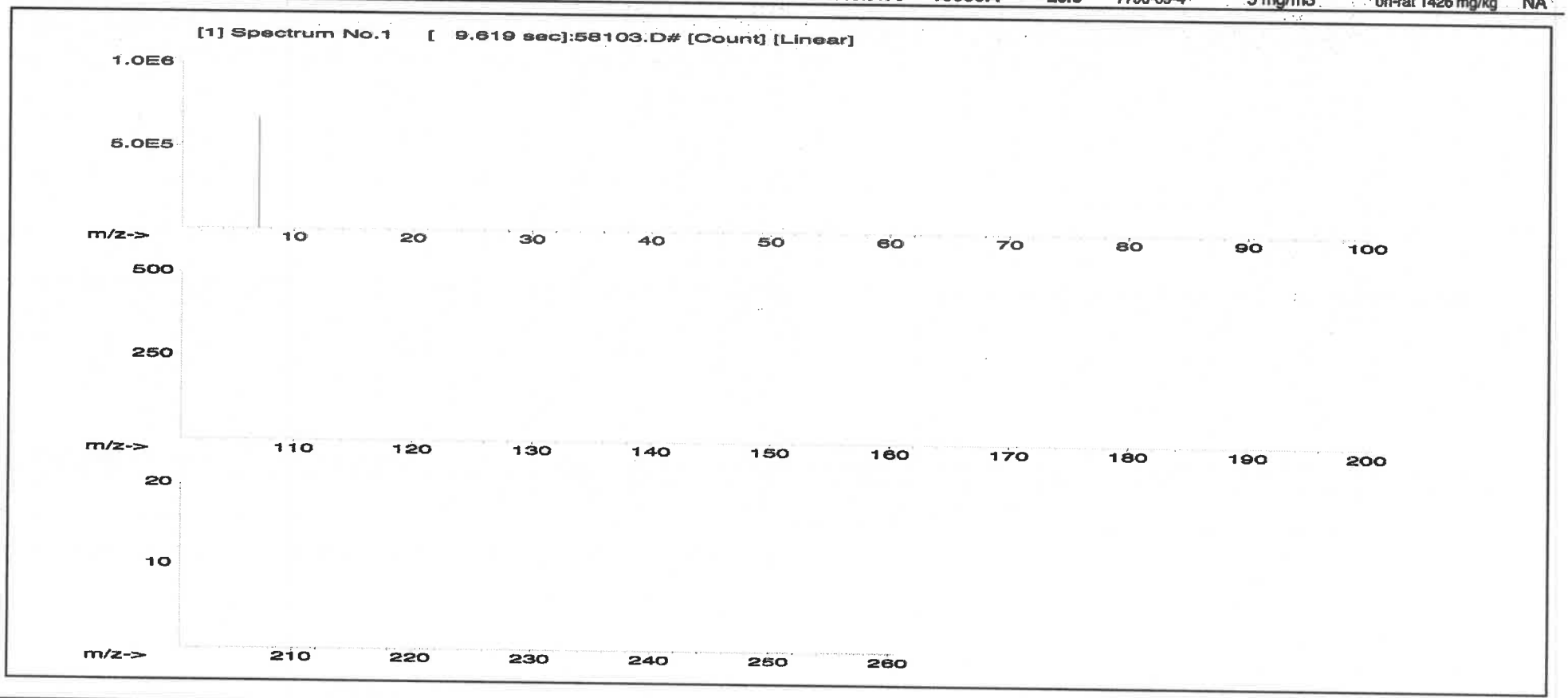
**Expiration Date:** 070625
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 1000.12

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 20510011 | Nitric Acid | |
| 2% | 20.0 (mL) | Nitric Acid | |

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 070622 |
| Reviewed By: | Pedro L. Rentas | 070622 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Lithium nitrate (Li) | IN019 | LIZ042018A1 | 10000 | 99.999 | 0.10 | 10.0 | 100.0134 | 100.0173 | **10000.4** | **20.0** | 7790-69-4 | 5 mg/m3 | orl-rat 1426 mg/kg | NA |



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

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

(T)= Target analyte

**Physical Characterization:**

Certified by:

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

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

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M5467 R: 03/01/23 (LA)

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**CERTIFIED WEIGHT REPORT:**

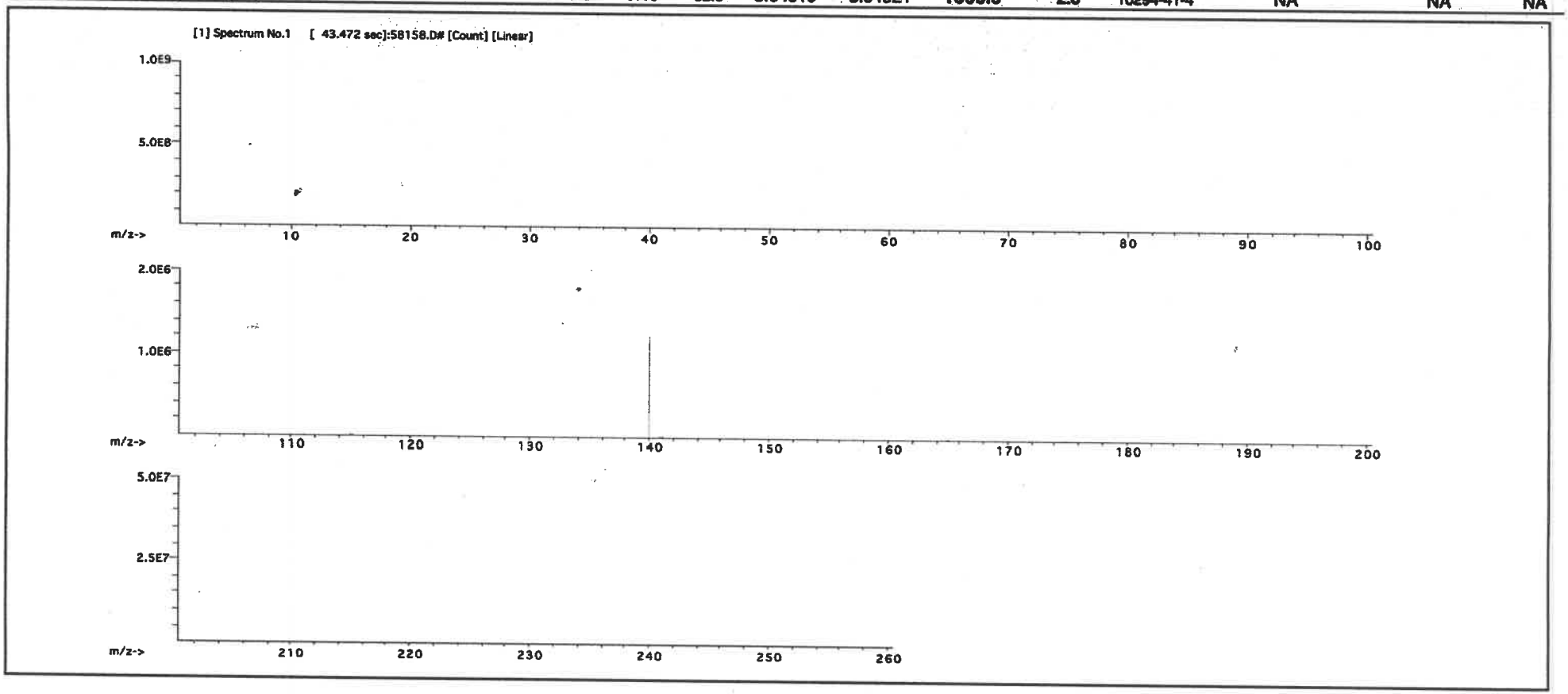
**Part Number:** 57058
**Lot Number:** 020623
**Description:** Cerium (Ce)

**Expiration Date:** 020626
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB 5E-05 Balance Uncertainty
**Weight shown below was diluted to (mL):** 1000.12 0.058 Flask Uncertainty

| | Lot # | |
|---|---|---|
| **Solvent:** | 21110221 | Nitric Acid |
| 2% | 20.0 (mL) | Nitric Acid |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 020623 |
| Reviewed By: | Pedro L. Rentas | 020623 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Cerium nitrate hexahydrate (Ce) | IN146 | Z512CEB1 | 1000 | 99.999 | 0.10 | 32.8 | 3.04919 | 3.04921 | 1000.0 | 2.0 | 10294-41-4 | NA | NA | NA |



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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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

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M5496 R 7/20/23

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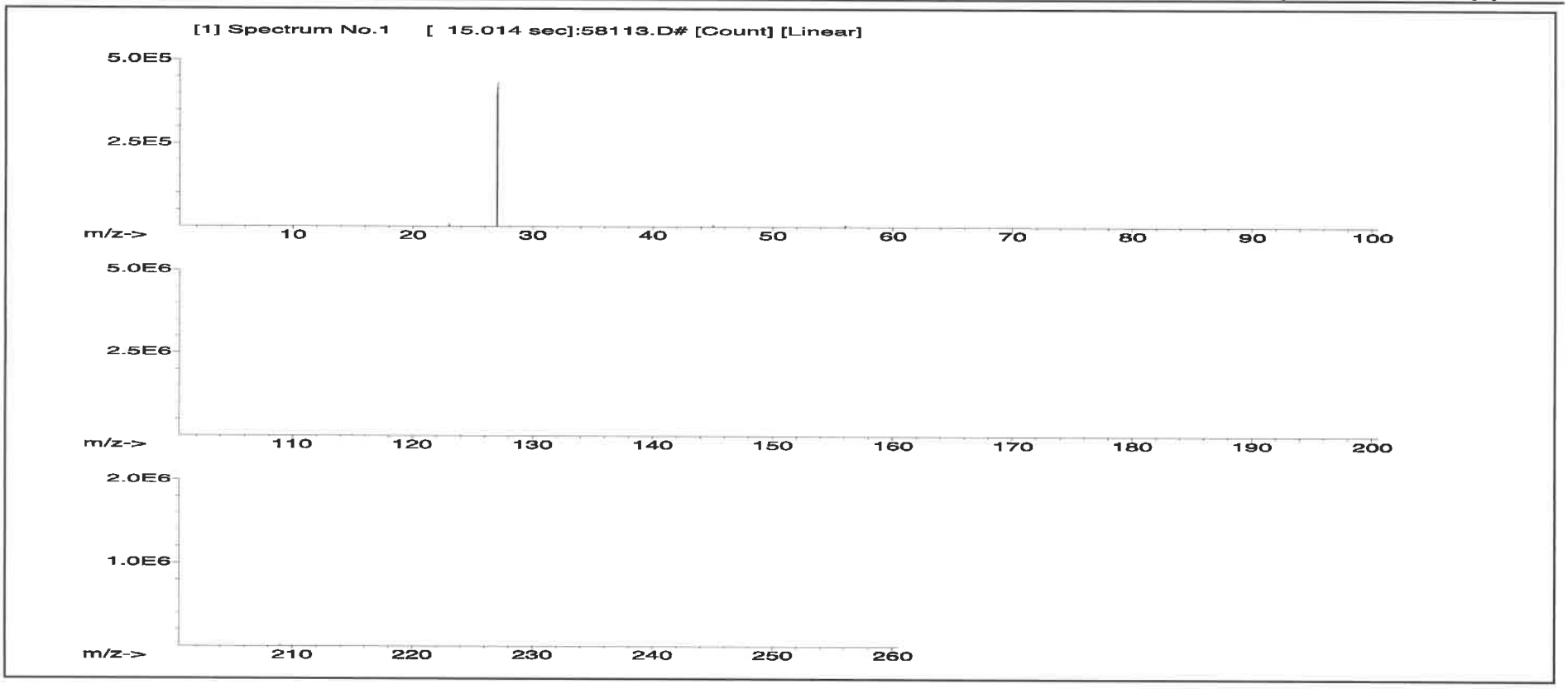
CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **58113** | | **Lot #** | | |
| **Lot Number:** | **011623** | **Solvent:** | 20510011 | Nitric Acid | |
| **Description:** | **Aluminum (Al)** | 2% | 40.0 (mL) | Nitric Acid | |
| **Expiration Date:** | 011626 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **10000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Weight shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | | |

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 011623 |
| Reviewed By: | Pedro L. Rentas | 011623 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Aluminum nitrate nonahydrate (Al) | IN022 | ALM112021A1 | 10000 | 99.999 | 0.10 | 7.30 | 273.9779 | 274.0078 | **10001.1** | **20.0** | 7784-27-2 | 2 mg/m3 | orl-rat 3671 mg/kg | 3101a |



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M5497 - M5498 R: 03/17/23 (BP)

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## CERTIFIED WEIGHT REPORT:

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

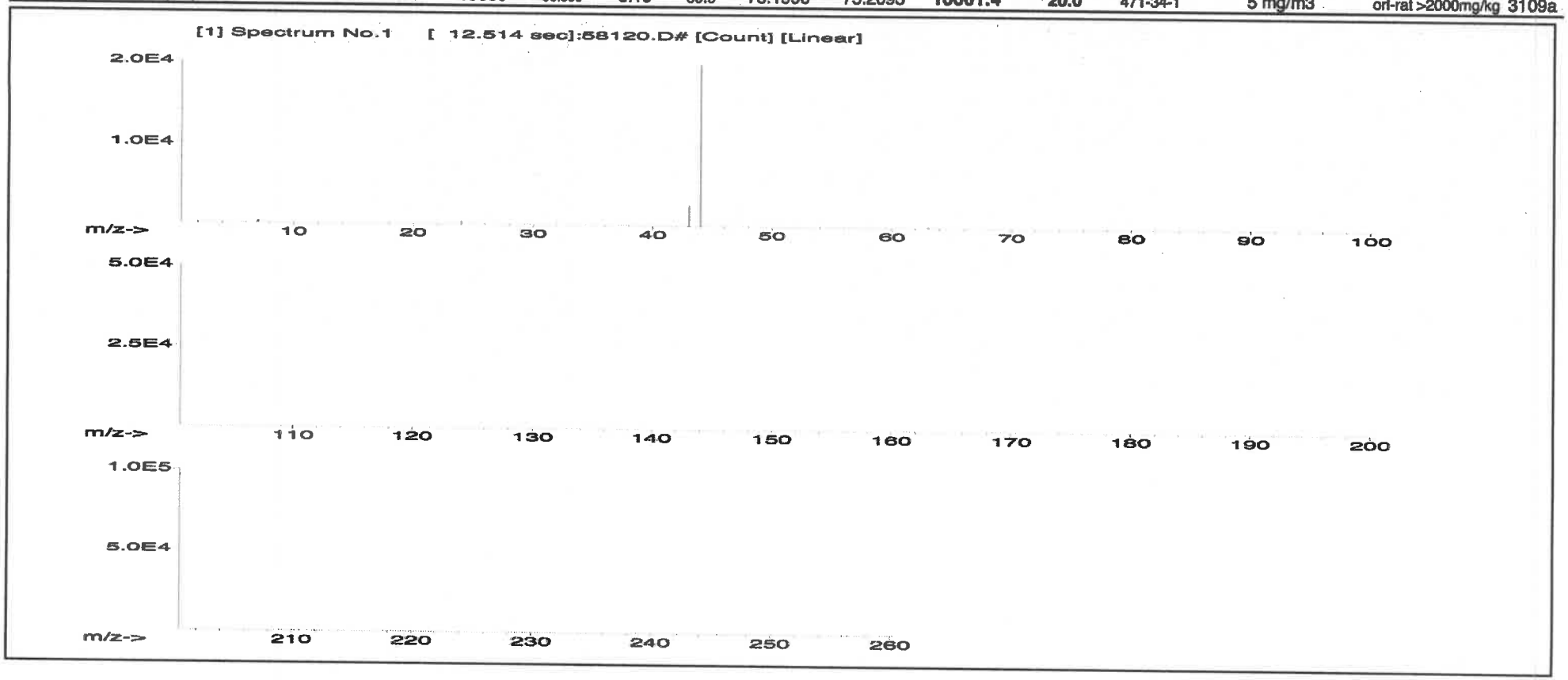
**Expiration Date:** 031526
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.41

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 21110221 | Nitric Acid | |
| 2% | 60.0 (mL) | Nitric Acid | |
| | 5E-05 | Balance Uncertainty | |
| | 0.058 | Flask Uncertainty | |

Giovanni Esposito
Formulated By: Giovanni Esposito 031523

Pedro Rentas
Reviewed By: Pedro L. Rentas 031523

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Calcium carbonate (Ca) | IN014 | CAD072022A1 | 10000 | 99.999 | 0.10 | 39.9 | 75.1990 | 75.2093 | **10001.4** | **20.0** | 471-34-1 | 5 mg/m3 | orl-rat >2000mg/kg | 3109a |



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

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

(T) = Target analyte

**Physical Characterization:**

**Certified by:**

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

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

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M5497 - M5498 R: 03/17/23 (BP)

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## CERTIFIED WEIGHT REPORT:

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

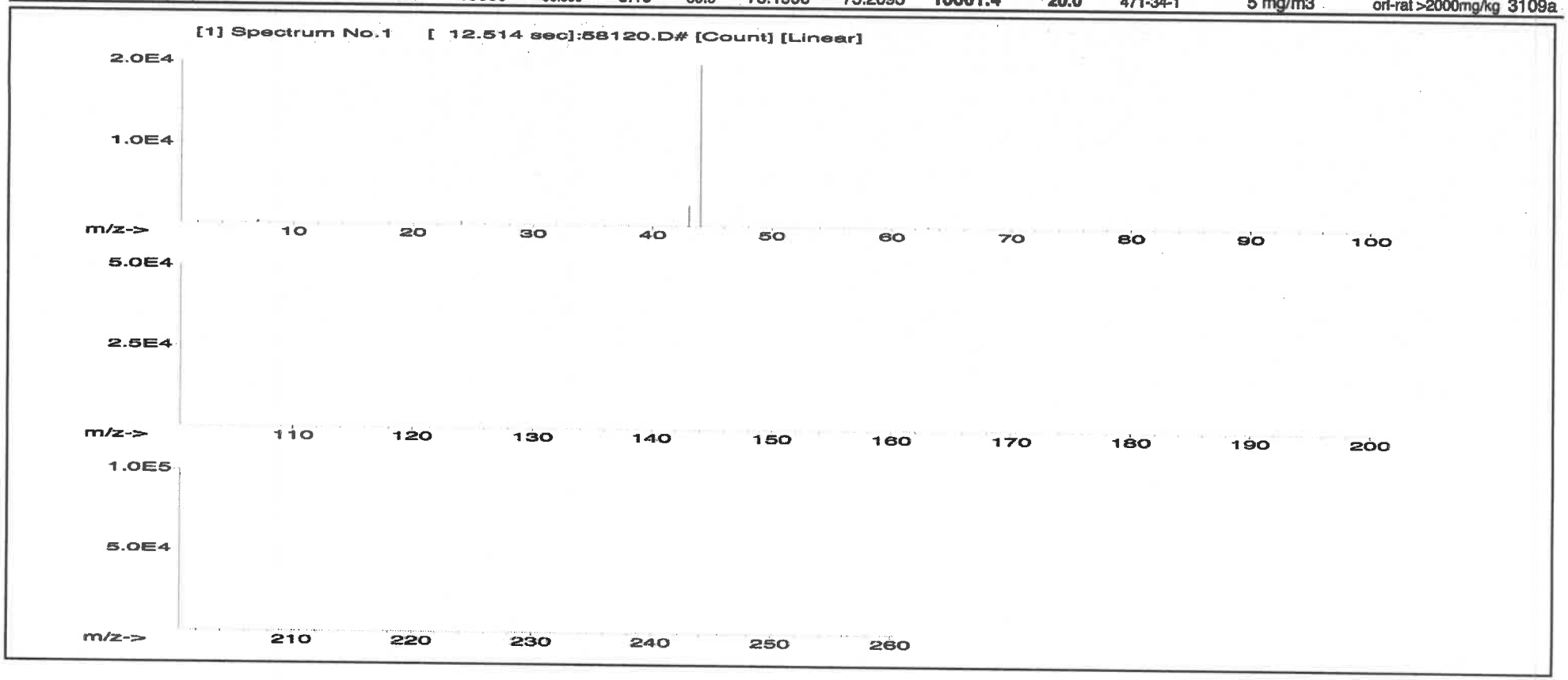
**Expiration Date:** 031526
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.41

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 21110221 | Nitric Acid | |
| 2% | 60.0 (mL) | Nitric Acid | |
| | 5E-05 | Balance Uncertainty | |
| | 0.058 | Flask Uncertainty | |

Giovanni Esposito
Formulated By: Giovanni Esposito 031523

Pedro Rentas
Reviewed By: Pedro L. Rentas 031523

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Calcium carbonate (Ca) | IN014 | CAD072022A1 | 10000 | 99.999 | 0.10 | 39.9 | 75.1990 | 75.2093 | **10001.4** | **20.0** | 471-34-1 | 5 mg/m3 | orl-rat >2000mg/kg | 3109a |



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

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

(T) = Target analyte

**Physical Characterization:**

**Certified by:**

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

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

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M5519. M5520 BH R:03/17/23

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CERTIFIED WEIGHT REPORT:

