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

# DATA PACKAGE

## METALS

**PROJECT NAME : FORMER SCHLUMBERGER SITE PRINCETON NJ**

**JACOBS ENGINEERING GROUP, INC.**

**412 Mt. Kemble Ave**

**Downtown Building**

**Morristown, NJ - 07960**

**Phone No: 9732670555**

**ORDER ID : P3426**

**ATTENTION : Mary I. Murphy**

**Laboratory Certification ID # 20012**

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# Cover Page

**Order ID :** P3426

**Project ID :** Former Schlumberger Site Princeton NJ

**Client :** JACOBS Engineering Group, Inc.

| Lab Sample Number | Client Sample Number |
|---|---|
| P3426-01 | 927-K1-WS-073124 |
| P3426-02 | 927-K1-WS-073124-FD |

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 : N. N. Pandya

**APPROVED**
Date: 8/16/2024
*By Nimisha Pandya QA/QC Supervisor at 1:47 pm, Aug 16, 2024*

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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# CASE NARRATIVE

**JACOBS Engineering Group, Inc.**
**Project Name: Former Schlumberger Site Princeton NJ**
**Project # N/A**
**Chemtech Project # P3426**
**Test Name: Metals Group4,Mercury**

**A. Number of Samples and Date of Receipt:**
2 Water samples were received on 07/31/2024.

**B. Parameters:**
According to the Chain of Custody document, the following analyses were requested: Hexavalent Chromium, Mercury, Metals Group4, SVOC-SIMGroup1, SVOCMS Group3, SVOCMS Group6, VOCMS Group3 and VOCMS Group6. This data package contains results for Metals Group4,Mercury.

**C. Analytical Techniques:**
The analysis of Metals Group4 was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of Mercury was based on method 7470A.

**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 (923-K1-WS-080124MS) analysis met criteria for all samples except for Strontium due to Chemical Interference during Digestion Process.
The Matrix Spike Duplicate (923-K1-WS-080124MSD) analysis met criteria for all samples except for Strontium due to Chemical Interference during Digestion Process.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

**E. Additional Comments:**

---

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 N. N. Pandya

**APPROVED**
*By Nimisha Pandya QA/QC Supervisor at 1:48 pm, Aug 16, 2024*

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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 |

QA Control # A3040961

**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: P3426 MATRIX: Water

METHOD: 6010D,7470A

| | | 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 (923-K1-WS-080124MS) analysis met criteria for all samples except for Strontium due to Chemical Interference during Digestion Process. The Matrix Spike Duplicate (923-K1-WS-080124MSD) analysis met criteria for all samples except for Strontium due to Chemical Interference during Digestion Process. | | | |
| 7. | Sample Duplicate Analysis Met QC Criteria | | | ✓ |
| | If not met, list those compounds and their recoveries which fall outside the acceptable range. | | | |
| 8. | Digestion Holding Time Met | | | ✓ |
| | If not met, list number of days exceeded for each sample: | | | |
| 9. | Analysis Holding Time Met | | | ✓ |
| | If not met, list those compounds and their recoveries which fall outside the acceptable range. | | | |

ADDITIONAL COMMENTS:

S. M. Jodhani
QA REVIEW

**REVIEWED**
*By Sohil Jodhani, QA/QC Director at 10:33 am, Aug 16, 2024*

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## APPENDIX A

## QA REVIEW GENERAL DOCUMENTATION

**Project #:** P3426

| | 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** | ✓ |

**1st Level QA Review Signature:** SOHIL JODHANI **Date:** 08/16/2024

**2nd Level QA Review Signature:** N. N. Pandya

APPROVED
*By Nimisha Pandya QA/QC Supervisor at 1:48 pm, Aug 16, 2024*

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

# LAB CHRONICLE

| | | | |
|---|---|---|---|
| **OrderID:** | P3426 | **OrderDate:** | 7/31/2024 2:33:00 PM |
| **Client:** | JACOBS Engineering Group, Inc. | **Project:** | Former Schlumberger Site Princeton NJ |
| **Contact:** | Mary I. Murphy | **Location:** | E21,VOA Ref. #3 Water |

| LabID | ClientID | Matrix | Test | Method | Sample Date | Prep Date | Anal Date | Received |
|---|---|---|---|---|---|---|---|---|
| **P3426-01** | **927-K1-WS-073124** | **Water** | | | **07/31/24** | | | **07/31/24** |
| | | | Mercury | 7470A | | 08/12/24 | 08/13/24 | |
| | | | Metals Group4 | 6010D | | 08/05/24 | 08/07/24 | |
| **P3426-02** | **927-K1-WS-073124-FD** | **Water** | | | **07/31/24** | | | **07/31/24** |
| | | | Mercury | 7470A | | 08/12/24 | 08/13/24 | |
| | | | Metals Group4 | 6010D | | 08/05/24 | 08/07/24 | |

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# Hit Summary Sheet
**SW-846**

**SDG No.:** P3426 **Order ID:** P3426

**Client:** JACOBS Engineering Group, Inc. **Project ID:** Former Schlumberger Site Princeton NJ

| Sample ID | Client ID | Matrix | Parameter | Concentration | C | MDL | RDL | Units |
|---|---|---|---|---|---|---|---|---|
| **Client ID : 927-K1-WS-073124** | | | | | | | | |
| P3426-01 | 927-K1-WS-073124 | Water | Barium | 176 | | 6.28 | 50.0 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Boron | 80.0 | | 9.95 | 50.0 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Calcium | 26600 | | 33.0 | 1000 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Chromium | 1.07 | J | 0.66 | 5.00 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Cobalt | 1.17 | J | 0.50 | 15.0 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Iron | 3130 | | 18.5 | 50.0 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Magnesium | 9010 | | 39.4 | 1000 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Manganese | 5300 | | 1.46 | 10.0 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Nickel | 2.04 | J | 0.85 | 20.0 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Potassium | 4830 | | 685 | 1000 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Sodium | 129000 | | 237 | 1000 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Strontium | 191 | | 2.32 | 10.0 | ug/L |
| P3426-01 | 927-K1-WS-073124 | Water | Zinc | 21.9 | | 1.75 | 20.0 | ug/L |
| **Client ID : 927-K1-WS-073124-FD** | | | | | | | | |
| P3426-02 | 927-K1-WS-073124-FD | Water | Barium | 179 | | 6.28 | 50.0 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Boron | 83.2 | | 9.95 | 50.0 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Calcium | 27400 | | 33.0 | 1000 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Chromium | 1.03 | J | 0.66 | 5.00 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Cobalt | 1.16 | J | 0.50 | 15.0 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Iron | 3150 | | 18.5 | 50.0 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Magnesium | 9290 | | 39.4 | 1000 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Manganese | 5440 | | 1.46 | 10.0 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Nickel | 1.54 | J | 0.85 | 20.0 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Potassium | 4960 | | 685 | 1000 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Sodium | 134000 | | 237 | 1000 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Strontium | 195 | | 2.32 | 10.0 | ug/L |
| P3426-02 | 927-K1-WS-073124-FD | Water | Zinc | 10.5 | J | 1.75 | 20.0 | ug/L |

# SAMPLE DATA

Alliance TECHNICAL GROUP
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Fax : 908 789 8922

# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | JACOBS Engineering Group, Inc. | Date Collected: | 07/31/24 |
| Project: | Former Schlumberger Site Princeton NJ | Date Received: | 07/31/24 |
| Client Sample ID: | 927-K1-WS-073124 | SDG No.: | P3426 |
| Lab Sample ID: | P3426-01 | Matrix: | Water |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. | Prep Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 28.3 | U | 1 | 28.3 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-36-0 | Antimony | 2.06 | U | 1 | 2.06 | 25.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-38-2 | Arsenic | 3.48 | U | 1 | 3.48 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-39-3 | Barium | 176 | | 1 | 6.28 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-41-7 | Beryllium | 0.13 | U | 1 | 0.13 | 3.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-42-8 | Boron | 80.0 | | 1 | 9.95 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-43-9 | Cadmium | 0.094 | U | 1 | 0.094 | 3.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-70-2 | Calcium | 26600 | | 1 | 33.0 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-47-3 | Chromium | 1.07 | J | 1 | 0.66 | 5.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-48-4 | Cobalt | 1.17 | J | 1 | 0.50 | 15.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-50-8 | Copper | 7.07 | U | 1 | 7.07 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7439-89-6 | Iron | 3130 | | 1 | 18.5 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7439-92-1 | Lead | 3.51 | U | 1 | 3.51 | 6.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7439-95-4 | Magnesium | 9010 | | 1 | 39.4 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7439-96-5 | Manganese | 5300 | | 1 | 1.46 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7439-97-6 | Mercury | 0.081 | U | 1 | 0.081 | 0.20 | ug/L | 08/12/24 16:13 | 08/13/24 10:12 | SW7470A | |
| 7439-98-7 | Molybdenum | 3.67 | U | 1 | 3.67 | 100 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-02-0 | Nickel | 2.04 | J | 1 | 0.85 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-09-7 | Potassium | 4830 | | 1 | 685 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7782-49-2 | Selenium | 5.88 | U | 1 | 5.88 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-22-4 | Silver | 0.58 | U | 1 | 0.58 | 5.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-23-5 | Sodium | 129000 | | 1 | 237 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-24-6 | Strontium | 191 | N | 1 | 2.32 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-28-0 | Thallium | 2.32 | U | 1 | 2.32 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-31-5 | Tin | 1.89 | U | 1 | 1.89 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-32-6 | Titanium | 2.35 | U | 1 | 2.35 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-62-2 | Vanadium | 3.06 | U | 1 | 3.06 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |
| 7440-66-6 | Zinc | 21.9 | | 1 | 1.75 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:38 | SW6010 | SW3010 |

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

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

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

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

# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | JACOBS Engineering Group, Inc. | Date Collected: | 07/31/24 |
| Project: | Former Schlumberger Site Princeton NJ | Date Received: | 07/31/24 |
| Client Sample ID: | 927-K1-WS-073124-FD | SDG No.: | P3426 |
| Lab Sample ID: | P3426-02 | Matrix: | Water |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. | Prep Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 28.3 | U | 1 | 28.3 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-36-0 | Antimony | 2.06 | U | 1 | 2.06 | 25.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-38-2 | Arsenic | 3.48 | U | 1 | 3.48 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-39-3 | Barium | 179 | | 1 | 6.28 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-41-7 | Beryllium | 0.13 | U | 1 | 0.13 | 3.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-42-8 | Boron | 83.2 | | 1 | 9.95 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-43-9 | Cadmium | 0.094 | U | 1 | 0.094 | 3.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-70-2 | Calcium | 27400 | | 1 | 33.0 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-47-3 | Chromium | 1.03 | J | 1 | 0.66 | 5.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-48-4 | Cobalt | 1.16 | J | 1 | 0.50 | 15.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-50-8 | Copper | 7.07 | U | 1 | 7.07 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7439-89-6 | Iron | 3150 | | 1 | 18.5 | 50.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7439-92-1 | Lead | 3.51 | U | 1 | 3.51 | 6.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7439-95-4 | Magnesium | 9290 | | 1 | 39.4 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7439-96-5 | Manganese | 5440 | | 1 | 1.46 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7439-97-6 | Mercury | 0.081 | U | 1 | 0.081 | 0.20 | ug/L | 08/12/24 16:13 | 08/13/24 10:14 | SW7470A | |
| 7439-98-7 | Molybdenum | 3.67 | U | 1 | 3.67 | 100 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-02-0 | Nickel | 1.54 | J | 1 | 0.85 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-09-7 | Potassium | 4960 | | 1 | 685 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7782-49-2 | Selenium | 5.88 | U | 1 | 5.88 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-22-4 | Silver | 0.58 | U | 1 | 0.58 | 5.00 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-23-5 | Sodium | 134000 | | 1 | 237 | 1000 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-24-6 | Strontium | 195 | N | 1 | 2.32 | 10.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-28-0 | Thallium | 2.32 | U | 1 | 2.32 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-31-5 | Tin | 1.89 | U | 1 | 1.89 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-32-6 | Titanium | 2.35 | U | 1 | 2.35 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-62-2 | Vanadium | 3.06 | U | 1 | 3.06 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |
| 7440-66-6 | Zinc | 10.5 | J | 1 | 1.75 | 20.0 | ug/L | 08/05/24 09:15 | 08/07/24 16:42 | SW6010 | SW3010 |

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

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

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

# METAL CALIBRATION DATA

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Fax : 908 789 8922

# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|---|---|---|
| ICV72 | Mercury | 4.01 | 4.0 | 100 | 90 - 110 | CV | 08/13/2024 | 08:53 | LB131960 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|---|---|---|
| CCV35 | Mercury | 4.53 | 5.0 | 91 | 90 - 110 | CV | 08/13/2024 | 08:58 | LB131960 |
| CCV36 | Mercury | 4.77 | 5.0 | 95 | 90 - 110 | CV | 08/13/2024 | 09:33 | LB131960 |
| CCV37 | Mercury | 4.95 | 5.0 | 99 | 90 - 110 | CV | 08/13/2024 | 10:00 | LB131960 |
| CCV38 | Mercury | 4.86 | 5.0 | 97 | 90 - 110 | CV | 08/13/2024 | 10:30 | LB131960 |
| CCV39 | Mercury | 5.18 | 5.0 | 104 | 90 - 110 | CV | 08/13/2024 | 10:58 | LB131960 |
| CCV40 | Mercury | 5.09 | 5.0 | 102 | 90 - 110 | CV | 08/13/2024 | 11:24 | LB131960 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 | Aluminum | 2310 | 2500 | 92 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Antimony | 937 | 1000 | 94 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Arsenic | 903 | 1000 | 90 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Barium | 489 | 520 | 94 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Beryllium | 472 | 510 | 92 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Boron | 2480 | 2500 | 99 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Cadmium | 470 | 510 | 92 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Calcium | 9780 | 10000 | 98 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Chromium | 521 | 520 | 100 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Cobalt | 487 | 520 | 94 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Copper | 490 | 510 | 96 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Iron | 10000 | 10000 | 100 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Lead | 954 | 1000 | 95 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Magnesium | 5520 | 6000 | 92 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Manganese | 493 | 520 | 95 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Molybdenum | 2710 | 2500 | 108 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Nickel | 490 | 530 | 92 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Potassium | 10300 | 9900 | 104 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Selenium | 916 | 1000 | 92 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Silver | 251 | 250 | 100 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Sodium | 10500 | 10000 | 105 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Strontium | 2500 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Thallium | 999 | 1000 | 100 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Tin | 2630 | 2500 | 105 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Titanium | 2640 | 2500 | 106 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Vanadium | 475 | 500 | 95 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |
| | Zinc | 1040 | 1000 | 104 | 90 - 110 | P | 08/07/2024 | 15:52 | LB131900 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 | Aluminum | 102 | 100 | 102 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Antimony | 51.2 | 50.0 | 102 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Arsenic | 19.9 | 20.0 | 100 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Barium | 101 | 100 | 101 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Beryllium | 6.00 | 6.0 | 100 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Boron | 102 | 100 | 102 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Cadmium | 6.25 | 6.0 | 104 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Calcium | 2040 | 2000 | 102 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Chromium | 9.27 | 10.0 | 93 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Cobalt | 29.6 | 30.0 | 99 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Copper | 21.9 | 20.0 | 109 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Iron | 99.5 | 100 | 100 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Lead | 13.9 | 12.0 | 116 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Magnesium | 2100 | 2000 | 105 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Manganese | 20.6 | 20.0 | 103 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Molybdenum | 201 | 200 | 101 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Nickel | 40.0 | 40.0 | 100 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Potassium | 1760 | 2000 | 88 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Selenium | 18.3 | 20.0 | 91 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Silver | 8.68 | 10.0 | 87 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Sodium | 1730 | 2000 | 86 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Strontium | 20.7 | 20.0 | 104 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Thallium | 41.2 | 40.0 | 103 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Tin | 36.0 | 40.0 | 90 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Titanium | 40.8 | 40.0 | 102 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Vanadium | 41.4 | 40.0 | 104 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |
| | Zinc | 41.5 | 40.0 | 104 | 80 - 120 | P | 08/07/2024 | 15:56 | LB131900 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 | Aluminum | 9700 | 10000 | 97 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Antimony | 4930 | 5000 | 99 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Arsenic | 4910 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Barium | 10000 | 10000 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Beryllium | 249 | 250 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Boron | 4900 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Cadmium | 2490 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Calcium | 25000 | 25000 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Chromium | 1010 | 1000 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Cobalt | 2470 | 2500 | 99 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Copper | 1230 | 1250 | 98 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Iron | 4990 | 5000 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Lead | 5060 | 5000 | 101 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Magnesium | 24600 | 25000 | 98 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Manganese | 2480 | 2500 | 99 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Molybdenum | 5040 | 5000 | 101 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Nickel | 2490 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Potassium | 24300 | 25000 | 97 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Selenium | 4880 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Silver | 1240 | 1250 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Sodium | 24000 | 25000 | 96 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Strontium | 5000 | 5000 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Thallium | 5160 | 5000 | 103 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Tin | 5000 | 5000 | 100 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Titanium | 4950 | 5000 | 99 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Vanadium | 2460 | 2500 | 98 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| | Zinc | 2540 | 2500 | 102 | 90 - 110 | P | 08/07/2024 | 16:20 | LB131900 |
| CCV02 | Aluminum | 9760 | 10000 | 98 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Antimony | 4910 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Arsenic | 4900 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Barium | 10200 | 10000 | 102 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Beryllium | 250 | 250 | 100 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Boron | 4890 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Cadmium | 2520 | 2500 | 101 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|---|---|---|
| CCV02 | Calcium | 25500 | 25000 | 102 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Chromium | 1010 | 1000 | 101 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Cobalt | 2490 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Copper | 1240 | 1250 | 99 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Iron | 5090 | 5000 | 102 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Lead | 5100 | 5000 | 102 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Magnesium | 24800 | 25000 | 99 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Manganese | 2530 | 2500 | 101 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Molybdenum | 5050 | 5000 | 101 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Nickel | 2510 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Potassium | 24500 | 25000 | 98 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Selenium | 4850 | 5000 | 97 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Silver | 1250 | 1250 | 100 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Sodium | 24200 | 25000 | 97 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Strontium | 5100 | 5000 | 102 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Thallium | 5130 | 5000 | 103 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Tin | 5030 | 5000 | 100 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Titanium | 5060 | 5000 | 101 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Vanadium | 2490 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| | Zinc | 2560 | 2500 | 102 | 90 - 110 | P | 08/07/2024 | 17:14 | LB131900 |
| CCV03 | Aluminum | 9390 | 10000 | 94 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Antimony | 4780 | 5000 | 96 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Arsenic | 4720 | 5000 | 94 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Barium | 9840 | 10000 | 98 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Beryllium | 252 | 250 | 101 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Boron | 4910 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Cadmium | 2440 | 2500 | 98 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Calcium | 24700 | 25000 | 99 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Chromium | 996 | 1000 | 100 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Cobalt | 2430 | 2500 | 97 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Copper | 1200 | 1250 | 96 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Iron | 4920 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Lead | 4950 | 5000 | 99 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Magnesium | 24200 | 25000 | 97 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |

Alliance TECHNICAL GROUP
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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|---|---|---|
| CCV03 | Manganese | 2460 | 2500 | 98 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Molybdenum | 4970 | 5000 | 99 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Nickel | 2440 | 2500 | 97 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Potassium | 24200 | 25000 | 97 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Selenium | 4670 | 5000 | 93 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Silver | 1240 | 1250 | 99 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Sodium | 23600 | 25000 | 94 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Strontium | 4900 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Thallium | 4990 | 5000 | 100 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Tin | 4860 | 5000 | 97 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Titanium | 4890 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Vanadium | 2420 | 2500 | 97 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| | Zinc | 2500 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 18:51 | LB131900 |
| CCV04 | Aluminum | 9190 | 10000 | 92 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Antimony | 4780 | 5000 | 96 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Arsenic | 4740 | 5000 | 95 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Barium | 9880 | 10000 | 99 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Beryllium | 242 | 250 | 97 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Boron | 4700 | 5000 | 94 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Cadmium | 2460 | 2500 | 98 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Calcium | 24600 | 25000 | 98 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Chromium | 995 | 1000 | 100 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Cobalt | 2430 | 2500 | 97 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Copper | 1200 | 1250 | 96 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Iron | 5100 | 5000 | 102 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Lead | 5000 | 5000 | 100 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Magnesium | 23900 | 25000 | 96 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Manganese | 2440 | 2500 | 98 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Molybdenum | 4950 | 5000 | 99 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Nickel | 2450 | 2500 | 98 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Potassium | 24600 | 25000 | 98 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Selenium | 4690 | 5000 | 94 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Silver | 1240 | 1250 | 99 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Sodium | 23900 | 25000 | 96 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |

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# Metals

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|---|---|---|
| CCV04 | Strontium | 4890 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Thallium | 5020 | 5000 | 100 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Tin | 4900 | 5000 | 98 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Titanium | 4860 | 5000 | 97 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Vanadium | 2410 | 2500 | 96 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |
| | Zinc | 2500 | 2500 | 100 | 90 - 110 | P | 08/07/2024 | 19:48 | LB131900 |

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# Metals

## - 2b -

## CRDL STANDARD FOR AA & ICP

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**Initial Calibration Source:**

**Continuing Calibration Source:**

| Sample ID | Analyte | Result ug/L | True Value ug/L | % Recovery | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| CRI01 | Aluminum | 106 | 100 | 106 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Antimony | 50.6 | 50.0 | 101 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Arsenic | 19.7 | 20.0 | 99 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Barium | 99.7 | 100 | 100 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Beryllium | 6.22 | 6.0 | 104 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Boron | 99.0 | 100 | 99 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Cadmium | 6.22 | 6.0 | 104 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Calcium | 2030 | 2000 | 102 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Chromium | 9.85 | 10.0 | 98 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Cobalt | 29.9 | 30.0 | 100 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Copper | 22.3 | 20.0 | 111 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Iron | 97.0 | 100 | 97 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Lead | 14.5 | 12.0 | 121 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Magnesium | 2110 | 2000 | 105 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Manganese | 21.1 | 20.0 | 106 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Molybdenum | 204 | 200 | 102 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Nickel | 40.1 | 40.0 | 100 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Potassium | 1760 | 2000 | 88 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Selenium | 17.8 | 20.0 | 89 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Silver | 8.55 | 10.0 | 86 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Sodium | 1750 | 2000 | 88 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Strontium | 20.5 | 20.0 | 103 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Thallium | 39.2 | 40.0 | 98 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Tin | 36.2 | 40.0 | 90 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Titanium | 40.3 | 40.0 | 101 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Vanadium | 39.9 | 40.0 | 100 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| | Zinc | 42.1 | 40.0 | 105 | 40 - 160 | P | 08/07/2024 | 16:07 | LB131900 |
| CRA | Mercury | 0.24 | 0.2 | 118 | 40 - 160 | CV | 08/13/2024 | 09:10 | LB131960 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| **ICB72** | Mercury | 0.20 | +/-0.20 | U | 0.20 | CV | 08/13/2024 | 08:55 | LB131960 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| **CCB35** | Mercury | 0.20 | +/-0.20 | U | 0.20 | CV | 08/13/2024 | 09:03 | LB131960 |
| **CCB36** | Mercury | 0.20 | +/-0.20 | U | 0.20 | CV | 08/13/2024 | 09:35 | LB131960 |
| **CCB37** | Mercury | 0.20 | +/-0.20 | U | 0.20 | CV | 08/13/2024 | 10:05 | LB131960 |
| **CCB38** | Mercury | 0.20 | +/-0.20 | U | 0.20 | CV | 08/13/2024 | 10:35 | LB131960 |
| **CCB39** | Mercury | 0.20 | +/-0.20 | U | 0.20 | CV | 08/13/2024 | 11:04 | LB131960 |
| **CCB40** | Mercury | 0.20 | +/-0.20 | U | 0.20 | CV | 08/13/2024 | 11:26 | LB131960 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| ICB01 | Aluminum | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:03 | LB131900 |
| | Antimony | 50.0 | +/-50.0 | U | 50.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Arsenic | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Barium | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:03 | LB131900 |
| | Beryllium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 16:03 | LB131900 |
| | Boron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:03 | LB131900 |
| | Cadmium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 16:03 | LB131900 |
| | Calcium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:03 | LB131900 |
| | Chromium | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Cobalt | 30.0 | +/-30.0 | U | 30.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Copper | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Iron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:03 | LB131900 |
| | Lead | 12.0 | +/-12.0 | U | 12.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Magnesium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:03 | LB131900 |
| | Manganese | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Molybdenum | 200 | +/-200 | U | 200 | P | 08/07/2024 | 16:03 | LB131900 |
| | Nickel | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Potassium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:03 | LB131900 |
| | Selenium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Silver | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Sodium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:03 | LB131900 |
| | Strontium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Thallium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Tin | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Titanium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Vanadium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:03 | LB131900 |
| | Zinc | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:03 | LB131900 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| CCB01 | Aluminum | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:25 | LB131900 |
| | Antimony | 50.0 | +/-50.0 | U | 50.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Arsenic | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Barium | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:25 | LB131900 |
| | Beryllium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 16:25 | LB131900 |
| | Boron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:25 | LB131900 |
| | Cadmium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 16:25 | LB131900 |
| | Calcium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:25 | LB131900 |
| | Chromium | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Cobalt | 30.0 | +/-30.0 | U | 30.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Copper | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Iron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 16:25 | LB131900 |
| | Lead | 12.0 | +/-12.0 | U | 12.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Magnesium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:25 | LB131900 |
| | Manganese | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Molybdenum | 200 | +/-200 | U | 200 | P | 08/07/2024 | 16:25 | LB131900 |
| | Nickel | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Potassium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:25 | LB131900 |
| | Selenium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Silver | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Sodium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 16:25 | LB131900 |
| | Strontium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Thallium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Tin | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Titanium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Vanadium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:25 | LB131900 |
| | Zinc | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 16:25 | LB131900 |
| CCB02 | Aluminum | 100 | +/-100 | U | 100 | P | 08/07/2024 | 17:18 | LB131900 |
| | Antimony | 50.0 | +/-50.0 | U | 50.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Arsenic | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Barium | 100 | +/-100 | U | 100 | P | 08/07/2024 | 17:18 | LB131900 |
| | Beryllium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 17:18 | LB131900 |
| | Boron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 17:18 | LB131900 |
| | Cadmium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 17:18 | LB131900 |
| | Calcium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 17:18 | LB131900 |
| | Chromium | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Cobalt | 30.0 | +/-30.0 | U | 30.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Copper | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Iron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 17:18 | LB131900 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| CCB02 | Lead | 12.0 | +/-12.0 | U | 12.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Magnesium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 17:18 | LB131900 |
| | Manganese | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Molybdenum | 200 | +/-200 | U | 200 | P | 08/07/2024 | 17:18 | LB131900 |
| | Nickel | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Potassium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 17:18 | LB131900 |
| | Selenium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Silver | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Sodium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 17:18 | LB131900 |
| | Strontium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Thallium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Tin | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Titanium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Vanadium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 17:18 | LB131900 |
| | Zinc | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 17:18 | LB131900 |
| CCB03 | Aluminum | 100 | +/-100 | U | 100 | P | 08/07/2024 | 18:55 | LB131900 |
| | Antimony | 50.0 | +/-50.0 | U | 50.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Arsenic | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Barium | 100 | +/-100 | U | 100 | P | 08/07/2024 | 18:55 | LB131900 |
| | Beryllium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 18:55 | LB131900 |
| | Boron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 18:55 | LB131900 |
| | Cadmium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 18:55 | LB131900 |
| | Calcium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 18:55 | LB131900 |
| | Chromium | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Cobalt | 30.0 | +/-30.0 | U | 30.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Copper | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Iron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 18:55 | LB131900 |
| | Lead | 12.0 | +/-12.0 | U | 12.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Magnesium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 18:55 | LB131900 |
| | Manganese | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Molybdenum | 200 | +/-200 | U | 200 | P | 08/07/2024 | 18:55 | LB131900 |
| | Nickel | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Potassium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 18:55 | LB131900 |
| | Selenium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Silver | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Sodium | 509 | +/-2000 | J | 2000 | P | 08/07/2024 | 18:55 | LB131900 |
| | Strontium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Thallium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Tin | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 18:55 | LB131900 |