**Part Number:** 58119
**Lot Number:** 120822
**Description:** Potassium (K)

**Expiration Date:** 120825
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.4 ± 0.06 Flask Uncertainty

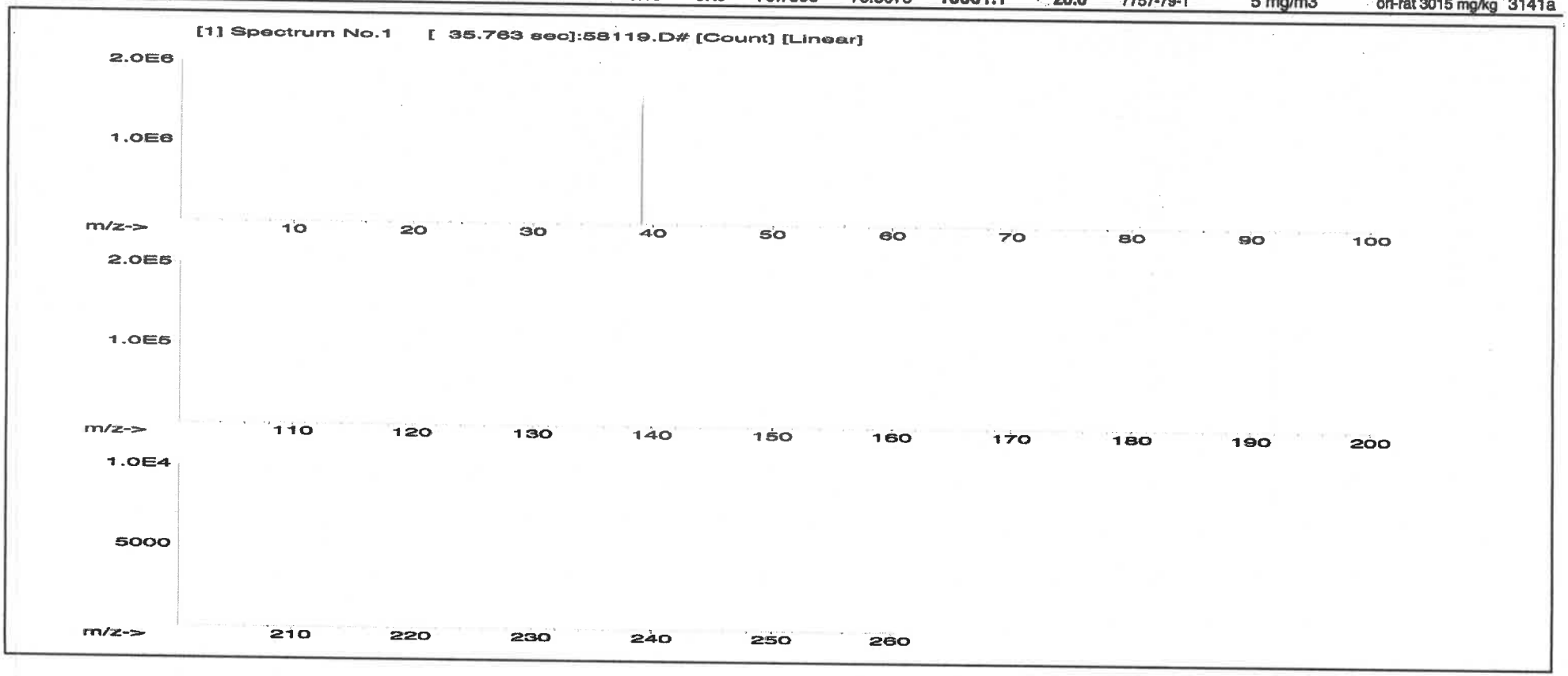
| | | Lot # | |
|---|---|---|---|
| **Solvent:** | 20510011 | | Nitric Acid |
| | 2% | 60.0 (mL) | Nitric Acid |

± 5E-05 Balance Uncertainty

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 120822 |
| Reviewed By: | Pedro L. Rentas | 120822 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Potassium nitrate (K) | IN034 | KD022021A1 | 10000 | 99.999 | 0.10 | 37.6 | 79.7990 | 79.8075 | **10001.1** | **20.0** | 7757-79-1 | 5 mg/m3 | orl-rat 3015 mg/kg | 3141a |



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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
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## QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

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

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

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

MSS28-37
MB

Contains Metals in Dilute Acidic or Cyanide in Basic Aqueous Solutions
**HAZARDOUS MATERIAL**

Safety Data Sheets Available Upon Request

### (A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

### (B) *BREAKAGE OR MISSING ITEMS*

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

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

### (C) *ANALYSIS OF SAMPLES*

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

**ICV1-1014** For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.

## Instructions for QATS Reference Material: *Inorganic ICV Solutions*

**ICV1-1014** For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

**ICV5-0415** For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

**ICV6-0400** For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

**NOTE:** USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

### (D) *CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS*

| ICV1-1014 | | |
|---|---|---|
| **Element** | **Concentration (µg/L) (after 10-fold dilution)** | **Concentration (µg/L) (after 50-fold dilution)** |
| **Al** | 2500 | 500 |
| **Sb** | 1000 | 200 |
| **As** | 1000 | 200 |
| **Ba** | 520 | 100 |
| **Be** | 510 | 100 |
| **Cd** | 510 | 100 |
| **Ca** | 10000 | 2000 |
| **Cr** | 520 | 100 |
| **Co** | 520 | 100 |
| **Cu** | 510 | 100 |
| **Fe** | 10000 | 2000 |
| **Pb** | 1000 | 200 |
| **Mg** | 6000 | 1200 |
| **Mn** | 520 | 100 |
| **Ni** | 530 | 110 |
| **K** | 9900 | 2000 |
| **Se** | 1000 | 200 |
| **Ag** | 250 | 50 |
| **Na** | 10000 | 2000 |
| **Tl** | 1000 | 210 |
| **V** | 500 | 100 |
| **Zn** | 1000 | 200 |

| ICV5-0415 | | ICV6-0400 | |
|---|---|---|---|
| **Element** | **Concentration (µg/L) (after 100-fold dilution)** | **Analyte** | **Concentration (µg/L) (after 100-fold dilution)** |
| **Hg** | 4.0 | **$CN^-$** | 99 |

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M5658 R ! 8/25/23

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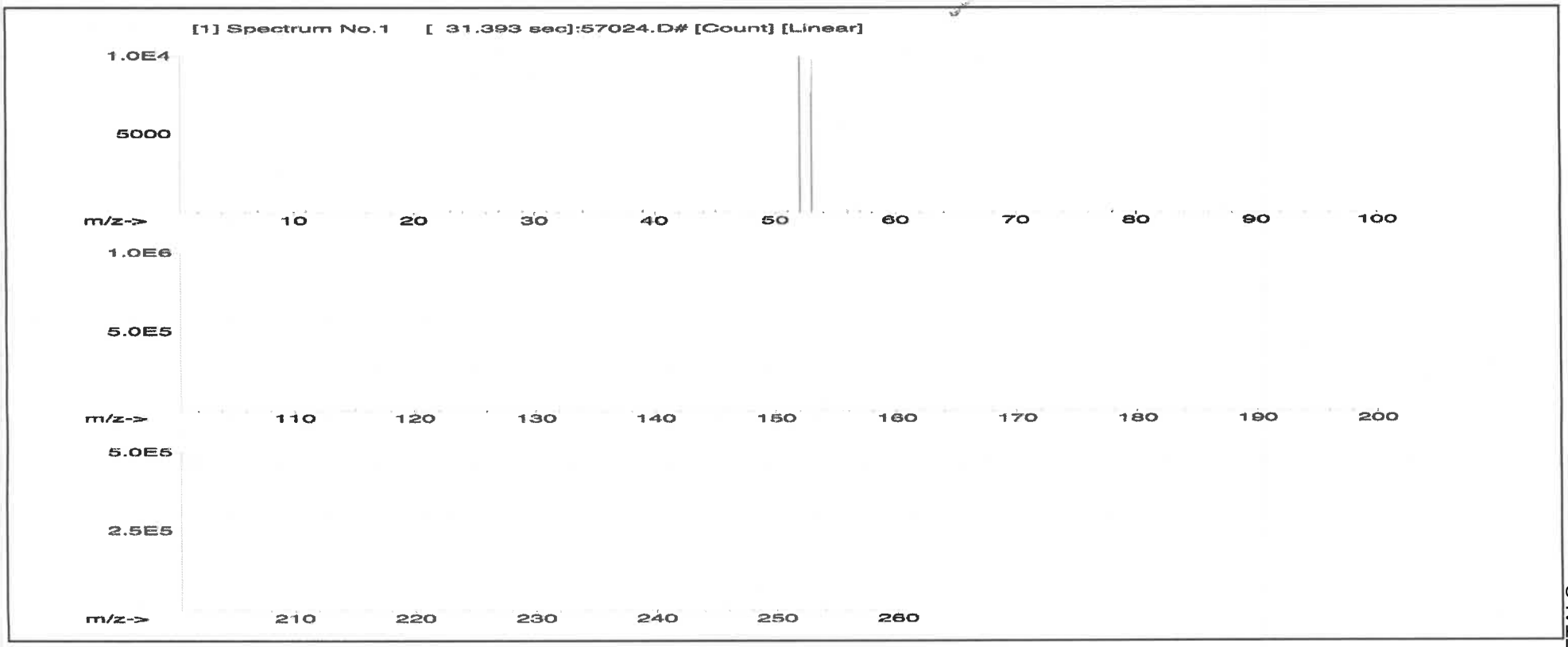


CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **58024** | 21110221 | Nitric Acid | |
| **Lot Number:** | **060523** | | | |
| **Description:** | **Chromium (Cr)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 060526 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 060523 |
| Reviewed By: | Pedro L. Rentas | 060523 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Chromium(III) nitrate nonahydrate (Cr) | 58124 | 071122 | 0.1000 | 200.0 | 0.084 | 1000 | 10000.1 | **1000.0** | **2.2** | 7789-02-8 | 0.5 mg(Cr)/m3 | orl-rat 3250 mg/kg | 3112a |



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

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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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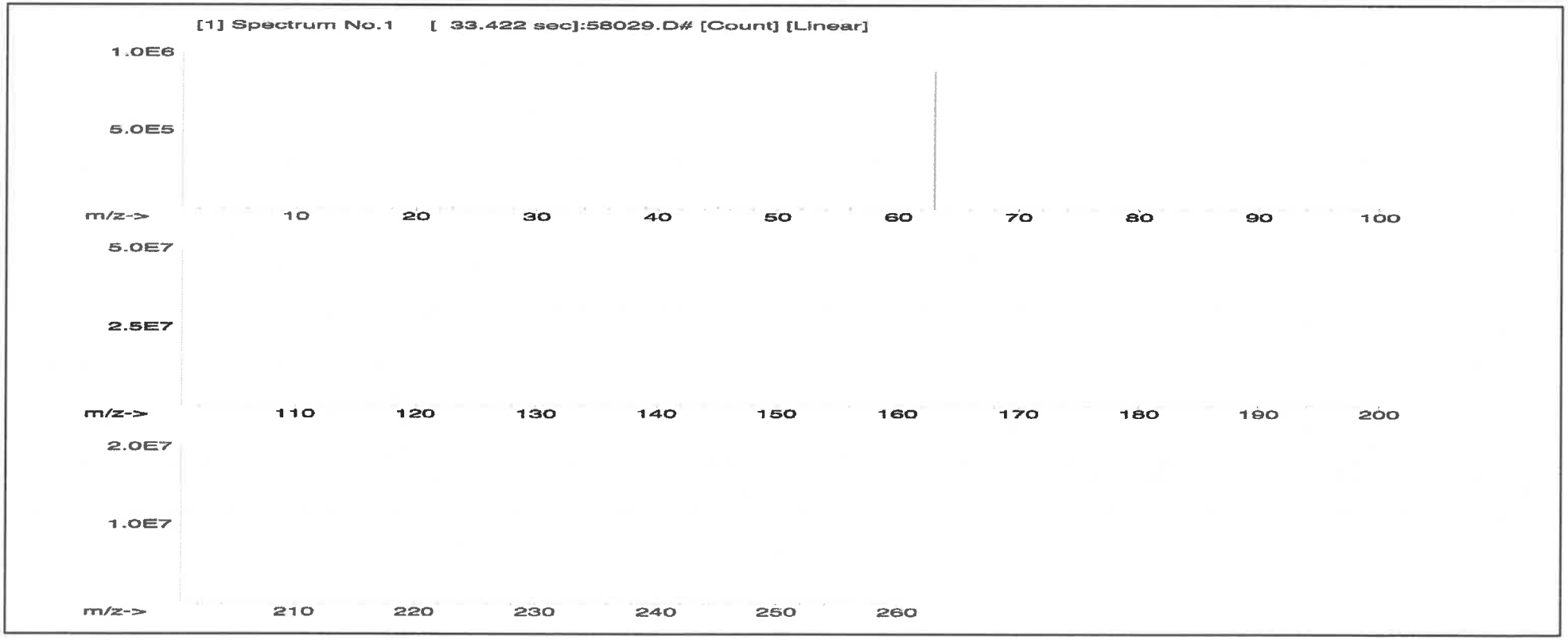


CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **58029** | 24002546 | Nitric Acid | |
| **Lot Number:** | **102523** | | | |
| **Description:** | **Copper (Cu)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 102526 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 102523 |
| Reviewed By: | Pedro L. Rentas | 102523 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Copper(II) nitrate trihydrate (Cu) | 58129 | 100223 | 0.1000 | 200.0 | 0.084 | 1000 | 10000.1 | **1000.0** | **2.2** | 10031-43-3 | 1 mg/m3 | orl-rat 794 mg/kg | 3114 |



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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

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

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R: 12/20/23 M5747

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CERTIFIED WEIGHT REPORT:

**Part Number:** 57082
**Lot Number:** 100923
**Description:** Lead (Pb)

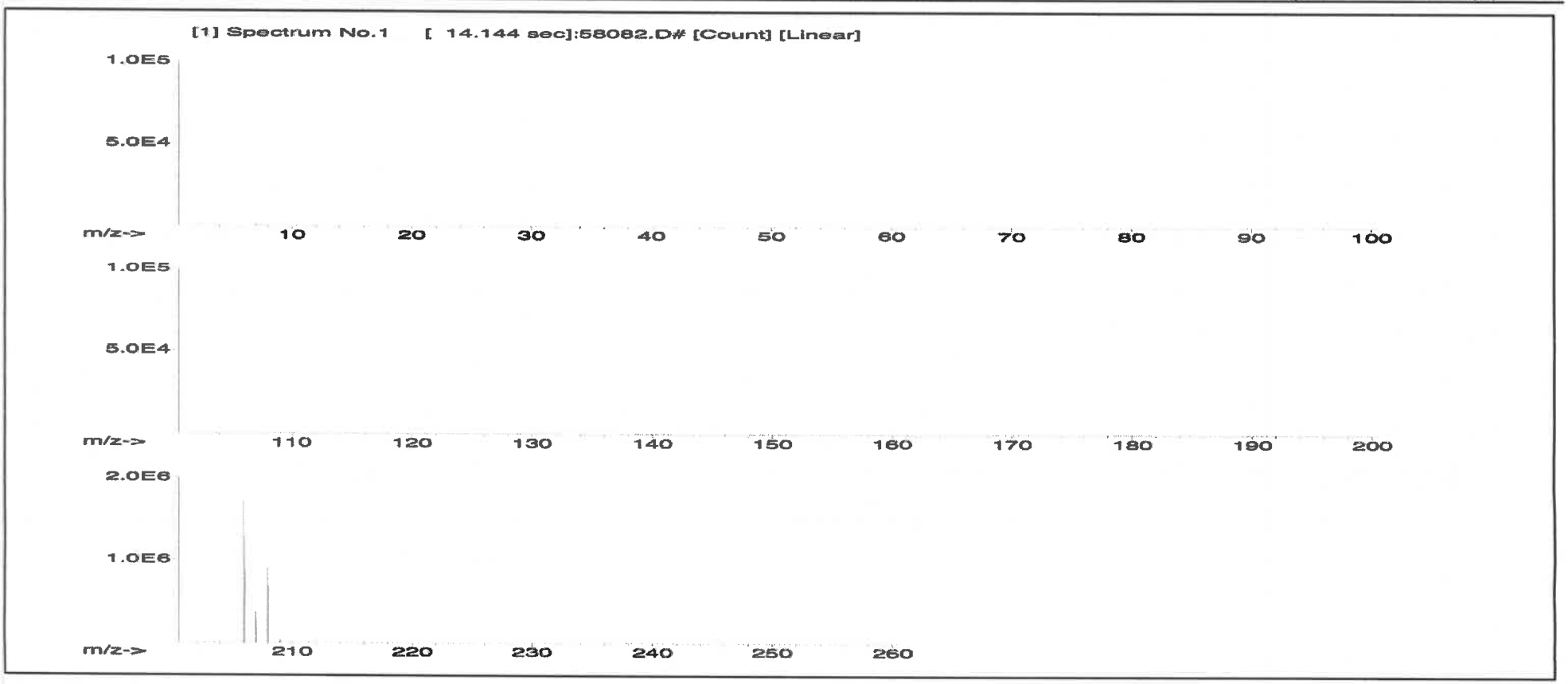
**Expiration Date:** 100926
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB

**Weight shown below was diluted to (mL):** 3000.41 5E-05 Balance Uncertainty 0.06 Flask Uncertainty

| | Lot # | |
|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid |
| 2% | 60.0 (mL) | Nitric Acid |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 100923 |
| Reviewed By: | Pedro L. Rentas | 100923 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Lead(II) nitrate (Pb) | IN029 | PBD122016A1 | 1000 | 99.999 | 0.10 | 62.5 | 4.80071 | 4.80077 | **1000.0** | **2.0** | 10099-74-8 | 0.05 mg/m3 | intrvns-rat 93 mg/kg | 3128 |



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

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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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

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R: 12/20/23 M5748

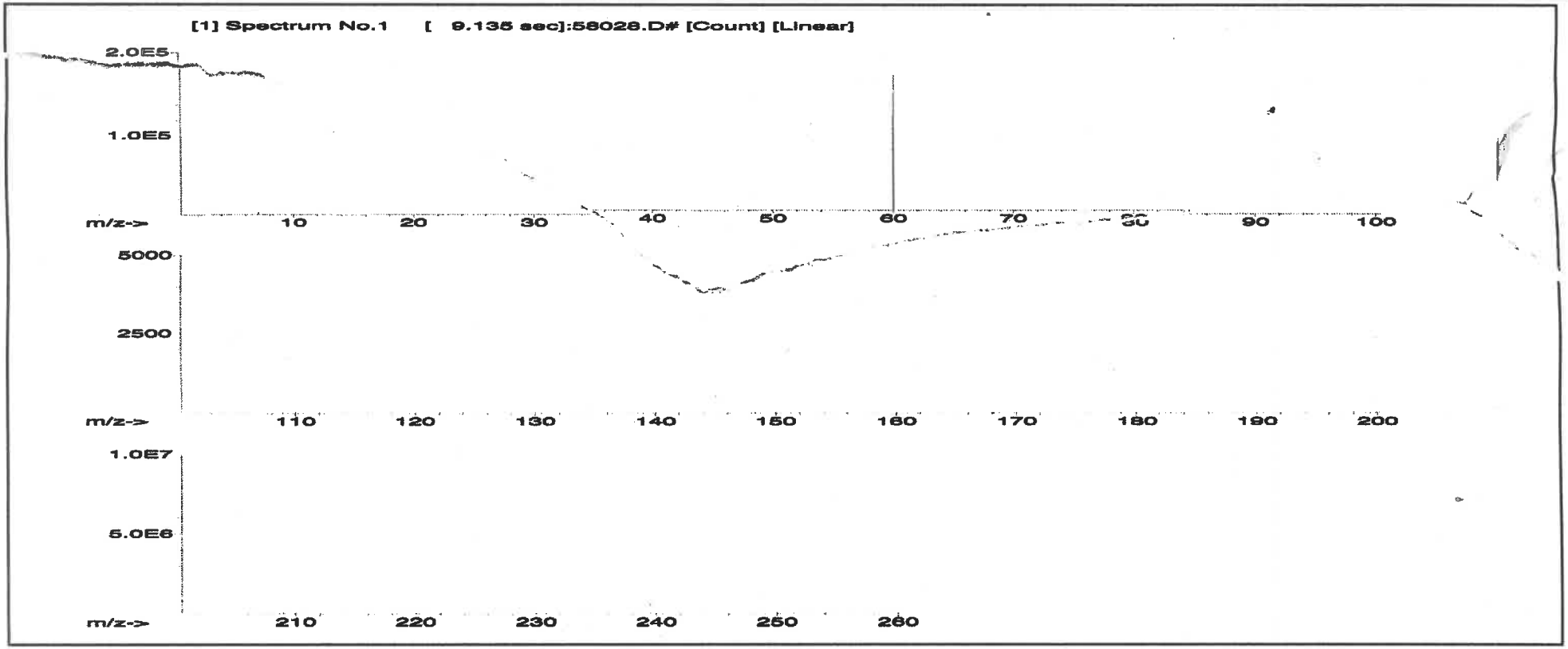
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**CERTIFIED WEIGHT REPORT:**

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57028** | 24002546 | Nitric Acid | |
| **Lot Number:** | **091223** | | | |
| **Description:** | **Nickel (Ni)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 091226 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 091223 |
| Reviewed By: | Pedro L. Rentas | 091223 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. 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 |



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

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

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

(T) = Target analyte

**Physical Characterization:**

**Certified by:**

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
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R: 8/25/23 M5751

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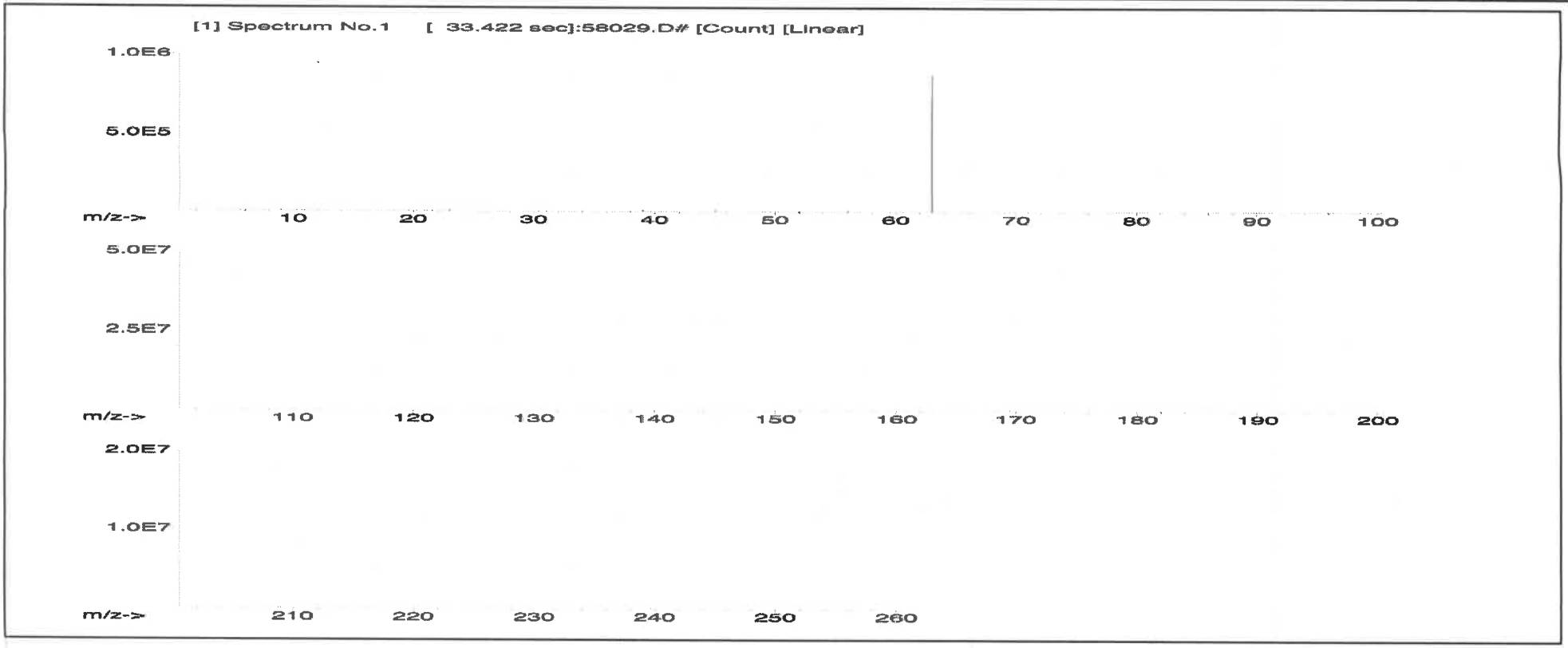


CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | 58029 | 21110221 | Nitric Acid | |
| **Lot Number:** | 071723 | | | |
| **Description:** | Copper (Cu) | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 071726 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | 1000 | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 071723 |
| Reviewed By: | Pedro L. Rentas | 071723 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) 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 | orl-rat 794 mg/kg | 3114 |



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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* All Standards should be stored with caps tight and under appropriate laboratory conditions.
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R: 02/09/24 M5798

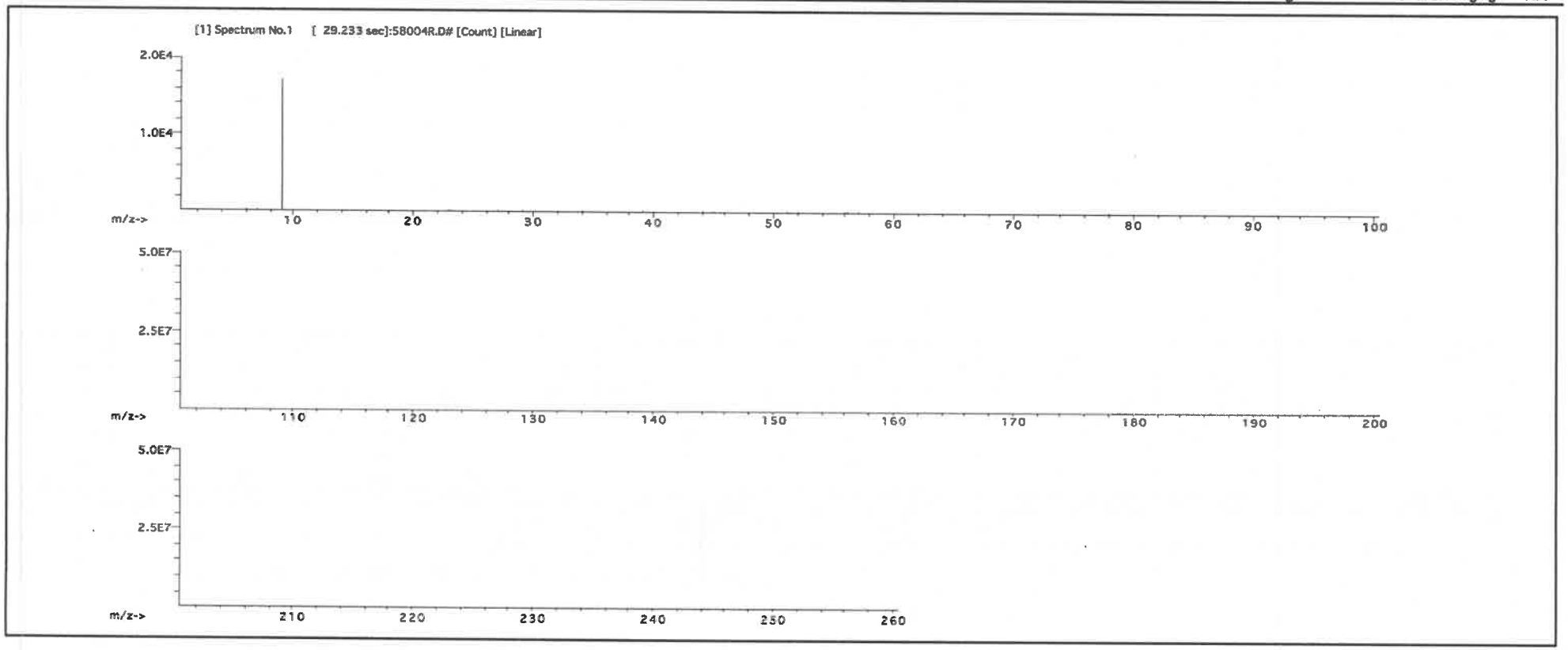
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CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57004** | | | |
| **Lot Number:** | **102523** | 24002546 | Nitric Acid | |
| **Description:** | **Beryllium (Be)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 102526 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 102523 |
| Reviewed By: | Pedro L. Rentas | 102523 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Beryllium nitrate (Be) | 58104 | 091423 | 0.1000 | 200.0 | 0.084 | 1000 | 10001.5 | **1000.0** | **2.2** | 13597-99-4 | 0.2ug/m3 | intrvns-rat 3.16mg/kg | NA |



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

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

(T) = Target analyte

**Physical Characterization:**

**Certified by:**

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* All Standards should be stored with caps tight and under appropriate laboratory conditions.
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## *Certified Reference Material CRM*

R? 02/09/24 IV15799 BA

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**CERTIFIED WEIGHT REPORT:**

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

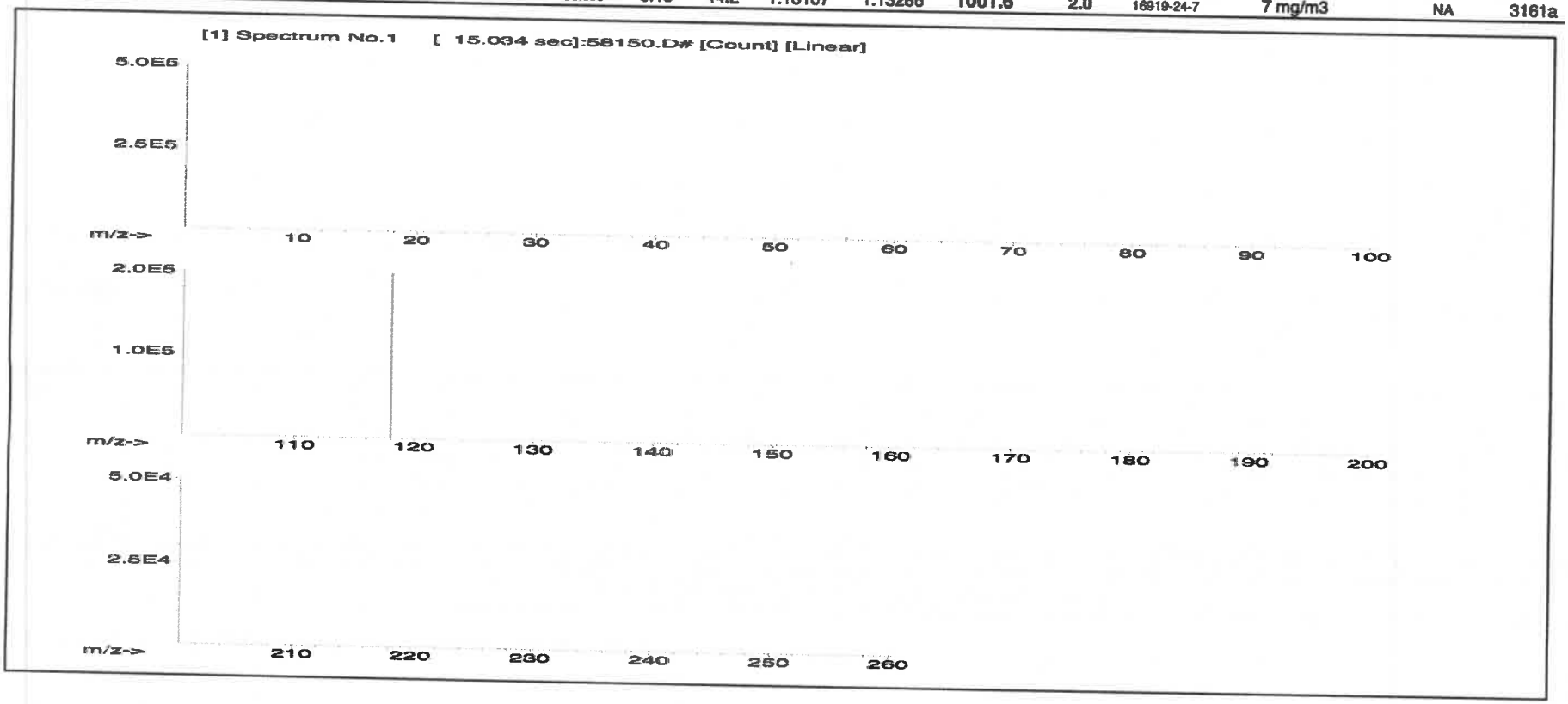
**Expiration Date:** 071126
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 499.93

| | Lot # | |
|---|---|---|
| **Solvents:** | 21110221 | Nitric Acid |
| | 22D0562008 | Hydrochloric acid |
| 2% | 10.0 | Nitric Acid |
| 6% | 30.0 | Hydrochloric acid |
| | (mL) | |

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 071123 |
| Reviewed By: | Pedro L. Rentas | 071123 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium hexafluorostannate(IV) (Sn) | IN010 | SND042023A1 | 1000 | 99.999 | 0.10 | 44.2 | 1.13107 | 1.13286 | **1001.6** | **2.0** | 16919-24-7 | 7 mg/m3 | NA | 3161a |



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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | <0.2 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <500 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | T | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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

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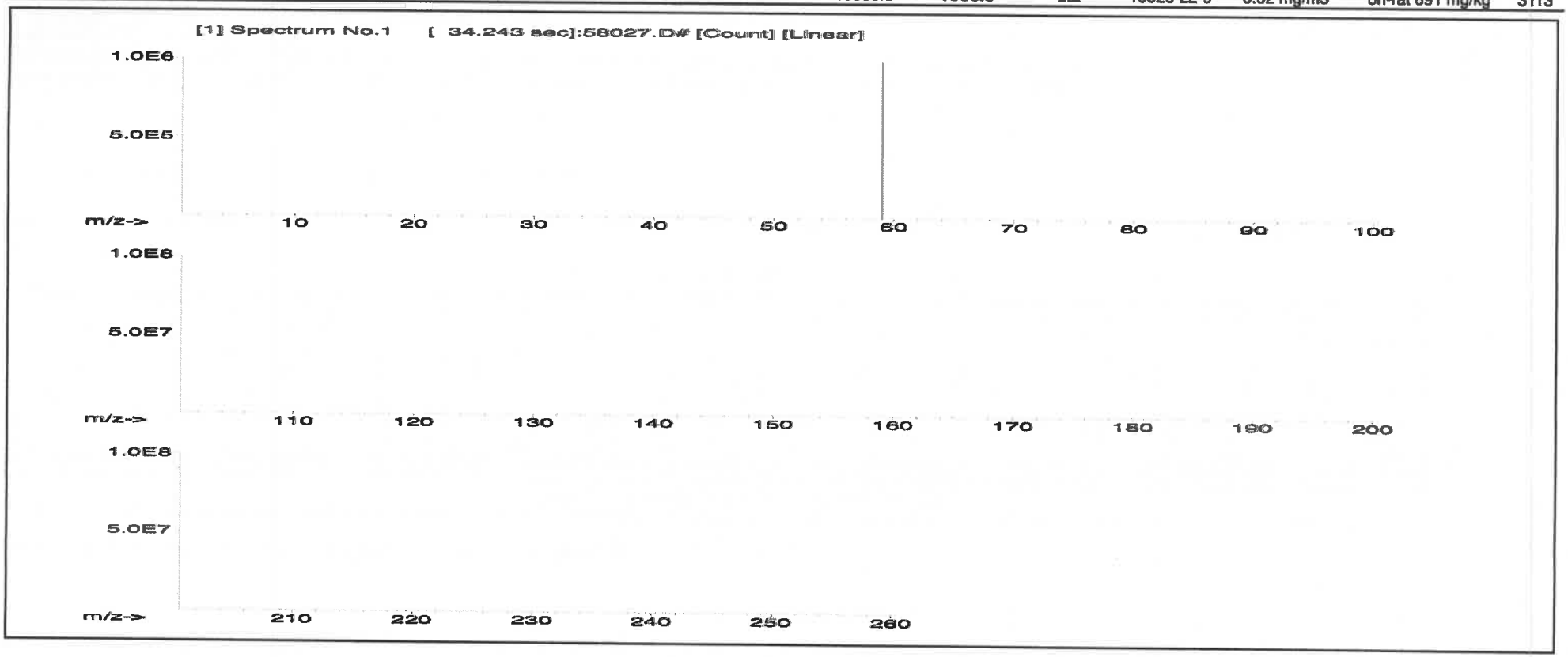
CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | | |
|---|---|---|---|---|---|
| **Part Number:** | **57027** | 24002546 | Nitric Acid | | |
| **Lot Number:** | **091923** | | | | |
| **Description:** | **Cobalt (Co)** | 2.0% | 40.0 (mL) | Nitric Acid | |
| **Expiration Date:** | 091926 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | | |

Formulated By: Lawrence Barry 091923

Reviewed By: Pedro L. Rentas 091923

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Cobalt(II) nitrate hexahydrate (Co) | 58127 | 050923 | 0.1000 | 200.0 | 0.084 | 1000 | 10000.0 | **1000.0** | **2.2** | 10026-22-9 | 0.02 mg/m3 | orl-rat 691 mg/kg | 3113 |



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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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

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CERTIFIED **WEIGHT** REPORT:

**Part Number:** 57033
**Lot Number:** 111323
**Description:** Arsenic (As)

**Expiration Date:** 111326
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB

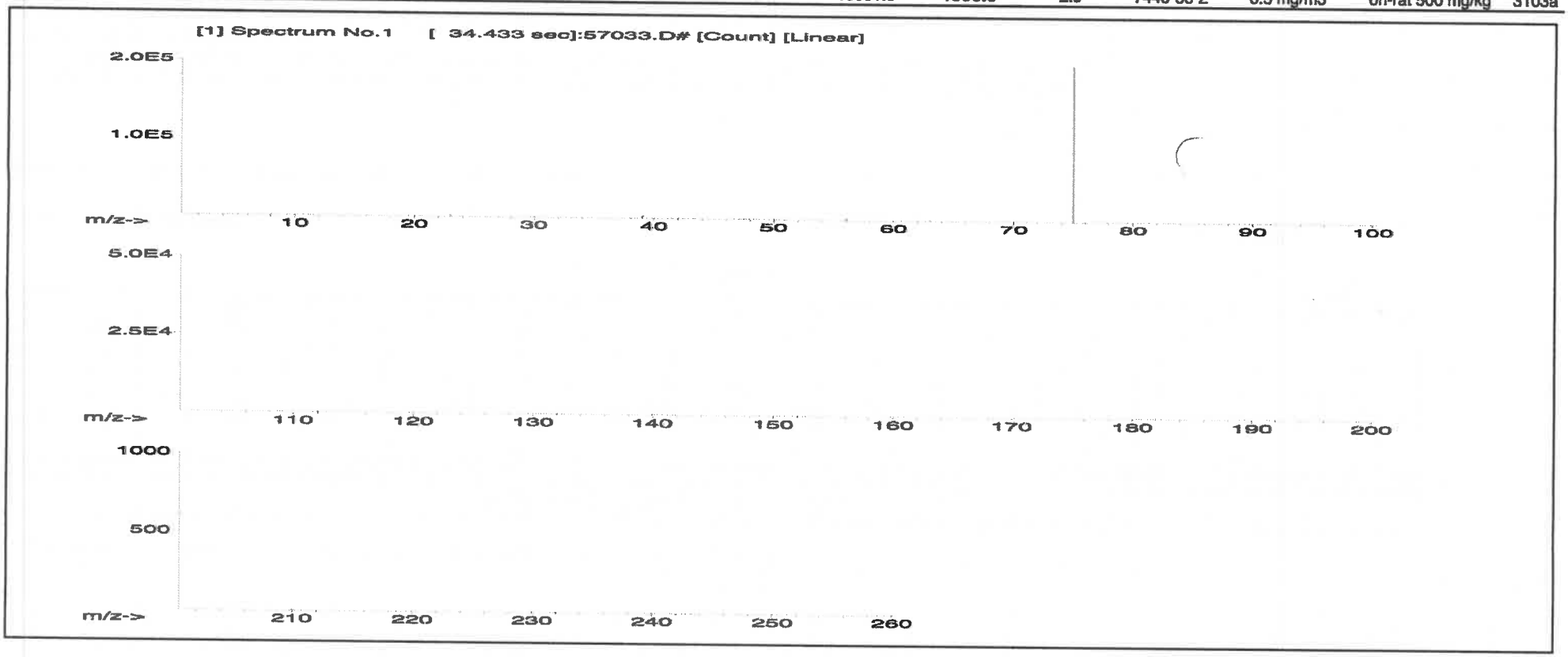
| | | | |
|---|---|---|---|
| | | 5E-05 | Balance Uncertainty |
| **Volume shown below was diluted to (mL):** | 4000.0 | 0.06 | Flask Uncertainty |

| Lot # | Solvent: | | |
|---|---|---|---|
| 24002546 | Nitric Acid | | |
| 2.0% | 80.0 (mL) | Nitric Acid | |

Formulated By: Lawrence Barry 111323

Reviewed By: Pedro L. Rentas 111323

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Arsenic (As) | 58133 | 020522 | 0.1000 | 400.0 | 0.084 | 1000 | 10001.0 | **1000.0** | 2.0 | 7440-38-2 | 0.5 mg/m3 | orl-rat 500 mg/kg | 3103a |



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

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

(T) = Target analyte

**Physical Characterization:**

**Certified by:**

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

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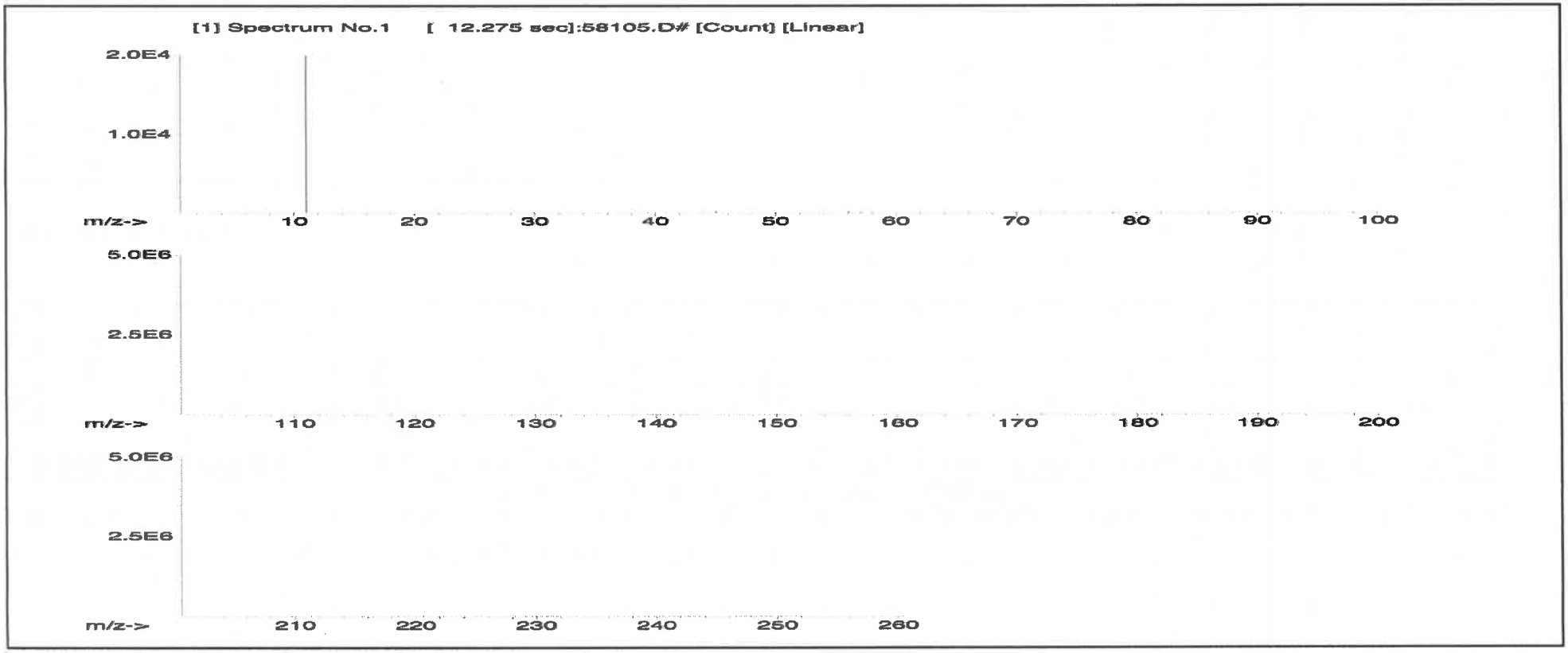
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## CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **57005** | | **Lot #** | | |
| **Lot Number:** | **071123** | **Solvent:** | MKBQ8597V | Ammonium hydroxide | |
| **Description:** | **Boron (B)** | | 2.0% | 40.0 (mL) | Ammonium hydroxide |
| **Expiration Date:** | 071126 | | | | |
| **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):** | 1999.48 | 0.058 | Flask Uncertainty | | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 071123 |
| Reviewed By: | Pedro L. Rentas | 071123 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Boric acid (B) | IN018 | BV092016A1 | 1000 | 99.9999 | 0.10 | 17.3 | 11.55772 | 11.56201 | **1000.4** | **2.0** | 10043-35-3 | 2 mg/m3 | orl-rat 2660 mg/kg | 3107 |






Q1352-METALS

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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | <0.2 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <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.
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* All Standards should be stored with caps tight and under appropriate laboratory conditions.
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R1 02/09/24. M58165

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CERTIFIED WEIGHT REPORT:

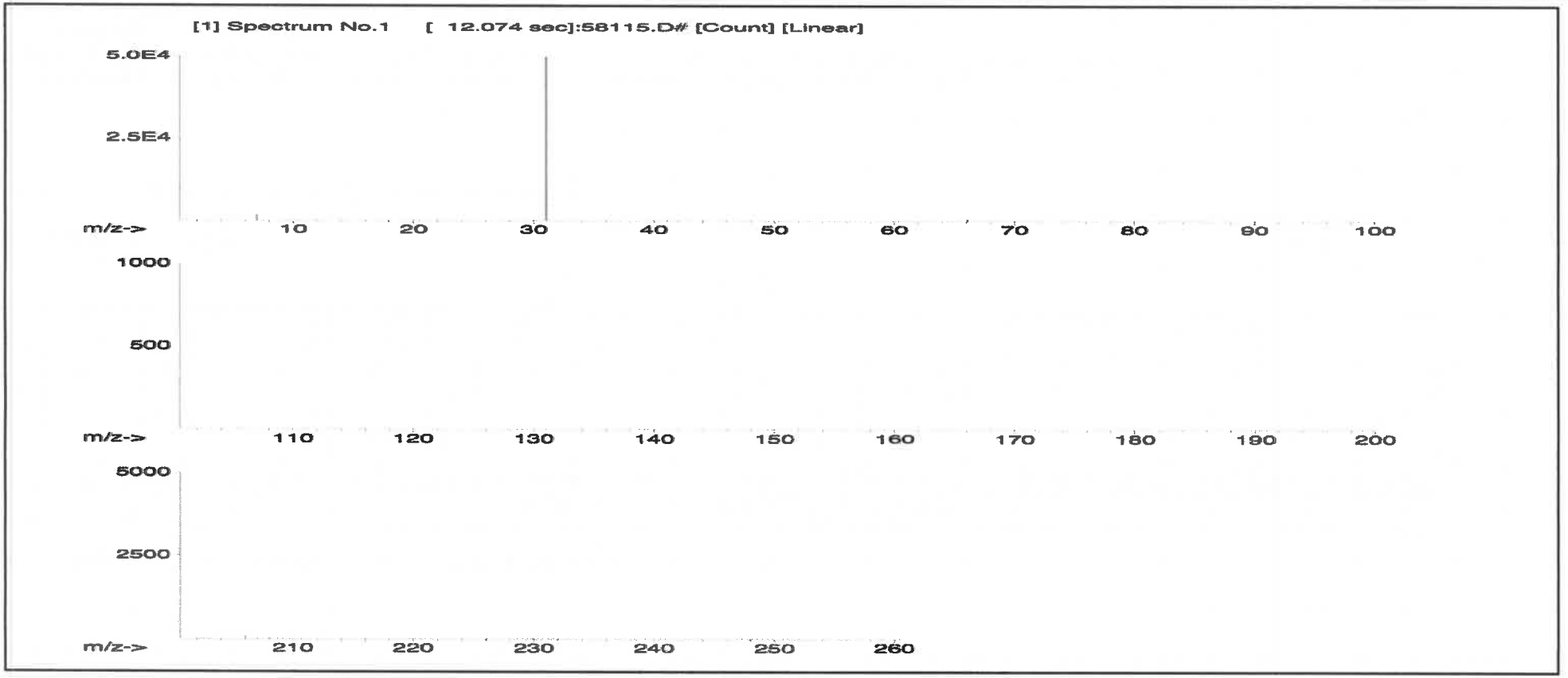
**Part Number:** 57115
**Lot Number:** 041723
**Description:** Phosphorous (P)

**Expiration Date:** 041726
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 2000.02 0.058 Flask Uncertainty

| | | Lot # | |
|---|---|---|---|
| **Solvent:** | 21110221 | | Nitric Acid |
| | 2% | 40.0 (mL) | Nitric Acid |
| | | 5E-05 | Balance Uncertainty |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 041723 |
| Reviewed By: | Pedro L. Rentas | 041723 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium dihydrogen phosphate (P) | IN008 | PV082019A1 | 10000 | 99.999 | 0.10 | 27.5 | 72.7287 | 72.7289 | **10000.0** | **20.0** | 7722-76-1 | 5 mg/m3 | orl-rat >2000mg/kg | 3186 |



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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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CERTIFIED WEIGHT REPORT:

**Part Number:** 57016
**Lot Number:** 122923
**Description:** Sulfur (S)

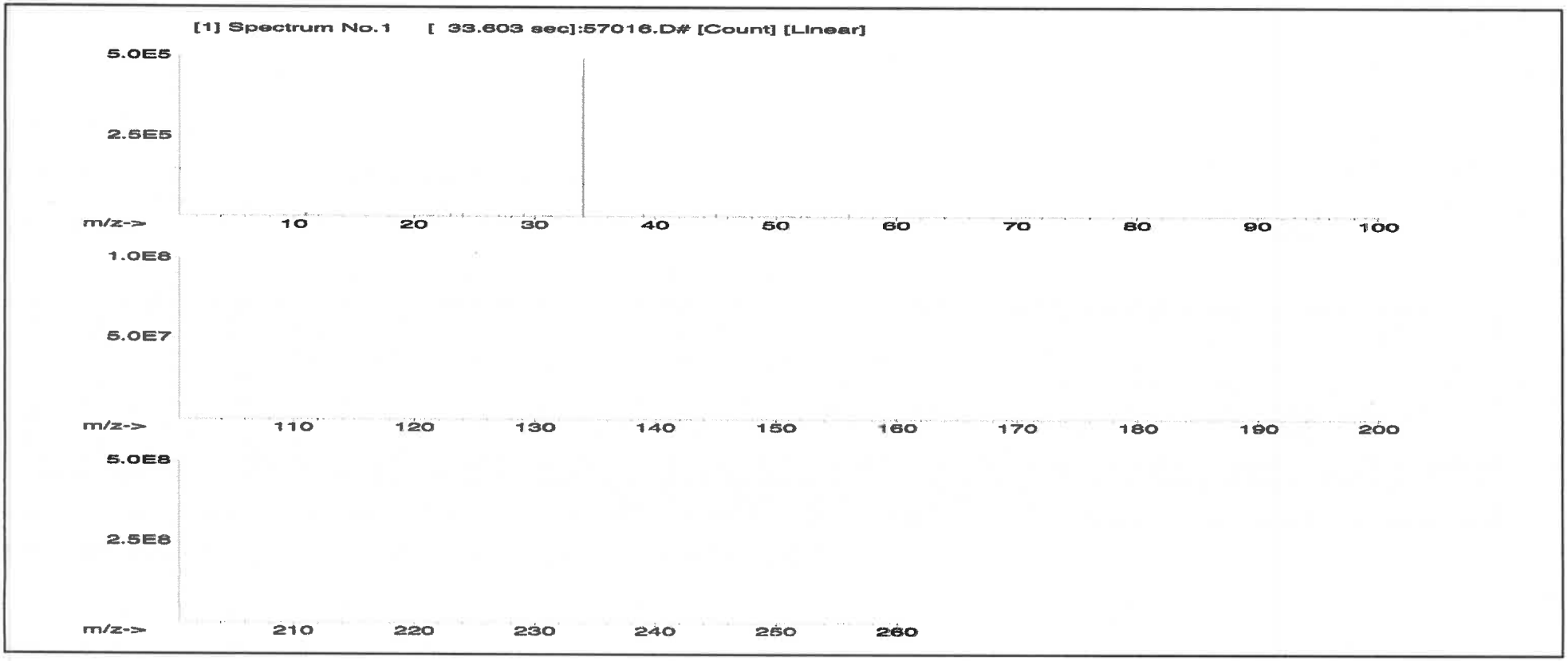
**Expiration Date:** 122926
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB

**Weight shown below was diluted to (mL):** 4000.0

| Lot # | | |
|---|---|---|
| **Solvent:** | 122923 | ASTM Type 1 Water |
| | 5E-05 | Balance Uncertainty |
| | 0.06 | Flask Uncertainty |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 122923 |
| Reviewed By: | Pedro L. Rentas | 122923 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium sulfate (S) | IN117 | SLBR7225V | 1000 | 99.9 | 0.10 | 24.3 | 16.4979 | 16.4980 | **1000.0** | **2.0** | 7783-20-2 | NA | orl-rat 4250mg/kg | 3181 |



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

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

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

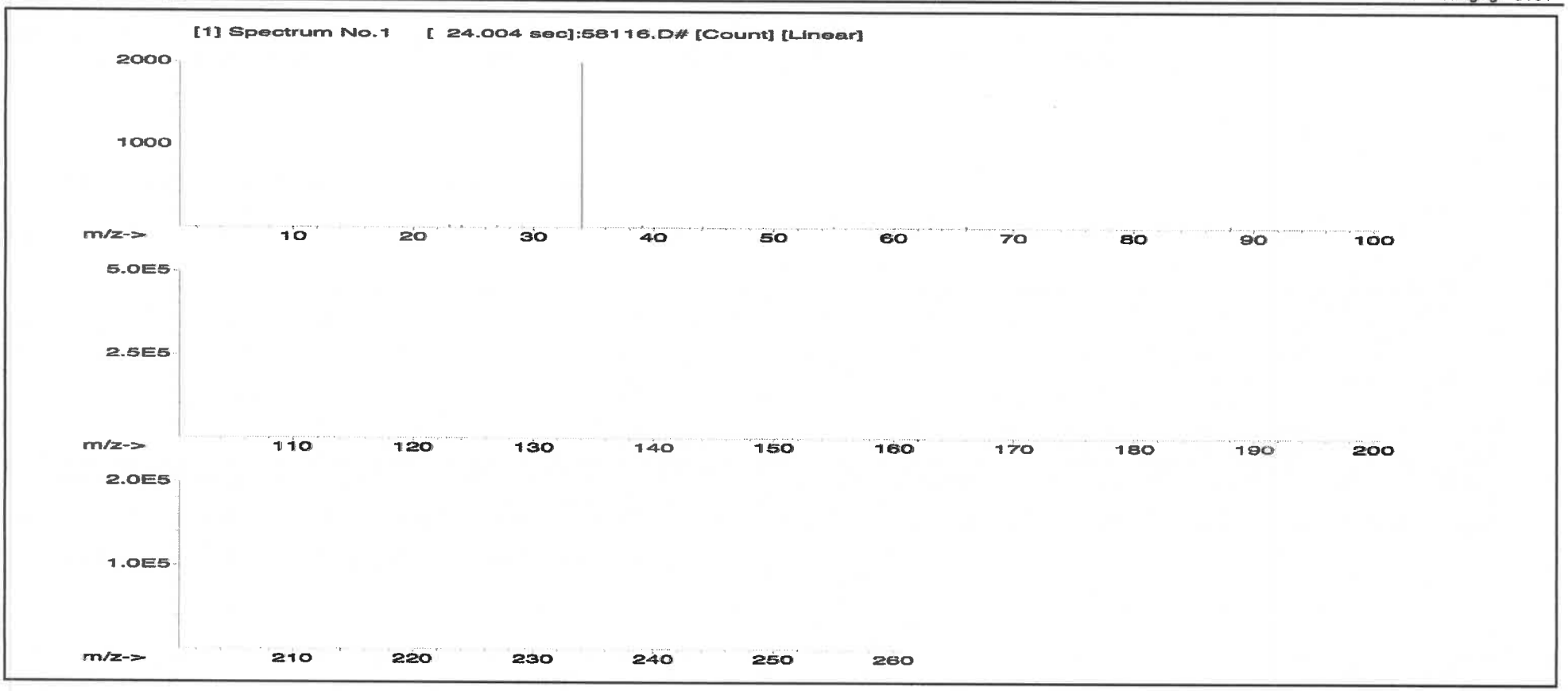
**Part Number:** 57116
**Lot Number:** 071123
**Description:** Sulfur (S)

**Lot #**
**Solvent:** 071123 ASTM Type 1 Water

**Expiration Date:** 071126
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB 5E-05 Balance Uncertainty
**Weight shown below was diluted to (mL):** 1999.48 0.058 Flask Uncertainty

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 071123 |
| Reviewed By: | Pedro L. Rentas | 071123 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium sulfate (S) | IN117 | SLBR7225V | 10000 | 99.9 | 0.10 | 24.3 | 82.4675 | 82.4682 | **10000.1** | **20.0** | 7783-20-2 | NA | ori-rat 4250mg/kg | 3181 |



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

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

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

(T)= Target analyte

**Physical Characterization:**

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

Certified by:

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

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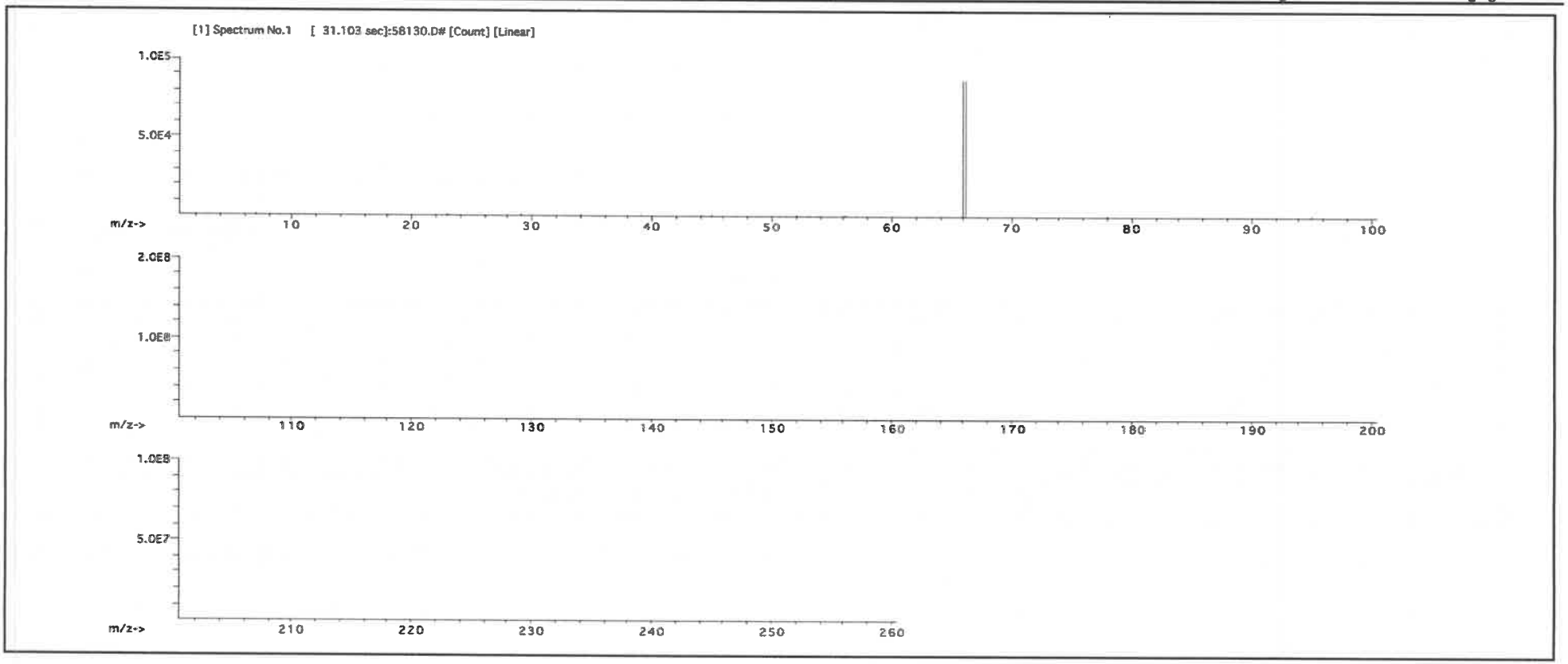


CERTIFIED WEIGHT REPORT:

| | | | | |
|---|---|---|---|---|
| **Part Number:** | **58030** | | | |
| **Lot Number:** | **111623** | | | |
| **Description:** | **Zinc (Zn)** | | | |
| | | | Lot # | |
| | | **Solvent:** | 24002546 | Nitric Acid |
| | | 2% | 60.0 (mL) | Nitric Acid |
| **Expiration Date:** | 111626 | | | |
| **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):** | 3000.4 | 0.06 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 111623 |
| Reviewed By: | Pedro L. Rentas | 111623 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Zinc nitrate hexahydrate (Zn) | IN016 | ZNE032021A1 | 1000 | 99.999 | 0.10 | 24.3 | 12.3475 | 12.3502 | **1000.2** | **2.0** | 10196-18-6 | 1 mg/m3 | orl-rat 1190mg/kg | 3168 |



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

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

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

(T) = Target analyte

**Physical Characterization:**

Certified by:

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

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

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CERTIFIED WEIGHT REPORT:

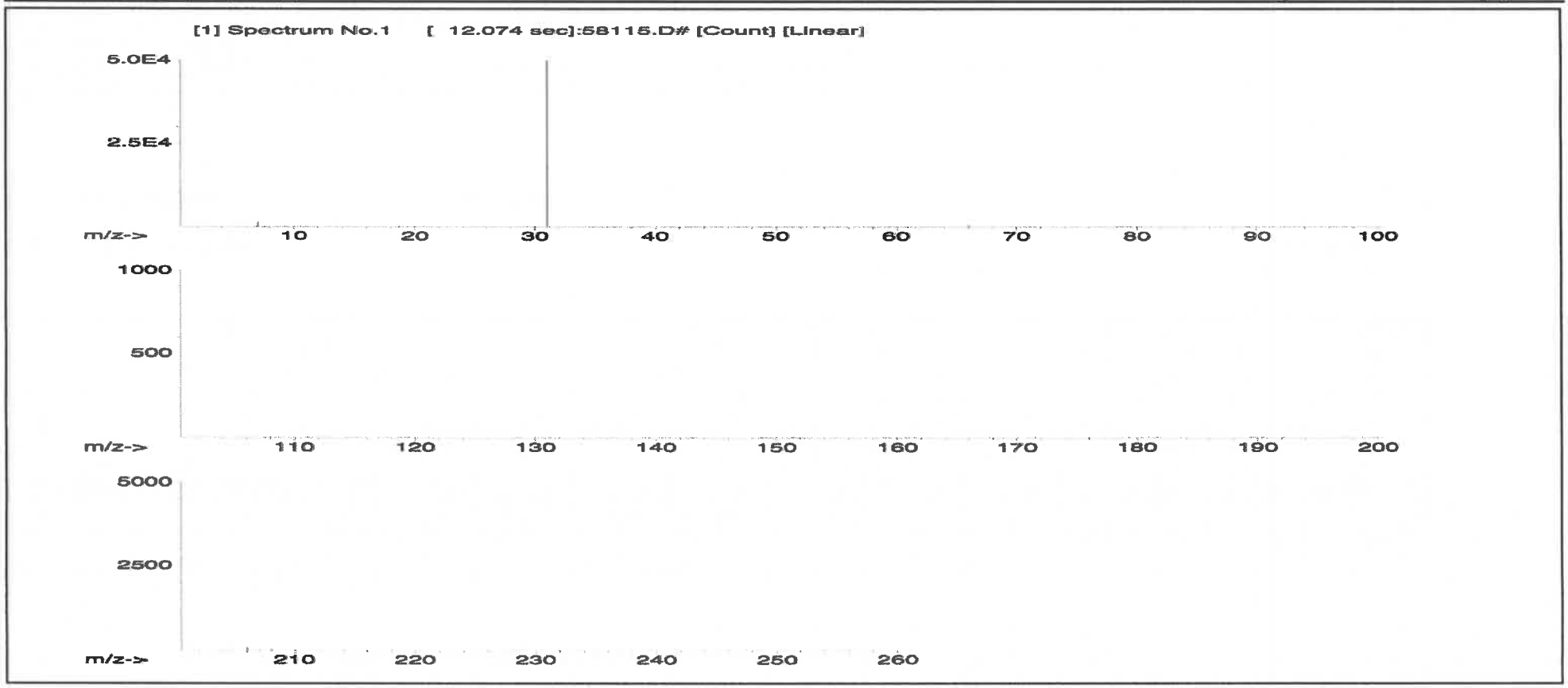
**Part Number:** 57015
**Lot Number:** 091123
**Description:** Phosphorous (P)

**Expiration Date:** 091126
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 2000.02

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid | |
| 2% | 40.0 (mL) | Nitric Acid | |
| | 5E-05 | Balance Uncertainty | |
| | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 091123 |
| Reviewed By: | Pedro L. Rentas | 091123 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium dihydrogen phosphate (P) | IN008 | PV082019A1 | 1000 | 99.999 | 0.10 | 27.5 | 7.2729 | 7.2730 | **1000.0** | **2.0** | 7722-76-1 | 5 mg/m3 | orl-rat >2000mg/k | 3186 |



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

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

(T) = Target analyte

**Physical Characterization:**

**Certified by:**

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Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

MT884
MB

avantor™ | J.T.Baker®

Material No.: 3624-01
Batch No.: 0000281938
Manufactured Date: 2021-06-07
Retest Date: 2026-06-07
Revision No.: 1

# Certificate of Analysis

| Test | Specification | Result |
|---|---|---|
| Assay (NaCl) (by Ag titrn) | ≥ 99.0 % | 100.0 % |
| pH of 5% Solution at 25°C | 5.0 - 9.0 | 6.3 |
| Insoluble Matter | ≤ 0.005 % | 0.003 % |
| Iodide (I) | ≤ 0.002 % | < 0.002 % |
| Bromide (Br) | ≤ 0.01 % | < 0.01 % |
| Chlorate and Nitrate (as $NO_3$) | ≤ 0.003 % | < 0.001 % |
| ACS - Phosphate ($PO_4$) | ≤ 5 ppm | < 5 ppm |
| Sulfate ($SO_4$) | ≤ 0.004 % | < 0.004 % |
| Barium (Ba) | Passes Test | Passes Test |
| ACS - Heavy Metals (as Pb) | ≤ 5 ppm | < 5 ppm |
| Iron (Fe) | ≤ 2 ppm | < 1 ppm |
| Calcium (Ca) | ≤ 0.002 % | < 0.001 % |
| Magnesium (Mg) | ≤ 0.001 % | < 0.001 % |
| Potassium (K) | ≤ 0.005 % | 0.001 % |

For Laboratory,Research,or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Mansford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

INORGANIC VENTURES
Refine your results. Redefine your industry.

# Certificate of Analysis

M5959 R: 6/14/24.