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# Metals

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Analyte | Result ug/L | Acceptance Limit | Conc Qual | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|
| **CCB03** | Titanium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Vanadium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 18:55 | LB131900 |
| | Zinc | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 18:55 | LB131900 |
| **CCB04** | Aluminum | 100 | +/-100 | U | 100 | P | 08/07/2024 | 19:52 | LB131900 |
| | Antimony | 50.0 | +/-50.0 | U | 50.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Arsenic | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Barium | 100 | +/-100 | U | 100 | P | 08/07/2024 | 19:52 | LB131900 |
| | Beryllium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 19:52 | LB131900 |
| | Boron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 19:52 | LB131900 |
| | Cadmium | 6.00 | +/-6.00 | U | 6.00 | P | 08/07/2024 | 19:52 | LB131900 |
| | Calcium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 19:52 | LB131900 |
| | Chromium | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Cobalt | 30.0 | +/-30.0 | U | 30.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Copper | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Iron | 100 | +/-100 | U | 100 | P | 08/07/2024 | 19:52 | LB131900 |
| | Lead | 12.0 | +/-12.0 | U | 12.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Magnesium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 19:52 | LB131900 |
| | Manganese | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Molybdenum | 200 | +/-200 | U | 200 | P | 08/07/2024 | 19:52 | LB131900 |
| | Nickel | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Potassium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 19:52 | LB131900 |
| | Selenium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Silver | 10.0 | +/-10.0 | U | 10.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Sodium | 2000 | +/-2000 | U | 2000 | P | 08/07/2024 | 19:52 | LB131900 |
| | Strontium | 20.0 | +/-20.0 | U | 20.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Thallium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Tin | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Titanium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Vanadium | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 19:52 | LB131900 |
| | Zinc | 40.0 | +/-40.0 | U | 40.0 | P | 08/07/2024 | 19:52 | LB131900 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Instrument:** CV1

| Sample ID | Analyte | Result (ug/L) | Acceptance Limit | Conc Qual | CRQL ug/L | M | Analysis Date | Analysis Time | Run |
|---|---|---|---|---|---|---|---|---|---|
| **PB162680BL** | | **WATER** | | **Batch Number:** | **PB162680** | | **Prep Date:** | **08/12/2024** | |
| | Mercury | 0.20 | <0.20 | U | 0.20 | CV | 08/13/2024 | 10:07 | LB131960 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Instrument:** P4

| Sample ID | Analyte | Result (ug/L) | Acceptance Limit | Conc Qual | CRQL ug/L | M | Analysis Date | Analysis Time | Run |
|---|---|---|---|---|---|---|---|---|---|
| **PB162493BL** | | **WATER** | | **Batch Number:** | **PB162493** | | **Prep Date:** | **08/05/2024** | |
| | Aluminum | 50.0 | <50.0 | U | 50.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Antimony | 25.0 | <25.0 | U | 25.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Arsenic | 10.0 | <10.0 | U | 10.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Barium | 50.0 | <50.0 | U | 50.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Beryllium | 3.00 | <3.00 | U | 3.00 | P | 08/07/2024 | 16:29 | LB131900 |
| | Boron | 50.0 | <50.0 | U | 50.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Cadmium | 3.00 | <3.00 | U | 3.00 | P | 08/07/2024 | 16:29 | LB131900 |
| | Calcium | 1000 | <1000 | U | 1000 | P | 08/07/2024 | 16:29 | LB131900 |
| | Chromium | 5.00 | <5.00 | U | 5.00 | P | 08/07/2024 | 16:29 | LB131900 |
| | Cobalt | 15.0 | <15.0 | U | 15.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Copper | 10.0 | <10.0 | U | 10.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Iron | 50.0 | <50.0 | U | 50.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Lead | 6.00 | <6.00 | U | 6.00 | P | 08/07/2024 | 16:29 | LB131900 |
| | Magnesium | 1000 | <1000 | U | 1000 | P | 08/07/2024 | 16:29 | LB131900 |
| | Manganese | 10.0 | <10.0 | U | 10.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Molybdenum | 100 | <100 | U | 100 | P | 08/07/2024 | 16:29 | LB131900 |
| | Nickel | 20.0 | <20.0 | U | 20.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Potassium | 1000 | <1000 | U | 1000 | P | 08/07/2024 | 16:29 | LB131900 |
| | Selenium | 10.0 | <10.0 | U | 10.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Silver | 5.00 | <5.00 | U | 5.00 | P | 08/07/2024 | 16:29 | LB131900 |
| | Sodium | 1000 | <1000 | U | 1000 | P | 08/07/2024 | 16:29 | LB131900 |
| | Strontium | 10.0 | <10.0 | U | 10.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Thallium | 20.0 | <20.0 | U | 20.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Tin | 20.0 | <20.0 | U | 20.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Titanium | 20.0 | <20.0 | U | 20.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Vanadium | 20.0 | <20.0 | U | 20.0 | P | 08/07/2024 | 16:29 | LB131900 |
| | Zinc | 20.0 | <20.0 | U | 20.0 | P | 08/07/2024 | 16:29 | LB131900 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 | Aluminum | 266000 | 255000 | 104 | 216000 | 294000 | 08/07/2024 | 16:12 | LB131900 |
| | Antimony | -1.84 | | | -50 | 50 | 08/07/2024 | 16:12 | LB131900 |
| | Arsenic | 4.35 | | | -20 | 20 | 08/07/2024 | 16:12 | LB131900 |
| | Barium | 6.14 | 6.0 | 102 | -94 | 106 | 08/07/2024 | 16:12 | LB131900 |
| | Beryllium | 0.93 | | | -6 | 6 | 08/07/2024 | 16:12 | LB131900 |
| | Boron | 12.4 | 1000 | 1 | -100 | 100 | 08/07/2024 | 16:12 | LB131900 |
| | Cadmium | 3.70 | 1.0 | 370 | -5 | 7 | 08/07/2024 | 16:12 | LB131900 |
| | Calcium | 253000 | 245000 | 103 | 208000 | 282000 | 08/07/2024 | 16:12 | LB131900 |
| | Chromium | 56.8 | 52.0 | 109 | 42 | 62 | 08/07/2024 | 16:12 | LB131900 |
| | Cobalt | 2.84 | | | -30 | 30 | 08/07/2024 | 16:12 | LB131900 |
| | Copper | 9.27 | 2.0 | 464 | -18 | 22 | 08/07/2024 | 16:12 | LB131900 |
| | Iron | 102000 | 101000 | 101 | 85600 | 116500 | 08/07/2024 | 16:12 | LB131900 |
| | Lead | 5.55 | | | -12 | 12 | 08/07/2024 | 16:12 | LB131900 |
| | Magnesium | 272000 | 255000 | 107 | 216000 | 294000 | 08/07/2024 | 16:12 | LB131900 |
| | Manganese | 16.2 | 7.0 | 231 | -13 | 27 | 08/07/2024 | 16:12 | LB131900 |
| | Molybdenum | 0.026 | 1000 | | -200 | 200 | 08/07/2024 | 16:12 | LB131900 |
| | Nickel | 3.43 | 2.0 | 172 | -38 | 42 | 08/07/2024 | 16:12 | LB131900 |
| | Potassium | -48.6 | | | 0 | 0 | 08/07/2024 | 16:12 | LB131900 |
| | Selenium | -7.63 | | | -20 | 20 | 08/07/2024 | 16:12 | LB131900 |
| | Silver | 2.04 | | | -10 | 10 | 08/07/2024 | 16:12 | LB131900 |
| | Sodium | 17.5 | | | 0 | 0 | 08/07/2024 | 16:12 | LB131900 |
| | Strontium | 3.47 | | | 0 | 0 | 08/07/2024 | 16:12 | LB131900 |
| | Thallium | 2.30 | | | -40 | 40 | 08/07/2024 | 16:12 | LB131900 |
| | Tin | -2.89 | 1000 | | -40 | 40 | 08/07/2024 | 16:12 | LB131900 |
| | Titanium | -3.00 | | | 0 | 0 | 08/07/2024 | 16:12 | LB131900 |
| | Vanadium | 5.23 | | | -40 | 40 | 08/07/2024 | 16:12 | LB131900 |
| | Zinc | 2.26 | | | -40 | 40 | 08/07/2024 | 16:12 | LB131900 |
| ICSAB01 | Aluminum | 250000 | 247000 | 101 | 209000 | 285000 | 08/07/2024 | 16:16 | LB131900 |
| | Antimony | 605 | 618 | 98 | 525 | 711 | 08/07/2024 | 16:16 | LB131900 |
| | Arsenic | 103 | 104 | 99 | 88.4 | 120 | 08/07/2024 | 16:16 | LB131900 |
| | Barium | 516 | 537 | 96 | 437 | 637 | 08/07/2024 | 16:16 | LB131900 |
| | Beryllium | 494 | 495 | 100 | 420 | 570 | 08/07/2024 | 16:16 | LB131900 |
| | Boron | 1010 | 1000 | 101 | 850 | 1150 | 08/07/2024 | 16:16 | LB131900 |
| | Cadmium | 968 | 972 | 100 | 826 | 1120 | 08/07/2024 | 16:16 | LB131900 |
| | Calcium | 237000 | 235000 | 101 | 199000 | 271000 | 08/07/2024 | 16:16 | LB131900 |
| | Chromium | 565 | 542 | 104 | 460 | 624 | 08/07/2024 | 16:16 | LB131900 |
| | Cobalt | 501 | 476 | 105 | 404 | 548 | 08/07/2024 | 16:16 | LB131900 |
| | Copper | 488 | 511 | 96 | 434 | 588 | 08/07/2024 | 16:16 | LB131900 |
| | Iron | 101000 | 99300 | 102 | 84400 | 114500 | 08/07/2024 | 16:16 | LB131900 |
| | Lead | 55.1 | 49.0 | 112 | 37 | 61 | 08/07/2024 | 16:16 | LB131900 |
| | Magnesium | 253000 | 248000 | 102 | 210000 | 286000 | 08/07/2024 | 16:16 | LB131900 |
| | Manganese | 510 | 507 | 101 | 430 | 584 | 08/07/2024 | 16:16 | LB131900 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|---|---|---|
| ICSAB01 | Molybdenum | 1070 | 1000 | 107 | 850 | 1150 | 08/07/2024 | 16:16 | LB131900 |
| | Nickel | 992 | 954 | 104 | 810 | 1100 | 08/07/2024 | 16:16 | LB131900 |
| | Potassium | -74.2 | | | 0 | 0 | 08/07/2024 | 16:16 | LB131900 |
| | Selenium | 34.4 | 46.0 | 75 | 26 | 66 | 08/07/2024 | 16:16 | LB131900 |
| | Silver | 221 | 201 | 110 | 170 | 232 | 08/07/2024 | 16:16 | LB131900 |
| | Sodium | 3.05 | | | 0 | 0 | 08/07/2024 | 16:16 | LB131900 |
| | Strontium | 863 | | | 0 | 0 | 08/07/2024 | 16:16 | LB131900 |
| | Thallium | 103 | 108 | 95 | 68 | 148 | 08/07/2024 | 16:16 | LB131900 |
| | Tin | 1070 | 1000 | 107 | 850 | 1150 | 08/07/2024 | 16:16 | LB131900 |
| | Titanium | 1050 | | | 0 | 0 | 08/07/2024 | 16:16 | LB131900 |
| | Vanadium | 487 | 491 | 99 | 417 | 565 | 08/07/2024 | 16:16 | LB131900 |
| | Zinc | 1090 | 952 | 114 | 809 | 1095 | 08/07/2024 | 16:16 | LB131900 |

# METAL QC DATA

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

**client:** JACOBS Engineering Group, Inc. **level:** low **sdg no.:** P3426

**contract:** JACO05 **lab code:** CHEM **case no.:** P3426 **sas no.:** P3426

**matrix:** Water **sample id:** P3440-01 **client id:** 923-K1-WS-080124MS

**Percent Solids for Sample:** NA **Spiked ID:** P3440-02 **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | ug/L | 86 - 115 | 1000 | | 50.9 | | 1000 | 95 | | P |
| Antimony | ug/L | 88 - 113 | 378 | | 25.0 | U | 400 | 94 | | P |
| Arsenic | ug/L | 87 - 113 | 359 | | 10.0 | U | 400 | 90 | | P |
| Barium | ug/L | 88 - 113 | 155 | | 58.9 | | 100 | 96 | | P |
| Beryllium | ug/L | 89 - 112 | 95.3 | | 3.00 | U | 100 | 95 | | P |
| Boron | ug/L | 85 - 113 | 178 | | 47.6 | J | 150 | 87 | | P |
| Cadmium | ug/L | 88 - 113 | 89.7 | | 3.00 | U | 100 | 90 | | P |
| Calcium | ug/L | 87 - 113 | 20200 | | 19400 | | 500 | 152 | | P |
| Chromium | ug/L | 90 - 113 | 196 | | 0.76 | J | 200 | 98 | | P |
| Cobalt | ug/L | 89 - 114 | 93.6 | | 15.0 | U | 100 | 94 | | P |
| Copper | ug/L | 86 - 114 | 140 | | 10.0 | U | 150 | 93 | | P |
| Iron | ug/L | 87 - 115 | 4020 | | 2490 | | 1500 | 103 | | P |
| Lead | ug/L | 86 - 113 | 453 | | 6.00 | U | 500 | 91 | | P |
| Magnesium | ug/L | 85 - 113 | 4590 | | 3680 | | 1000 | 92 | | P |
| Manganese | ug/L | 90 - 114 | 887 | | 777 | | 100 | 111 | | P |
| Mercury | ug/L | 75 - 125 | 3.28 | | 0.20 | U | 4.0 | 82 | | CV |
| Molybdenum | ug/L | 89 - 113 | 205 | | 100 | U | 200 | 102 | | P |
| Nickel | ug/L | 88 - 113 | 236 | | 1.18 | J | 250 | 94 | | P |
| Potassium | ug/L | 86 - 114 | 8060 | | 3290 | | 5000 | 95 | | P |
| Selenium | ug/L | 83 - 114 | 851 | | 10.0 | U | 1000 | 85 | | P |
| Silver | ug/L | 84 - 115 | 34.0 | | 5.00 | U | 37.5 | 91 | | P |
| Sodium | ug/L | 87 - 115 | 80100 | | 79700 | | 1500 | 24 | | P |
| Strontium | ug/L | 90 - 113 | 229 | | 129 | | 500 | 20 | N | P |
| Thallium | ug/L | 85 - 114 | 884 | | 20.0 | U | 1000 | 88 | | P |
| Tin | ug/L | 88 - 115 | 331 | | 20.0 | U | 350 | 95 | | P |
| Titanium | ug/L | 91 - 111 | 100 | | 20.0 | U | 100 | 100 | | P |
| Vanadium | ug/L | 90 - 111 | 146 | | 20.0 | U | 150 | 97 | | P |
| Zinc | ug/L | 87 - 115 | 114 | | 10.1 | J | 100 | 104 | | P |

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

**client:** JACOBS Engineering Group, Inc. **level:** low **sdg no.:** P3426

**contract:** JACO05 **lab code:** CHEM **case no.:** P3426 **sas no.:** P3426

**matrix:** Water **sample id:** P3440-01 **client id:** 923-K1-WS-080124MSD

**Percent Solids for Sample:** NA **Spiked ID:** P3440-03 **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit %R | MSD Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | ug/L | 86 - 115 | 1050 | | 50.9 | | 1000 | 100 | | P |
| Antimony | ug/L | 88 - 113 | 391 | | 25.0 | U | 400 | 98 | | P |
| Arsenic | ug/L | 87 - 113 | 377 | | 10.0 | U | 400 | 94 | | P |
| Barium | ug/L | 88 - 113 | 161 | | 58.9 | | 100 | 102 | | P |
| Beryllium | ug/L | 89 - 112 | 102 | | 3.00 | U | 100 | 102 | | P |
| Boron | ug/L | 85 - 113 | 188 | | 47.6 | J | 150 | 93 | | P |
| Cadmium | ug/L | 88 - 113 | 94.8 | | 3.00 | U | 100 | 95 | | P |
| Calcium | ug/L | 87 - 113 | 20600 | | 19400 | | 500 | 244 | | P |
| Chromium | ug/L | 90 - 113 | 205 | | 0.76 | J | 200 | 102 | | P |
| Cobalt | ug/L | 89 - 114 | 99.1 | | 15.0 | U | 100 | 99 | | P |
| Copper | ug/L | 86 - 114 | 146 | | 10.0 | U | 150 | 97 | | P |
| Iron | ug/L | 87 - 115 | 4110 | | 2490 | | 1500 | 108 | | P |
| Lead | ug/L | 86 - 113 | 477 | | 6.00 | U | 500 | 95 | | P |
| Magnesium | ug/L | 85 - 113 | 4730 | | 3680 | | 1000 | 105 | | P |
| Manganese | ug/L | 90 - 114 | 906 | | 777 | | 100 | 129 | | P |
| Mercury | ug/L | 75 - 125 | 3.17 | | 0.20 | U | 4.0 | 79 | | CV |
| Molybdenum | ug/L | 89 - 113 | 213 | | 100 | U | 200 | 106 | | P |
| Nickel | ug/L | 88 - 113 | 249 | | 1.18 | J | 250 | 99 | | P |
| Potassium | ug/L | 86 - 114 | 8290 | | 3290 | | 5000 | 100 | | P |
| Selenium | ug/L | 83 - 114 | 889 | | 10.0 | U | 1000 | 89 | | P |
| Silver | ug/L | 84 - 115 | 35.5 | | 5.00 | U | 37.5 | 95 | | P |
| Sodium | ug/L | 87 - 115 | 80100 | | 79700 | | 1500 | 27 | | P |
| Strontium | ug/L | 90 - 113 | 236 | | 129 | | 500 | 21 | N | P |
| Thallium | ug/L | 85 - 114 | 940 | | 20.0 | U | 1000 | 94 | | P |
| Tin | ug/L | 88 - 115 | 344 | | 20.0 | U | 350 | 98 | | P |
| Titanium | ug/L | 91 - 111 | 103 | | 20.0 | U | 100 | 103 | | P |
| Vanadium | ug/L | 90 - 111 | 155 | | 20.0 | U | 150 | 103 | | P |
| Zinc | ug/L | 87 - 115 | 119 | | 10.1 | J | 100 | 109 | | P |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**Matrix:** Water **Level:** LOW **Client ID:** 923-K1-WS-080124A

**Sample ID:** P3440-01 **Spiked ID:** P3440-01A

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Strontium | ug/L | 90 - 113 | 210 | | 129 | | 500 | 16 | | P |

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# Metals

## - 6 -

## DUPLICATE SAMPLE SUMMARY

**Client:** JACOBS Engineering Group, Inc. **Level:** LOW **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**Matrix:** Water **Sample ID:** P3440-01 **Client ID:** 923-K1-WS-080124DUP

**Percent Solids for Sample:** NA **Duplicate ID** P3440-01DUP **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | ug/L | 20 | 50.9 | | 56.2 | | 10 | | P |
| Antimony | ug/L | 20 | 25.0 | U | 25.0 | U | | | P |
| Arsenic | ug/L | 20 | 10.0 | U | 10.0 | U | | | P |
| Barium | ug/L | 20 | 58.9 | | 57.4 | | 3 | | P |
| Beryllium | ug/L | 20 | 3.00 | U | 3.00 | U | | | P |
| Boron | ug/L | 20 | 47.6 | J | 46.4 | J | 3 | | P |
| Cadmium | ug/L | 20 | 3.00 | U | 3.00 | U | | | P |
| Calcium | ug/L | 20 | 19400 | | 18900 | | 3 | | P |
| Chromium | ug/L | 20 | 0.76 | J | 0.84 | J | 10 | | P |
| Cobalt | ug/L | 20 | 15.0 | U | 15.0 | U | | | P |
| Copper | ug/L | 20 | 10.0 | U | 10.0 | U | | | P |
| Iron | ug/L | 20 | 2490 | | 2400 | | 4 | | P |
| Lead | ug/L | 20 | 6.00 | U | 6.00 | U | | | P |
| Magnesium | ug/L | 20 | 3680 | | 3600 | | 2 | | P |
| Manganese | ug/L | 20 | 777 | | 758 | | 2 | | P |
| Mercury | ug/L | 20 | 0.20 | U | 0.20 | U | | | CV |
| Molybdenum | ug/L | 20 | 100 | U | 100 | U | | | P |
| Nickel | ug/L | 20 | 1.18 | J | 1.15 | J | 3 | | P |
| Potassium | ug/L | 20 | 3290 | | 3190 | | 3 | | P |
| Selenium | ug/L | 20 | 10.0 | U | 10.0 | U | | | P |
| Silver | ug/L | 20 | 5.00 | U | 5.00 | U | | | P |
| Sodium | ug/L | 20 | 79700 | | 76900 | | 4 | | P |
| Strontium | ug/L | 20 | 129 | | 126 | | 2 | | P |
| Thallium | ug/L | 20 | 20.0 | U | 20.0 | U | | | P |
| Tin | ug/L | 20 | 20.0 | U | 20.0 | U | | | P |
| Titanium | ug/L | 20 | 20.0 | U | 20.0 | U | | | P |
| Vanadium | ug/L | 20 | 20.0 | U | 20.0 | U | | | P |
| Zinc | ug/L | 20 | 10.1 | J | 9.57 | J | 5 | | 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:** JACOBS Engineering Group, Inc. **Level:** LOW **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**Matrix:** Water **Sample ID:** P3440-02 **Client ID:** 923-K1-WS-080124MSD

**Percent Solids for Sample:** NA **Duplicate ID** P3440-03 **Percent Solids for Spike Sample:** NA

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | ug/L | 20 | 1000 | | 1050 | | 5 | | P |
| Antimony | ug/L | 20 | 378 | | 391 | | 3 | | P |
| Arsenic | ug/L | 20 | 359 | | 377 | | 5 | | P |
| Barium | ug/L | 20 | 155 | | 161 | | 4 | | P |
| Beryllium | ug/L | 20 | 95.3 | | 102 | | 7 | | P |
| Boron | ug/L | 20 | 178 | | 188 | | 5 | | P |
| Cadmium | ug/L | 20 | 89.7 | | 94.8 | | 6 | | P |
| Calcium | ug/L | 20 | 20200 | | 20600 | | 2 | | P |
| Chromium | ug/L | 20 | 196 | | 205 | | 4 | | P |
| Cobalt | ug/L | 20 | 93.6 | | 99.1 | | 6 | | P |
| Copper | ug/L | 20 | 140 | | 146 | | 4 | | P |
| Iron | ug/L | 20 | 4020 | | 4110 | | 2 | | P |
| Lead | ug/L | 20 | 453 | | 477 | | 5 | | P |
| Magnesium | ug/L | 20 | 4590 | | 4730 | | 3 | | P |
| Manganese | ug/L | 20 | 887 | | 906 | | 2 | | P |
| Mercury | ug/L | 20 | 3.28 | | 3.17 | | 3 | | CV |
| Molybdenum | ug/L | 20 | 205 | | 213 | | 4 | | P |
| Nickel | ug/L | 20 | 236 | | 249 | | 5 | | P |
| Potassium | ug/L | 20 | 8060 | | 8290 | | 3 | | P |
| Selenium | ug/L | 20 | 851 | | 889 | | 4 | | P |
| Silver | ug/L | 20 | 34.0 | | 35.5 | | 4 | | P |
| Sodium | ug/L | 20 | 80100 | | 80100 | | 0 | | P |
| Strontium | ug/L | 20 | 229 | | 236 | | 3 | | P |
| Thallium | ug/L | 20 | 884 | | 940 | | 6 | | P |
| Tin | ug/L | 20 | 331 | | 344 | | 4 | | P |
| Titanium | ug/L | 20 | 100 | | 103 | | 3 | | P |
| Vanadium | ug/L | 20 | 146 | | 155 | | 6 | | P |
| Zinc | ug/L | 20 | 114 | | 119 | | 4 | | 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:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Analyte | Units | True Value | Result | C | % Recovery | Acceptance Limits | M |
|---|---|---|---|---|---|---|---|
| PB162493BS | | | | | | | |
| Aluminum | ug/L | 1000 | 1020 | | 102 | 86 - 115 | P |
| Antimony | ug/L | 400 | 403 | | 101 | 88 - 113 | P |
| Arsenic | ug/L | 400 | 390 | | 98 | 87 - 113 | P |
| Barium | ug/L | 100 | 100 | | 100 | 88 - 113 | P |
| Beryllium | ug/L | 100 | 108 | | 108 | 89 - 112 | P |
| Boron | ug/L | 150 | 157 | | 105 | 85 - 113 | P |
| Cadmium | ug/L | 100 | 98.7 | | 99 | 88 - 113 | P |
| Calcium | ug/L | 500 | 539 | J | 108 | 87 - 113 | P |
| Chromium | ug/L | 200 | 205 | | 102 | 90 - 113 | P |
| Cobalt | ug/L | 100 | 100 | | 100 | 89 - 114 | P |
| Copper | ug/L | 150 | 155 | | 103 | 86 - 114 | P |
| Iron | ug/L | 1500 | 1440 | | 96 | 87 - 115 | P |
| Lead | ug/L | 500 | 499 | | 100 | 86 - 113 | P |
| Magnesium | ug/L | 1000 | 1000 | | 100 | 85 - 113 | P |
| Manganese | ug/L | 100 | 104 | | 104 | 90 - 114 | P |
| Molybdenum | ug/L | 200 | 204 | | 102 | 89 - 113 | P |
| Nickel | ug/L | 250 | 256 | | 102 | 88 - 113 | P |
| Potassium | ug/L | 5000 | 4540 | | 91 | 86 - 114 | P |
| Selenium | ug/L | 1000 | 977 | | 98 | 83 - 114 | P |
| Silver | ug/L | 37.5 | 37.1 | | 99 | 84 - 115 | P |
| Sodium | ug/L | 1500 | 1340 | | 89 | 87 - 115 | P |
| Strontium | ug/L | 100 | 99.7 | | 100 | 90 - 113 | P |
| Thallium | ug/L | 1000 | 1000 | | 100 | 85 - 114 | P |
| Tin | ug/L | 350 | 356 | | 102 | 88 - 115 | P |
| Titanium | ug/L | 100 | 102 | | 102 | 91 - 111 | P |
| Vanadium | ug/L | 150 | 152 | | 101 | 90 - 111 | P |
| Zinc | ug/L | 100 | 106 | | 106 | 87 - 115 | P |

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## LABORATORY CONTROL SAMPLE SUMMARY

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

| Analyte | Units | True Value | Result | C | % Recovery | Acceptance Limits | M |
|---|---|---|---|---|---|---|---|
| PB162680BS | | | | | | | |
| Mercury | ug/L | 4.0 | 3.62 | | 90 | 80 - 120 | CV |

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# Metals

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## ICP SERIAL DILUTIONS

SAMPLE NO.