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).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Single Analyte Custom Grade Solution |
| Catalog Number: | CGY10 |
| Lot Number: | V2-Y740548 |
| Matrix: | 2% (v/v) HNO3 |
| Value / Analyte(s): | 10 000 µg/mL ea: Yttrium |
| Starting Material: | Yttrium Oxide |
| Starting Material Lot#: | 2661 and 06230520YL |
| Starting Material Purity: | 99.9984% |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10000 ± 30 µg/mL

**Density:** 1.032 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| | |
|---|---|
| **Assay Method #1** | **10011 ± 25 µg/mL**<br>EDTA NIST SRM 928 Lot Number: 928 |
| **Assay Method #2** | **9997 ± 50 µg/mL**<br>ICP Assay NIST SRM 3167a Lot Number: 190730 |
| **Assay Method #3** | **9984 ± 31 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:**

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | Ag | < | 0.004600 | M | Eu | | 0.009037 | M | Na | | 0.086360 | M | Se | < | 0.005200 | M | Zn | | 0.030125 |
| M | Al | | 0.014862 | O | Fe | | 0.002410 | M | Nb | < | 0.000570 | O | Si | | 0.024100 | O | Zr | < | 0.002600 |
| M | As | < | 0.003500 | M | Ga | < | 0.000570 | M | Nd | | 0.000923 | M | Sm | | 0.000461 | | | | |
| M | Au | < | 0.001700 | M | Gd | < | 0.003500 | M | Ni | < | 0.005700 | M | Sn | < | 0.002300 | | | | |
| O | B | | 0.002209 | M | Ge | < | 0.005200 | M | Os | < | 0.001200 | M | Sr | < | 0.004600 | | | | |
| O | Ba | < | 0.002500 | M | Hf | < | 0.000570 | n | P | < | | M | Ta | < | 0.000570 | | | | |
| O | Be | < | 0.001400 | M | Hg | < | 0.000570 | M | Pb | | 0.005020 | M | Tb | | 0.001044 | | | | |
| M | Bi | < | 0.003500 | M | Ho | | 0.009037 | M | Pd | < | 0.005100 | M | Te | < | 0.002300 | | | | |
| O | Ca | | 0.009841 | M | In | < | 0.002300 | M | Pr | < | 0.002300 | M | Th | < | 0.000570 | | | | |
| M | Cd | < | 0.000570 | M | Ir | < | 0.000570 | M | Pt | < | 0.000570 | M | Ti | < | 0.003500 | | | | |
| M | Ce | < | 0.002300 | O | K | | 0.018677 | M | Rb | < | 0.000570 | M | Tl | < | 0.000570 | | | | |
| M | Co | < | 0.000570 | M | La | | 0.000461 | M | Re | < | 0.000570 | M | Tm | < | 0.003500 | | | | |
| M | Cr | < | 0.004000 | O | Li | < | 0.009300 | M | Rh | < | 0.008000 | M | U | < | 0.000570 | | | | |
| M | Cs | < | 0.000570 | M | Lu | | 0.000582 | M | Ru | < | 0.000570 | M | V | | 0.001265 | | | | |
| M | Cu | | 0.002610 | O | Mg | | 0.001486 | n | S | < | | M | W | < | 0.002300 | | | | |
| M | Dy | | 0.003815 | M | Mn | | 0.000582 | M | Sb | | 0.005422 | s | Y | < | | | | | |
| M | Er | | 0.003615 | M | Mo | < | 0.005700 | M | Sc | < | 0.001200 | M | Yb | | 0.001827 | | | | |

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

## 6.0 INTENDED USE

**6.1** This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution -** 88.91 +3 6 Y(OH)(H2O)x+2

**Chemical Compatibility -**Soluble in HCl, H2SO4 and HNO3. Avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride.

**Stability -** 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

**Y Containing Samples (Preparation and Solution) -** Metal (Soluble in acids); Oxide (Dissolve by heating in H2O/ HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H2O / HCl or HNO3).

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

| **Technique/Line** | **Estimated D.L.** | **Order** | **Interferences** (underlined indicates severe) |
|---|---|---|---|
| ICP-MS 89 amu | 0.8 ppt | N/A | 73Ge16O, 178Hf+2 |
| ICP-OES 360.073 nm | 0.005 / 0.000036 µg/mL | 1 | Ce, Th |
| ICP-OES 371.030 nm | 0.004 / 0.00007 µg/mL | 1 | Ce |
| ICP-OES 377.433 nm | 0.005 / 0.0009 µg/mL | 1 | Ta, Th |

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

February 20, 2024

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

**11.2 Lot Expiration Date**

**- February 20, 2029**

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

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

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Prepared By:**

Uyen Truong
Custom Processing Supervisor



**Certificate Approved By:**

Muzzammil Khan
Stock Laboratory Supervisor



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



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M5961 R: 6/11/24

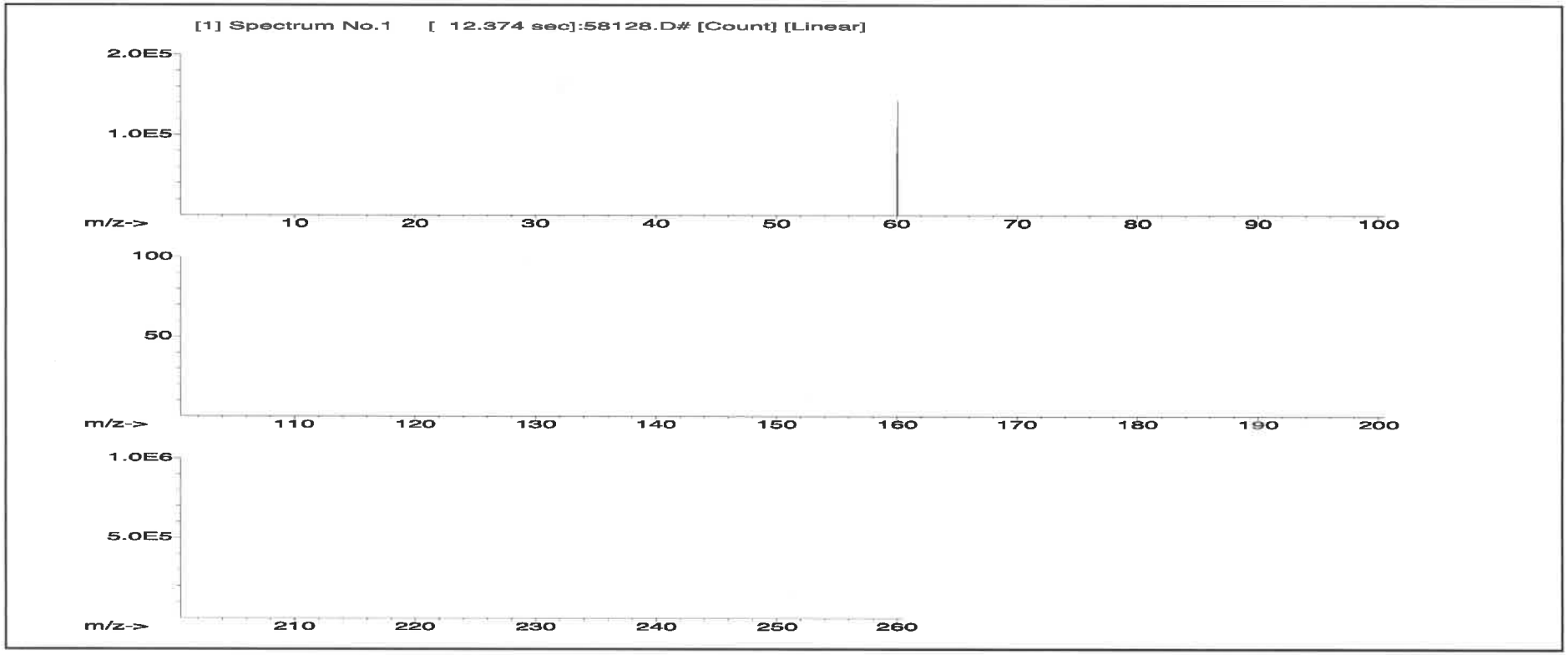
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CERTIFIED WEIGHT REPORT:

| | | Lot # | | |
|---|---|---|---|---|
| **Part Number:** | **57028** | **Solvent:** | 24002546 | Nitric Acid |
| **Lot Number:** | **041124** | | | |
| **Description:** | **Nickel (Ni)** | | 2% | 5.0 (mL) Nitric Acid |
| **Expiration Date:** | 041127 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Weight shown below was diluted to (mL):** | 249.85 | 0.002 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Brian Geddes | 041124 |
| Reviewed By: | Pedro L. Rentas | 041124 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Nickel(II) nitrate hexahydrate (Ni) | IN033 | NIM052023A1 | 1000 | 99.999 | 0.10 | 20.2 | 1.2369 | 1.2369 | **1000.0** | **2.0** | 13478-00-7 | 1 mg/m3 | orl-rat 1620 mg/kg | 3136 |



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

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

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

(T) = Target analyte

**Physical Characterization:**

Certified by:

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

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

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***Certified Reference Material CRM***

M5962 R! 06/14/24.

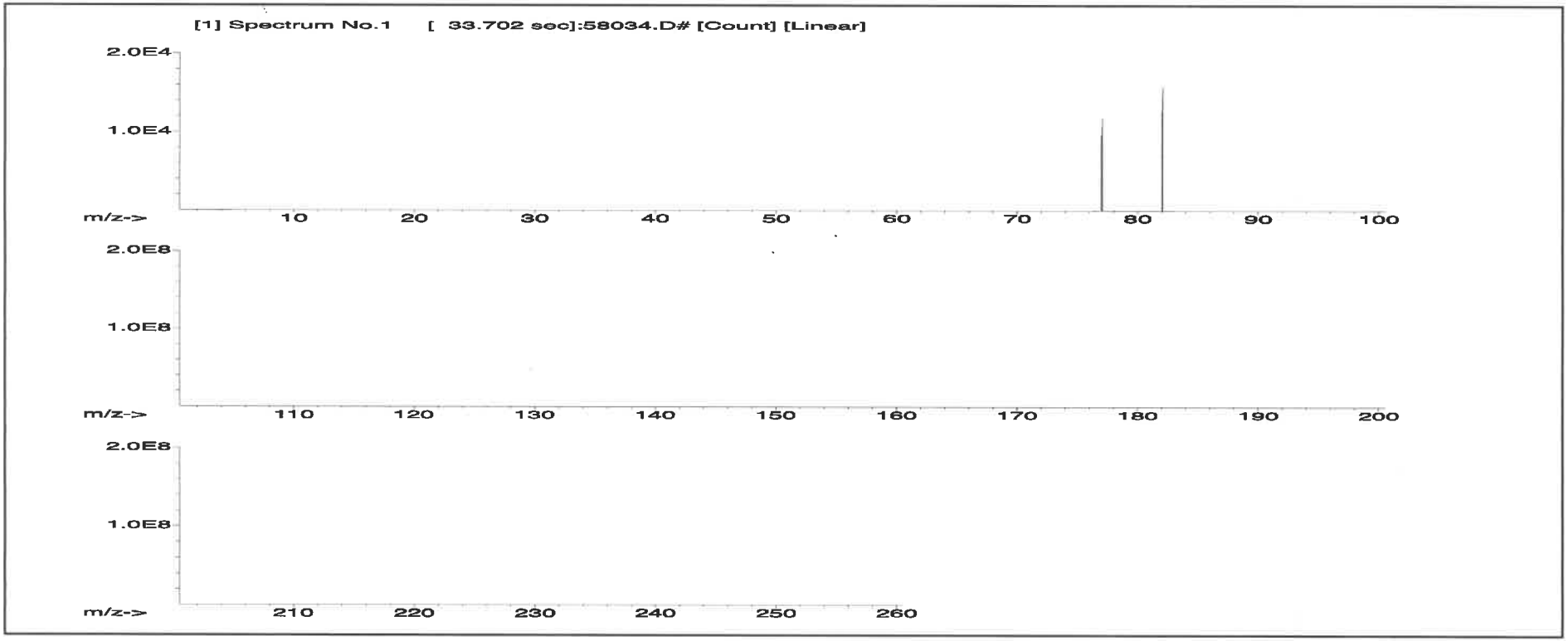
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CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57034** | 24002546 | Nitric Acid | |
| **Lot Number:** | **060624** | | | |
| **Description:** | **Selenium (Se)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 060627 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.07 | 0.100 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 060624 |
| Reviewed By: | Pedro L. Rentas | 060624 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Selenium (Se) | 58134 | 071223 | 0.1000 | 200.0 | 0.084 | 1000 | 10002.5 | **1000.0** | **2.2** | 7782-49-2 | 0.2 mg/m3 | orl-rat 6700 mg/kg | 3149 |



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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

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

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***Certified Reference Material CRM***

M5970, M5971 R: 7/01/24

ANAB ISO 17034 Accredited
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CERTIFIED WEIGHT REPORT:

**Part Number:** 57003
**Lot Number:** 062124
**Description:** Lithium (Li)
**Expiration Date:** 062127
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Volume shown below was diluted to (mL):** 250.11

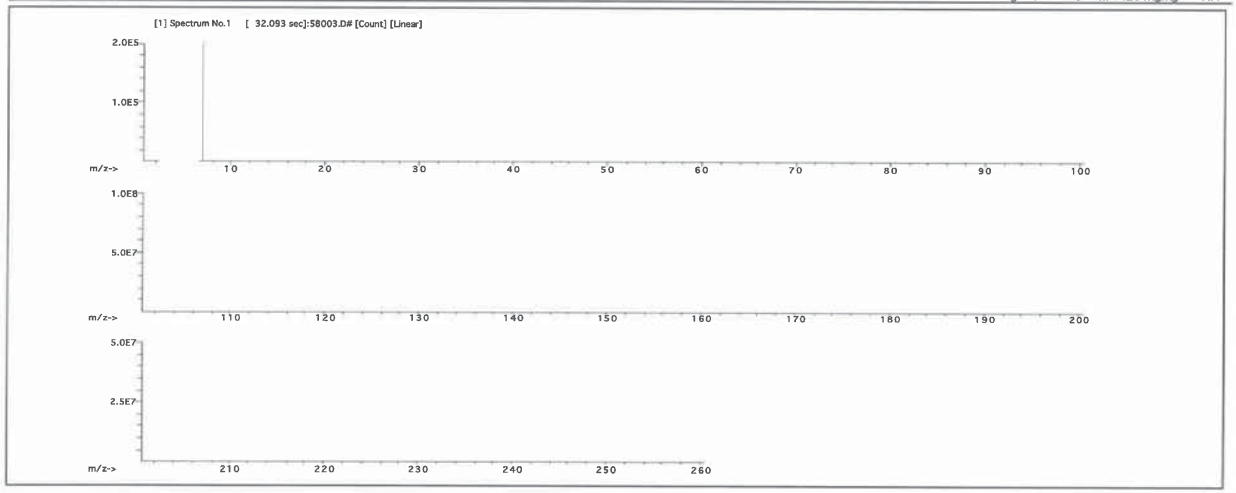
| Lot # | Solvent: | | |
|---|---|---|---|
| 24002546 | Nitric Acid | | |
| 2.0% | 5.0 (mL) | Nitric Acid | |

5E-05 Balance Uncertainty
0.016 Flask Uncertainty

Giovanni Esposito
Formulated By: Giovanni Esposito 062124

Pedro Rentas
Reviewed By: Pedro L. Rentas 062124

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Lithium nitrate (Li) | 58103 | 070622 | 0.1000 | 25.0 | 0.004 | 1000 | 10000.4 | **1000.0** | **2.0** | 7790-69-4 | 5 mg/m3 | orl-rat 1426 mg/kg | NA |



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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

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

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# Certificate of Analysis

M5976, M5977
R: 02/22/24

## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Single Analyte Custom Grade Solution |
| Catalog Number: | CGMO1 |
| Lot Number: | T2-MO720876 |
| Matrix: | H2O<br>tr. NH4OH |
| Value / Analyte(s): | 1 000 µg/mL ea:<br>Molybdenum |
| Starting Material: | Ammonium Molybdate |
| Starting Material Lot#: | 2361 |
| Starting Material Purity: | 99.9893% |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 998 ± 7 µg/mL

**Density:** 1.000 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1** **998 ± 4 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

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

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | Ag | < | 0.000590 | M | Eu | < | 0.000300 | M | Na | | 0.000879 | M | Se | < | 0.008000 | M | Zn | | 0.000598 |
| M | Al | | 0.000563 | M | Fe | < | 0.006500 | M | Nb | < | 0.029000 | i | Si | < | | M | Zr | < | 0.001800 |
| M | As | < | 0.002100 | M | Ga | < | 0.000300 | i | Nd | < | | M | Sm | < | 0.000300 | | | | |
| M | Au | < | 0.000300 | M | Gd | < | 0.000300 | M | Ni | < | 0.008000 | M | Sn | < | 0.008900 | | | | |
| M | B | < | 0.003300 | M | Ge | < | 0.000300 | M | Os | < | 0.000590 | M | Sr | | 0.000175 | | | | |
| M | Ba | | 0.001689 | M | Hf | < | 0.001800 | i | P | < | | M | Ta | < | 0.004200 | | | | |
| M | Be | < | 0.000890 | M | Hg | < | 0.003300 | M | Pb | < | 0.000300 | M | Tb | < | 0.000300 | | | | |
| M | Bi | < | 0.000890 | M | Ho | < | 0.000300 | M | Pd | < | 0.001800 | M | Te | < | 0.021000 | | | | |
| O | Ca | | 0.006334 | M | In | < | 0.032000 | M | Pr | < | 0.013000 | M | Th | < | 0.000300 | | | | |
| O | Cd | < | 0.026000 | M | Ir | < | 0.000300 | M | Pt | < | 0.000300 | O | Tl | < | 0.032000 | | | | |
| M | Ce | < | 0.008300 | M | K | | 0.130213 | M | Rb | | 0.004575 | M | Tl | | 0.001266 | | | | |
| M | Co | | 0.000598 | M | La | < | 0.000300 | M | Re | < | 0.000300 | M | Tm | < | 0.000300 | | | | |
| M | Cr | | 0.000527 | O | Li | | 0.000059 | M | Rh | < | 0.000300 | M | U | < | 0.005300 | | | | |
| M | Cs | | 0.000527 | M | Lu | < | 0.000300 | M | Ru | < | 0.079000 | M | V | < | 0.000890 | | | | |
| M | Cu | | 0.002252 | M | Mg | | 0.000563 | i | S | < | | M | W | | 0.087982 | | | | |
| M | Dy | < | 0.000300 | M | Mn | < | 0.005900 | M | Sb | | 0.001513 | M | Y | < | 0.000300 | | | | |
| M | Er | < | 0.000300 | s | Mo | < | | M | Sc | < | 0.001200 | M | Yb | < | 0.000300 | | | | |

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

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution -** 95.94 +6 6,7,8,9 [MoO4]-2(chemical form as received)

**Chemical Compatibility -**Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

**Stability -** 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

**Mo Containing Samples (Preparation and Solution) -**Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl ).

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

| **Technique/Line** | **Estimated D.L.** | **Order** | **Interferences** (underlined indicates severe) |
|---|---|---|---|
| ICP-MS 95 amu | 3 ppt | n/a | 40Ar39K16O,79Br1 6O,190Os2+,190Pt 2+ |
| ICP-OES 202.030 nm | 0.008 / 0.0002 µg/mL | 1 | Os, Hf |
| ICP-OES 203.844 nm | 0.012 / 0.002 µg/mL | 1 | |
| ICP-OES 204.598 nm | 0.012 / 0.001 µg/mL | 1 | Ir, Ta |

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

July 17, 2022

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

**11.2 Lot Expiration Date**

**- July 17, 2027**

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

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

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Prepared By:**

Uyen Truong
Supervisor, Product Documentation



**Certificate Approved By:**

Michael Booth
Director, Technical



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



MS978, MS979

INORGANIC VENTURES

Refine your results. Redefine your industry.

# Certificate of Analysis

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R: 2/22/24

## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 865.01 — ACCREDITED Reference Material Producer Certificate 865.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Single Analyte Custom Grade Solution |
| Catalog Number: | CGT11 |
| Lot Number: | T2-TI719972 |
| Matrix: | 2% (v/v) HNO3<br>tr. HF |
| Value / Analyte(s): | 1 000 µg/mL ea:<br>Titanium<br>Ti Metal |
| Starting Material: | |
| Starting Material Lot#: | 2094 |
| Starting Material Purity: | 99.9975% |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 1002 ± 5 µg/mL

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

**Assay Information:**

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

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

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

### Characterization of CRM/RM by Two or More Methods

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

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

$x_i$ = mean of Assay Method $i$ with standard uncertainty $u_{Char\ i}$

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

$$X_{CRM/RM} = (\Sigma x_a)\,(u_{Char\ a})$$

$X_a$ = mean of Assay Method A with $u_{Char\ a}$ = the standard uncertainty of characterization Method A

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

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

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

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

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

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

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

**Ti Containing Samples (Preparation and Solution) -** Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores ( fuse in Pt0 with KF + K2SO7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

**10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

June 17, 2022

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

**11.2 Lot Expiration Date**

**- June 17, 2027**

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

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

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozlkowski
Manager, Quality Control

**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director

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# Certificate of Analysis

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MS985
R: 6/14/24

## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Single Analyte Custom Grade Solution |
| Catalog Number: | CGIN10 |
| Lot Number: | U2-IN729349 |
| Matrix: | 5% (v/v) HNO3 |
| Value / Analyte(s): | 10 000 µg/mL ea: Indium |
| Starting Material: | Indium Metal |
| Starting Material Lot#: | 2511 |
| Starting Material Purity: | 99.9995% |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10022 ± 30 µg/mL

**Density:** 1.044 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| | |
|---|---|
| **Assay Method #1** | **10021 ± 56 µg/mL**<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:**

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | Ag | < | 0.000760 | M | Eu | < | 0.000760 | O | Na | | 0.012771 | M | Se | < | 0.023000 | M | Zn | < | 0.006100 |
| M | Al | | 0.003385 | O | Fe | | 0.004462 | M | Nb | < | 0.000760 | O | Si | | 0.024619 | M | Zr | < | 0.000760 |
| M | As | < | 0.004600 | M | Ga | < | 0.000760 | M | Nd | < | 0.000760 | M | Sm | < | 0.000760 | | | | |
| M | Au | < | 0.002300 | M | Gd | < | 0.000760 | O | Ni | < | 0.005100 | M | Sn | < | 0.000760 | | | | |
| O | B | | 0.003692 | M | Ge | < | 0.001600 | M | Os | < | 0.000760 | O | Sr | < | 0.000610 | | | | |
| M | Ba | < | 0.001600 | M | Hf | < | 0.000760 | n | P | < | | M | Ta | < | 0.000760 | | | | |
| O | Be | < | 0.000130 | M | Hg | < | 0.003100 | M | Pb | | 0.001400 | M | Tb | < | 0.000760 | | | | |
| M | Bi | < | 0.000760 | M | Ho | < | 0.000760 | M | Pd | < | 0.001600 | M | Te | < | 0.000760 | | | | |
| O | Ca | | 0.004616 | s | In | < | | M | Pr | < | 0.000760 | M | Th | < | 0.000760 | | | | |
| M | Cd | < | 0.000760 | M | Ir | < | 0.000760 | M | Pt | < | 0.000760 | O | Ti | < | 0.001100 | | | | |
| M | Ce | < | 0.000760 | O | K | | 0.007078 | M | Rb | < | 0.000760 | M | Tl | < | 0.000760 | | | | |
| M | Co | < | 0.000760 | M | La | < | 0.000760 | M | Re | < | 0.000760 | M | Tm | < | 0.000760 | | | | |
| O | Cr | < | 0.001300 | O | Li | < | 0.000130 | M | Rh | < | 0.000760 | M | U | < | 0.000760 | | | | |
| M | Cs | < | 0.000760 | M | Lu | < | 0.000760 | M | Ru | < | 0.000760 | M | V | < | 0.001600 | | | | |
| M | Cu | < | 0.003800 | O | Mg | | 0.000707 | n | S | < | | M | W | < | 0.001600 | | | | |
| M | Dy | < | 0.000760 | O | Mn | | 0.000149 | M | Sb | < | 0.000760 | M | Y | < | 0.000760 | | | | |
| M | Er | < | 0.000760 | M | Mo | < | 0.002300 | M | Sc | < | 0.000760 | M | Yb | < | 0.000760 | | | | |

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

## 6.0 INTENDED USE

**6.1** This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

**6.2** For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution -** 114.82 +3 6 In(H2O)6+3

**Chemical Compatibility -**Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

**Stability -** 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

**In Containing Samples (Preparation and Solution) -**Metal (Best dissolved in HCl / HNO3 ); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

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

| **Technique/Line** | **Estimated D.L.** | **Order** | **Interferences** (underlined indicates severe) |
|---|---|---|---|
| ICP-MS 115 amu | 1 ppt | n/a | 115Sn, 99Ru16O |
| ICP-OES 158.583 nm | 0.05 / 0.002 µg/mL | 1 | |
| ICP-OES 230.606 nm | 0.1 / 0.03 µg/mL | 1 | Ni, Os |
| ICP-OES 325.609 nm | 0.2 / 0.05 µg/mL | 1 | Mn, Mo, Th |

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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 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



Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

M 6041-46
MS

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

# Certificate of Analysis

| Test | Specification | Result |
|---|---|---|
| ACS – Assay ($H_2SO_4$) | 95.0 – 98.0 % | 96.1 % |
| Appearance | Passes Test | Passes Test |
| ACS – Color (APHA) | ≤ 10 | 5 |
| ACS – Residue after Ignition | ≤ 3 ppm | < 1 ppm |
| ACS – Substances Reducing Permanganate (as SO2) | ≤ 2 ppm | < 2 ppm |
| Ammonium ($NH_4$) | ≤ 1 ppm | 1 ppm |
| Chloride (Cl) | ≤ 0.1 ppm | < 0.1 ppm |
| Nitrate ($NO_3$) | ≤ 0.2 ppm | < 0.1 ppm |
| Phosphate ($PO_4$) | ≤ 0.5 ppm | < 0.1 ppm |
| Trace Impurities – Aluminum (Al) | ≤ 30.0 ppb | < 5.0 ppb |
| Arsenic and Antimony (as As) | ≤ 4.0 ppb | < 2.0 ppb |
| Trace Impurities – Boron (B) | ≤ 10.0 ppb | 8.5 ppb |
| Trace Impurities – Cadmium (Cd) | ≤ 2.0 ppb | < 0.3 ppb |
| Trace Impurities – Chromium (Cr) | ≤ 6.0 ppb | < 0.4 ppb |
| Trace Impurities – Cobalt (Co) | ≤ 0.5 ppb | < 0.3 ppb |
| Trace Impurities – Copper (Cu) | ≤ 1.0 ppb | < 0.1 ppb |
| Trace Impurities – Gold (Au) | ≤ 10.0 ppb | 0.5 ppb |
| Heavy Metals (as Pb) | ≤ 500.0 ppb | < 100.0 ppb |
| Trace Impurities – Iron (Fe) | ≤ 50.0 ppb | 1.3 ppb |
| Trace Impurities – Lead (Pb) | ≤ 0.5 ppb | < 0.5 ppb |
| Trace Impurities – Magnesium (Mg) | ≤ 7.0 ppb | 0.8 ppb |
| Trace Impurities – Manganese (Mn) | ≤ 1.0 ppb | < 0.4 ppb |
| Trace Impurities – Mercury (Hg) | ≤ 0.5 ppb | < 0.1 ppb |
| Trace Impurities – Nickel (Ni) | ≤ 2.0 ppb | 0.3 ppb |
| Trace Impurities – Potassium (K) | ≤ 500.0 ppb | < 2.0 ppb |
| Trace Impurities – Selenium (Se) | ≤ 50.0 ppb | < 0.1 ppb |
| Trace Impurities – Silicon (Si) | ≤ 100.0 ppb | 31.5 ppb |
| Trace Impurities – Silver (Ag) | ≤ 1.0 ppb | < 0.3 ppb |

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 23D2462010

| Test | Specification | Result |
|---|---|---|
| Trace Impurities - Sodium (Na) | ≤ 500.0 ppb | 5.4 ppb |
| Trace Impurities - Strontium (Sr) | ≤ 5.0 ppb | < 0.2 ppb |
| Trace Impurities - Tin (Sn) | ≤ 5.0 ppb | < 0.8 ppb |
| Trace Impurities - Zinc (Zn) | ≤ 5.0 ppb | 0.4 ppb |

For Laboratory,Research,or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier
Jamie Ethier
Vice President Global Quality

INORGANIC VENTURES™
Refine your results. Redefine your industry.

# Certificate of Analysis

M6074
M6075
M6076
M6077

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | CHEM-CLP-4 |
| Lot Number: | V2-MEB746762 |
| Matrix: | 3% (v/v) HNO3<br>3% (v/v) HF |
| Value / Analyte(s): | 1 000 µg/mL ea:<br>Boron, Molybdenum,<br>Silicon, Tin,<br>Titanium |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE | CERTIFIED VALUE | ANALYTE | CERTIFIED VALUE |
|---|---|---|---|
| Boron, B | 1 000 ± 5 µg/mL | Molybdenum, Mo | 1 000 ± 5 µg/mL |
| Silicon, Si | 1 000 ± 7 µg/mL | Tin, Sn | 1 000 ± 5 µg/mL |
| Titanium, Ti | 1 000 ± 6 µg/mL | | |

**Density:** 1.033 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| B | ICP Assay | 3107 | 190605 |
| B | Calculated | | See Sec. 4.2 |
| Mo | ICP Assay | traceable to 3134 | U2-MO739068 |
| Si | ICP Assay | Traceable to 3150 | S2-SI702546 |
| Sn | ICP Assay | 3161a | 140917 |
| Ti | ICP Assay | traceable to 3162a | T2-TI725816 |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

N/A

## 6.0 INTENDED USE

**6.1** This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

**6.2** For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

September 06, 2024

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

### 11.2 Lot Expiration Date

**- September 06, 2029**

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

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

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Joseph Burns
Custom VS Manager



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

R → 10/13/24
Met dig

M 6121

Material No.: 9530-33
Batch No.: 0000275677
Manufactured Date: 2020/12/16
Retest Date: 2025/12/15
Revision No: 1

# Certificate of Analysis

| Test | Specification | Result |
|---|---|---|
| ACS – Assay (as HCl) (by acid-base titrn) | 36.5 – 38.0 % | 37.6 |
| ACS – Color (APHA) | <= 10 | 5 |
| ACS – Residue after Ignition | <= 3 ppm | 1 |
| ACS – Specific Gravity at 60°/60°F | 1.185 – 1.192 | 1.190 |
| ACS – Bromide (Br) | <= 0.005 % | < 0.005 |
| ACS – Extractable Organic Substances | <= 5 ppm | 1 |
| ACS – Free Chlorine (as $Cl_2$) | <= 0.5 ppm | < 0.5 |
| Phosphate ($PO_4$) | <= 0.05 ppm | < 0.03 |
| Sulfate ($SO_4$) | <= 0.5 ppm | < 0.3 |
| Sulfite ($SO_3$) | <= 0.8 ppm | 0.3 |
| Ammonium ($NH_4$) | <= 3 ppm | < 1 |
| Trace Impurities – Arsenic (As) | <= 0.010 ppm | < 0.003 |
| Trace Impurities – Aluminum (Al) | <= 10.0 ppb | < 0.2 |
| Arsenic and Antimony (as As) | <= 5 ppb | < 3 |
| Trace Impurities – Barium (Ba) | <= 1.0 ppb | < 0.2 |
| Trace Impurities – Beryllium (Be) | <= 1.0 ppb | < 0.2 |
| Trace Impurities – Bismuth (Bi) | <= 10.0 ppb | < 1.0 |
| Trace Impurities – Boron (B) | <= 20.0 ppb | < 5.0 |
| Trace Impurities – Cadmium (Cd) | <= 1.0 ppb | < 0.3 |
| Trace Impurities – Calcium (Ca) | <= 50.0 ppb | 29.7 |
| Trace Impurities – Chromium (Cr) | <= 1.0 ppb | < 0.4 |
| Trace Impurities – Cobalt (Co) | <= 1.0 ppb | < 0.3 |
| Trace Impurities – Copper (Cu) | <= 1.0 ppb | < 0.1 |
| Trace Impurities – Gallium (Ga) | <= 1.0 ppb | < 0.2 |

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Material No.: 9530-33
Batch No.: 0000275677

| Test | Specification | Result |
|---|---|---|
| Trace Impurities - Germanium (Ge) | <= 3.0 ppb | < 2.0 |
| Trace Impurities - Gold (Au) | <= 4.0 ppb | < 0.2 |
| Heavy Metals (as Pb) | <= 100 ppb | < 50 |
| Trace Impurities - Iron (Fe) | <= 15.0 ppb | <1 |
| Trace Impurities - Lead (Pb) | <= 1.0 ppb | < 0.5 |
| Trace Impurities - Lithium (Li) | <= 1.0 ppb | 0.2 |
| Trace Impurities - Magnesium (Mg) | <= 10.0 ppb | 0.4 |
| Trace Impurities - Manganese (Mn) | <= 1.0 ppb | < 0.4 |
| Trace Impurities - Mercury (Hg) | <= 0.5 ppb | 0.1 |
| Trace Impurities - Molybdenum (Mo) | <= 10.0 ppb | < 5.0 |
| Trace Impurities - Nickel (Ni) | <= 4.0 ppb | < 0.3 |
| Trace Impurities - Niobium (Nb) | <= 1.0 ppb | < 0.2 |
| Trace Impurities - Potassium (K) | <= 9.0 ppb | < 2.0 |
| Trace Impurities - Selenium (Se), For Information Only | ppb | 1.0 |
| Trace Impurities - Silicon (Si) | <= 100.0 ppb | < 10.0 |
| Trace Impurities - Silver (Ag) | <= 1.0 ppb | < 0.3 |
| Trace Impurities - Sodium (Na) | <= 100.0 ppb | < 5.0 |
| Trace Impurities - Strontium (Sr) | <= 1.0 ppb | < 0.2 |
| Trace Impurities - Tantalum (Ta) | <= 1.0 ppb | < 0.9 |
| Trace Impurities - Thallium (Tl) | <= 5.0 ppb | < 2.0 |
| Trace Impurities - Tin (Sn) | <= 5.0 ppb | < 0.8 |
| Trace Impurities - Titanium (Ti) | <= 1.0 ppb | 0.2 |
| Trace Impurities - Vanadium (V) | <= 1.0 ppb | < 0.2 |
| Trace Impurities - Zinc (Zn) | <= 5.0 ppb | 0.3 |
| Trace Impurities - Zirconium (Zr) | <= 1.0 ppb | < 0.1 |

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

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

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R -> 11/12/24

M6126

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

# Certificate of Analysis

| Test | Specification | Result |
|---|---|---|
| Assay ($HNO_3$) | 69.0 - 70.0 % | 69.7 % |
| Appearance | Passes Test | Passes Test |
| Color (APHA) | ≤ 10 | 5 |
| Residue after Ignition | ≤ 2 ppm | 1 ppm |
| Chloride (Cl) | ≤ 0.08 ppm | < 0.03 ppm |
| Phosphate ($PO_4$) | ≤ 0.10 ppm | < 0.03 ppm |
| Sulfate ($SO_4$) | ≤ 0.2 ppm | < 0.2 ppm |
| Trace Impurities - Aluminum (Al) | ≤ 40.0 ppb | < 1.0 ppb |
| Arsenic and Antimony (as As) | ≤ 5.0 ppb | < 2.0 ppb |
| Trace Impurities - Barium (Ba) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities - Beryllium (Be) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities - Bismuth (Bi) | ≤ 20.0 ppb | < 10.0 ppb |
| Trace Impurities - Boron (B) | ≤ 10.0 ppb | < 5.0 ppb |
| Trace Impurities - Cadmium (Cd) | ≤ 50 ppb | < 1 ppb |
| Trace Impurities - Calcium (Ca) | ≤ 50.0 ppb | 2.3 ppb |
| Trace Impurities - Chromium (Cr) | ≤ 30.0 ppb | < 1.0 ppb |
| Trace Impurities - Cobalt (Co) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities - Copper (Cu) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities - Gallium (Ga) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities - Germanium (Ge) | ≤ 20 ppb | < 10 ppb |
| Trace Impurities - Gold (Au) | ≤ 20 ppb | < 5 ppb |
| Heavy Metals (as Pb) | ≤ 100 ppb | 100 ppb |
| Trace Impurities - Iron (Fe) | ≤ 40.0 ppb | < 1.0 ppb |
| Trace Impurities - Lead (Pb) | ≤ 20.0 ppb | < 10.0 ppb |
| Trace Impurities - Lithium (Li) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities - Magnesium (Mg) | ≤ 20 ppb | < 1 ppb |
| Trace Impurities - Manganese (Mn) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities - Nickel (Ni) | ≤ 20.0 ppb | < 5.0 ppb |

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

| Test | Specification | Result |
|---|---|---|

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak
Director Quality Operations, Bioscience Production

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

*Certified Reference Material CRM*

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



CERTIFIED WEIGHT REPORT:

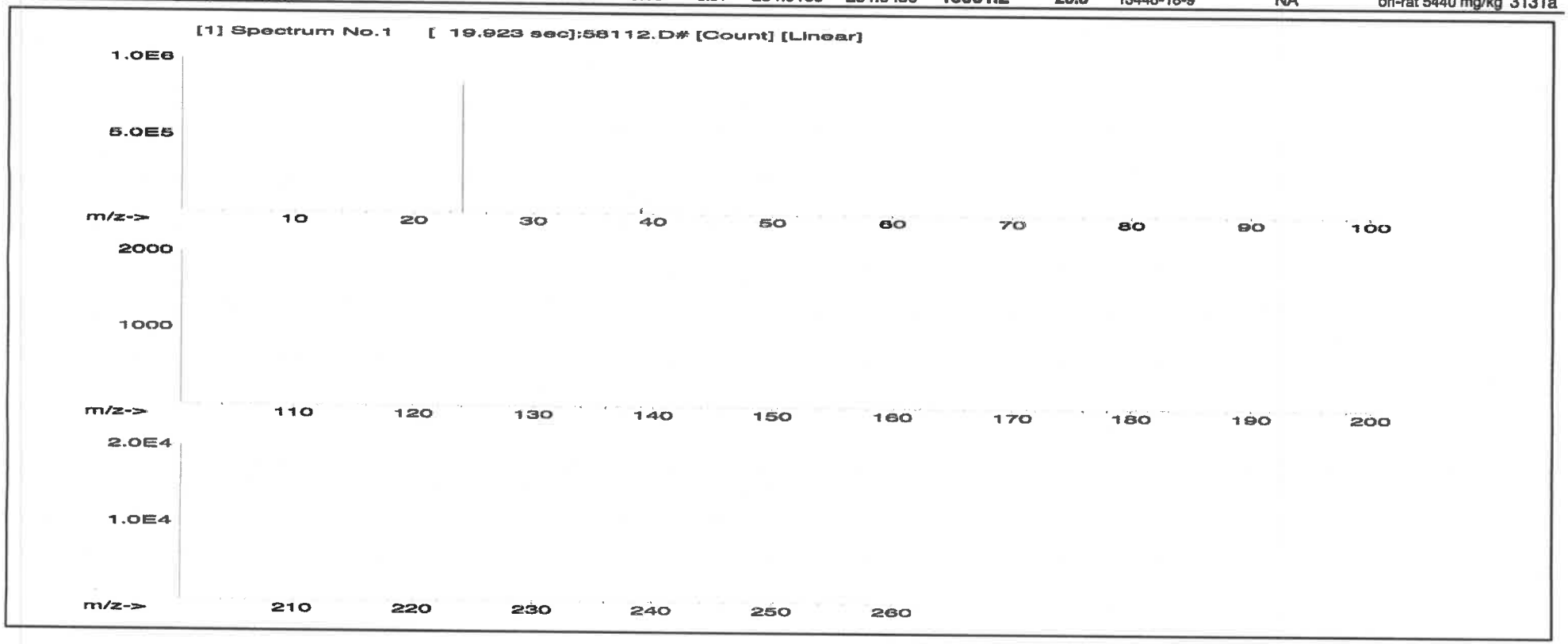
R→ 1/13/25
M 6127

| | | | Lot # | |
|---|---|---|---|---|
| **Part Number:** | **58112** | **Solvent:** | 24012496 | Nitric Acid |
| **Lot Number:** | **112124** | | | |
| **Description:** | **Magnesium (Mg)** | 2% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 112127 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **10000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Weight shown below was diluted to (mL):** | 2000.07 | 0.100 | Flask Uncertainty | |

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 112124 |
| Reviewed By: | Pedro L. Rentas | 112124 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Magnesium nitrate hexahydrate (Mg) | IN030 | MGD052023A1 | 10000 | 99.999 | 0.10 | 8.51 | 234.9183 | 234.9459 | **10001.2** | **20.0** | 13446-18-9 | NA | orl-rat 5440 mg/kg | 3131a |



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

*Certified Reference Material CRM*

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



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

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

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

(T) = Target analyte

## Physical Characterization:

Certified by:

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

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

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## CERTIFIED WEIGHT REPORT:

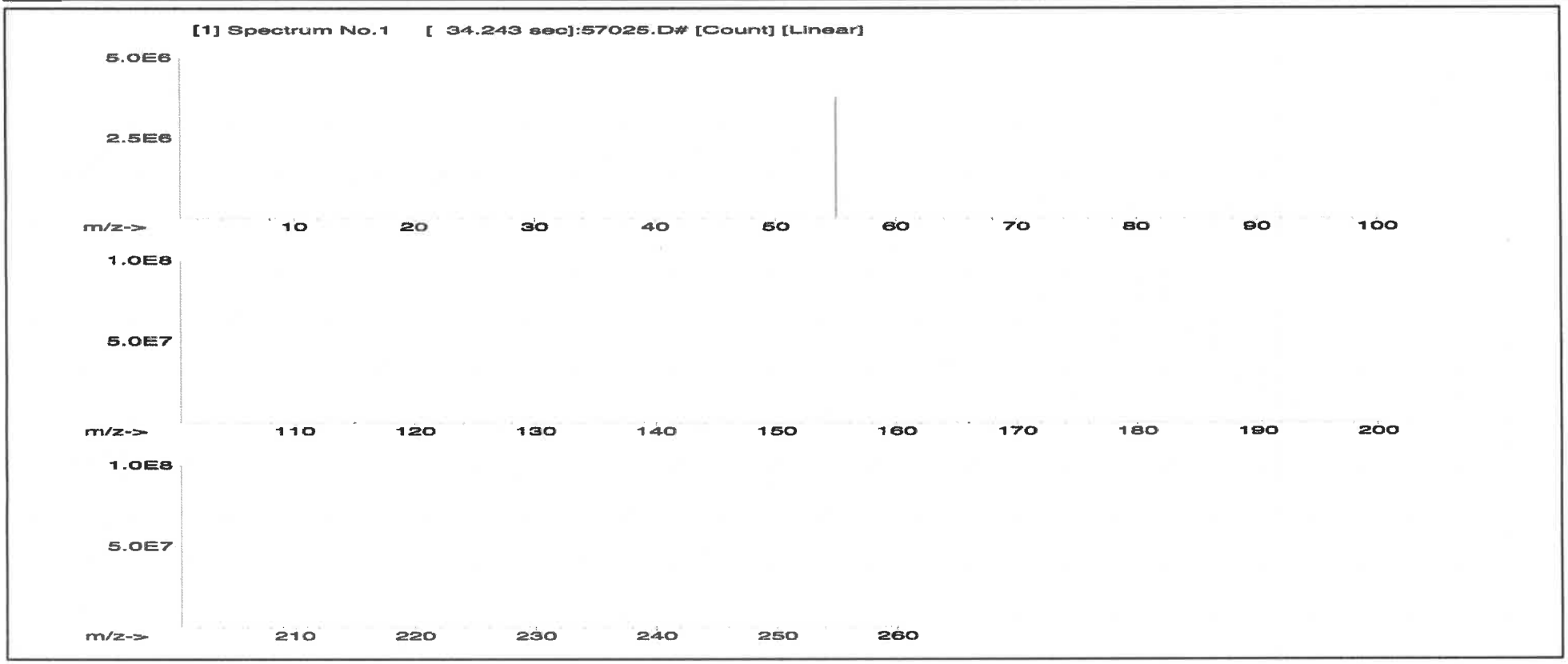
R->1/13/25
M6128

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **58025** | | **Solvent:** | **Lot #** 24002546 | Nitric Acid |
| **Lot Number:** | **101124** | | | | |
| **Description:** | **Manganese (Mn)** | | 2% | 80.0 (mL) | Nitric Acid |
| **Expiration Date:** | 101127 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Weight shown below was diluted to (mL):** | 4000.2 | 0.10 | Flask Uncertainty | | |

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 101124 |
| Reviewed By: | Pedro L. Rentas | 101124 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | **Actual Conc. (µg/mL)** | Expanded Uncertainty +/- (µg/mL) | **SDS Information** (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Manganese(II) nitrate hydrate (Mn) | IN031 | MNM092020A1 | 1000 | 99.999 | 0.10 | 20.8 | 19.2322 | 19.2344 | **1000.1** | **2.0** | 15710-66-4 | 5 mg/m3 | orl-rat >300mg/kg | 3132 |