923-K1-WS-080124L

**Lab Name:** Chemtech Consulting Group **Contract:** JACO05

**Lab Code:** CHEM **Lb No.:** lb131900 **Lab Sample ID :** P3440-01L **SDG No.:** P3426

**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 |
|---|---|---|---|---|---|---|---|
| Aluminum | 50.9 | | 250 | U | 100.0 | | P |
| Antimony | 25.0 | U | 125 | U | | | P |
| Arsenic | 10.0 | U | 50.0 | U | | | P |
| Barium | 58.9 | | 59.1 | J | 0 | | P |
| Beryllium | 3.00 | U | 15.0 | U | | | P |
| Boron | 47.6 | J | 50.3 | J | 6 | | P |
| Cadmium | 3.00 | U | 15.0 | U | | | P |
| Calcium | 19400 | | 19700 | | 2 | | P |
| Chromium | 0.76 | J | 25.0 | U | 100.0 | | P |
| Cobalt | 15.0 | U | 75.0 | U | | | P |
| Copper | 10.0 | U | 50.0 | U | | | P |
| Iron | 2490 | | 2550 | | 2 | | P |
| Lead | 6.00 | U | 30.0 | U | | | P |
| Magnesium | 3680 | | 3600 | J | 2 | | P |
| Manganese | 777 | | 782 | | 1 | | P |
| Mercury | 0.20 | U | 1.00 | U | | | CV |
| Molybdenum | 100 | U | 500 | U | | | P |
| Nickel | 1.18 | J | 100 | U | 100.0 | | P |
| Potassium | 3290 | | 5000 | U | 100.0 | | P |
| Selenium | 10.0 | U | 50.0 | U | | | P |
| Silver | 5.00 | U | 25.0 | U | | | P |
| Sodium | 79700 | | 78800 | | 1 | | P |
| Strontium | 129 | | 131 | | 1 | | P |
| Thallium | 20.0 | U | 100 | U | | | P |
| Tin | 20.0 | U | 100 | U | | | P |
| Titanium | 20.0 | U | 100 | U | | | P |
| Vanadium | 20.0 | U | 100 | U | | | P |
| Zinc | 10.1 | J | 9.90 | J | 2 | | P |

# METAL PREPARATION & INSTRUMENT DATA

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|
| Aluminum | 396.100 | 0.0000000 | -0.0002060 | 0.0000000 | 0.0000000 | 0.0000000 |
| Antimony | 206.833 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| 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 |
| Beryllium | 234.861 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cadmium | 226.502 | 0.0000000 | 0.0000000 | 0.0000930 | 0.0000000 | 0.0000000 |
| Calcium | 373.690 | 0.0000000 | 0.0000000 | -0.0075970 | 0.0000000 | 0.0000000 |
| Chromium | 267.716 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cobalt | 228.616 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Copper | 224.700 | 0.0000000 | 0.0000000 | 0.0007850 | 0.0000000 | 0.0000000 |
| Iron | 240.488 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Lead | 220.353 | -0.0000920 | 0.0000000 | 0.0000380 | 0.0000000 | 0.0000000 |
| Magnesium | 279.079 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Manganese | 257.610 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Nickel | 231.604 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Potassium | 766.490 | 0.0000000 | 0.0000000 | 0.0000000 | 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 |
| Sodium | 589.592 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Thallium | 190.856 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Vanadium | 292.402 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc | 213.800 | 0.0000000 | 0.0000000 | 0.0001050 | 0.0000000 | 0.0000000 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|
| Aluminum | 396.100 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Antimony | 206.833 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| 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 |
| Beryllium | 234.861 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cadmium | 226.502 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0002870 |
| Calcium | 373.690 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Chromium | 267.716 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cobalt | 228.616 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Copper | 224.700 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0009530 |
| Iron | 240.488 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | -0.0039600 |
| Lead | 220.353 | 0.0000000 | 0.0003170 | 0.0000000 | 0.0000000 | 0.0000000 |
| Magnesium | 279.079 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Manganese | 257.610 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Nickel | 231.604 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Potassium | 766.490 | 0.0000000 | 0.0000000 | 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 |
| Sodium | 589.592 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Thallium | 190.856 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0054900 |
| Vanadium | 292.402 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc | 213.800 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|
| Aluminum | 396.100 | 0.0000000 | 0.0000000 | 0.0000590 | 0.0000000 | 0.0396900 |
| Antimony | 206.833 | 0.0122000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| 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 |
| Beryllium | 234.861 | 0.0000000 | 0.0000000 | 0.0000000 | -0.0000710 | -0.0003400 |
| Cadmium | 226.502 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Calcium | 373.690 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Chromium | 267.716 | 0.0000000 | 0.0000000 | 0.0000070 | 0.0002200 | 0.0000000 |
| Cobalt | 228.616 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | -0.0007860 |
| Copper | 224.700 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0006510 | 0.0020500 |
| Iron | 240.488 | 0.0000000 | 0.0000000 | 0.0000730 | 0.0000000 | -0.0015250 |
| Lead | 220.353 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0001400 | -0.0008600 |
| Magnesium | 279.079 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Manganese | 257.610 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Nickel | 231.604 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Potassium | 766.490 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| 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 |
| Sodium | 589.592 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Thallium | 190.856 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0017400 | -0.0100400 |
| Vanadium | 292.402 | -0.0025100 | 0.0000000 | 0.0000000 | 0.0000000 | -0.0072000 |
| Zinc | 213.800 | 0.0000000 | 0.0009010 | 0.0000000 | 0.0000000 | 0.0000000 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|
| Aluminum | 396.100 | 0.0000000 | 0.0000000 | 0.0012800 | 0.0000000 | 0.0000000 |
| Antimony | 206.833 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| 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 |
| Beryllium | 234.861 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cadmium | 226.502 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Calcium | 373.690 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Chromium | 267.716 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cobalt | 228.616 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Copper | 224.700 | 0.0000000 | -0.0047000 | 0.0036100 | 0.0000000 | 0.0000000 |
| Iron | 240.488 | 0.0000000 | -0.0017000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Lead | 220.353 | 0.0000000 | 0.0006580 | 0.0000000 | 0.0000000 | 0.0001290 |
| Magnesium | 279.079 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Manganese | 257.610 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Nickel | 231.604 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Potassium | 766.490 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| 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 |
| Sodium | 589.592 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Thallium | 190.856 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Vanadium | 292.402 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc | 213.800 | 0.0000000 | 0.0067600 | 0.0000000 | 0.0000000 | 0.0000000 |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Case No.:** P3426 **SAS No.:** P3426

**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 |
|---|---|---|---|---|---|---|
| Aluminum | 396.100 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Antimony | 206.833 | -0.0035600 | -0.0007970 | 0.0000000 | -0.0018900 | 0.0000000 |
| 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 |
| Beryllium | 234.861 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cadmium | 226.502 | 0.0000000 | 0.0000630 | 0.0001280 | 0.0000000 | 0.0000000 |
| Calcium | 373.690 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Chromium | 267.716 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0001110 | 0.0000000 |
| Cobalt | 228.616 | 0.0000000 | 0.0018800 | 0.0000000 | 0.0000000 | 0.0000000 |
| Copper | 224.700 | 0.0000000 | 0.0003840 | 0.0000000 | 0.0000000 | 0.0000000 |
| Iron | 240.488 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Lead | 220.353 | 0.0000000 | -0.0003610 | 0.0000000 | 0.0000000 | 0.0000000 |
| Magnesium | 279.079 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Manganese | 257.610 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Nickel | 231.604 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Potassium | 766.490 | 0.0000000 | 0.0000000 | 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 |
| Sodium | 589.592 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Thallium | 190.856 | 0.0000000 | -0.0039700 | 0.0000000 | -0.0115600 | 0.0000000 |
| Vanadium | 292.402 | 0.0000000 | 0.0005320 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc | 213.800 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |

# METAL PREPARATION & ANALYICAL SUMMARY

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Method:**

**Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Client ID | Sample Type | Matrix | Prep Date | Initial Sample Size(mL) | Final Sample Volume (mL) | Percent Solids |
|---|---|---|---|---|---|---|---|
| **Batch Number:** | **PB162493** | | | | | | |
| P3426-01 | 927-K1-WS-073124 | SAM | WATER | 08/05/2024 | 50.0 | 25.0 | |
| P3426-02 | 927-K1-WS-073124-FD | SAM | WATER | 08/05/2024 | 50.0 | 25.0 | |
| P3440-01DUP | 923-K1-WS-080124DUP | DUP | WATER | 08/05/2024 | 50.0 | 25.0 | |
| P3440-02 | 923-K1-WS-080124MS | MS | WATER | 08/05/2024 | 50.0 | 25.0 | |
| P3440-03 | 923-K1-WS-080124MSD | MSD | WATER | 08/05/2024 | 50.0 | 25.0 | |
| PB162493BL | PB162493BL | MB | WATER | 08/05/2024 | 50.0 | 25.0 | |
| PB162493BS | PB162493BS | LCS | WATER | 08/05/2024 | 50.0 | 25.0 | |

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

**Client:** JACOBS Engineering Group, Inc. **SDG No.:** P3426

**Contract:** JACO05 **Lab Code:** CHEM **Method:**

**Case No.:** P3426 **SAS No.:** P3426

| Sample ID | Client ID | Sample Type | Matrix | Prep Date | Initial Sample Size(mL) | Final Sample Volume (mL) | Percent Solids |
|---|---|---|---|---|---|---|---|
| **Batch Number:** | **PB162680** | | | | | | |
| P3426-01 | 927-K1-WS-073124 | SAM | WATER | 08/12/2024 | 30.0 | 30.0 | |
| P3426-02 | 927-K1-WS-073124-FD | SAM | WATER | 08/12/2024 | 30.0 | 30.0 | |
| P3440-01DUP | 923-K1-WS-080124DUP | DUP | WATER | 08/12/2024 | 30.0 | 30.0 | |
| P3440-02 | 923-K1-WS-080124MS | MS | WATER | 08/12/2024 | 30.0 | 30.0 | |
| P3440-03 | 923-K1-WS-080124MSD | MSD | WATER | 08/12/2024 | 30.0 | 30.0 | |
| PB162680BL | PB162680BL | MB | WATER | 08/12/2024 | 30.0 | 30.0 | |
| PB162680BS | PB162680BS | LCS | WATER | 08/12/2024 | 30.0 | 30.0 | |

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**metals**
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**ANALYSIS RUN LOG**

**Client:** JACOBS Engineering Group, Inc. **Contract:** JACO05

**Lab code:** CHEM **Case no.:** P3426 **Sas no.:** P3426 **Sdg no.:** P3426

**Instrument id number:** **Method:** **Run number:** LB131900

**Start date:** 08/07/2024 **End date:** 08/07/2024

| Lab sample id. | Client Sample Id | d/f | Time | Parameter list |
|---|---|---|---|---|
| S0 | S0 | 1 | 1416 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| S1 | S1 | 1 | 1421 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| S2 | S2 | 1 | 1425 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| S3 | S3 | 1 | 1429 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| S4 | S4 | 1 | 1433 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| S5 | S5 | 1 | 1438 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| ICV01 | ICV01 | 1 | 1552 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| LLICV01 | LLICV01 | 1 | 1556 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| ICB01 | ICB01 | 1 | 1603 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CRI01 | CRI01 | 1 | 1607 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| ICSA01 | ICSA01 | 1 | 1612 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| ICSAB01 | ICSAB01 | 1 | 1616 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CCV01 | CCV01 | 1 | 1620 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CCB01 | CCB01 | 1 | 1625 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| PB162493BL | PB162493BL | 1 | 1629 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| PB162493BS | PB162493BS | 1 | 1634 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| P3426-01 | 927-K1-WS-073124 | 1 | 1638 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| P3426-02 | 927-K1-WS-073124-FD | 1 | 1642 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| P3440-01DUP | 923-K1-WS-080124DUP | 1 | 1705 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| P3440-01L | 923-K1-WS-080124L | 5 | 1709 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CCV02 | CCV02 | 1 | 1714 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CCB02 | CCB02 | 1 | 1718 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| P3440-02 | 923-K1-WS-080124MS | 1 | 1820 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| P3440-03 | 923-K1-WS-080124MSD | 1 | 1824 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| P3440-01A | 923-K1-WS-080124A | 1 | 1833 | Sr |
| CCV03 | CCV03 | 1 | 1851 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CCB03 | CCB03 | 1 | 1855 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CCV04 | CCV04 | 1 | 1948 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |
| CCB04 | CCB04 | 1 | 1952 | Ag,Al,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Ti,Tl,V,Zn |

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

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

**Client:** JACOBS Engineering Group, Inc. **Contract:** JACO05

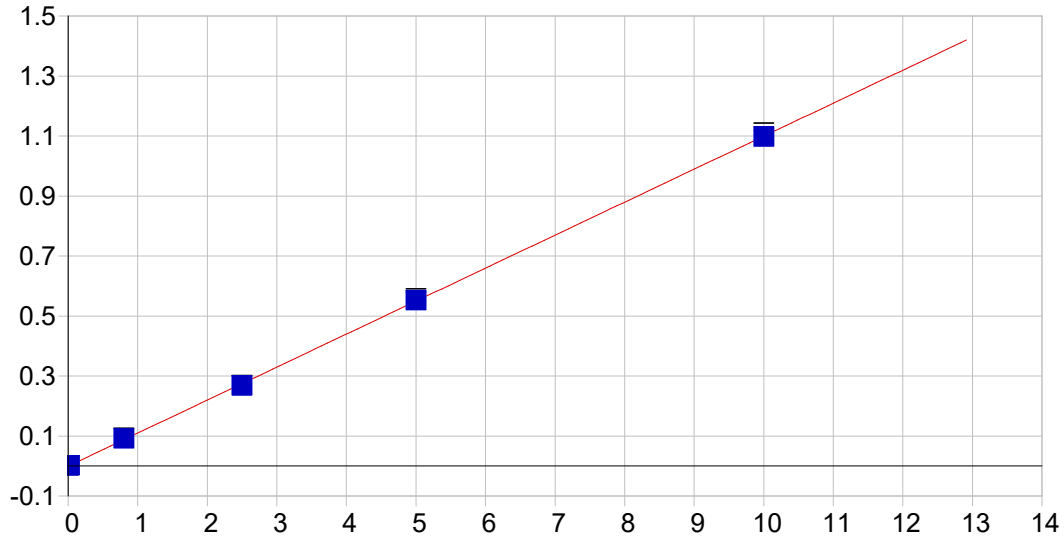
**Lab code:** CHEM **Case no.:** P3426 **Sas no.:** P3426 **Sdg no.:** P3426

**Instrument id number:** **Method:** **Run number:** LB131960

**Start date:** 08/13/2024 **End date:** 08/13/2024

| Lab sample id. | Client Sample Id | d/f | Time | Parameter list |
|---|---|---|---|---|
| S0 | S0 | 1 | 0836 | HG |
| S0.2 | S0.2 | 1 | 0839 | HG |
| S2.5 | S2.5 | 1 | 0841 | HG |
| S5 | S5 | 1 | 0843 | HG |
| S7.5 | S7.5 | 1 | 0845 | HG |
| S10 | S10 | 1 | 0850 | HG |
| ICV72 | ICV72 | 1 | 0853 | HG |
| ICB72 | ICB72 | 1 | 0855 | HG |
| CCV35 | CCV35 | 1 | 0858 | HG |
| CCB35 | CCB35 | 1 | 0903 | HG |
| CRA | CRA | 1 | 0910 | HG |
| CCV36 | CCV36 | 1 | 0933 | HG |
| CCB36 | CCB36 | 1 | 0935 | HG |
| CCV37 | CCV37 | 1 | 1000 | HG |
| CCB37 | CCB37 | 1 | 1005 | HG |
| PB162680BL | PB162680BL | 1 | 1007 | HG |
| PB162680BS | PB162680BS | 1 | 1009 | HG |
| P3426-01 | 927-K1-WS-073124 | 1 | 1012 | HG |
| P3426-02 | 927-K1-WS-073124-FD | 1 | 1014 | HG |
| P3440-01DUP | 923-K1-WS-080124DUP | 1 | 1025 | HG |
| P3440-02 | 923-K1-WS-080124MS | 1 | 1028 | HG |
| CCV38 | CCV38 | 1 | 1030 | HG |
| CCB38 | CCB38 | 1 | 1035 | HG |
| P3440-03 | 923-K1-WS-080124MSD | 1 | 1037 | HG |
| CCV39 | CCV39 | 1 | 1058 | HG |
| CCB39 | CCB39 | 1 | 1104 | HG |
| P3440-01L | 923-K1-WS-080124L | 5 | 1119 | HG |
| CCV40 | CCV40 | 1 | 1124 | HG |
| CCB40 | CCB40 | 1 | 1126 | HG |

# METAL
# RAW DATA

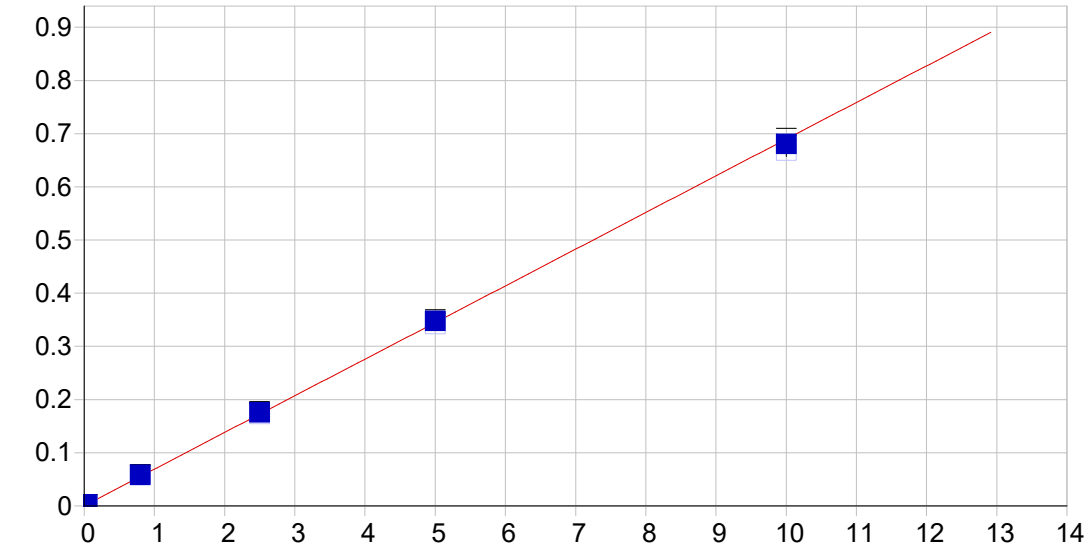



**As 189.042 {479}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000235 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.109962 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999906 | Status: | OK. |
| Std Error of Est: | 0.000035 | | |
| Predicted MDL: | 0.001621 | | |
| Predicted MQL: | 0.005402 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00024 | .000 | 1 |
| S1 | .02000 | .01945 | -.001 | -2.76 | .00189 | .000 | 1 |
| S3 | 2.5000 | 2.4436 | -.056 | -2.25 | .26818 | .001 | 1 |
| S4 | 5.0000 | 5.0271 | .027 | .543 | .55197 | .005 | 1 |
| S5 | 10.000 | 9.9898 | -.010 | -.102 | 1.0971 | .013 | 1 |
| S2 | .80000 | .83999 | .040 | 5.00 | .09204 | .001 | 1 |

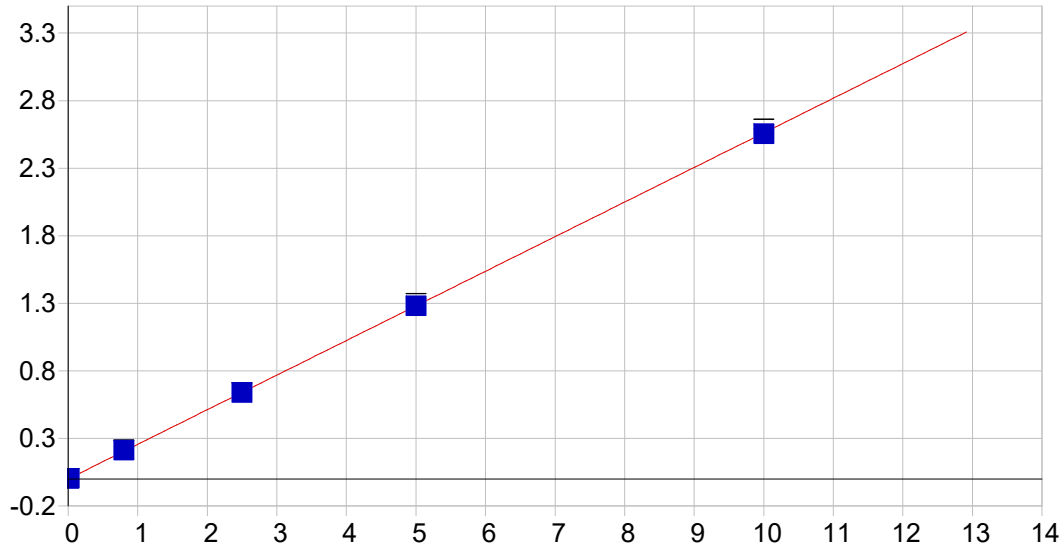



**Tl 190.856 {477}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000182 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.068946 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999847 | Status: | OK. |
| Std Error of Est: | 0.000039 | | |
| Predicted MDL: | 0.001453 | | |
| Predicted MQL: | 0.004845 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00018 | .000 | 1 |
| S1 | .04000 | .03848 | -.002 | -3.81 | .00266 | .000 | 1 |
| S3 | 2.5000 | 2.5463 | .046 | 1.85 | .17256 | .002 | 1 |
| S4 | 5.0000 | 5.0456 | .046 | .912 | .34170 | .002 | 1 |
| S5 | 10.000 | 9.8667 | -.133 | -1.33 | .66775 | .011 | 1 |
| S2 | .80000 | .84287 | .043 | 5.36 | .05728 | .001 | 1 |

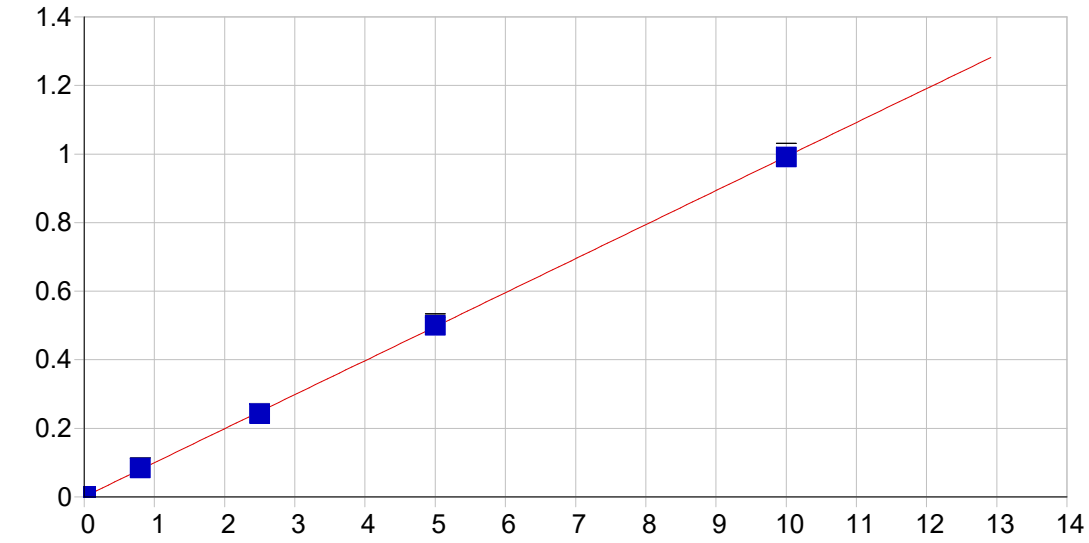



**Pb 220.353 {453}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000280 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.256173 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999956 | Status: | OK. |
| Std Error of Est: | 0.000044 | | |
| Predicted MDL: | 0.001041 | | |
| Predicted MQL: | 0.003468 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00028 | .000 | 1 |
| S1 | .01200 | .01311 | .001 | 9.25 | .00302 | .000 | 1 |
| S3 | 2.5000 | 2.4911 | -.009 | -.357 | .63719 | .001 | 1 |
| S4 | 5.0000 | 5.0012 | .001 | .023 | 1.2795 | .018 | 1 |
| S5 | 10.000 | 9.9730 | -.027 | -.270 | 2.5519 | .036 | 1 |
| S2 | .80000 | .83368 | .034 | 4.21 | .21307 | .001 | 1 |

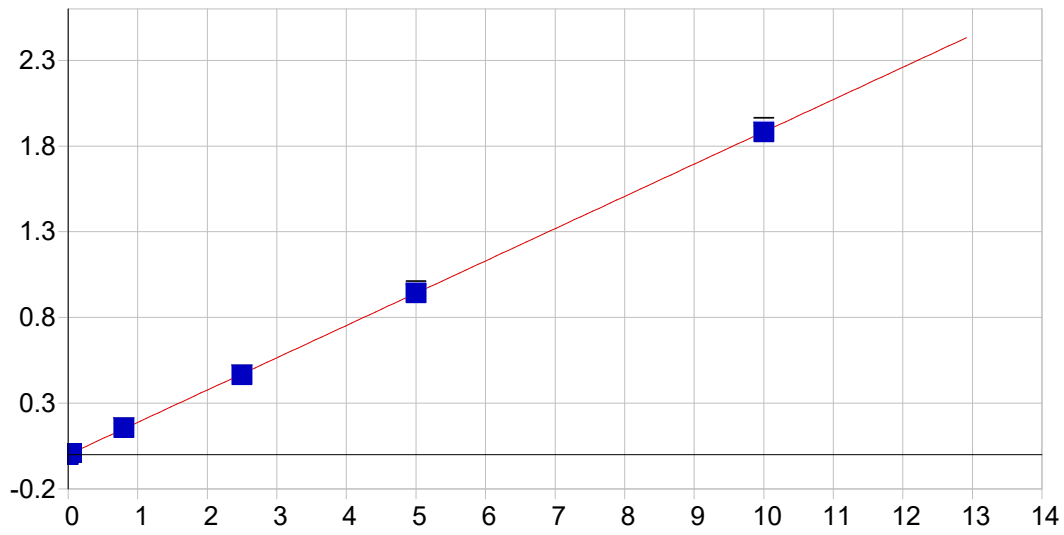



**Se 196.090 {472}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000490 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.099208 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999879 | Status: | OK. |
| Std Error of Est: | 0.000036 | | |
| Predicted MDL: | 0.002026 | | |
| Predicted MQL: | 0.006752 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .00049 | .000 | 1 |
| S1 | .02000 | .01810 | -.002 | -9.48 | .00229 | .000 | 1 |
| S3 | 2.5000 | 2.4402 | -.060 | -2.39 | .24251 | .001 | 1 |
| S4 | 5.0000 | 5.0339 | .034 | .678 | .49976 | .005 | 1 |
| S5 | 10.000 | 9.9827 | -.017 | -.173 | .99060 | .012 | 1 |
| S2 | .80000 | .84513 | .045 | 5.64 | .08431 | .001 | 1 |