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

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

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

(T) = Target analyte

## Physical Characterization:

**Certified by:**

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
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* All standards should be stored with caps tight and under appropriate laboratory conditions.
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## CERTIFIED WEIGHT REPORT:

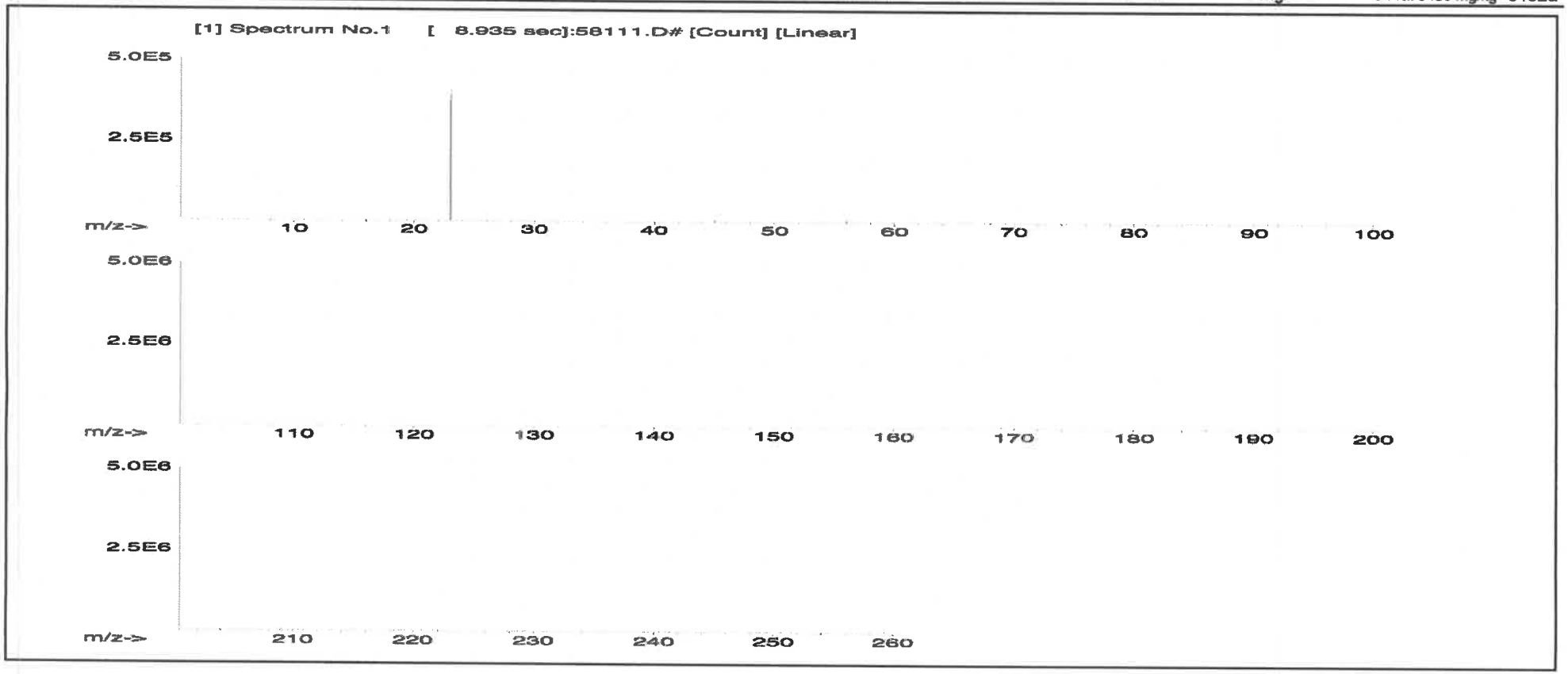
R->1/13/25

M6144

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **58111** | | **Lot #** | | |
| **Lot Number:** | **072424** | **Solvent:** | 24002546 | Nitric Acid | |
| **Description:** | **Sodium (Na)** | | | | |
| | | 2% | 80.0 (mL) | Nitric Acid | |
| **Expiration Date:** | 072427 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **10000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Weight shown below was diluted to (mL):** | 4000.2 | 0.10 | Flask Uncertainty | | |

| | |
|---|---|
| Formulated By: | Benson Chan 072424 |
| Reviewed By: | Pedro L. Rentas 072424 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sodium nitrate (Na) | IN036 | NAV012015I1 | 10000 | 99.999 | 0.10 | 26.9 | 148.7096 | ###### | **10000.0** | **20.0** | 7631-99-4 | 5 mg/m3 | orl-rat 3430 mg/kg | 3152a |



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

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

(T) = Target analyte

**Physical Characterization:**

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## CERTIFIED WEIGHT REPORT:

**Part Number:** 58030
**Lot Number:** 121724
**Description:** Zinc (Zn)

R → 1/13/25

M6145

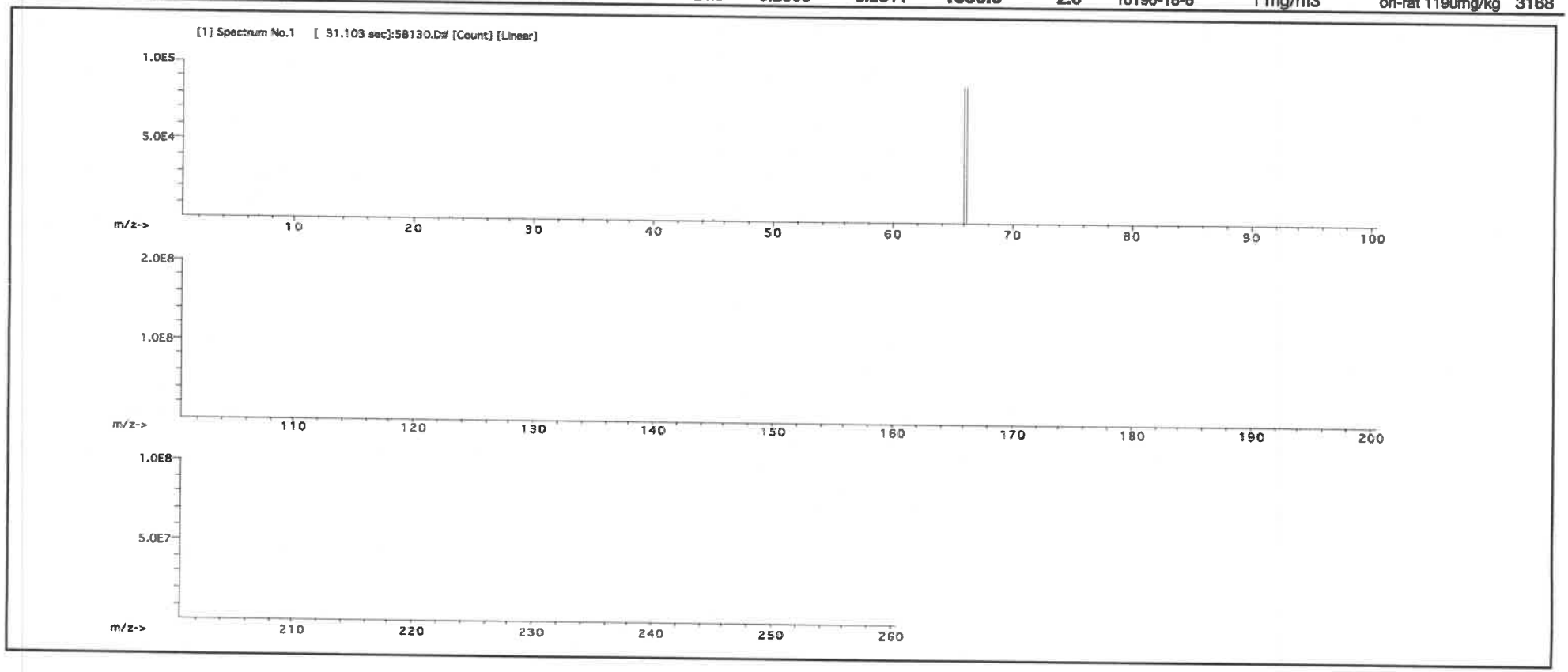
**Expiration Date:** 121727
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB

| | | | | Lot # | |
|---|---|---|---|---|---|
| **Solvent:** | 24012496 | Nitric Acid | | | |
| | 2% | 40.0 (mL) | Nitric Acid | | |
| | | 5E-05 | Balance Uncertainty | | |
| **Weight shown below was diluted to (mL):** | 2000.1 | 0.10 | Flask Uncertainty | | |

Aleah O'Brady

| | | |
|---|---|---|
| Formulated By: | Aleah O'Brady | 121724 |
| Reviewed By: | Pedro L. Rentas | 121724 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Zinc nitrate hexahydrate (Zn) | IN016 | ZNE032021A1 | 1000 | 99.999 | 0.10 | 24.3 | 8.2308 | 8.2311 | **1000.0** | **2.0** | 10196-18-6 | 1 mg/m3 | ori-rat 1190mg/kg | 3168 |



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

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

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

(T) = Target analyte

**Physical Characterization:**

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R : 4/20/21

## QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

M6150

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

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

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

Contains Metals in Dilute Acidic or Cyanide in Basic Aqueous Solutions
**HAZARDOUS MATERIAL**

Safety Data Sheets Available Upon Request

### (A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

### (B) *BREAKAGE OR MISSING ITEMS*

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

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

### (C) *ANALYSIS OF SAMPLES*

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

**ICV1-1014** For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.



*The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.*

**ICV1-1014** For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

**ICV5-0415** For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

**ICV6-0400** For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

**NOTE:** USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

**(D)** ***CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS***

| ICV1-1014 | | |
|---|---|---|
| **Element** | **Concentration (µg/L) (after 10-fold dilution)** | **Concentration (µg/L) (after 50-fold dilution)** |
| Al | 2500 | 500 |
| Sb | 1000 | 200 |
| As | 1000 | 200 |
| Ba | 520 | 100 |
| Be | 510 | 100 |
| Cd | 510 | 100 |
| Ca | 10000 | 2000 |
| Cr | 520 | 100 |
| Co | 520 | 100 |
| Cu | 510 | 100 |
| Fe | 10000 | 2000 |
| Pb | 1000 | 200 |
| Mg | 6000 | 1200 |
| Mn | 520 | 100 |
| Ni | 530 | 110 |
| K | 9900 | 2000 |
| Se | 1000 | 200 |
| Ag | 250 | 50 |
| Na | 10000 | 2000 |
| Tl | 1000 | 210 |
| V | 500 | 100 |
| Zn | 1000 | 200 |

| ICV5-0415 | | ICV6-0400 | |
|---|---|---|---|
| **Element** | **Concentration (µg/L) (after 100-fold dilution)** | **Analyte** | **Concentration (µg/L) (after 100-fold dilution)** |
| Hg | 4.0 | $CN^-$ | 99 |

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R: 01/03/24 M5802, M5803

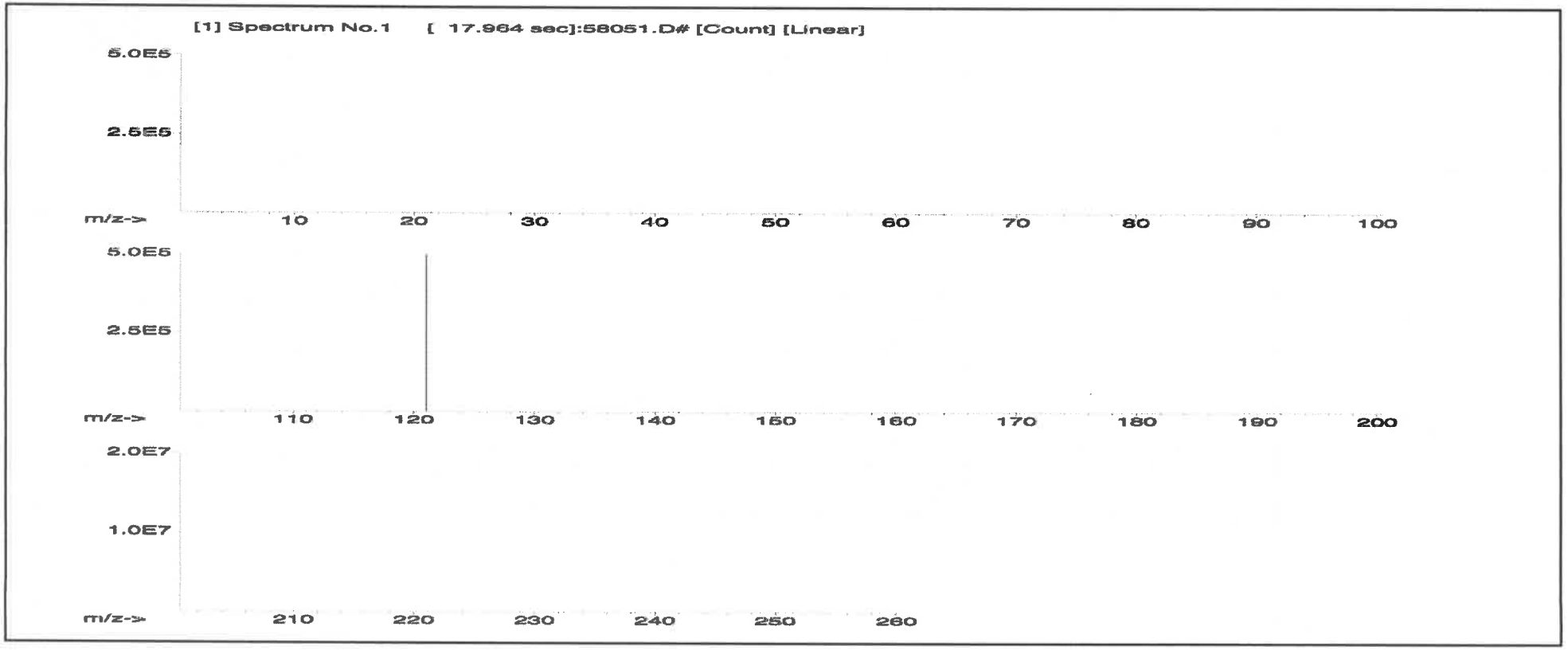


CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57051** | 24002546 | Nitric Acid | |
| **Lot Number:** | **120523** | | | |
| **Description:** | **Antimony (Sb)** | | | |
| | | 2.0% | 60.0 (mL) | Nitric Acid |
| **Expiration Date:** | 120526 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 3000.41 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 120523 |
| Reviewed By: | Pedro L. Rentas | 120523 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Antimony (Sb) | 58151 | 100923 | 0.1000 | 300.0 | 0.084 | 1000 | 10001.4 | **1000.0** | 2.1 | 7440-36-0 | 0.5 mg/m3 | orl-rat 7000 mg/kg | 3102a |



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

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

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

(T) = Target analyte

**Physical Characterization:**

**Certified by:**

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

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

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***Certified Reference Material CRM***

M6030

R: 8/5/24

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CERTIFIED WEIGHT REPORT:

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

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

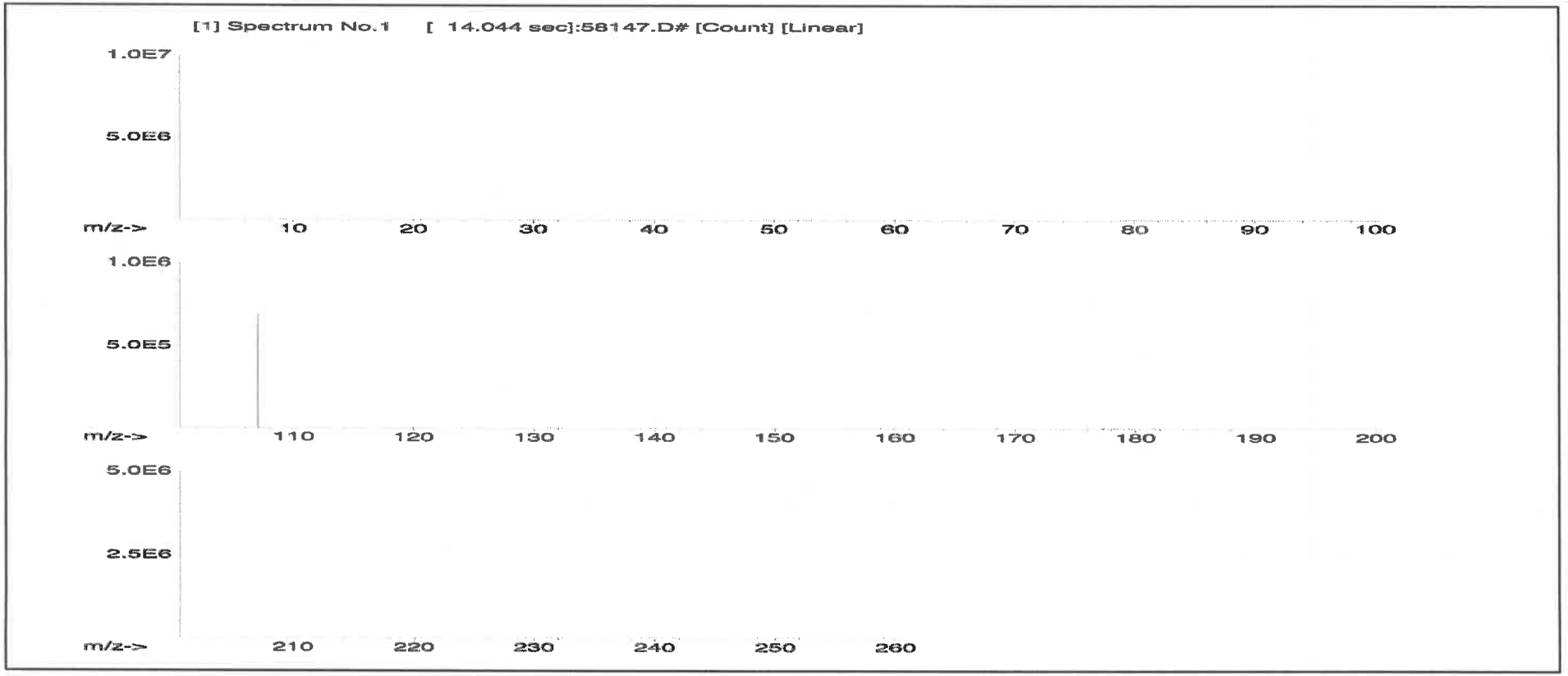
**Weight shown below was diluted to (mL):** 4000.30 0.058 Flask Uncertainty

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

5E-05 Balance Uncertainty

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 122823 |
| Reviewed By: | Pedro L. Rentas | 122823 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Silver nitrate (Ag) | IN035 | J0612AGA1 | 1000.0 | 99.9999 | 0.10 | 63.7 | 6.27992 | 6.27998 | **1000.0** | **2.0** | 7761-88-8 | 10 ug/m3 | NA | 3151 |



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

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

(T)= Target analyte

**Physical Characterization:**

Certified by:

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

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

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***Certified Reference Material CRM***

R: 10/18/24

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CERTIFIED WEIGHT REPORT:

MG146

**Part Number:** 57051
**Lot Number:** 071724
**Description:** Antimony (Sb)
**Expiration Date:** 071727
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Volume shown below was diluted to (mL):** 2000.26 ± 0.058 Flask Uncertainty

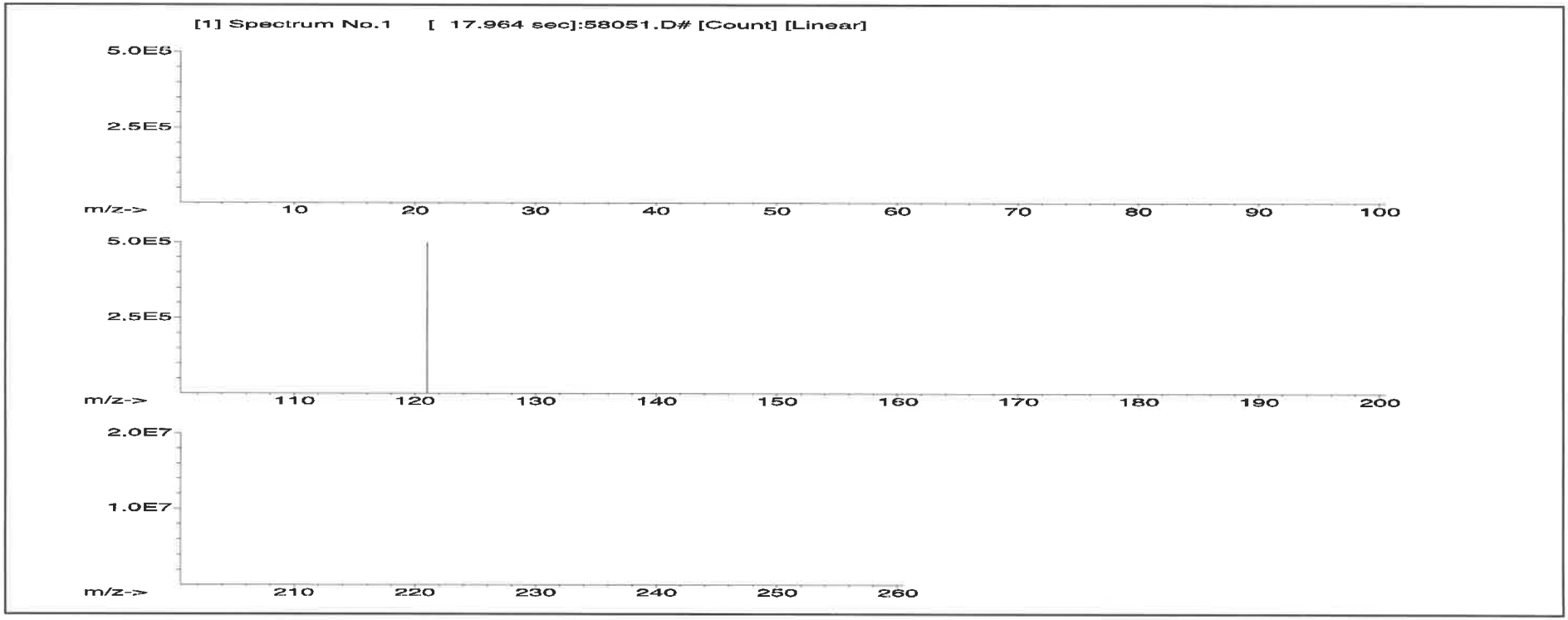
| Lot # | Solvent: | | |
|---|---|---|---|
| 24002546 | Nitric Acid | | |
| 2.0% | 40.0 (mL) | Nitric Acid | |

5E-05 Balance Uncertainty

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 071724 |
| Reviewed By: | Pedro L. Rentas | 071724 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Antimony (Sb) | 58151 | 060324 | 0.1000 | 200.0 | 0.084 | 1000 | 10001.4 | **1000.0** | **2.2** | 7440-36-0 | 0.5 mg/m3 | orl-rat 7000 mg/kg | 3102a |



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

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

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

(T) = Target analyte

**Physical Characterization:**

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

**Certified by:**

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
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R : 04/20/21

APTIM

**QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY**
***"An ISO 9001:2015 Certified Program"***

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

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

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

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

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

M6152

Contains Heavy Metals
**HAZARDOUS MATERIAL**

Safety Data Sheets
Available Upon Request

### (A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

***CAUTION:*** The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

### (B) *BREAKAGE OR MISSING ITEMS*

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

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

### (C) *ANALYSIS OF SAMPLES*

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



*The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.*

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

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

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

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

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

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

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

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

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

INORGANIC VENTURES™
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# Certificate of Analysis

R: 8/5/24 M6019

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

## 1.0 ACCREDITATION / REGISTRATION

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

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Single Analyte Custom Grade Solution |
| Catalog Number: | CGSR1 |
| Lot Number: | U2-SR730227 |
| Matrix: | 0.1% (v/v) HNO3 |
| Value / Analyte(s): | 1 000 µg/mL ea: Strontium |
| Starting Material: | SrCO3 |
| Starting Material Lot#: | M2-2192 |
| Starting Material Purity: | 99.9993% |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 1001 ± 3 µg/mL

**Density:** 1.000 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

| | |
|---|---|
| **Assay Method #1** | **998 ± 4 µg/mL**<br>ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985 |
| **Assay Method #2** | **1001 ± 3 µg/mL**<br>EDTA NIST SRM 928 Lot Number: 928 |
| **Assay Method #3** | **1001 ± 2 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:**

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | Ag | < | 0.001980 | M | Eu | < | 0.000495 | O | Na | | 0.000200 | M | Se | < | 0.013862 | O | Zn | | 0.000143 |
| O | Al | | 0.000370 | O | Fe | | 0.000410 | M | Nb | < | 0.000495 | i | Si | < | | M | Zr | < | 0.000495 |
| M | As | < | 0.000495 | M | Ga | < | 0.000495 | M | Nd | < | 0.000495 | M | Sm | < | 0.000495 | | | | |
| M | Au | < | 0.000989 | M | Gd | < | 0.000495 | O | Ni | < | 0.007631 | M | Sn | < | 0.000990 | | | | |
| M | B | < | 0.039606 | M | Ge | < | 0.000495 | M | Os | < | 0.000494 | s | Sr | < | | | | | |
| M | Ba | | 0.006486 | M | Hf | < | 0.000495 | i | P | < | | M | Ta | < | 0.000495 | | | | |
| M | Be | < | 0.000990 | M | Hg | < | 0.000989 | M | Pb | < | 0.002970 | M | Tb | < | 0.000495 | | | | |
| M | Bi | < | 0.000495 | M | Ho | < | 0.000495 | M | Pd | < | 0.003957 | M | Te | < | 0.027724 | | | | |
| O | Ca | | 0.004255 | M | In | < | 0.000495 | M | Pr | < | 0.000495 | M | Th | < | 0.000990 | | | | |
| M | Cd | | 0.001339 | M | Ir | < | 0.000494 | M | Pt | < | 0.002970 | M | Ti | < | 0.005940 | | | | |
| M | Ce | < | 0.004950 | O | K | < | 0.008184 | M | Rb | < | 0.002970 | M | Tl | < | 0.000495 | | | | |
| M | Co | < | 0.000495 | M | La | < | 0.000495 | M | Re | < | 0.000495 | M | Tm | < | 0.000495 | | | | |
| O | Cr | < | 0.003207 | O | Li | < | 0.000884 | O | Rh | < | 0.012829 | M | U | < | 0.001485 | | | | |
| M | Cs | < | 0.000990 | M | Lu | < | 0.002970 | M | Ru | < | 0.000989 | M | V | < | 0.001980 | | | | |
| M | Cu | | 0.000099 | O | Mg | | 0.000064 | i | S | < | | M | W | < | 0.003960 | | | | |
| M | Dy | < | 0.000495 | O | Mn | | 0.000066 | M | Sb | < | 0.014852 | O | Y | < | 0.000995 | | | | |
| M | Er | < | 0.000495 | M | Mo | < | 0.001980 | M | Sc | < | 0.001980 | M | Yb | < | 0.000495 | | | | |

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

## 6.0 INTENDED USE

**6.1** This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

**6.2** For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, https://www.inorganicventures.com/terms-and-conditions-sale. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution -** 87.62 +2 6 $Sr(H_2O)_{6}^{+2}$

**Chemical Compatibility -** Soluble in HCl, and $HNO_3$. Avoid $H_2SO_4$, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

**Stability -** 2-100 ppb levels stable for months in 1% $HNO_3$ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% $HNO_3$ / LDPE container.

**Sr Containing Samples (Preparation and Solution) -**Metal (Best dissolved in diluted $HNO_3$ ); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

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

| **Technique/Line** | **Estimated D.L.** | **Order** | **Interferences** (underlined indicates severe) |
|---|---|---|---|
| ICP-MS 88 amu | 1200 ppt | N/A | 72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2 |
| ICP-OES 407.771 nm | 0.0004 / 0.00006 µg/mL | 1 | U, Ce |
| ICP-OES 421.552 nm | 0.0008 / 0.00004 µg/mL | 1 | Rb |
| ICP-OES 460.733 nm | 0.07 / 0.003 µg/mL | 1 | Ce |

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

March 03, 2023

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

**11.2 Lot Expiration Date**

- **March 03, 2028**

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

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

**11.3 Period of Validity**

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director



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

***Certified Reference Material CRM***

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

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

CERTIFIED WEIGHT REPORT:

**Part Number:** 56138
**Lot Number:** 082922
**Description:** Strontium (Sr)

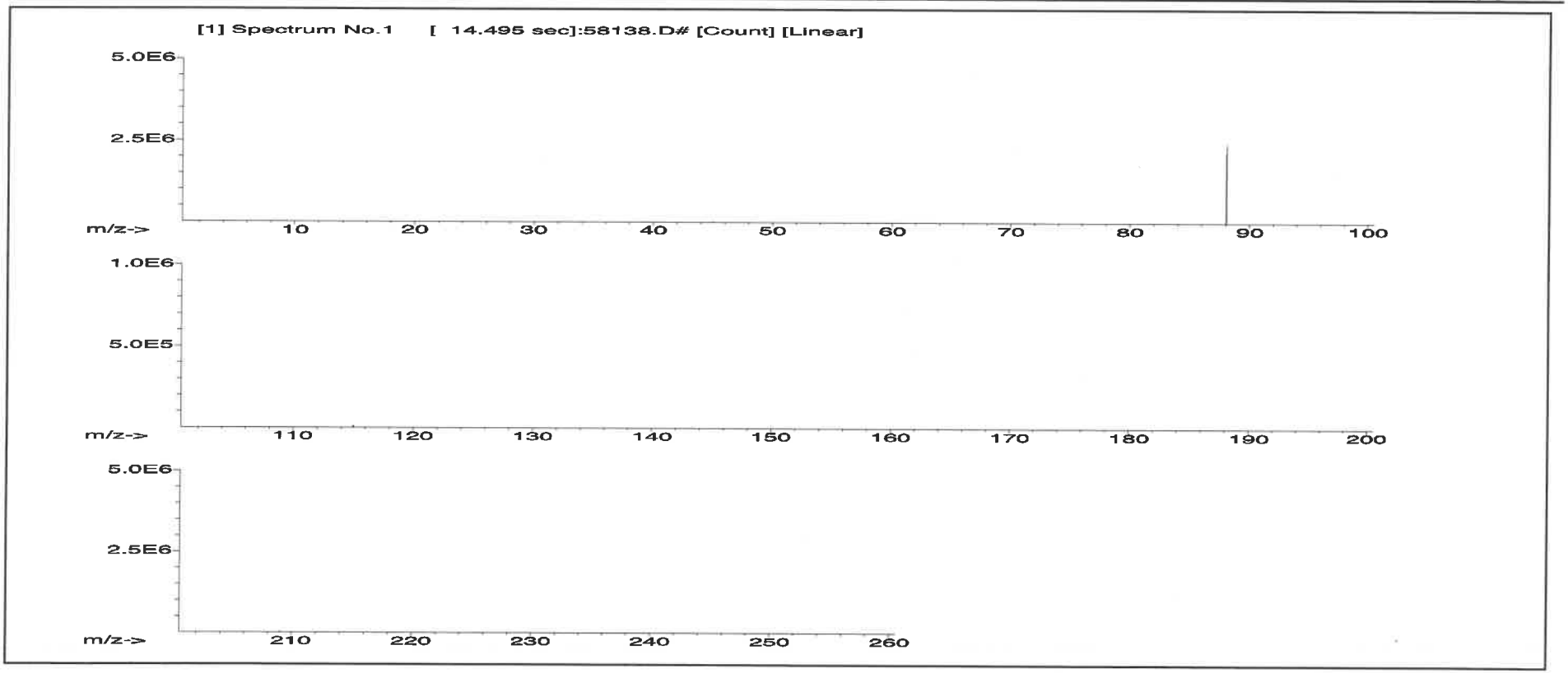
**Expiration Date:** 082925
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 1000.12

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 20510011 | Nitric Acid | |
| 2% | 20.0 (mL) | Nitric Acid | |

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 082922 |
| Reviewed By: | Pedro L. Rentas | 082922 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Strontium nitrate (Sr) | IN017 | SRZ022018A1 | 10000 | 99.997 | 0.10 | 41.2 | 24.2756 | 24.2758 | **10000.1** | **20.0** | 10042-76-9 | NA | orl-rat >2000mg/kg | 3153a |



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

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

(T)= Target analyte

**Physical Characterization:**

Certified by:

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

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

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M6023

R ! 8/5/24

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https://Absolutestandards.com

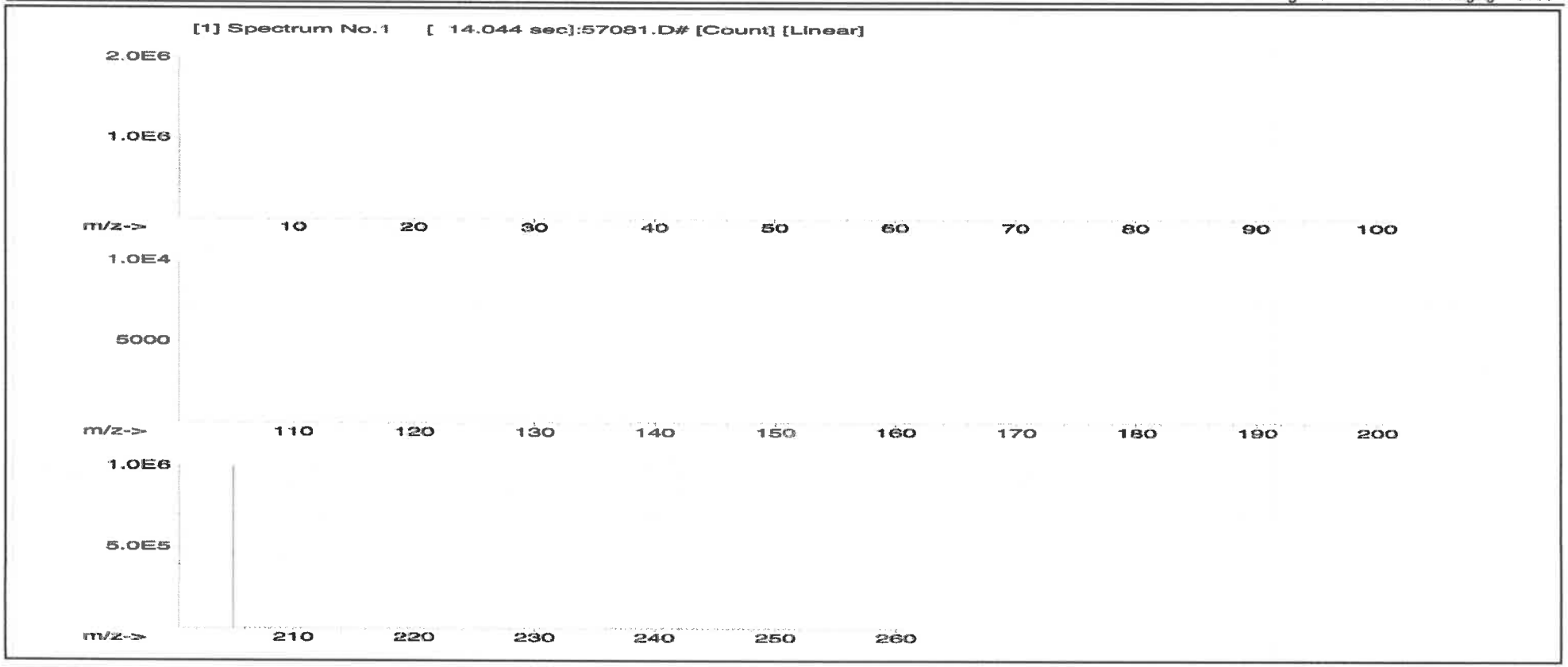
CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **57081** | | **Lot #** | | |
| **Lot Number:** | **062724** | **Solvent:** | 24002546 | Nitric Acid | |
| **Description:** | **Thallium (Tl)** | | | | |
| | | 2% | 40.0 (mL) | Nitric Acid | |
| **Expiration Date:** | 062727 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Weight shown below was diluted to (mL):** | 2000.1 | 0.10 | Flask Uncertainty | | |

Aleah O'Brady

| | | |
|---|---|---|
| Formulated By: | Aleah O'Brady | 062724 |
| Reviewed By: | Pedro L. Rentas | 062724 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Thallium nitrate (Tl) | IN037 | BCCF4399 | 1000 | 99.999 | 0.10 | 77.0 | 2.5975 | 2.5977 | **1000.1** | **2.0** | 10102-45-1 | 0.1 mg/m3 | orl-mus 15mg/kg | 3158 |



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

| Trace Metals Verification by ICP-MS (µg/mL) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | <0.2 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | T | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:



* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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***Certified Reference Material CRM***

M6021

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AR-1539 Certificate Number
https://Absolutestandards.com

Rc. 8/5/24



CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | 57023 | | | |
| **Lot Number:** | 062424 | 24002546 | Nitric Acid | |
| **Description:** | Vanadium (V) | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 062427 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | 1000 | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.3 | 0.06 | Flask Uncertainty | |

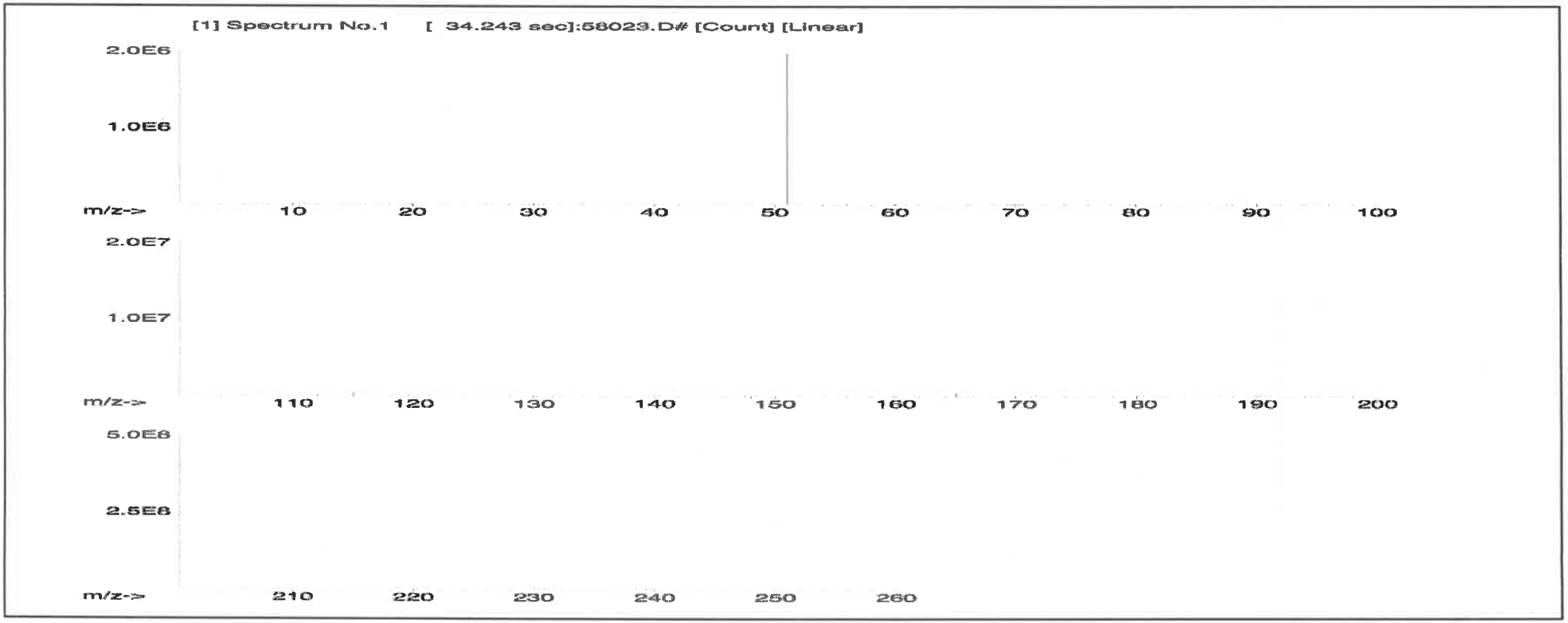
Aleah O'Brady

| Formulated By: | Aleah O'Brady | 062424 |
|---|---|---|

Pedro Rentas

| Reviewed By: | Pedro L. Rentas | 062424 |
|---|---|---|

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium metavanadate (V) | 58123 | 021224 | 0.1000 | 200.0 | 0.084 | 1000 | 10000.3 | **1000.0** | **2.2** | 7803-55-6 | 0.05 mg/m3 | orl-rat 58.1mg/kg | 3165 |



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https://Absolutestandards.com



**Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):**

**Trace Metals Verification by ICP-MS (µg/mL)**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | <0.2 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | T |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

Homogeneity: No heterogeneity was observed in the preparation of this standard.

**Certified by:**

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

# SHIPPING DOCUMENTS

| Weston COC ID |
|---|
| Weston_20250210_1440 |

# Chain of Custody Record/Lab Work Request

Page 1 of 1

| | | | |
|---|---|---|---|
| Client: | Weston Solutions, Inc. | | |
| Project Manager: | David Sembrot | | |
| Street Address: | 1400 Weston Way | City: | West Chester |
| Phone: | 610-314-5456 | ST, ZIP: | PA, 19038 |
| e-mail: | david.sembrot@westonsolutions.com | | |
| Sampled By: | Cheyenne Harrington | | |

| | | | |
|---|---|---|---|
| Project Name: | Fort Meade RI | Project POC: | Nathan Fretz |
| PO Number | 0111169 | Phone: | 484-524-5665 |
| W.O. #: | | POC e-mail: | nathan.fretz@westonsolutions.com |
| Lab: | CHEMTECH | Lab POC: | Jordan Hedvat |
| TAT (days): | 21 | Lab Phone: | 908-728-3144 |
| Lab Address: | 284 Sheffield Street Mountainside, NJ 07092 | | |

| Matrix Codes |
|---|
| SS - Soil |
| SE - Sediment |
| SO - Solid |
| SL - Sludge |
| GW - Groundwater |
| W - Water |
| SB - Soil Boring |
| A - Air |
| DS - Drum Solids |
| DL - Drum Liquids |
| L - EP/TCLP Leachate |
| WI - Wipe |
| X - Other |
| F - Fish |

| Lab Use Only | | |
|---|---|---|
| Temperature of cooler when received (°C) | | |
| COC Tape was present and unbroken on outer package? | Y | N |
| Samples received in good condition? | Y | N |
| Labels indicate properly preserved? | Y | N |
| Received within holding times? | Y | N |
| Discrepancies between sample labels and COC record? | Y | N |

| # | Sample ID | G/C | Matrix | # Cont | MS/MSD | Date Collected | Time Collected | Analyses Requested: TCLP VOCs by EPA 8260D (1311) | TCLP SVOCs by EPA 8270E (1311) | TCLP Metals by EPA 6010D/7470A | TCLP Pesticides by EPA 8081B | TCLP Herbicides by EPA 8151A | Total Sulfide by EPA 9034 | Total Cyanide by EPA 9012B | PCB by EPA 8082A | Ignitability by EPA 1030 | pH by EPA 9045D | | | Special Instructions/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type: | | | | | | | | Encore | Glass | Glass | Glass | Glass | Glass | Glass | Glass | Glass | Glass | | | |
| Container Size: | | | | | | | | 25g | 8 oz | 8 oz | 8 oz | 8 oz | 8 oz | 8 oz | 8 oz | 8 oz | 8 oz | | | |
| Preservative: | | | | | | | | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | Ice to 0-6 | | | |
| 1 | ~~TAP-SOIL-IDW-021025~~ TAP-IDW-SOIL-021025 | c | DS | 6 | no | 2/10/2025 | 13:40 | X | X | X | X | X | X | X | X | X | X | | | |
| 2 | CH | | | 7 Tb 10 Feb 2025 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
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| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |

FedEx Shipping Airbill Number: 7719 9075 4644

Cooler Number: 1 of 1

| | Relinquished By | Date | Time | Received By | Date | Time | Additional Comments |
|---|---|---|---|---|---|---|---|
| 1.) | | 10 Feb 25 | 1800 | yg 3.1 | 2/11/2025 9:10 | | QSM 6.0 Compliant |
| 2.) | | | | | | | Deliverable Requirements: DoD Level IV report, EnviroData EDD, and ERIS-compatible EDD |
| 3.) | | | | | | | |

# Laboratory Certification

| Certified By | License No. |
|---|---|
| | |
| CAS EPA CLP Contract | 68HERH20D0011 |
| | |
| Connecticut | PH-0830 |
| | |
| DOD ELAP (ANAB) | L2219 |
| | |
| Maine | 2024021 |
| | |
| Maryland | 296 |
| | |
| New Hampshire | 255424 Rev 1 |
| | |
| New Jersey | 20012 |
| | |
| New York | 11376 |
| | |
| Pennsylvania | 68-00548 |
| | |
| Soil Permit | 525-24-234-08441 |
| | |
| Texas | T104704488 |