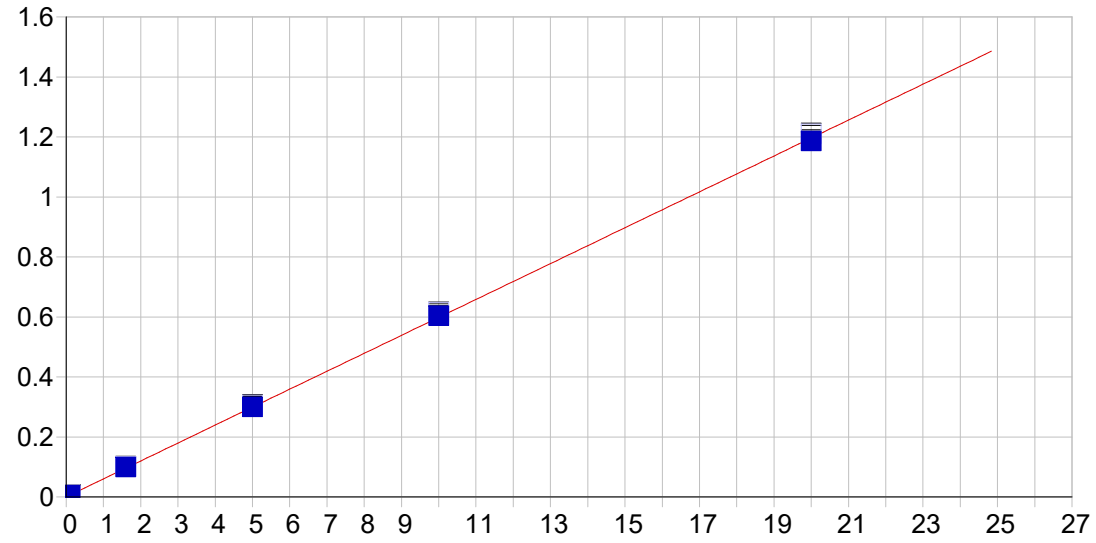



**Sb 206.833 {463}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000094 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.188285 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999957 | Status: | OK. |
| Std Error of Est: | 0.000065 | | |
| Predicted MDL: | 0.001304 | | |
| Predicted MQL: | 0.004345 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .00009 | .000 | 1 |
| S1 | .05000 | .04866 | -.001 | -2.68 | .00928 | .000 | 1 |
| S3 | 2.5000 | 2.4683 | -.032 | -1.27 | .46612 | .001 | 1 |
| S4 | 5.0000 | 5.0082 | .008 | .164 | .94562 | .010 | 1 |
| S5 | 10.000 | 9.9945 | -.005 | -.055 | 1.8870 | .023 | 1 |
| S2 | .80000 | .83028 | .030 | 3.79 | .15683 | .000 | 1 |

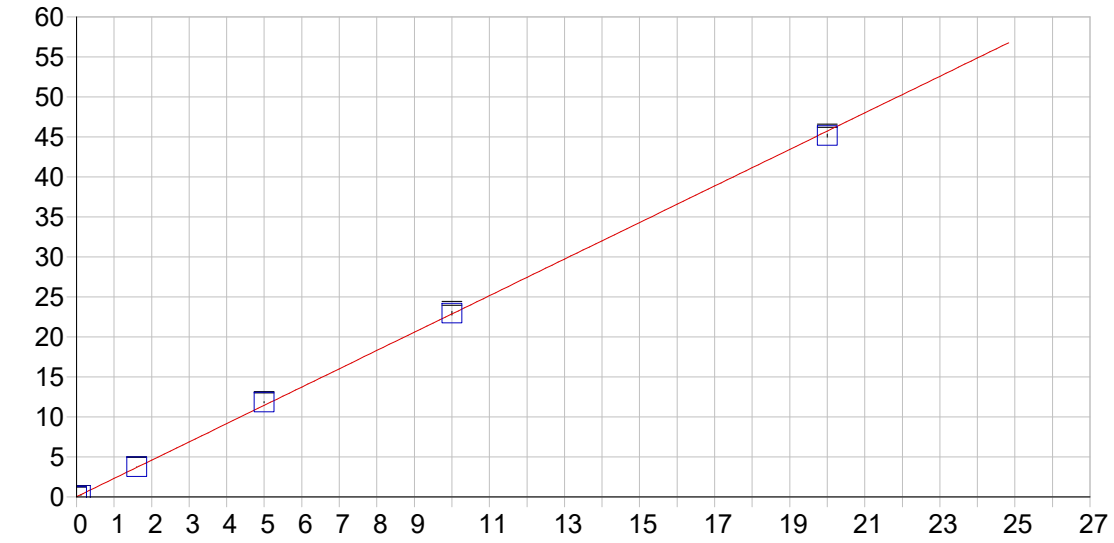



**Al 396.152 { 85}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000288 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.059801 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999936 | Status: | OK. |
| Std Error of Est: | 0.000051 | | |
| Predicted MDL: | 0.008904 | | |
| Predicted MQL: | 0.029679 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00029 | .000 | 1 |
| S1 | .10000 | .10912 | .009 | 9.12 | .00728 | .000 | 1 |
| S3 | 5.0000 | 5.0146 | .015 | .292 | .30596 | .002 | 1 |
| S4 | 10.000 | 10.090 | .090 | .898 | .61527 | .002 | 1 |
| S5 | 20.000 | 19.833 | -.167 | -.836 | 1.2095 | .004 | 1 |
| S2 | 1.6000 | 1.6532 | .053 | 3.32 | .10101 | .001 | 1 |

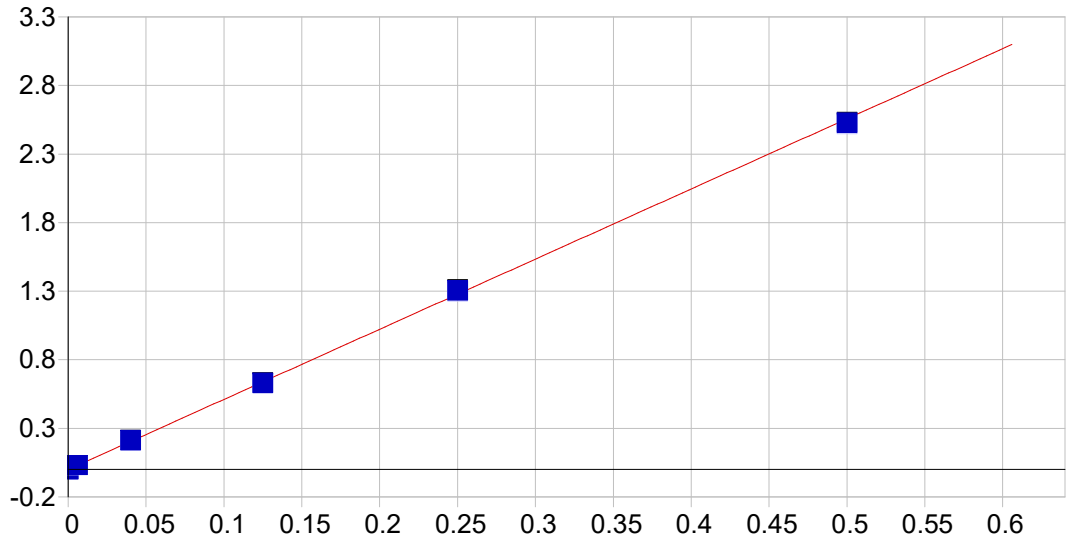



**Ba 493.409 { 68}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.021546 | Re-Slope: | 1.000000 |
| A1 (Gain): | 2.285023 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999869 | Status: | OK. |
| Std Error of Est: | 0.002740 | | |
| Predicted MDL: | 0.000765 | | |
| Predicted MQL: | 0.002549 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .02153 | .003 | 1 |
| S1 | .10000 | .10133 | .001 | 1.33 | .25308 | .004 | 1 |
| S3 | 5.0000 | 5.1702 | .170 | 3.40 | 11.835 | .079 | 1 |
| S4 | 10.000 | 10.037 | .037 | .366 | 22.955 | .253 | 1 |
| S5 | 20.000 | 19.758 | -.242 | -1.21 | 45.169 | .197 | 1 |
| S2 | 1.6000 | 1.6340 | .034 | 2.13 | 3.7553 | .021 | 1 |

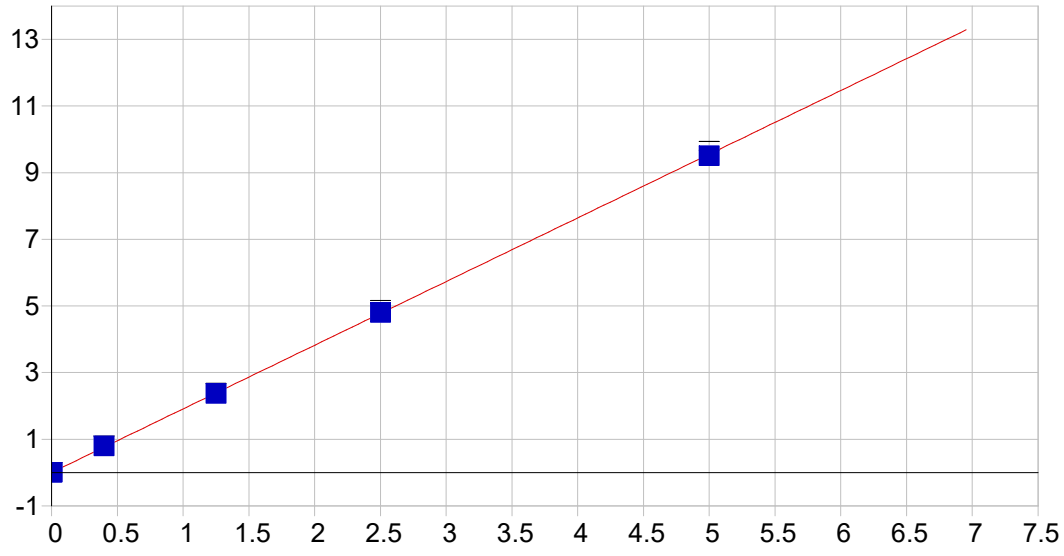



**Be 234.861 {144}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000476 | Re-Slope: | 1.000000 |
| A1 (Gain): | 5.114586 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999845 | Status: | OK. |
| Std Error of Est: | 0.000258 | | |
| Predicted MDL: | 0.000044 | | |
| Predicted MQL: | 0.000148 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00048 | .000 | 1 |
| S1 | .00600 | .00639 | .000 | 6.53 | .03199 | .000 | 1 |
| S3 | .12500 | .12328 | -.002 | -1.37 | .62720 | .003 | 1 |
| S4 | .25000 | .25517 | .005 | 2.07 | 1.2989 | .006 | 1 |
| S5 | .50000 | .49452 | -.005 | -1.10 | 2.5173 | .003 | 1 |
| S2 | .04000 | .04164 | .002 | 4.10 | .21158 | .001 | 1 |

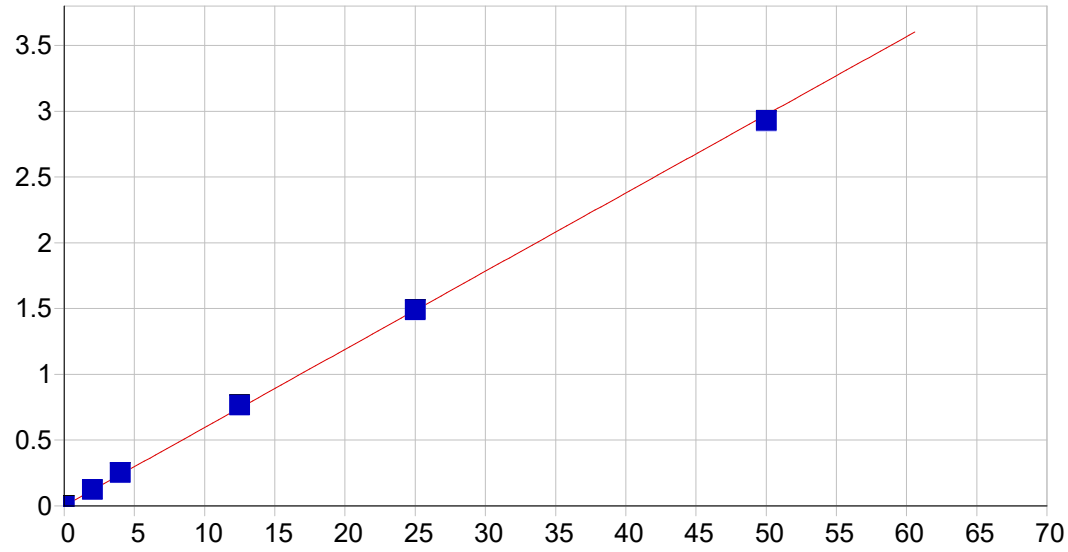



**Cd 226.502 {449}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000006 | Re-Slope: | 1.000000 |
| A1 (Gain): | 1.910879 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999937 | Status: | OK. |
| Std Error of Est: | 0.000195 | | |
| Predicted MDL: | 0.000091 | | |
| Predicted MQL: | 0.000305 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00001 | .000 | 1 |
| S1 | .00600 | .00613 | .000 | 2.14 | .01176 | .000 | 1 |
| S3 | 1.2500 | 1.2429 | -.007 | -.568 | 2.3767 | .002 | 1 |
| S4 | 2.5000 | 2.5144 | .014 | .578 | 4.8081 | .060 | 1 |
| S5 | 5.0000 | 4.9737 | -.026 | -.527 | 9.5106 | .133 | 1 |
| S2 | .40000 | .41887 | .019 | 4.72 | .80094 | .001 | 1 |

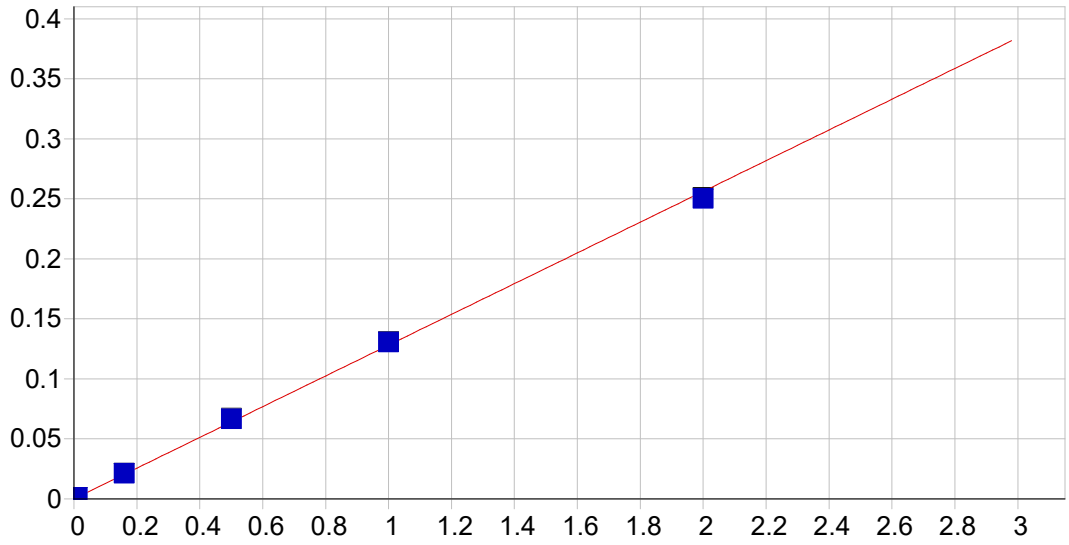



**Ca 373.690 { 90}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001052 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.059443 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999805 | Status: | OK. |
| Std Error of Est: | 0.000619 | | |
| Predicted MDL: | 0.008221 | | |
| Predicted MQL: | 0.027404 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00021 | -.000 | .000 | .00104 | .000 | 1 |
| S2 | 4.0000 | 4.2187 | .219 | 5.47 | .25115 | .001 | 1 |
| S3 | 12.500 | 12.876 | .376 | 3.01 | .76433 | .003 | 1 |
| S4 | 25.000 | 25.078 | .078 | .311 | 1.4876 | .003 | 1 |
| S5 | 50.000 | 49.266 | -.734 | -1.47 | 2.9212 | .001 | 1 |
| S1 | 2.0000 | 2.0616 | .062 | 3.08 | .12351 | .001 | 1 |

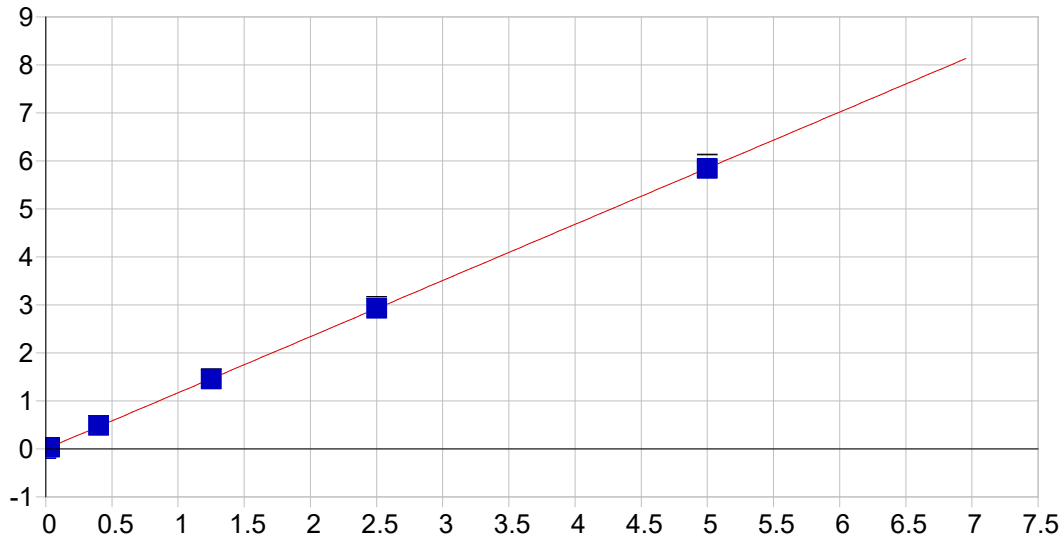



**Cr 267.716 {126}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000023 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.128062 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999675 | Status: | OK. |
| Std Error of Est: | 0.000024 | | |
| Predicted MDL: | 0.000317 | | |
| Predicted MQL: | 0.001057 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00002 | .000 | 1 |
| S1 | .01000 | .00996 | -.000 | -.395 | .00130 | .000 | 1 |
| S3 | .50000 | .51927 | .019 | 3.85 | .06654 | .001 | 1 |
| S4 | 1.0000 | 1.0201 | .020 | 2.01 | .13070 | .000 | 1 |
| S5 | 2.0000 | 1.9547 | -.045 | -2.26 | .25043 | .001 | 1 |
| S2 | .16000 | .16588 | .006 | 3.68 | .02127 | .000 | 1 |

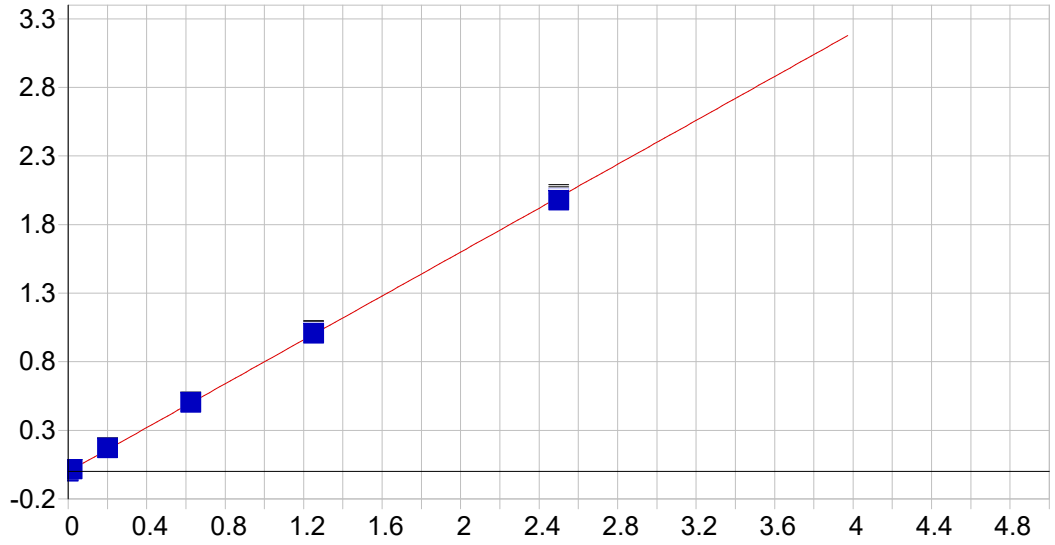



**Co 228.616 {448}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000029 | Re-Slope: | 1.000000 |
| A1 (Gain): | 1.169571 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999962 | Status: | OK. |
| Std Error of Est: | 0.000207 | | |
| Predicted MDL: | 0.000166 | | |
| Predicted MQL: | 0.000554 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00003 | .000 | 1 |
| S1 | .03000 | .02971 | -.000 | -.959 | .03457 | .000 | 1 |
| S3 | 1.2500 | 1.2433 | -.007 | -.535 | 1.4566 | .001 | 1 |
| S4 | 2.5000 | 2.4996 | -.000 | -.016 | 2.9284 | .038 | 1 |
| S5 | 5.0000 | 4.9913 | -.009 | -.173 | 5.8476 | .084 | 1 |
| S2 | .40000 | .41605 | .016 | 4.01 | .48737 | .001 | 1 |

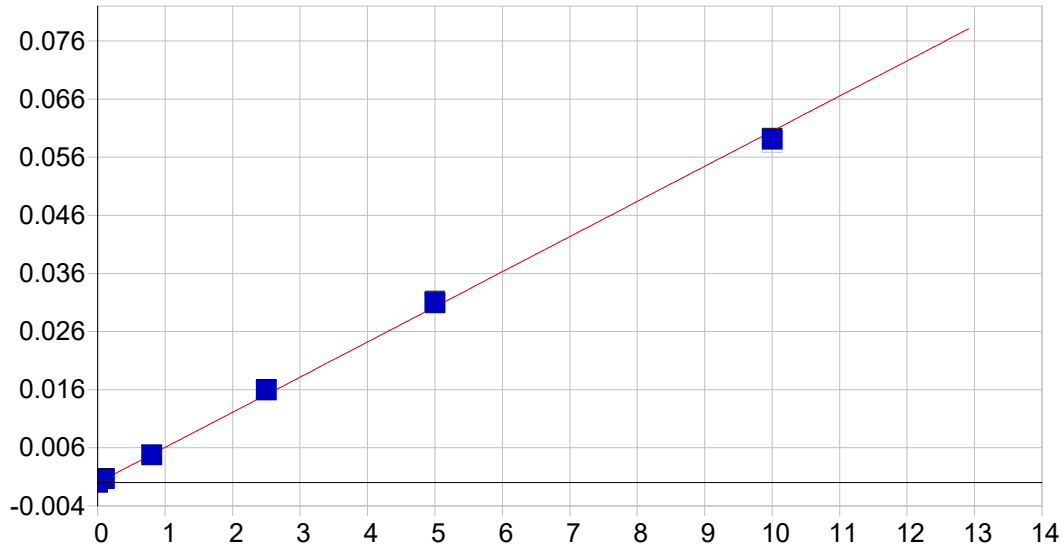



**Cu 224.700 {450}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000311 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.799965 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999834 | Status: | OK. |
| Std Error of Est: | 0.000173 | | |
| Predicted MDL: | 0.000395 | | |
| Predicted MQL: | 0.001315 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00031 | .000 | 1 |
| S1 | .02000 | .02192 | .002 | 9.60 | .01741 | .000 | 1 |
| S3 | .62500 | .62834 | .003 | .535 | .50670 | .001 | 1 |
| S4 | 1.2500 | 1.2595 | .010 | .761 | 1.0160 | .012 | 1 |
| S5 | 2.5000 | 2.4714 | -.029 | -1.14 | 1.9942 | .025 | 1 |
| S2 | .20000 | .21382 | .014 | 6.91 | .17213 | .001 | 1 |

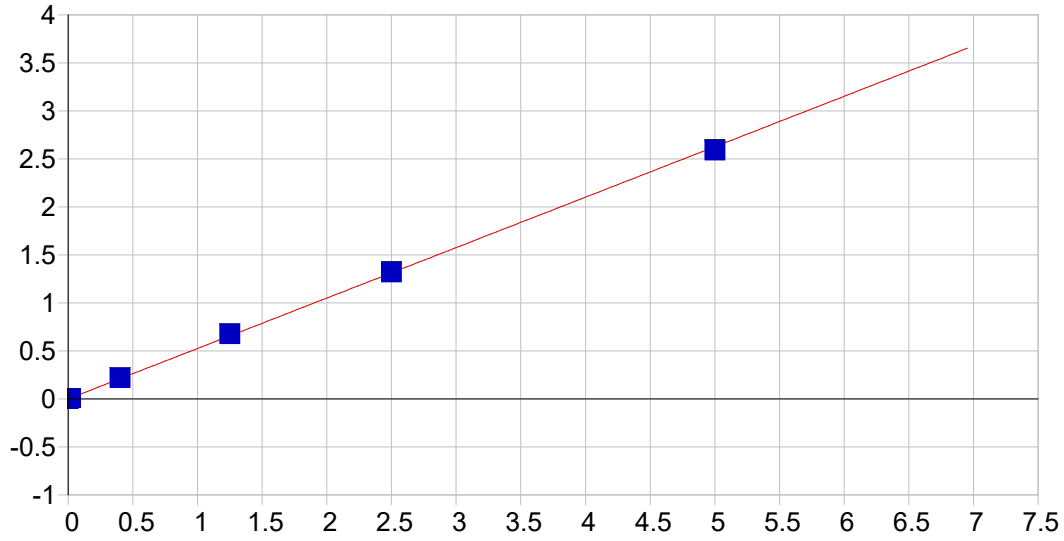



**Fe 240.488 {140}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000009 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.006048 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999555 | Status: | OK. |
| Std Error of Est: | 0.000009 | | |
| Predicted MDL: | 0.003607 | | |
| Predicted MQL: | 0.012024 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00001 | .000 | 1 |
| S1 | .10000 | .10442 | .004 | 4.42 | .00063 | .000 | 1 |
| S3 | 2.5000 | 2.6304 | .130 | 5.21 | .01579 | .000 | 1 |
| S4 | 5.0000 | 5.1222 | .122 | 2.44 | .03073 | .000 | 1 |
| S5 | 10.000 | 9.7597 | -.240 | -2.40 | .05852 | .000 | 1 |
| S2 | .80000 | .78332 | -.017 | -2.08 | .00471 | .000 | 1 |

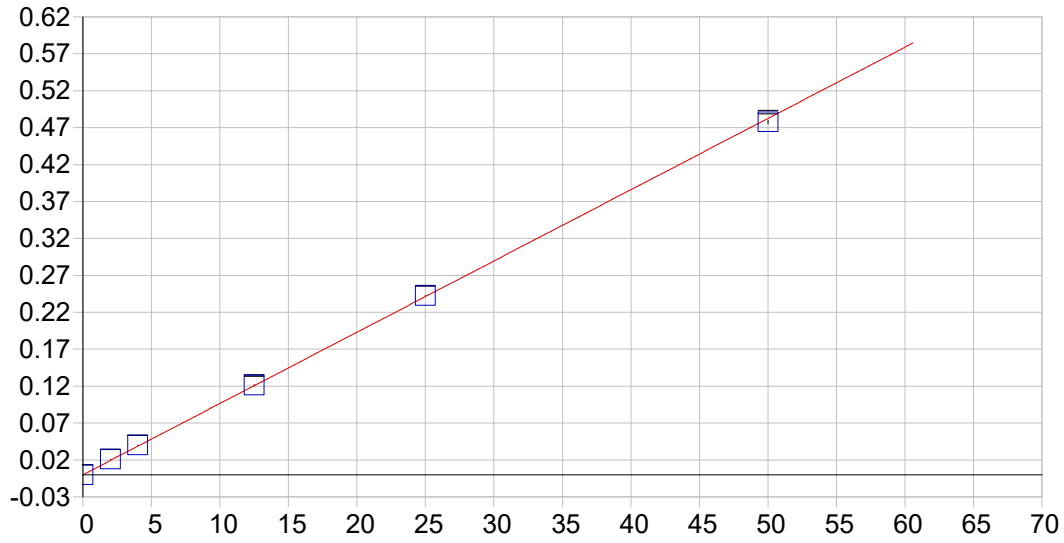



**Mn 257.610 {131}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000073 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.525349 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999814 | Status: | OK. |
| Std Error of Est: | 0.000168 | | |
| Predicted MDL: | 0.000320 | | |
| Predicted MQL: | 0.001065 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00007 | .000 | 1 |
| S1 | .02000 | .02123 | .001 | 6.14 | .01123 | .000 | 1 |
| S3 | 1.2500 | 1.2852 | .035 | 2.82 | .67532 | .005 | 1 |
| S4 | 2.5000 | 2.5149 | .015 | .598 | 1.3214 | .005 | 1 |
| S5 | 5.0000 | 4.9269 | -.073 | -1.46 | 2.5887 | .007 | 1 |
| S2 | .40000 | .42174 | .022 | 5.44 | .22166 | .001 | 1 |

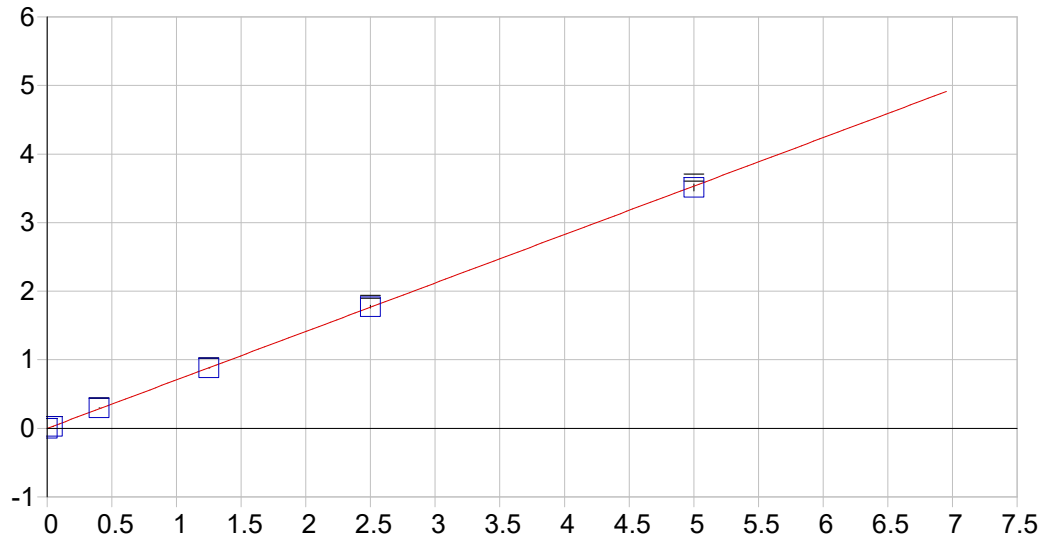



**Mg 279.079 {121}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000006 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.009650 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999859 | Status: | OK. |
| Std Error of Est: | 0.000086 | | |
| Predicted MDL: | 0.019038 | | |
| Predicted MQL: | 0.063459 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00024 | -.000 | .000 | .00000 | .000 | 1 |
| S2 | 4.0000 | 4.1430 | .143 | 3.58 | .03999 | .000 | 1 |
| S3 | 12.500 | 12.545 | .045 | .361 | .12107 | .001 | 1 |
| S4 | 25.000 | 25.140 | .140 | .559 | .24260 | .000 | 1 |
| S5 | 50.000 | 49.497 | -.503 | -1.01 | .47765 | .002 | 1 |
| S1 | 2.0000 | 2.1749 | .175 | 8.74 | .02099 | .000 | 1 |

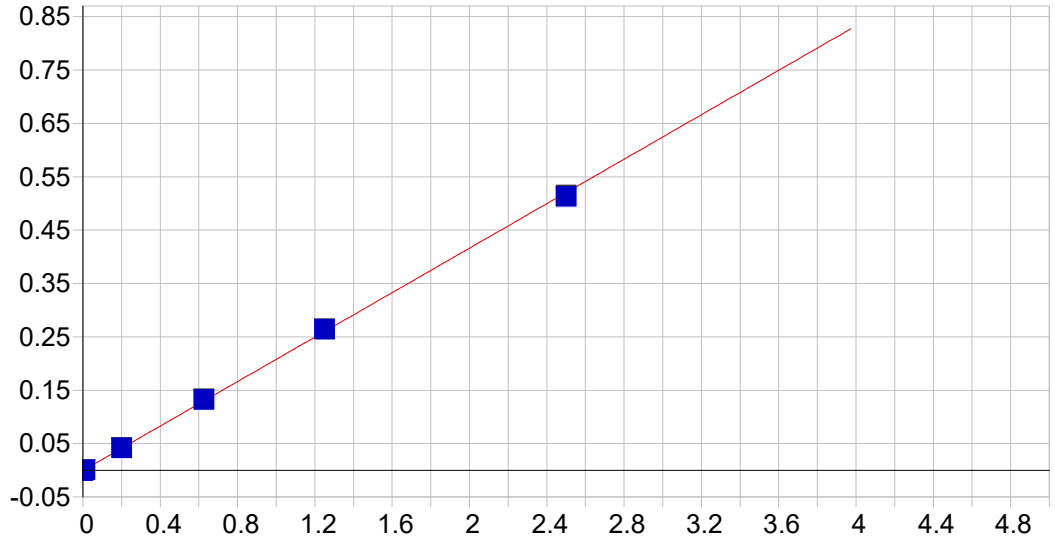



**Ni 231.604 {446}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000075 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.706465 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999920 | Status: | OK. |
| Std Error of Est: | 0.000210 | | |
| Predicted MDL: | 0.000270 | | |
| Predicted MQL: | 0.000901 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00007 | .000 | 1 |
| S1 | .04000 | .03951 | -.000 | -1.23 | .02799 | .000 | 1 |
| S3 | 1.2500 | 1.2459 | -.004 | -.332 | .88023 | .002 | 1 |
| S4 | 2.5000 | 2.5103 | .010 | .412 | 1.7735 | .023 | 1 |
| S5 | 5.0000 | 4.9719 | -.028 | -.562 | 3.5126 | .051 | 1 |
| S2 | .40000 | .42240 | .022 | 5.60 | .29849 | .000 | 1 |

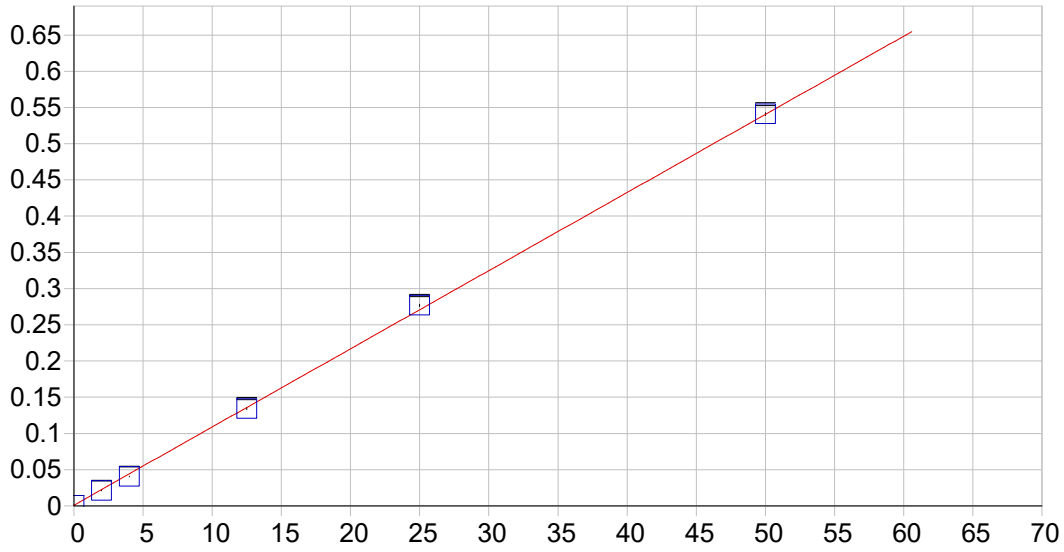



**Ag 328.068 {103}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000623 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.208404 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999854 | Status: | OK. |
| Std Error of Est: | 0.000029 | | |
| Predicted MDL: | 0.000331 | | |
| Predicted MQL: | 0.001105 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | -.00062 | .000 | 1 |
| S1 | .01000 | .00855 | -.001 | -14.5 | .00115 | .000 | 1 |
| S3 | .62500 | .63775 | .013 | 2.04 | .13179 | .001 | 1 |
| S4 | 1.2500 | 1.2710 | .021 | 1.68 | .26327 | .001 | 1 |
| S5 | 2.5000 | 2.4653 | -.035 | -1.39 | .51115 | .002 | 1 |
| S2 | .20000 | .20234 | .002 | 1.17 | .04138 | .000 | 1 |

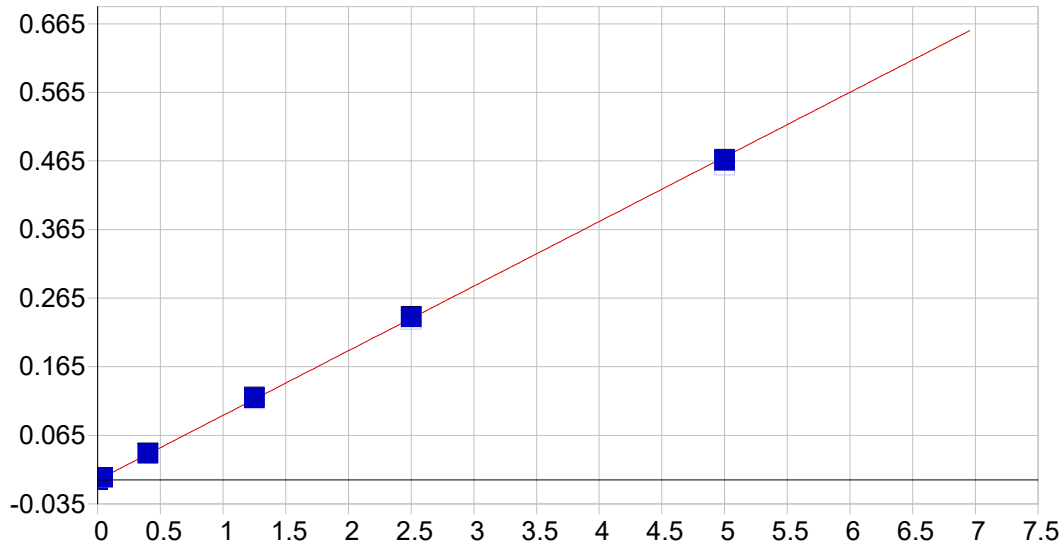



**Na 589.592 { 57}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001095 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.010788 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999737 | Status: | OK. |
| Std Error of Est: | 0.000131 | | |
| Predicted MDL: | 0.011354 | | |
| Predicted MQL: | 0.037847 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00027 | .000 | .000 | .00110 | .000 | 1 |
| S2 | 4.0000 | 3.6754 | -.325 | -8.11 | .04075 | .000 | 1 |
| S3 | 12.500 | 12.358 | -.142 | -1.14 | .13441 | .002 | 1 |
| S4 | 25.000 | 25.554 | .554 | 2.22 | .27677 | .002 | 1 |
| S5 | 50.000 | 50.046 | .046 | .093 | .54100 | .002 | 1 |
| S1 | 2.0000 | 1.8667 | -.133 | -6.66 | .02123 | .000 | 1 |

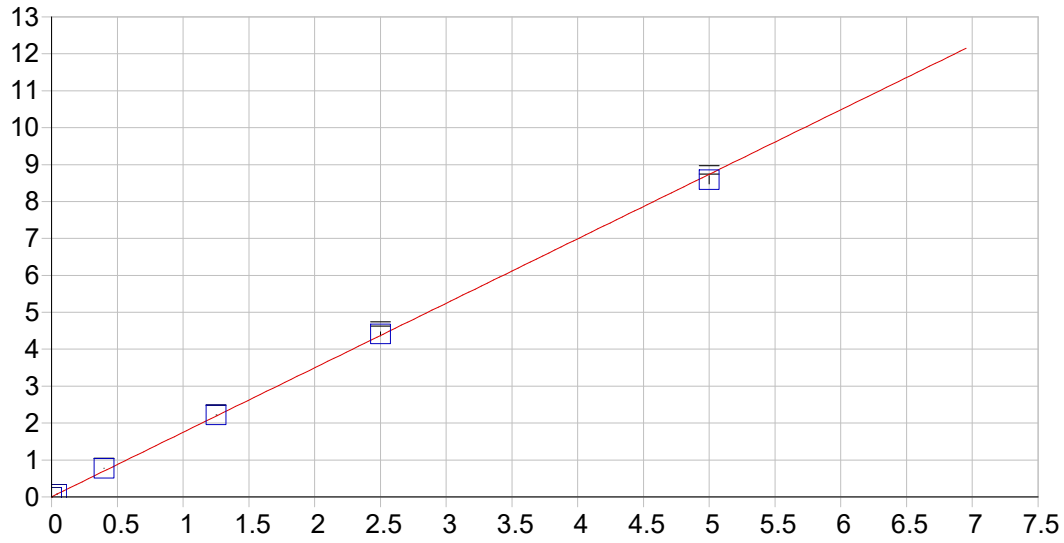



**V 292.402 {115}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000140 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.094213 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999900 | Status: | OK. |
| Std Error of Est: | 0.000031 | | |
| Predicted MDL: | 0.002265 | | |
| Predicted MQL: | 0.007550 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00014 | .000 | 1 |
| S1 | .04000 | .04176 | .002 | 4.39 | .00365 | .000 | 1 |
| S3 | 1.2500 | 1.2738 | .024 | 1.91 | .11815 | .001 | 1 |
| S4 | 2.5000 | 2.5204 | .020 | .816 | .23388 | .001 | 1 |
| S5 | 5.0000 | 4.9414 | -.059 | -1.17 | .45854 | .002 | 1 |
| S2 | .40000 | .41264 | .013 | 3.16 | .03819 | .000 | 1 |

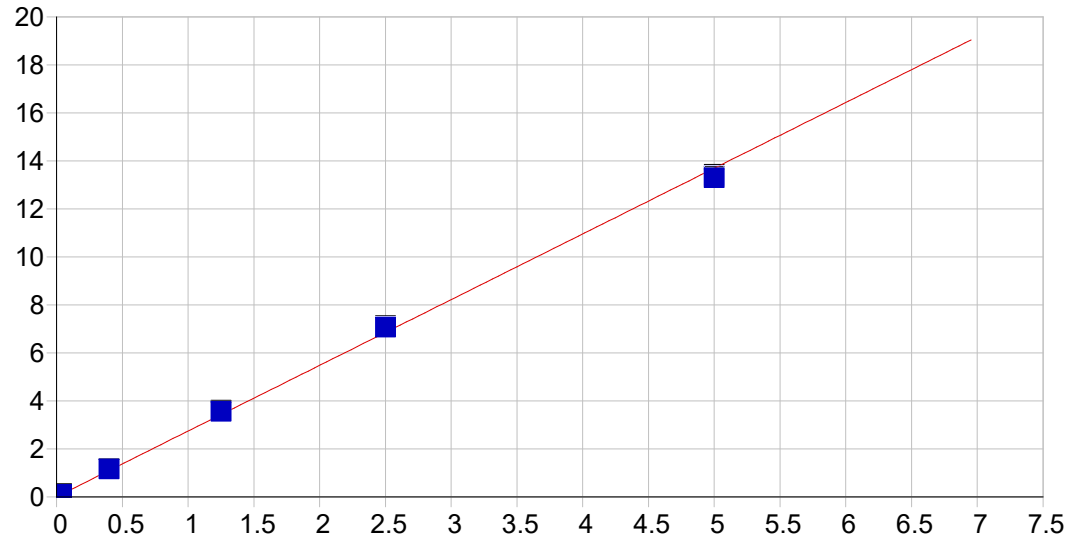



**Zn 206.200 {464}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.003079 | Re-Slope: | 1.000000 |
| A1 (Gain): | 1.746973 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999651 | Status: | OK. |
| Std Error of Est: | 0.001083 | | |
| Predicted MDL: | 0.000138 | | |
| Predicted MQL: | 0.000461 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00307 | .000 | 1 |
| S1 | .04000 | .04225 | .002 | 5.63 | .07690 | .001 | 1 |
| S3 | 1.2500 | 1.2674 | .017 | 1.39 | 2.2172 | .001 | 1 |
| S4 | 2.5000 | 2.5253 | .025 | 1.01 | 4.4147 | .057 | 1 |
| S5 | 5.0000 | 4.9136 | -.086 | -1.73 | 8.5870 | .111 | 1 |
| S2 | .40000 | .44143 | .041 | 10.4 | .77424 | .002 | 1 |

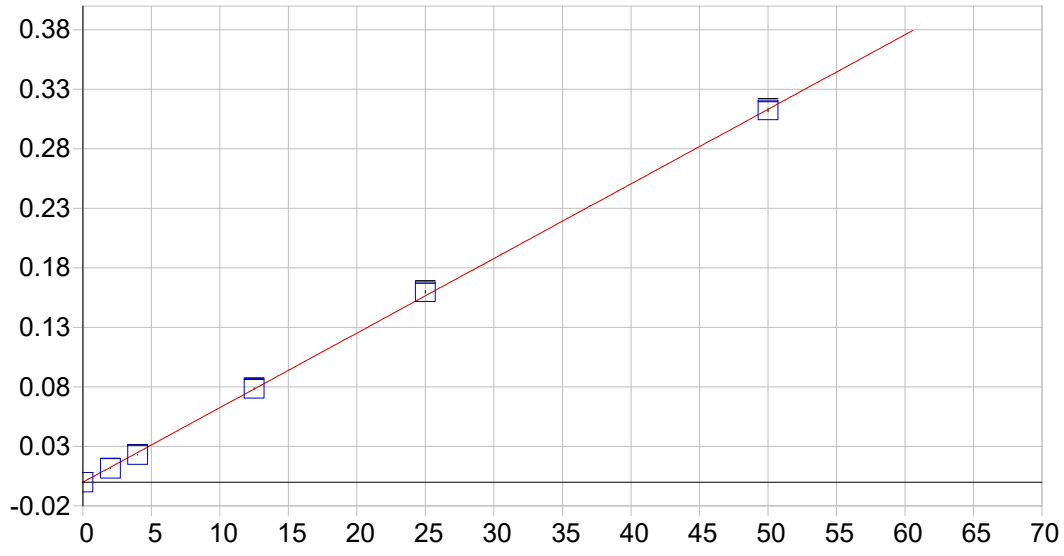



**Zn 213.856 {158}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.005707 | Re-Slope: | 1.000000 |
| A1 (Gain): | 2.738041 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999483 | Status: | OK. |
| Std Error of Est: | 0.002081 | | |
| Predicted MDL: | 0.000193 | | |
| Predicted MQL: | 0.000645 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | .00569 | .000 | 1 |
| S1 | .04000 | .04327 | .003 | 8.17 | .12494 | .002 | 1 |
| S3 | 1.2500 | 1.2967 | .047 | 3.73 | 3.5798 | .031 | 1 |
| S4 | 2.5000 | 2.5770 | .077 | 3.08 | 7.1092 | .019 | 1 |
| S5 | 5.0000 | 4.8535 | -.147 | -2.93 | 13.390 | .048 | 1 |
| S2 | .40000 | .41962 | .020 | 4.91 | 1.1623 | .001 | 1 |

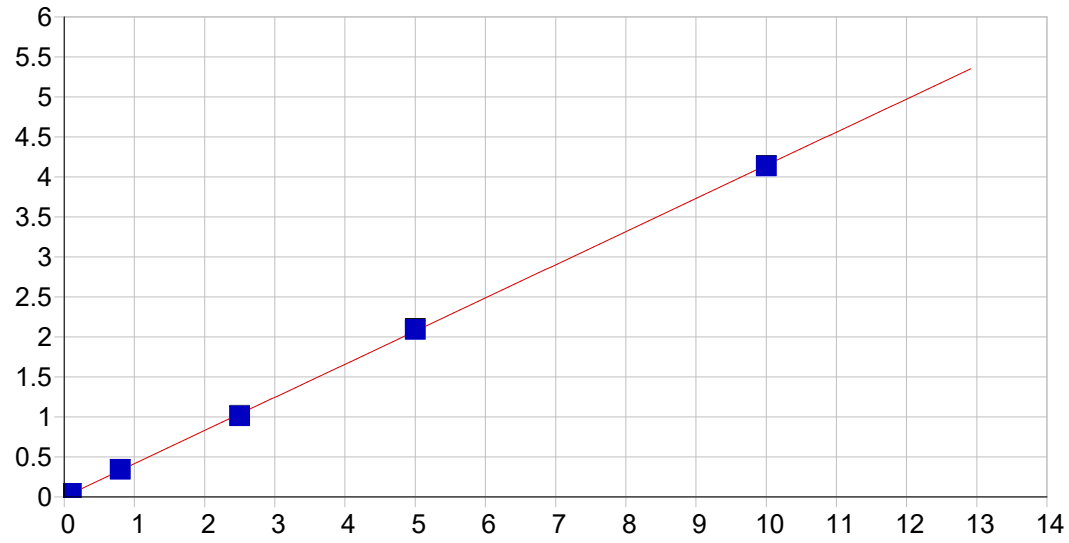



**K 766.490 { 44}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000072 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.006266 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999754 | Status: | OK. |
| Std Error of Est: | 0.000074 | | |
| Predicted MDL: | 0.026526 | | |
| Predicted MQL: | 0.088419 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00025 | .000 | .000 | -.00007 | .000 | 1 |
| S2 | 4.0000 | 3.6821 | -.318 | -7.95 | .02300 | .000 | 1 |
| S3 | 12.500 | 12.550 | .050 | .400 | .07857 | .001 | 1 |
| S4 | 25.000 | 25.514 | .514 | 2.06 | .15980 | .001 | 1 |
| S5 | 50.000 | 49.893 | -.107 | -.214 | .31256 | .001 | 1 |
| S1 | 2.0000 | 1.8607 | -.139 | -6.96 | .01159 | .000 | 1 |

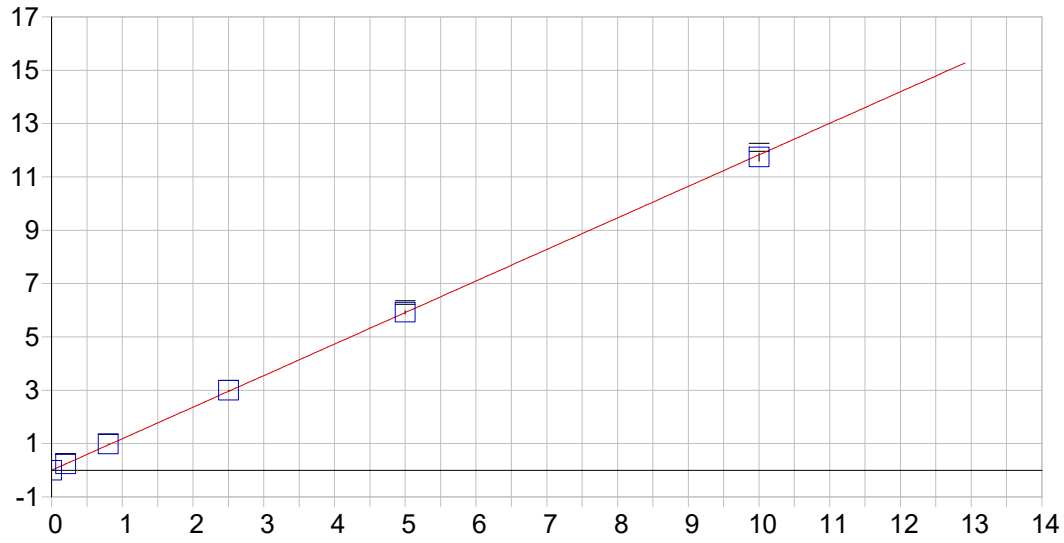



**B 249.678 {135}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001044 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.414366 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999927 | Status: | OK. |
| Std Error of Est: | 0.000262 | | |
| Predicted MDL: | 0.000640 | | |
| Predicted MQL: | 0.002135 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00104 | .000 | 1 |
| S1 | .10000 | .10285 | .003 | 2.85 | .04349 | .000 | 1 |
| S3 | 2.5000 | 2.4416 | -.058 | -2.34 | 1.0107 | .006 | 1 |
| S4 | 5.0000 | 5.0490 | .049 | .980 | 2.0891 | .012 | 1 |
| S5 | 10.000 | 9.9827 | -.017 | -.173 | 4.1294 | .002 | 1 |
| S2 | .80000 | .82385 | .024 | 2.98 | .34177 | .001 | 1 |

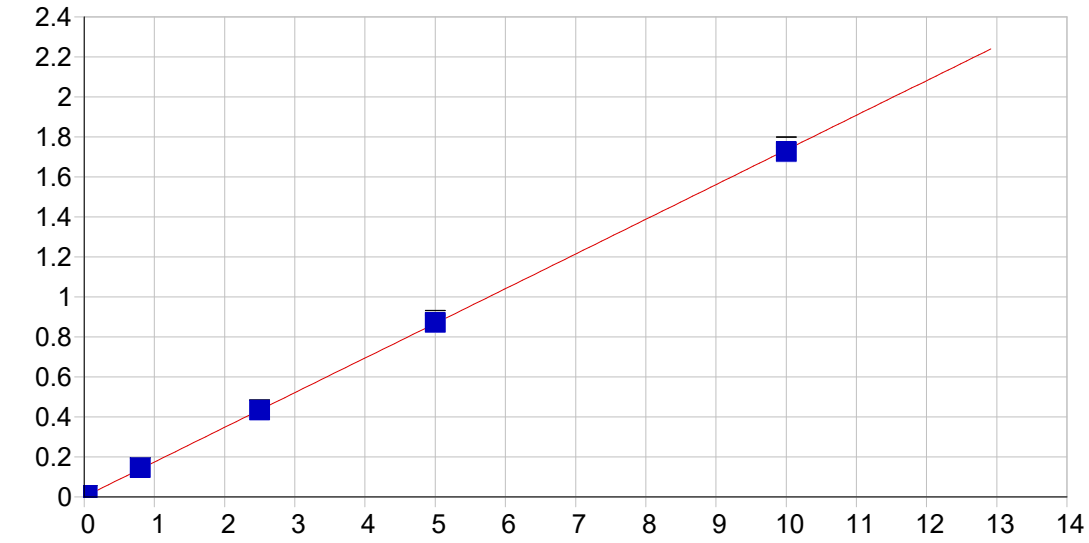



**Mo 202.030 {467}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000221 | Re-Slope: | 1.000000 |
| A1 (Gain): | 1.182801 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999938 | Status: | OK. |
| Std Error of Est: | 0.000979 | | |
| Predicted MDL: | 0.000209 | | |
| Predicted MQL: | 0.000698 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00001 | -.000 | .000 | -.00024 | .000 | 1 |
| S1 | .20000 | .20355 | .004 | 1.78 | .24054 | .004 | 1 |
| S3 | 2.5000 | 2.5334 | .033 | 1.34 | 2.9963 | .004 | 1 |
| S4 | 5.0000 | 5.0064 | .006 | .128 | 5.9213 | .064 | 1 |
| S5 | 10.000 | 9.9255 | -.075 | -.745 | 11.740 | .147 | 1 |
| S2 | .80000 | .83116 | .031 | 3.90 | .98288 | .003 | 1 |

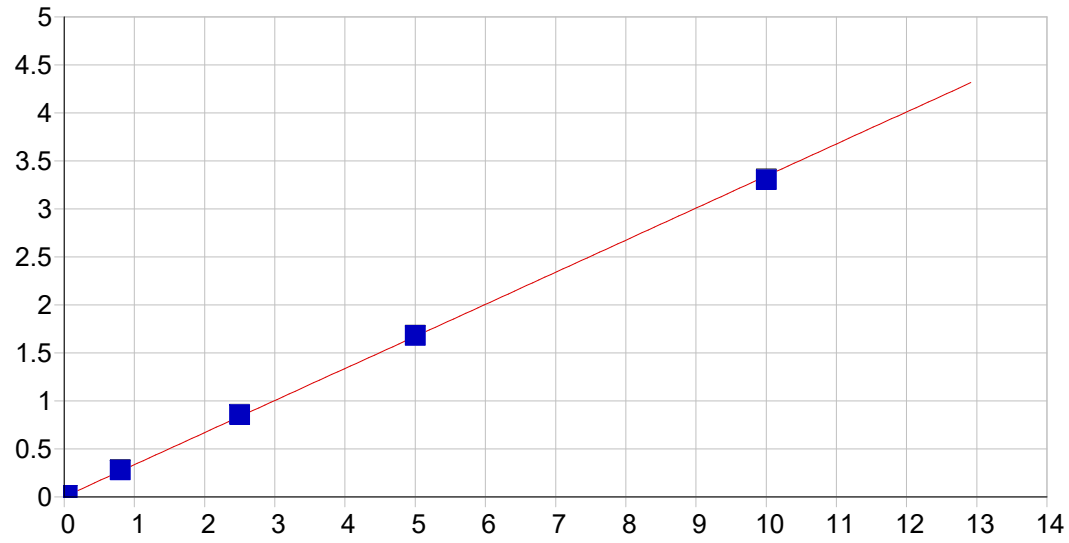



**Sn 189.989 {478}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000883 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.173370 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999936 | Status: | OK. |
| Std Error of Est: | 0.000065 | | |
| Predicted MDL: | 0.000576 | | |
| Predicted MQL: | 0.001921 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | .00088 | .000 | 1 |
| S1 | .04000 | .03578 | -.004 | -10.6 | .00708 | .000 | 1 |
| S3 | 2.5000 | 2.4977 | -.002 | -.092 | .43346 | .001 | 1 |
| S4 | 5.0000 | 5.0224 | .022 | .447 | .87072 | .011 | 1 |
| S5 | 10.000 | 9.9492 | -.051 | -.508 | 1.7240 | .025 | 1 |
| S2 | .80000 | .83496 | .035 | 4.37 | .14550 | .000 | 1 |

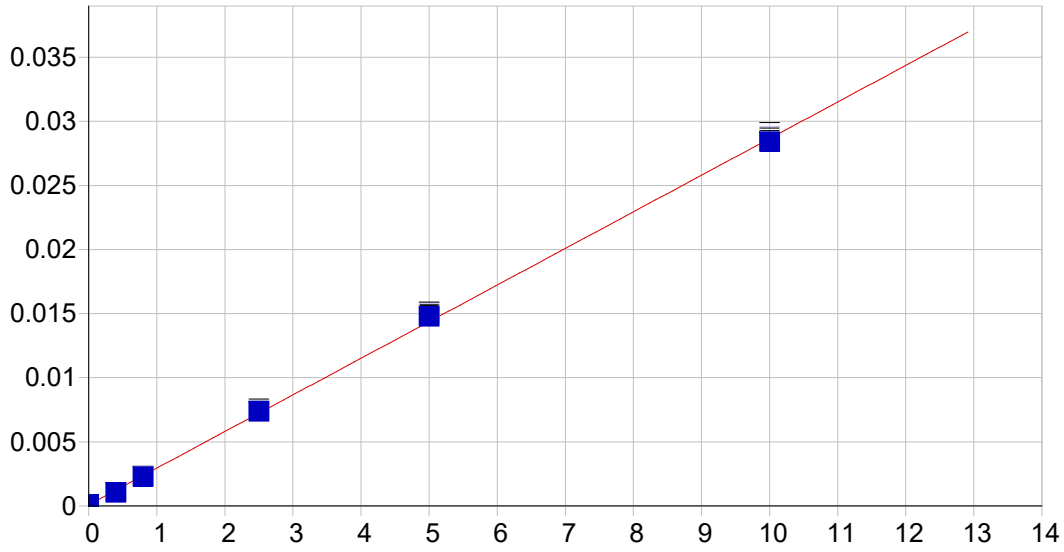



**Ti 336.121 {100}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.001400 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.334056 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999896 | Status: | OK. |
| Std Error of Est: | 0.000160 | | |
| Predicted MDL: | 0.000950 | | |
| Predicted MQL: | 0.003167 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | .00140 | .000 | 1 |
| S1 | .04000 | .04142 | .001 | 3.56 | .01523 | .000 | 1 |
| S3 | 2.5000 | 2.5573 | .057 | 2.29 | .85539 | .005 | 1 |
| S4 | 5.0000 | 5.0240 | .024 | .480 | 1.6791 | .003 | 1 |
| S5 | 10.000 | 9.8880 | -.112 | -1.12 | 3.3033 | .005 | 1 |
| S2 | .80000 | .82928 | .029 | 3.66 | .27833 | .001 | 1 |

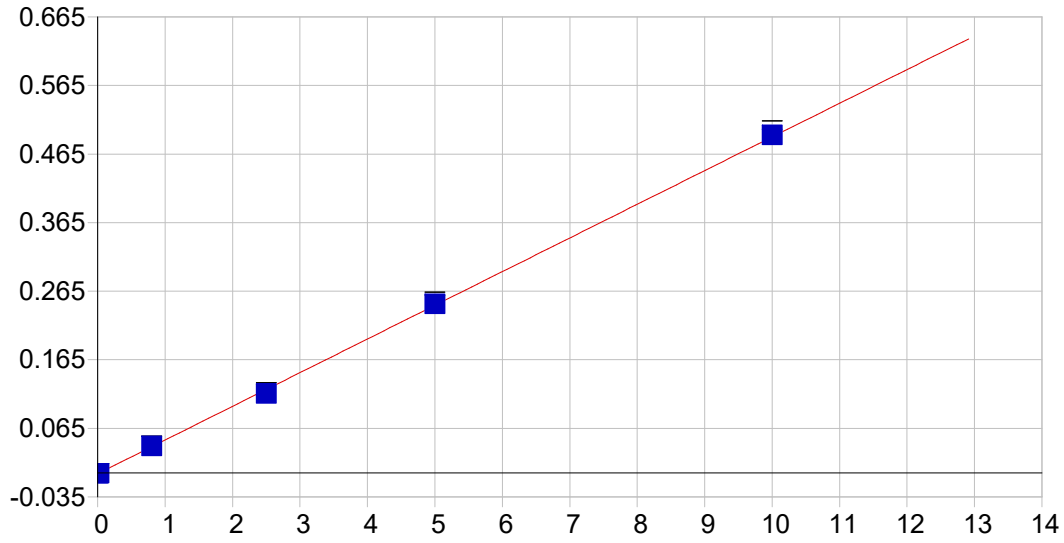



**Si 288.158 {117}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000091 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.002857 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999513 | Status: | OK. |
| Std Error of Est: | 0.000010 | | |
| Predicted MDL: | 0.009703 | | |
| Predicted MQL: | 0.032342 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00007 | .000 | .000 | .00009 | .000 | 1 |
| S1 | .40000 | .33261 | -.067 | -16.8 | .00104 | .000 | 1 |
| S3 | 2.5000 | 2.5453 | .045 | 1.81 | .00747 | .000 | 1 |
| S4 | 5.0000 | 5.1454 | .145 | 2.91 | .01500 | .000 | 1 |
| S5 | 10.000 | 9.9109 | -.089 | -.891 | .02883 | .000 | 1 |
| S2 | .80000 | .76490 | -.035 | -4.39 | .00231 | .000 | 1 |

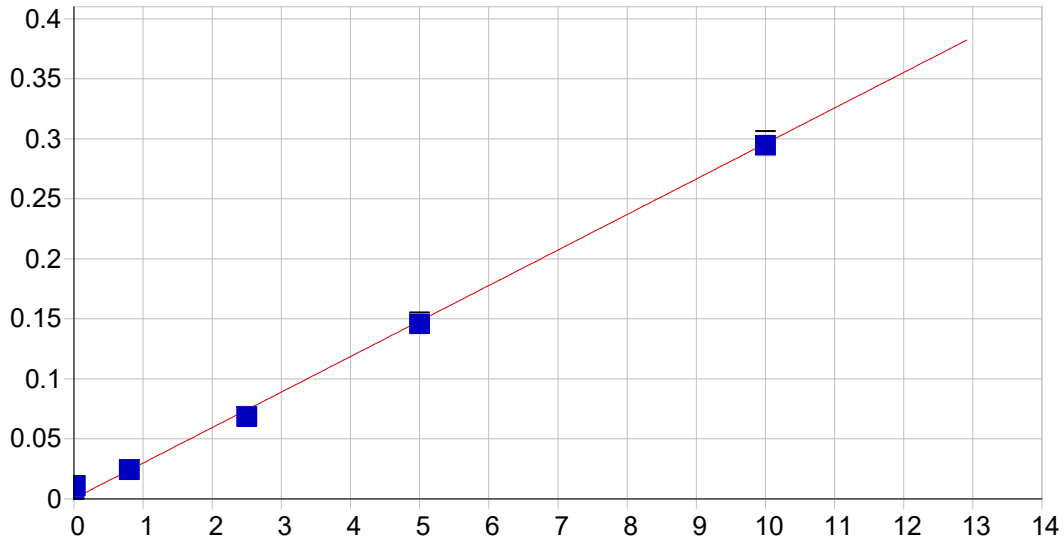



**P 177.495 {490}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.001137 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.049110 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999794 | Status: | OK. |
| Std Error of Est: | 0.000023 | | |
| Predicted MDL: | 0.001837 | | |
| Predicted MQL: | 0.006125 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00000 | .000 | .000 | -.00114 | .000 | 1 |
| S1 | .02000 | .01756 | -.002 | -12.2 | -.00027 | .000 | 1 |
| S3 | 2.5000 | 2.3780 | -.122 | -4.88 | .11563 | .001 | 1 |
| S4 | 5.0000 | 5.0449 | .045 | .898 | .24658 | .003 | 1 |
| S5 | 10.000 | 10.059 | .059 | .588 | .49277 | .006 | 1 |
| S2 | .80000 | .82078 | .021 | 2.60 | .03917 | .000 | 1 |

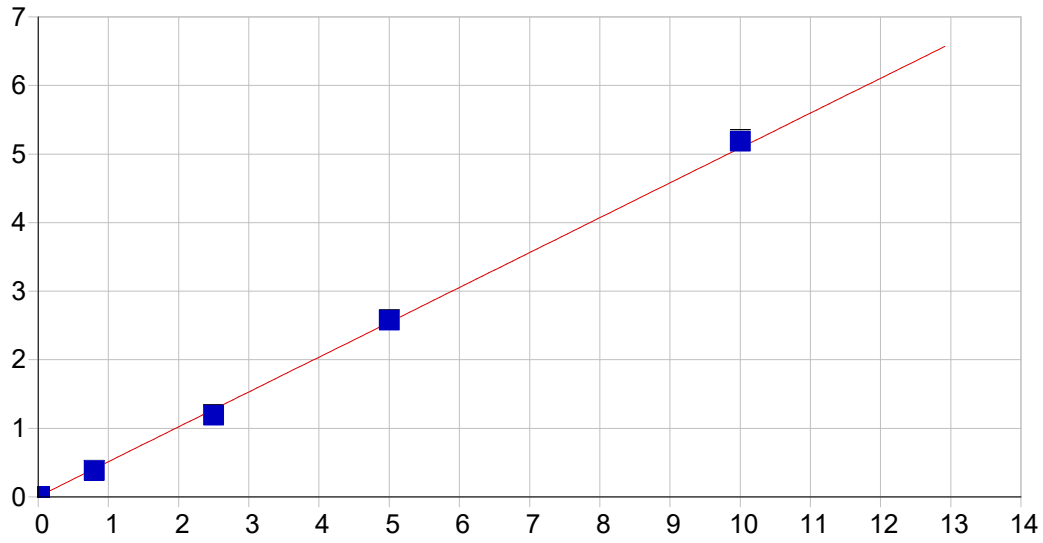



**S 182.034 {485}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.000276 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.029579 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.877490 | Status: | OK. |
| Std Error of Est: | 0.000378 | | |
| Predicted MDL: | 0.002773 | | |
| Predicted MQL: | 0.009245 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00033 | -.000 | .000 | .00027 | .000 | 1 |
| S1 | .02000 | .34930 | .329 | 1650. | .01058 | .000 | 1 |
| S3 | 2.5000 | 2.3079 | -.192 | -7.68 | .06835 | .000 | 1 |
| S4 | 5.0000 | 4.9221 | -.078 | -1.56 | .14548 | .002 | 1 |
| S5 | 10.000 | 9.9460 | -.054 | -.540 | .29370 | .004 | 1 |
| S2 | .80000 | .80789 | .008 | .986 | .02411 | .000 | 1 |

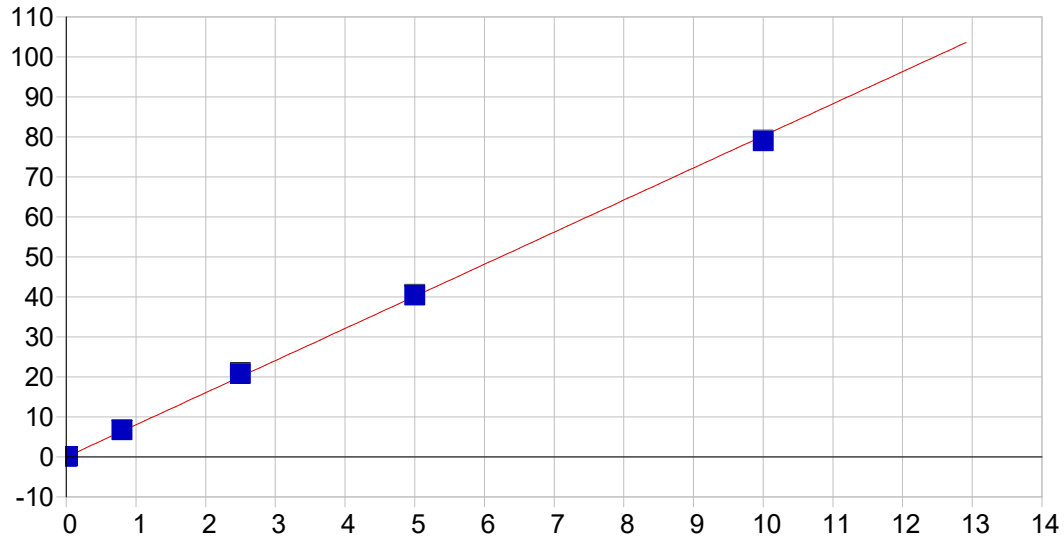



**Li 670.784 { 50}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | 0.004729 | Re-Slope: | 1.000000 |
| A1 (Gain): | 0.508339 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999041 | Status: | OK. |
| Std Error of Est: | 0.000522 | | |
| Predicted MDL: | 0.002257 | | |
| Predicted MQL: | 0.007522 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | .00002 | .000 | .000 | .00474 | .001 | 1 |
| S5 | 10.000 | 10.189 | .189 | 1.89 | 5.1886 | .023 | 1 |
| S4 | 5.0000 | 5.0546 | .055 | 1.09 | 2.5765 | .007 | 1 |
| S3 | 2.5000 | 2.3302 | -.170 | -6.79 | 1.1904 | .010 | 1 |
| S1 | .02000 | .00228 | -.018 | -88.6 | .00607 | .001 | 1 |
| S2 | .80000 | .74460 | -.055 | -6.93 | .38360 | .002 | 1 |

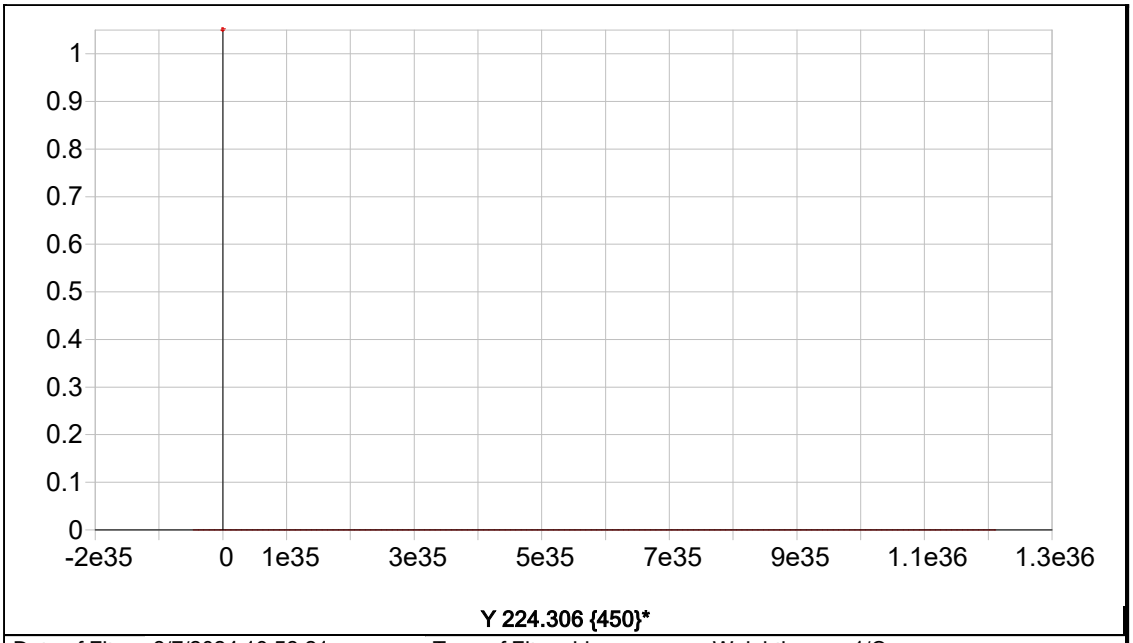



**Sr 407.771 { 83}**

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | Type of Fit: | Linear | Weighting: | 1/Conc |

| | | | |
|---|---|---|---|
| A0 (Offset): | -0.000025 | Re-Slope: | 1.000000 |
| A1 (Gain): | 8.025497 | Y-int: | 0.000000 |
| A2 (Curvature): | 0.000000 | | |
| n (Exponent): | 1.000000 | | |
| Correlation: | 0.999788 | Status: | OK. |
| Std Error of Est: | 0.003879 | | |
| Predicted MDL: | 0.000066 | | |
| Predicted MQL: | 0.000221 | | |

| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|
| S0 | .00000 | -.00000 | -.000 | .000 | -.00004 | .000 | 1 |
| S1 | .02000 | .02071 | .001 | 3.55 | .16698 | .003 | 1 |
| S3 | 2.5000 | 2.5902 | .090 | 3.61 | 20.807 | .195 | 1 |
| S4 | 5.0000 | 5.0383 | .038 | .766 | 40.475 | .185 | 1 |
| S5 | 10.000 | 9.8358 | -.164 | -1.64 | 79.018 | .147 | 1 |
| S2 | .80000 | .83499 | .035 | 4.37 | 6.7076 | .030 | 1 |

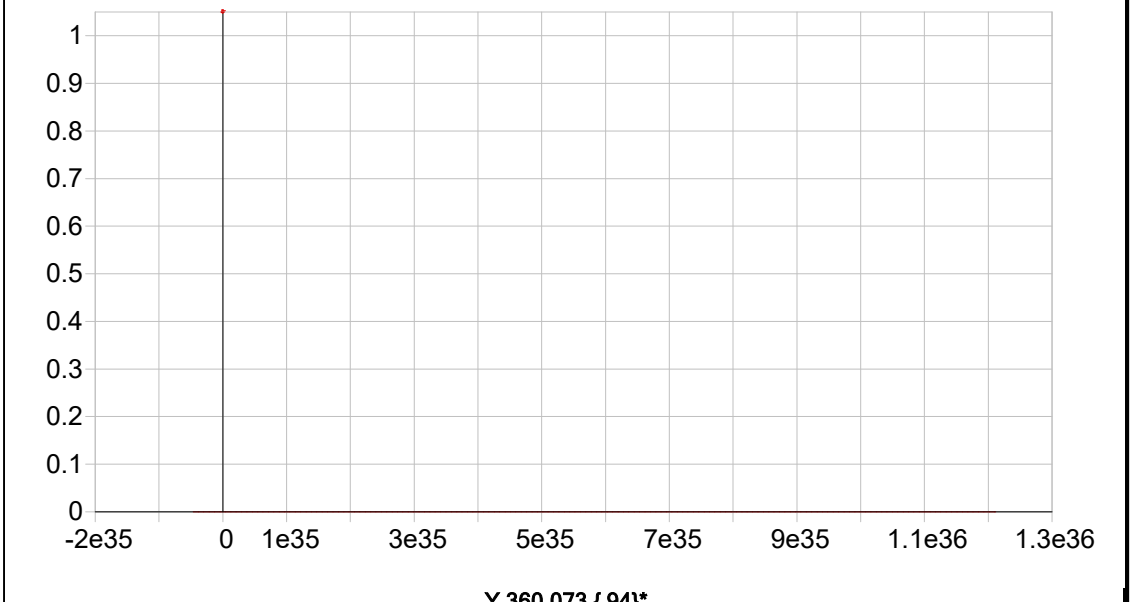



**Y 224.306 {450}***

| | | | | | |
|---|---|---|---|---|---|
| Date of Fit: | 8/7/2024 19:58:21 | 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 |
|---|---|---|---|---|---|---|---|



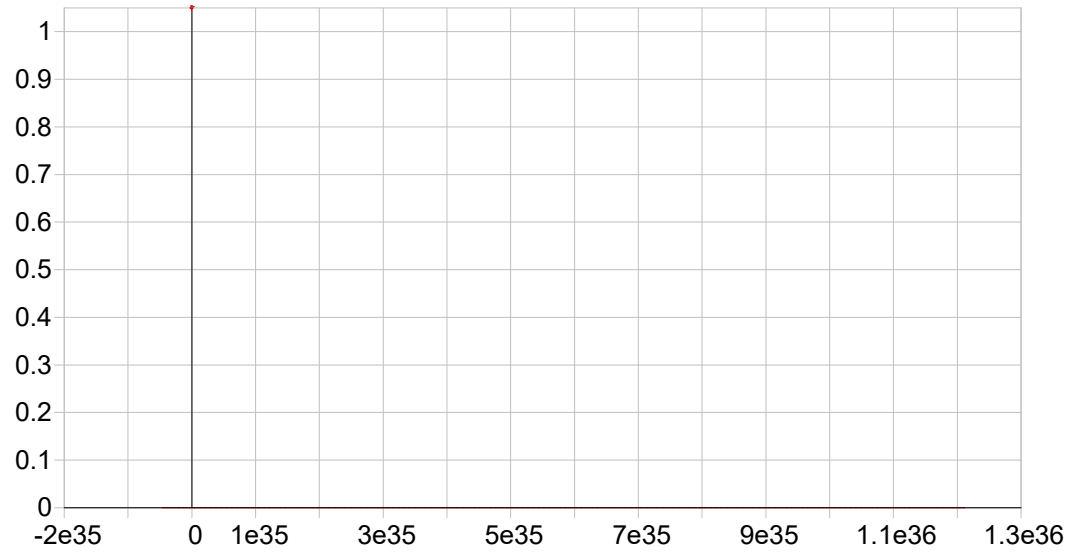

**Y 360.073 { 94}***

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | | |

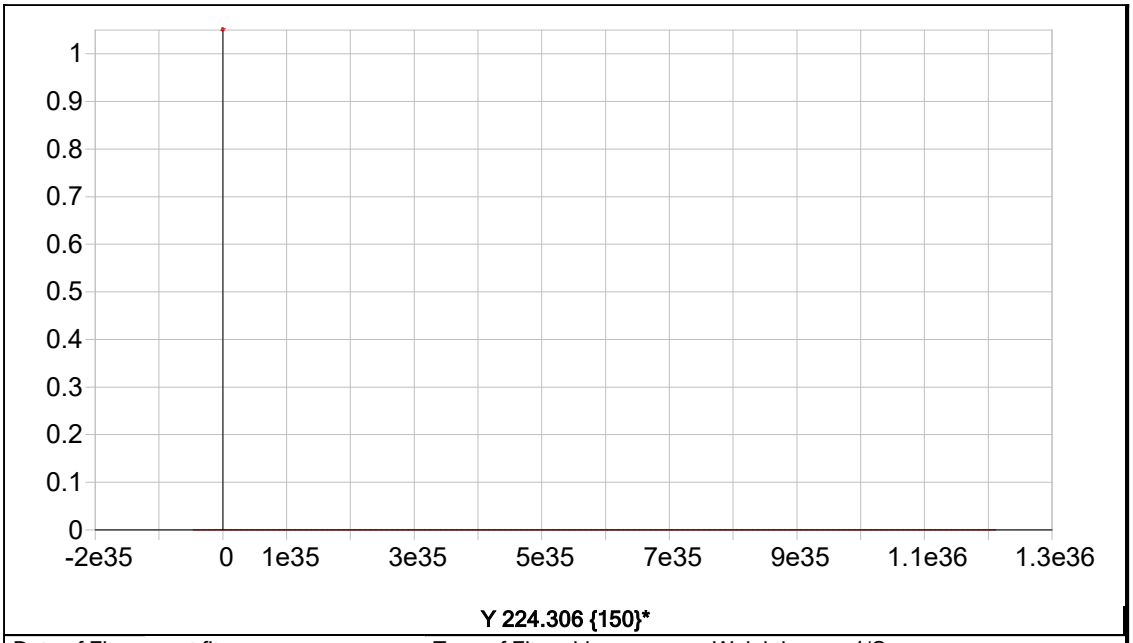
| Std. Name | Stated Conc. | Found Conc. | Difference | % Diff. | (S)IR | Std Dev | Emphasis |
|---|---|---|---|---|---|---|---|




**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 |
|---|---|---|---|---|---|---|---|

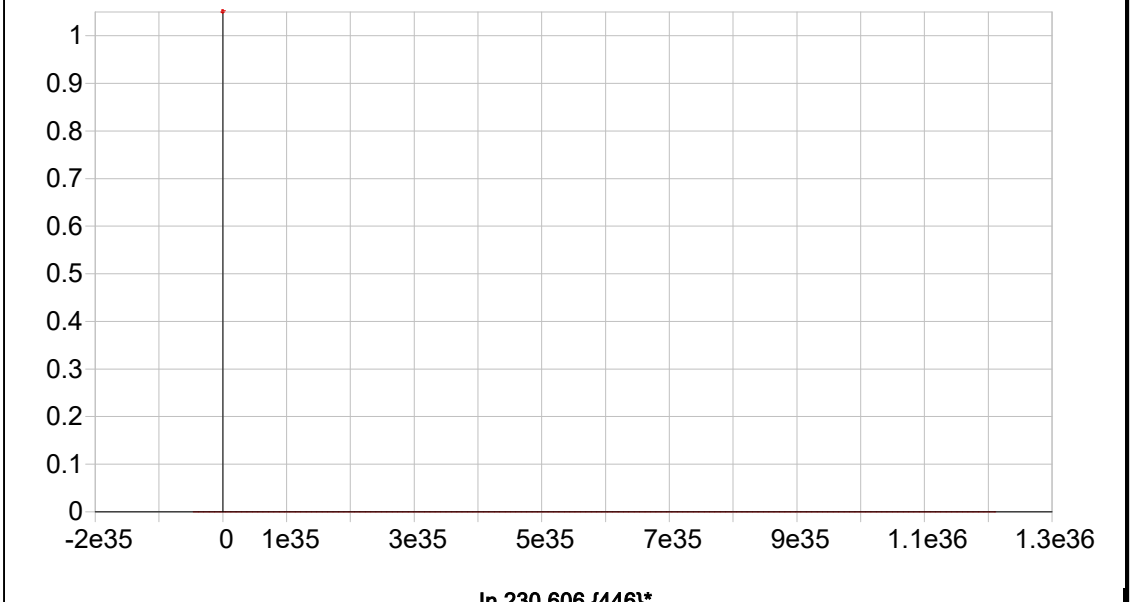



**Y 224.306 {150}***

| | | | | | |
|---|---|---|---|---|---|
| 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:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S0 Acquired: 8/7/2024 14:16:38 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | -.00024 | .00018 | -.00028 | .00049 | .00009 | .00029 | .02153 | -.00048 |
| Stddev | .00017 | .00003 | .00003 | .00014 | .00020 | .00027 | .00254 | .00003 |
| %RSD | 70.186 | 16.372 | 11.389 | 27.670 | 209.55 | 93.074 | 11.783 | 5.7793 |
| #1 | -.00039 | .00015 | -.00029 | .00064 | .00011 | .00003 | .01941 | -.00049 |
| #2 | -.00025 | .00021 | -.00030 | .00044 | -.00011 | .00056 | .02434 | -.00050 |
| #3 | -.00006 | .00018 | -.00024 | .00039 | .00029 | .00027 | .02084 | -.00045 |

| 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 | .00001 | .00104 | .00002 | -.00003 | -.00031 | .00001 | .00007 | .00000 |
| Stddev | .00012 | .00036 | .00002 | .00009 | .00020 | .00002 | .00008 | .00014 |
| %RSD | 2006.1 | 34.705 | 68.059 | 297.62 | 63.110 | 213.20 | 118.76 | 4528.9 |
| #1 | .00011 | .00078 | .00004 | .00001 | -.00026 | .00001 | -.00003 | -.00015 |
| #2 | -.00012 | .00145 | .00001 | .00003 | -.00015 | -.00001 | .00011 | .00004 |
| #3 | .00002 | .00089 | .00001 | -.00013 | -.00053 | .00003 | .00013 | .00013 |

| 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 | .00007 | -.00062 | .00110 | -.00014 | .00569 | -.00007 | .00104 | -.00024 |
| Stddev | .00012 | .00001 | .00008 | .00021 | .00049 | .00013 | .00022 | .00023 |
| %RSD | 162.04 | 1.8839 | 7.5315 | 152.46 | 8.6799 | 181.34 | 20.914 | 95.775 |
| #1 | .00016 | -.00064 | .00106 | -.00005 | .00570 | -.00020 | .00082 | -.00037 |
| #2 | .00013 | -.00062 | .00104 | -.00038 | .00519 | -.00007 | .00105 | .00003 |
| #3 | -.00006 | -.00061 | .00119 | .00001 | .00617 | .00006 | .00125 | -.00037 |

| 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 | .00088 | .00140 | .00009 | -.00114 | .00027 | .00474 | -.00004 |
| Stddev | .00007 | .00033 | .00001 | .00003 | .00005 | .00062 | .00034 |
| %RSD | 7.6213 | 23.447 | 15.561 | 2.3182 | 20.499 | 13.090 | 796.31 |
| #1 | .00085 | .00151 | .00008 | -.00111 | .00028 | .00526 | .00034 |
| #2 | .00084 | .00166 | .00011 | -.00116 | .00021 | .00405 | -.00020 |
| #3 | .00096 | .00103 | .00008 | -.00114 | .00031 | .00490 | -.00027 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S0 Acquired: 8/7/2024 14:16:38 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | 2842.8 | 100060. | 13228. | 3855.0 | 5340.4 |
| Stddev | 29.5 | 379. | 84. | 13.0 | 56.4 |
| %RSD | 1.0395 | .37909 | .63181 | .33607 | 1.0555 |
| | | | | | |
| #1 | 2813.5 | 100340. | 13138. | 3850.7 | 5281.6 |
| #2 | 2872.6 | 99627. | 13303. | 3844.7 | 5394.0 |
| #3 | 2842.3 | 100210. | 13243. | 3869.5 | 5345.4 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S1 Acquired: 8/7/2024 14:21:03 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | .00189 | .00266 | .00302 | .00229 | .00928 | .00728 | .25308 | .03199 |
| Stddev | .00006 | .00010 | .00031 | .00022 | .00020 | .00015 | .00350 | .00007 |
| %RSD | 2.9668 | 3.8485 | 10.308 | 9.7553 | 2.1393 | 2.0089 | 1.3843 | .22865 |
| #1 | .00193 | .00256 | .00335 | .00209 | .00907 | .00723 | .24923 | .03202 |
| #2 | .00192 | .00277 | .00273 | .00225 | .00928 | .00716 | .25392 | .03204 |
| #3 | .00183 | .00264 | .00297 | .00253 | .00947 | .00744 | .25609 | .03190 |

| 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 | .01176 | .12351 | .00130 | .03457 | .01741 | .00063 | .01123 | .02099 |
| Stddev | .00017 | .00141 | .00002 | .00049 | .00040 | .00003 | .00012 | .00016 |
| %RSD | 1.4542 | 1.1423 | 1.2652 | 1.4038 | 2.3071 | 4.3395 | 1.0793 | .76376 |
| #1 | .01160 | .12293 | .00132 | .03407 | .01698 | .00060 | .01109 | .02086 |
| #2 | .01194 | .12249 | .00130 | .03504 | .01777 | .00064 | .01131 | .02117 |
| #3 | .01174 | .12512 | .00128 | .03462 | .01749 | .00066 | .01128 | .02094 |

| 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 | .02799 | .00115 | .02123 | .00365 | .12494 | .01159 | .04349 | .24054 |
| Stddev | .00045 | .00007 | .00038 | .00001 | .00204 | .00025 | .00030 | .00401 |
| %RSD | 1.6039 | 6.0627 | 1.8118 | .29812 | 1.6366 | 2.1344 | .69635 | 1.6654 |
| #1 | .02748 | .00118 | .02100 | .00366 | .12478 | .01143 | .04331 | .23667 |
| #2 | .02834 | .00119 | .02168 | .00366 | .12706 | .01187 | .04331 | .24467 |
| #3 | .02814 | .00107 | .02103 | .00364 | .12298 | .01146 | .04384 | .24029 |

| 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 | .00708 | .01523 | .00104 | -.00027 | .01058 | .00607 | .16698 |
| Stddev | .00012 | .00028 | .00002 | .00006 | .00025 | .00138 | .00297 |
| %RSD | 1.6640 | 1.8664 | 1.5914 | 23.166 | 2.3836 | 22.662 | 1.7780 |
| #1 | .00697 | .01500 | .00105 | -.00033 | .01033 | .00457 | .16487 |
| #2 | .00720 | .01514 | .00106 | -.00021 | .01084 | .00638 | .16570 |
| #3 | .00706 | .01555 | .00102 | -.00028 | .01057 | .00727 | .17038 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S1 Acquired: 8/7/2024 14:21:03 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | 2820.7 | 97260. | 13217. | 3767.6 | 5270.4 |
| Stddev | 34.6 | 1428. | 125. | 51.0 | 64.6 |
| %RSD | 1.2280 | 1.4681 | .94605 | 1.3539 | 1.2251 |
| | | | | | |
| #1 | 2844.7 | 97408. | 13292. | 3769.1 | 5318.5 |
| #2 | 2781.0 | 95764. | 13286. | 3715.9 | 5197.0 |
| #3 | 2836.5 | 98609. | 13073. | 3817.9 | 5295.7 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S2 Acquired: 8/7/2024 14:25:29 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | .09204 | .05728 | .21307 | .08431 | .15683 | .10101 | 3.7553 | .21158 |
| Stddev | .00052 | .00063 | .00067 | .00060 | .00029 | .00106 | .0207 | .00109 |
| %RSD | .56191 | 1.1084 | .31275 | .71184 | .18615 | 1.0462 | .55127 | .51621 |
| #1 | .09145 | .05656 | .21374 | .08363 | .15651 | .10215 | 3.7640 | .21061 |
| #2 | .09225 | .05752 | .21241 | .08455 | .15690 | .10080 | 3.7702 | .21135 |
| #3 | .09242 | .05776 | .21307 | .08476 | .15709 | .10007 | 3.7316 | .21276 |

| 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 | .80094 | .25115 | .02127 | .48737 | .17213 | .00471 | .22166 | .03999 |
| Stddev | .00133 | .00146 | .00014 | .00070 | .00074 | .00002 | .00057 | .00019 |
| %RSD | .16620 | .58306 | .67520 | .14447 | .43278 | .41287 | .25893 | .46466 |
| #1 | .80170 | .25273 | .02134 | .48718 | .17171 | .00472 | .22220 | .04020 |
| #2 | .79941 | .25089 | .02111 | .48678 | .17169 | .00471 | .22106 | .03987 |
| #3 | .80172 | .24984 | .02137 | .48815 | .17299 | .00468 | .22171 | .03989 |

| 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 | .29849 | .04138 | .04075 | .03819 | 1.1623 | .02300 | .34177 | .98288 |
| Stddev | .00031 | .00019 | .00034 | .00044 | .0014 | .00016 | .00106 | .00289 |
| %RSD | .10494 | .46409 | .84541 | 1.1647 | .11975 | .68889 | .31078 | .29435 |
| #1 | .29816 | .04136 | .04101 | .03865 | 1.1627 | .02317 | .34091 | .98069 |
| #2 | .29852 | .04121 | .04087 | .03815 | 1.1607 | .02296 | .34145 | .98179 |
| #3 | .29878 | .04159 | .04036 | .03776 | 1.1634 | .02287 | .34296 | .98616 |

| 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 | .14550 | .27833 | .00231 | .03917 | .02411 | .38360 | 6.7076 |
| Stddev | .00030 | .00066 | .00002 | .00012 | .00024 | .00198 | .0304 |
| %RSD | .20823 | .23573 | .82764 | .31714 | .98483 | .51709 | .45267 |
| #1 | .14550 | .27866 | .00229 | .03930 | .02384 | .38384 | 6.7272 |
| #2 | .14520 | .27875 | .00231 | .03914 | .02429 | .38545 | 6.7231 |
| #3 | .14580 | .27757 | .00233 | .03905 | .02419 | .38151 | 6.6726 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S2 Acquired: 8/7/2024 14:25:29 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | 2638.4 | 101090. | 13414. | 3860.6 | 4825.4 |
| Stddev | 10.9 | 217. | 6. | 10.1 | 13.0 |
| %RSD | .41406 | .21484 | .04511 | .26207 | .26992 |
| #1 | 2648.9 | 100870. | 13409. | 3856.9 | 4836.1 |
| #2 | 2639.2 | 101310. | 13421. | 3852.9 | 4829.2 |
| #3 | 2627.1 | 101100. | 13413. | 3872.1 | 4810.9 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S3 Acquired: 8/7/2024 14:29:39 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | .26818 | .17256 | .63719 | .24251 | .46612 | .30596 | 11.835 | .62720 |
| Stddev | .00083 | .00191 | .00076 | .00077 | .00080 | .00178 | .079 | .00342 |
| %RSD | .31132 | 1.1066 | .11892 | .31673 | .17242 | .58309 | .66543 | .54554 |
| | | | | | | | | |
| #1 | .26802 | .17343 | .63660 | .24329 | .46685 | .30721 | 11.898 | .62913 |
| #2 | .26908 | .17388 | .63693 | .24248 | .46625 | .30676 | 11.861 | .62921 |
| #3 | .26743 | .17037 | .63805 | .24176 | .46526 | .30392 | 11.747 | .62325 |

| 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 | 2.3767 | .76433 | .06654 | 1.4566 | .50670 | .01579 | .67532 | .12107 |
| Stddev | .0024 | .00342 | .00064 | .0012 | .00079 | .00013 | .00507 | .00120 |
| %RSD | .09955 | .44768 | .95727 | .08193 | .15580 | .79476 | .75052 | .99407 |
| | | | | | | | | |
| #1 | 2.3739 | .76491 | .06727 | 1.4576 | .50714 | .01593 | .67713 | .12118 |
| #2 | 2.3781 | .76742 | .06610 | 1.4568 | .50718 | .01574 | .67924 | .12221 |
| #3 | 2.3779 | .76065 | .06624 | 1.4553 | .50579 | .01570 | .66960 | .11981 |

| 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 | .88023 | .13179 | .13441 | .11815 | 3.5798 | .07857 | 1.0107 | 2.9963 |
| Stddev | .00151 | .00140 | .00158 | .00098 | .0308 | .00063 | .0064 | .0043 |
| %RSD | .17166 | 1.0633 | 1.1751 | .83043 | .86064 | .80457 | .63732 | .14190 |
| | | | | | | | | |
| #1 | .87863 | .13339 | .13623 | .11879 | 3.6147 | .07928 | 1.0155 | 2.9976 |
| #2 | .88163 | .13114 | .13359 | .11865 | 3.5562 | .07809 | 1.0134 | 2.9998 |
| #3 | .88042 | .13083 | .13340 | .11702 | 3.5685 | .07832 | 1.0034 | 2.9916 |

| 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 | .43346 | .85539 | .00747 | .11563 | .06835 | 1.1904 | 20.807 |
| Stddev | .00107 | .00500 | .00009 | .00141 | .00012 | .0104 | .195 |
| %RSD | .24725 | .58464 | 1.1954 | 1.2185 | .17077 | .87018 | .93842 |
| | | | | | | | |
| #1 | .43356 | .85941 | .00757 | .11449 | .06848 | 1.1957 | 21.033 |
| #2 | .43449 | .85696 | .00743 | .11518 | .06826 | 1.1970 | 20.696 |
| #3 | .43235 | .84979 | .00741 | .11720 | .06830 | 1.1784 | 20.694 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S3 Acquired: 8/7/2024 14:29:39 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | 2798.9 | 95865. | 13985. | 3717.9 | 5157.5 |
| Stddev | 4.0 | 869. | 91. | 35.7 | 3.7 |
| %RSD | .14267 | .90640 | .64732 | .96046 | .07087 |
| | | | | | |
| #1 | 2794.3 | 94864. | 13951. | 3676.7 | 5153.3 |
| #2 | 2801.2 | 96302. | 13917. | 3737.9 | 5159.6 |
| #3 | 2801.2 | 96428. | 14088. | 3739.2 | 5159.6 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S4 Acquired: 8/7/2024 14:33:54 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | .55197 | .34170 | 1.2795 | .49976 | .94562 | .61527 | 22.955 | 1.2989 |
| Stddev | .00527 | .00221 | .0176 | .00481 | .00997 | .00172 | .253 | .0063 |
| %RSD | .95538 | .64748 | 1.3774 | .96162 | 1.0542 | .27887 | 1.1006 | .48636 |
| #1 | .54667 | .33921 | 1.2629 | .49543 | .93694 | .61723 | 22.923 | 1.3058 |
| #2 | .55722 | .34342 | 1.2980 | .50493 | .95651 | .61403 | 22.720 | 1.2933 |
| #3 | .55201 | .34248 | 1.2776 | .49893 | .94342 | .61455 | 23.222 | 1.2976 |

| 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 | 4.8081 | 1.4876 | .13070 | 2.9284 | 1.0160 | .03073 | 1.3214 | .24260 |
| Stddev | .0597 | .0032 | .00022 | .0376 | .0118 | .00023 | .0046 | .00043 |
| %RSD | 1.2417 | .21418 | .16832 | 1.2824 | 1.1628 | .74301 | .34599 | .17525 |
| #1 | 4.7513 | 1.4912 | .13095 | 2.8934 | 1.0056 | .03047 | 1.3262 | .24295 |
| #2 | 4.8703 | 1.4853 | .13062 | 2.9680 | 1.0288 | .03085 | 1.3172 | .24213 |
| #3 | 4.8026 | 1.4862 | .13053 | 2.9237 | 1.0135 | .03088 | 1.3209 | .24273 |

| 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 | 1.7735 | .26327 | .27677 | .23388 | 7.1092 | .15980 | 2.0891 | 5.9213 |
| Stddev | .0225 | .00056 | .00164 | .00096 | .0193 | .00106 | .0125 | .0635 |
| %RSD | 1.2691 | .21352 | .59348 | .41152 | .27187 | .66131 | .59697 | 1.0731 |
| #1 | 1.7531 | .26269 | .27487 | .23488 | 7.0923 | .15859 | 2.1035 | 5.8671 |
| #2 | 1.7977 | .26329 | .27766 | .23296 | 7.1303 | .16050 | 2.0808 | 5.9913 |
| #3 | 1.7698 | .26381 | .27777 | .23380 | 7.1049 | .16032 | 2.0831 | 5.9056 |

| 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 | .87072 | 1.6791 | .01500 | .24658 | .14548 | 2.5765 | 40.475 |
| Stddev | .01079 | .0027 | .00014 | .00263 | .00161 | .0075 | .185 |
| %RSD | 1.2397 | .16326 | .91050 | 1.0685 | 1.1039 | .28981 | .45654 |
| #1 | .86107 | 1.6822 | .01485 | .24392 | .14395 | 2.5843 | 40.560 |
| #2 | .88238 | 1.6778 | .01508 | .24919 | .14715 | 2.5695 | 40.263 |
| #3 | .86872 | 1.6773 | .01509 | .24662 | .14535 | 2.5756 | 40.602 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S4 Acquired: 8/7/2024 14:33:54 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | 2623.8 | 91190. | 13156. | 3567.6 | 4743.0 |
| Stddev | 21.8 | 410. | 65. | 19.8 | 41.4 |
| %RSD | .83260 | .44975 | .49735 | .55568 | .87213 |
| | | | | | |
| #1 | 2638.3 | 91656. | 13083. | 3589.2 | 4775.3 |
| #2 | 2598.7 | 91028. | 13210. | 3563.4 | 4696.4 |
| #3 | 2634.4 | 90885. | 13175. | 3550.2 | 4757.3 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: S5 Acquired: 8/7/2024 14:38:15 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | 1.0971 | .66775 | 2.5519 | .99060 | 1.8870 | 1.2095 | 45.169 | 2.5173 |
| Stddev | .0129 | .01083 | .0356 | .01177 | .0231 | .0038 | .197 | .0028 |
| %RSD | 1.1732 | 1.6219 | 1.3949 | 1.1879 | 1.2222 | .31190 | .43566 | .10992 |
| | | | | | | | | |
| #1 | 1.0865 | .65754 | 2.5220 | .98130 | 1.8689 | 1.2096 | 45.293 | 2.5173 |
| #2 | 1.0934 | .66661 | 2.5423 | .98667 | 1.8793 | 1.2057 | 44.942 | 2.5146 |
| #3 | 1.1114 | .67911 | 2.5913 | 1.0038 | 1.9130 | 1.2132 | 45.272 | 2.5201 |

| 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 | 9.5106 | 2.9212 | .25043 | 5.8476 | 1.9942 | .05852 | 2.5887 | .47765 |
| Stddev | .1327 | .0009 | .00052 | .0844 | .0248 | .00024 | .0074 | .00241 |
| %RSD | 1.3950 | .03096 | .20797 | 1.4429 | 1.2454 | .41792 | .28517 | .50508 |
| | | | | | | | | |
| #1 | 9.3945 | 2.9202 | .24989 | 5.7777 | 1.9770 | .05828 | 2.5912 | .47797 |
| #2 | 9.4820 | 2.9214 | .25093 | 5.8239 | 1.9829 | .05853 | 2.5804 | .47510 |
| #3 | 9.6552 | 2.9220 | .25046 | 5.9413 | 2.0227 | .05877 | 2.5945 | .47989 |

| 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 | 3.5126 | .51115 | .54100 | .45854 | 13.390 | .31256 | 4.1294 | 11.740 |
| Stddev | .0511 | .00230 | .00193 | .00225 | .048 | .00127 | .0019 | .147 |
| %RSD | 1.4551 | .45076 | .35619 | .49133 | .36098 | .40538 | .04602 | 1.2534 |
| | | | | | | | | |
| #1 | 3.4695 | .50850 | .53891 | .46027 | 13.382 | .31117 | 4.1297 | 11.625 |
| #2 | 3.4991 | .51272 | .54136 | .45599 | 13.346 | .31287 | 4.1274 | 11.688 |
| #3 | 3.5691 | .51223 | .54271 | .45935 | 13.442 | .31364 | 4.1311 | 11.906 |

| 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 | 1.7240 | 3.3033 | .02883 | .49277 | .29370 | 5.1886 | 79.018 |
| Stddev | .0247 | .0052 | .00031 | .00608 | .00413 | .0230 | .147 |
| %RSD | 1.4334 | .15601 | 1.0889 | 1.2337 | 1.4062 | .44401 | .18562 |
| | | | | | | | |
| #1 | 1.7033 | 3.3052 | .02849 | .48834 | .29052 | 5.1993 | 79.087 |
| #2 | 1.7174 | 3.2975 | .02890 | .49026 | .29220 | 5.1622 | 79.117 |
| #3 | 1.7513 | 3.3072 | .02911 | .49970 | .29836 | 5.2043 | 78.849 |

Sample Name: S5 Acquired: 8/7/2024 14:38:15 Type: Cal
Method: NON EPA-6010-200.7(v2342) 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 | 2575.7 | 93628. | 13075. | 3550.9 | 4608.3 |
| Stddev | 24.8 | 355. | 29. | 9.4 | 51.3 |
| %RSD | .96163 | .37916 | .22008 | .26475 | 1.1142 |
| | | | | | |
| #1 | 2590.8 | 93917. | 13044. | 3559.2 | 4646.2 |
| #2 | 2589.2 | 93232. | 13082. | 3552.8 | 4628.9 |
| #3 | 2547.1 | 93736. | 13100. | 3540.7 | 4549.9 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICV01 Acquired: 8/7/2024 15:52:34 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .9030789 | .9994193 | .9541418 | .9164869 | .9371919 | 2.312478 |
| Stddev | .0123032 | .0090212 | .0123932 | .0100951 | .0133883 | .012006 |
| %RSD | 1.362364 | .9026447 | 1.298883 | 1.101497 | 1.428552 | .5191695 |
| #1 | .8963378 | .9945968 | .9476451 | .9109319 | .9304948 | 2.307183 |
| #2 | .8956195 | .9938343 | .9463478 | .9103892 | .9284737 | 2.326221 |
| #3 | .9172794 | 1.009827 | .9684326 | .9281394 | .9526073 | 2.304030 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4890079 | .4718164 | .4702097 | 9.778822 | .5207177 | .4874401 |
| Stddev | .0011548 | .0020018 | .0069672 | .032023 | .0036412 | .0073087 |
| %RSD | .2361566 | .4242748 | 1.481729 | .3274771 | .6992599 | 1.499396 |
| #1 | .4886452 | .4741117 | .4667800 | 9.742408 | .5248638 | .4839852 |
| #2 | .4880779 | .4709049 | .4656222 | 9.802599 | .5192492 | .4824994 |
| #3 | .4903005 | .4704325 | .4782270 | 9.791458 | .5180401 | .4958357 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4898263 | 10.04721 | .4933306 | 5.522499 | .4904687 | .2513103 |
| Stddev | .0068740 | .00889 | .0010841 | .008112 | .0068870 | .0009252 |
| %RSD | 1.403365 | .0885265 | .2197407 | .1468893 | 1.404175 | .3681299 |
| #1 | .4862795 | 10.04352 | .4942812 | 5.529776 | .4874334 | .2520870 |
| #2 | .4854501 | 10.04076 | .4935606 | 5.523968 | .4856207 | .2502867 |
| #3 | .4977493 | 10.05736 | .4921500 | 5.513753 | .4983520 | .2515571 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.46409 | .4752209 | 1.041797 | 10.33834 | 2.484759 | 2.713180 |
| Stddev | .02191 | .0014087 | .006502 | .03813 | .007065 | .036882 |
| %RSD | .2093649 | .2964270 | .6240729 | .3688311 | .2843230 | 1.359351 |
| #1 | 10.47969 | .4765357 | 1.049299 | 10.37732 | 2.492405 | 2.697512 |
| #2 | 10.43905 | .4737341 | 1.038286 | 10.30112 | 2.478473 | 2.686719 |
| #3 | 10.47355 | .4753929 | 1.037805 | 10.33657 | 2.483398 | 2.755309 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICV01 Acquired: 8/7/2024 15:52:34 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 2.627209 | 2.644031 | 2.290586 | F -.001106 | F -.003787 | F .0007870 |
| Stddev | .033581 | .009546 | .010957 | .002240 | .001686 | .0014464 |
| %RSD | 1.278210 | .3610518 | .4783402 | 202.4823 | 44.50727 | 183.7840 |
| | | | | | | |
| #1 | 2.612156 | 2.635647 | 2.303214 | .001046 | -.005584 | .0021798 |
| #2 | 2.603788 | 2.642024 | 2.284942 | -.003426 | -.002240 | -.000708 |
| #3 | 2.665683 | 2.654421 | 2.283602 | -.000939 | -.003538 | .000889 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | 2.503018 |
| Stddev | .013131 |
| %RSD | .5246181 |
| | |
| #1 | 2.493502 |
| #2 | 2.497552 |
| #3 | 2.517999 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2848.217 | 94766.41 | 14260.01 | 3635.562 | 5333.102 |
| Stddev | 33.619 | 166.47 | 16.95 | 1.236 | 66.504 |
| %RSD | 1.180361 | .1756679 | .1188417 | .0339848 | 1.246995 |
| | | | | | |
| #1 | 2856.413 | 94651.36 | 14279.55 | 3636.338 | 5349.415 |
| #2 | 2876.981 | 94957.30 | 14251.13 | 3634.138 | 5389.931 |
| #3 | 2811.258 | 94690.58 | 14249.35 | 3636.211 | 5259.959 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LLICV01 Acquired: 8/7/2024 15:56:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0199173 | .0412116 | .0139037 | .0182834 | .0512344 | .1016224 |
| Stddev | .0011979 | .0010298 | .0001295 | .0021866 | .0006702 | .0081829 |
| %RSD | 6.014410 | 2.498839 | .9314088 | 11.95966 | 1.308083 | 8.052297 |
| #1 | .0194106 | .0402623 | .0138325 | .0179837 | .0518077 | .1048524 |
| #2 | .0212852 | .0410660 | .0140531 | .0206044 | .0504976 | .1076974 |
| #3 | .0190559 | .0423064 | .0138254 | .0162621 | .0513980 | .0923175 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1011584 | .0060026 | .0062540 | 2.042189 | .0092735 | .0295957 |
| Stddev | .0010129 | .0000466 | .0000506 | .000983 | .0001180 | .0001163 |
| %RSD | 1.001298 | .7765579 | .8088921 | .0481107 | 1.272923 | .3929419 |
| #1 | .1011654 | .0060084 | .0063007 | 2.041175 | .0093211 | .0294894 |
| #2 | .1021679 | .0060461 | .0062611 | 2.043137 | .0093603 | .0297199 |
| #3 | .1001421 | .0059534 | .0062003 | 2.042254 | .0091391 | .0295777 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0218889 | .0994735 | .0206221 | 2.103021 | .0400081 | .0086832 |
| Stddev | .0003883 | .0020440 | .0005404 | .026003 | .0003345 | .0001580 |
| %RSD | 1.774137 | 2.054825 | 2.620510 | 1.236477 | .8360794 | 1.819494 |
| #1 | .0216275 | .0972982 | .0207239 | 2.111325 | .0398290 | .0085016 |
| #2 | .0223352 | .0997679 | .0211044 | 2.123858 | .0403941 | .0087584 |
| #3 | .0217041 | .1013543 | .0200381 | 2.073879 | .0398014 | .0087896 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.728466 | .0414265 | .0414877 | 1.761238 | .1020511 | .2014149 |
| Stddev | .008672 | .0020017 | .0004565 | .011874 | .0016055 | .0004656 |
| %RSD | .5016959 | 4.831926 | 1.100360 | .6741853 | 1.573199 | .2311675 |
| #1 | 1.726288 | .0402529 | .0419986 | 1.753776 | .1019918 | .2009535 |
| #2 | 1.738019 | .0402889 | .0411198 | 1.774930 | .1036855 | .2014065 |
| #3 | 1.721091 | .0437377 | .0413445 | 1.755007 | .1004762 | .2018846 |

Sample Name: LLICV01 Acquired: 8/7/2024 15:56:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0360339 | .0407602 | F .3107209 | .0167503 | F .3618586 | F -.000386 |
| Stddev | .0004319 | .0004408 | .0075832 | .0008820 | .0007694 | .003084 |
| %RSD | 1.198511 | 1.081510 | 2.440520 | 5.265722 | .2126119 | 799.7534 |
| #1 | .0364601 | .0402513 | .3185578 | .0176212 | .3617138 | -.003905 |
| #2 | .0355966 | .0410254 | .3034198 | .0158576 | .3626901 | .000902 |
| #3 | .0360450 | .0410039 | .3101851 | .0167722 | .3611719 | .001846 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0207007 |
| Stddev | .0002214 |
| %RSD | 1.069670 |
| #1 | .0207790 |
| #2 | .0208723 |
| #3 | .0204507 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2727.532 | 102753.1 | 14016.35 | 3883.264 | 5023.178 |
| Stddev | 5.186 | 425.8 | 121.35 | 25.129 | 3.450 |
| %RSD | .1901477 | .4143512 | .8657586 | .6471116 | .0686726 |
| #1 | 2724.520 | 102356.3 | 13978.36 | 3860.156 | 5023.704 |
| #2 | 2724.556 | 103202.8 | 13918.55 | 3910.016 | 5019.496 |
| #3 | 2733.521 | 102700.1 | 14152.15 | 3879.619 | 5026.334 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICB01 Acquired: 8/7/2024 16:03:10 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0010981 | -.001049 | .0000753 | -.001993 | .0011316 | .0052669 | .0000791 |
| Stddev | .0004839 | .001993 | .0006541 | .000707 | .0014817 | .0034728 | .0003025 |
| %RSD | 44.06613 | 189.9114 | 868.9640 | 35.47145 | 130.9326 | 65.93627 | 382.2929 |
| #1 | .0010102 | .000522 | -.000243 | -.002810 | .0010281 | .0039577 | -.000207 |
| #2 | .0006642 | -.003290 | -.000359 | -.001588 | -.000296 | .0026390 | .000396 |
| #3 | .0016200 | -.000379 | .000828 | -.001582 | .002662 | .0092041 | .000048 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000590 | -.000040 | .0027290 | -.000032 | .0000633 | -.000551 | -.002134 |
| Stddev | .0000288 | .000046 | .0024173 | .000068 | .0000783 | .000113 | .002527 |
| %RSD | 48.84351 | 113.9391 | 88.57926 | 214.3455 | 123.7559 | 20.56950 | 118.4359 |
| #1 | .0000483 | .000011 | .0035296 | .000005 | -.000026 | -.000593 | -.001927 |
| #2 | .0000917 | -.000056 | .0046445 | .000010 | .000094 | -.000637 | -.004758 |
| #3 | .0000371 | -.000077 | .0000129 | -.000111 | .000122 | -.000423 | .000284 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000130 | -.017036 | -.000104 | .0000246 | -.028978 | .0020362 | -.000181 |
| Stddev | .000085 | .013959 | .000189 | .0000967 | .006203 | .0010825 | .000092 |
| %RSD | 64.81593 | 81.94168 | 181.4278 | 392.1975 | 21.40477 | 53.16080 | 50.85734 |
| #1 | -.000119 | -.029011 | -.000113 | .0000945 | -.036128 | .0032571 | -.000228 |
| #2 | -.000052 | -.001704 | .000089 | .0000651 | -.025762 | .0011936 | -.000075 |
| #3 | -.000220 | -.020392 | -.000290 | -.000086 | -.025043 | .0016579 | -.000240 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.065261 | .0009737 | .0000083 | -.000317 | .0001638 | -.005381 | -.001896 |
| Stddev | .010151 | .0004389 | .0001184 | .000174 | .0005730 | .004719 | .001899 |
| %RSD | 15.55480 | 45.08112 | 1429.061 | 55.00632 | 349.7663 | 87.68834 | 100.1663 |
| #1 | -.068400 | .0011567 | -.000003 | -.000192 | .0007575 | -.007648 | .000265 |
| #2 | -.073472 | .0004728 | .000132 | -.000242 | .0001197 | -.008539 | -.003300 |
| #3 | -.053911 | .0012915 | -.000104 | -.000516 | -.000386 | .000043 | -.002653 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICB01 Acquired: 8/7/2024 16:03:10 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002756 | .0016815 | -.000047 |
| Stddev | .001513 | .0004151 | .000018 |
| %RSD | 54.91331 | 24.68957 | 37.92174 |
| | | | |
| #1 | -.001020 | .0020797 | -.000044 |
| #2 | -.003796 | .0017134 | -.000030 |
| #3 | -.003452 | .0012513 | -.000065 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2770.575 | 101690.7 | 13622.01 | 3885.005 | 5185.570 |
| Stddev | 33.500 | 202.5 | 48.28 | 10.580 | 63.580 |
| %RSD | 1.209149 | .1991171 | .3544283 | .2723239 | 1.226089 |
| | | | | | |
| #1 | 2797.377 | 101718.7 | 13572.64 | 3886.054 | 5239.271 |
| #2 | 2733.018 | 101877.6 | 13624.28 | 3895.022 | 5115.366 |
| #3 | 2781.329 | 101475.6 | 13669.12 | 3873.940 | 5202.074 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CRI01 Acquired: 8/7/2024 16:07:38 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0197108 | .0392327 | .0145395 | .0178106 | .0505561 | .1061444 |
| Stddev | .0005312 | .0008550 | .0004863 | .0002455 | .0009011 | .0001508 |
| %RSD | 2.695182 | 2.179221 | 3.345038 | 1.378506 | 1.782314 | .1420294 |
| #1 | .0203120 | .0382910 | .0150414 | .0180700 | .0499658 | .1062098 |
| #2 | .0195156 | .0399602 | .0140703 | .0177798 | .0501093 | .1062513 |
| #3 | .0193047 | .0394470 | .0145067 | .0175819 | .0515933 | .1059719 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0997214 | .0062227 | .0062181 | 2.030023 | .0098461 | .0298811 |
| Stddev | .0008877 | .0000528 | .0000511 | .013646 | .0004388 | .0005899 |
| %RSD | .8902161 | .8483983 | .8223018 | .6722039 | 4.456016 | 1.974180 |
| #1 | .0998203 | .0062603 | .0062769 | 2.034432 | .0100499 | .0293902 |
| #2 | .1005555 | .0062454 | .0061931 | 2.040918 | .0101459 | .0297175 |
| #3 | .0987883 | .0061623 | .0061843 | 2.014717 | .0093426 | .0305355 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0222730 | .0970248 | .0211187 | 2.108968 | .0401303 | .0085538 |
| Stddev | .0003279 | .0023739 | .0001077 | .023442 | .0005754 | .0000745 |
| %RSD | 1.472313 | 2.446735 | .5099842 | 1.111562 | 1.433735 | .8706673 |
| #1 | .0219037 | .0971182 | .0212093 | 2.123142 | .0395503 | .0085024 |
| #2 | .0223849 | .0993506 | .0211472 | 2.121853 | .0401396 | .0085198 |
| #3 | .0225303 | .0946055 | .0209996 | 2.081909 | .0407009 | .0086392 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.753115 | .0399209 | .0421126 | 1.758269 | .0990384 | .2039760 |
| Stddev | .005364 | .0012803 | .0001862 | .029117 | .0006126 | .0012965 |
| %RSD | .3059540 | 3.207110 | .4421007 | 1.656020 | .6185423 | .6356319 |
| #1 | 1.749773 | .0408380 | .0419959 | 1.781060 | .0996144 | .2029726 |
| #2 | 1.759302 | .0404666 | .0420145 | 1.725467 | .0991058 | .2035156 |
| #3 | 1.750270 | .0384582 | .0423273 | 1.768281 | .0983948 | .2054400 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CRI01 Acquired: 8/7/2024 16:07:38 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0362068 | .0403067 | .3195116 | .0152129 | F .3600683 | F .0006077 |
| Stddev | .0001876 | .0008255 | .0053009 | .0016957 | .0037945 | .0008295 |
| %RSD | .5182120 | 2.048029 | 1.659057 | 11.14637 | 1.053832 | 136.5026 |
| #1 | .0359996 | .0397378 | .3135527 | .0134853 | .3574387 | -.000172 |
| #2 | .0362557 | .0399289 | .3212792 | .0168748 | .3583480 | .001480 |
| #3 | .0363652 | .0412535 | .3237028 | .0152787 | .3644183 | .000515 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0205154 |
| Stddev | .0000772 |
| %RSD | .3763512 |
| #1 | .0205948 |
| #2 | .0204406 |
| #3 | .0205108 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2740.623 | 100828.1 | 13660.37 | 3862.786 | 5074.082 |
| Stddev | 15.277 | 154.9 | 59.54 | 19.678 | 26.078 |
| %RSD | .5574109 | .1536632 | .4358488 | .5094314 | .5139419 |
| #1 | 2747.865 | 100679.6 | 13607.84 | 3875.150 | 5084.206 |
| #2 | 2750.932 | 100988.8 | 13648.21 | 3873.115 | 5093.579 |
| #3 | 2723.073 | 100816.0 | 13725.05 | 3840.094 | 5044.460 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICSA01 Acquired: 8/7/2024 16:12:03 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0043502 | .0022998 | .0055536 | -.007634 | -.001839 | 265.7290 |
| Stddev | .0005076 | .0008634 | .0013983 | .001385 | .000797 | 2.0180 |
| %RSD | 11.66898 | 37.54104 | 25.17834 | 18.14548 | 43.32996 | .7594091 |
| #1 | .0041309 | .0032921 | .0052466 | -.008419 | -.001782 | 265.1290 |
| #2 | .0039891 | .0017203 | .0070799 | -.008447 | -.002663 | 267.9790 |
| #3 | .0049306 | .0018870 | .0043343 | -.006034 | -.001073 | 264.0791 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0061369 | .0009273 | .0036998 | 253.1989 | .0567516 | .0028376 |
| Stddev | .0010812 | .0000364 | .0001636 | .8927 | .0009792 | .0001835 |
| %RSD | 17.61799 | 3.926106 | 4.423177 | .3525785 | 1.725319 | 6.465408 |
| #1 | .0048896 | .0008883 | .0038390 | 252.3262 | .0564804 | .0029684 |
| #2 | .0067129 | .0009332 | .0037409 | 254.1103 | .0559366 | .0029165 |
| #3 | .0068081 | .0009604 | .0035195 | 253.1603 | .0578377 | .0026279 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0092688 | 101.8314 | .0161522 | 271.7230 | .0034326 | .0020449 |
| Stddev | .0020000 | 1.4458 | .0002444 | .7594 | .0000414 | .0001476 |
| %RSD | 21.57790 | 1.419784 | 1.513095 | .2794590 | 1.206179 | 7.216110 |
| #1 | .0102252 | 101.2356 | .0159527 | 270.9491 | .0034804 | .0022132 |
| #2 | .0106111 | 100.7787 | .0160791 | 272.4669 | .0034063 | .0019377 |
| #3 | .0069702 | 103.4799 | .0164248 | 271.7530 | .0034113 | .0019838 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0175097 | .0052267 | .0022627 | -.048565 | .0124168 | .0000263 |
| Stddev | .0065281 | .0015288 | .0002201 | .022301 | .0022016 | .0003323 |
| %RSD | 37.28284 | 29.24881 | 9.726136 | 45.92063 | 17.73108 | 1261.996 |
| #1 | .0125327 | .0034615 | .0020800 | -.026962 | .0113498 | -.000179 |
| #2 | .0249010 | .0061081 | .0025070 | -.071505 | .0109519 | -.000151 |
| #3 | .0150952 | .0061106 | .0022011 | -.047228 | .0149486 | .000410 |

Sample Name: ICSA01 Acquired: 8/7/2024 16:12:03 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002889 | -.002997 | .0164923 | .0014513 | F -.023256 | F .0309686 |
| Stddev | .000639 | .000311 | .0112694 | .0020443 | .001148 | .0005772 |
| %RSD | 22.13369 | 10.36208 | 68.33136 | 140.8658 | 4.934275 | 1.863766 |
| #1 | -.002282 | -.003330 | .0204948 | -.000231 | -.023284 | .0314555 |
| #2 | -.002829 | -.002716 | .0037680 | .003727 | -.022095 | .0311192 |
| #3 | -.003557 | -.002945 | .0252143 | .000858 | -.024390 | .0303310 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0034657 |
| Stddev | .0016210 |
| %RSD | 46.77307 |
| #1 | .0040063 |
| #2 | .0047472 |
| #3 | .0016434 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2438.168 | 87220.38 | 12754.86 | 3338.220 | 4257.823 |
| Stddev | 11.303 | 1079.16 | 30.48 | 36.659 | 19.259 |
| %RSD | .4635935 | 1.237275 | .2389350 | 1.098172 | .4523245 |
| #1 | 2433.545 | 87225.41 | 12727.18 | 3322.941 | 4250.897 |
| #2 | 2429.909 | 88297.01 | 12749.88 | 3380.048 | 4242.984 |
| #3 | 2451.050 | 86138.72 | 12787.52 | 3311.672 | 4279.587 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICSAB01 Acquired: 8/7/2024 16:16:41 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .1034045 | .1033269 | .0550785 | .0343896 | .6052752 | 249.9884 |
| Stddev | .0022474 | .0019889 | .0025807 | .0023067 | .0006830 | 2.2370 |
| %RSD | 2.173386 | 1.924886 | 4.685533 | 6.707589 | .1128485 | .8948453 |
| #1 | .1036191 | .1047659 | .0536326 | .0317522 | .6054322 | 252.2433 |
| #2 | .1055368 | .1041575 | .0580580 | .0353859 | .6058661 | 249.9522 |
| #3 | .1010575 | .1010573 | .0535448 | .0360307 | .6045274 | 247.7697 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .5156567 | .4943890 | .9677298 | 237.1691 | .5646960 | .5005156 |
| Stddev | .0042262 | .0015689 | .0002088 | 1.6405 | .0010681 | .0004370 |
| %RSD | .8195691 | .3173432 | .0215720 | .6916913 | .1891459 | .0873022 |
| #1 | .5198691 | .4951649 | .9674905 | 238.6323 | .5645275 | .5006763 |
| #2 | .5156841 | .4954189 | .9678745 | 237.4795 | .5637221 | .5008495 |
| #3 | .5114169 | .4925834 | .9678243 | 235.3956 | .5658383 | .5000211 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .4882216 | 101.1827 | .5103977 | 252.7847 | .9922725 | .2207981 |
| Stddev | .0009073 | .3931 | .0041154 | 1.7991 | .0005913 | .0001128 |
| %RSD | .1858330 | .3885327 | .8063058 | .7117154 | .0595948 | .0510831 |
| #1 | .4874016 | 101.5563 | .5139903 | 254.5422 | .9916993 | .2206761 |
| #2 | .4880670 | 100.7726 | .5112952 | 252.8653 | .9928805 | .2208196 |
| #3 | .4891963 | 101.2192 | .5059077 | 250.9467 | .9922379 | .2208986 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0030522 | .4868824 | 1.091999 | -.074180 | 1.010766 | 1.069326 |
| Stddev | .0063302 | .0023686 | .002685 | .012783 | .005245 | .000522 |
| %RSD | 207.4021 | .4864938 | .2458510 | 17.23184 | .5189265 | .0488089 |
| #1 | -.004232 | .4843264 | 1.095080 | -.060301 | 1.015411 | 1.069810 |
| #2 | .006165 | .4890033 | 1.090165 | -.085469 | 1.011810 | 1.069395 |
| #3 | .007224 | .4873175 | 1.090751 | -.076772 | 1.005077 | 1.068773 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: ICSAB01 Acquired: 8/7/2024 16:16:41 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 1.070895 | 1.052947 | .9607425 | F .0024513 | F -.021590 | F .0277107 |
| Stddev | .003193 | .010117 | .0074789 | .0003750 | .002548 | .0012621 |
| %RSD | .2981148 | .9608262 | .7784471 | 15.29965 | 11.79944 | 4.554639 |
| #1 | 1.074557 | 1.061018 | .9610614 | .0028699 | -.021321 | .0262552 |
| #2 | 1.068698 | 1.056227 | .9531093 | .0021459 | -.024262 | .0283733 |
| #3 | 1.069431 | 1.041598 | .9680568 | .0023380 | -.019188 | .0285034 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .8630054 |
| Stddev | .0071309 |
| %RSD | .8262888 |
| #1 | .8695092 |
| #2 | .8641267 |
| #3 | .8553802 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2472.824 | 84142.59 | 13110.23 | 3234.073 | 4344.851 |
| Stddev | 1.317 | 246.41 | 108.36 | 13.622 | 2.014 |
| %RSD | .0532596 | .2928424 | .8265595 | .4211994 | .0463561 |
| #1 | 2474.111 | 83858.39 | 13027.85 | 3218.695 | 4343.170 |
| #2 | 2472.883 | 84272.84 | 13069.85 | 3238.901 | 4347.084 |
| #3 | 2471.479 | 84296.53 | 13232.98 | 3244.624 | 4344.300 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV01 Acquired: 8/7/2024 16:20:52 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.912658 | 5.164469 | 5.059280 | 4.880384 | 4.930195 | 9.702629 | 10.02679 |
| Stddev | .027108 | .038689 | .029713 | .016113 | .025467 | .084490 | .06689 |
| %RSD | .5517945 | .7491391 | .5872990 | .3301665 | .5165517 | .8707994 | .6670916 |
| #1 | 4.892408 | 5.189896 | 5.059863 | 4.875250 | 4.922522 | 9.788042 | 10.04036 |
| #2 | 4.902111 | 5.119944 | 5.029279 | 4.867463 | 4.909446 | 9.700751 | 10.08585 |
| #3 | 4.943454 | 5.183567 | 5.088696 | 4.898439 | 4.958616 | 9.619093 | 9.95416 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2491685 | 2.493714 | 24.95708 | 1.005494 | 2.473895 | 1.231177 | 4.994595 |
| Stddev | .0019457 | .011200 | .09761 | .003612 | .011197 | .004537 | .065992 |
| %RSD | .7808728 | .4491391 | .3911053 | .3592646 | .4526101 | .3684904 | 1.321278 |
| #1 | .2494164 | 2.495821 | 25.05965 | 1.005445 | 2.475192 | 1.229685 | 4.985088 |
| #2 | .2509784 | 2.481610 | 24.94628 | 1.001907 | 2.462106 | 1.227573 | 4.933872 |
| #3 | .2471108 | 2.503711 | 24.86533 | 1.009131 | 2.484387 | 1.236271 | 5.064825 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.481258 | 24.57995 | 2.489347 | 1.244845 | 24.00242 | 2.460757 | 2.540427 |
| Stddev | .011603 | .09917 | .011257 | .006522 | .29339 | .017630 | .018328 |
| %RSD | .4676294 | .4034419 | .4522070 | .5239176 | 1.222354 | .7164442 | .7214523 |
| #1 | 2.493941 | 24.69446 | 2.489246 | 1.241743 | 24.04846 | 2.480989 | 2.542601 |
| #2 | 2.478657 | 24.52377 | 2.478141 | 1.240454 | 23.68872 | 2.452591 | 2.521109 |
| #3 | 2.471177 | 24.52164 | 2.500655 | 1.252339 | 24.27007 | 2.448690 | 2.557571 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 24.31878 | 4.900675 | 5.043403 | 5.004263 | 4.952676 | 4.854809 | 5.029217 |
| Stddev | .28646 | .042481 | .023999 | .024840 | .027025 | .071191 | .014775 |
| %RSD | 1.177934 | .8668494 | .4758526 | .4963719 | .5456679 | 1.466402 | .2937864 |
| #1 | 24.32445 | 4.908890 | 5.038566 | 5.008246 | 4.980192 | 4.879031 | 5.028853 |
| #2 | 24.02952 | 4.938449 | 5.022191 | 4.977672 | 4.951665 | 4.774667 | 5.014627 |
| #3 | 24.60236 | 4.854686 | 5.069453 | 5.026871 | 4.926170 | 4.910728 | 5.044170 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV01 Acquired: 8/7/2024 16:20:52 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.678984 | 4.702781 | 5.000227 |
| Stddev | .027234 | .034403 | .032942 |
| %RSD | .5820476 | .7315387 | .6588133 |
| #1 | 4.668624 | 4.739715 | 4.998141 |
| #2 | 4.658451 | 4.696980 | 5.034163 |
| #3 | 4.709878 | 4.671647 | 4.968378 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2707.043 | 94979.20 | 13456.56 | 3633.897 | 4904.021 |
| Stddev | 13.628 | 636.71 | 111.18 | 29.392 | 25.695 |
| %RSD | .5034337 | .6703665 | .8261790 | .8088395 | .5239613 |
| #1 | 2711.271 | 95147.28 | 13425.90 | 3635.693 | 4905.877 |
| #2 | 2718.056 | 95515.00 | 13363.93 | 3662.350 | 4928.739 |
| #3 | 2691.802 | 94275.31 | 13579.85 | 3603.648 | 4877.449 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB01 Acquired: 8/7/2024 16:25:11 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000546 | -.000461 | .0000196 | .0007940 | .0011534 | .0037589 | .0001135 |
| Stddev | .001727 | .001063 | .0008075 | .0009433 | .0015998 | .0014490 | .0010932 |
| %RSD | 316.3872 | 230.3910 | 4129.056 | 118.8056 | 138.7045 | 38.54926 | 963.6036 |
| #1 | .000196 | .000546 | .0006945 | -.000146 | .0012712 | .0023405 | .0013202 |
| #2 | -.002520 | -.000358 | -.000875 | .000788 | -.000502 | .0052368 | -.000169 |
| #3 | .000686 | -.001572 | .000239 | .001740 | .002691 | .0036994 | -.000811 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000152 | -.000037 | -.000882 | -.000035 | .0000293 | -.000218 | .0002195 |
| Stddev | .0000543 | .000052 | .006435 | .000026 | .0000909 | .000233 | .0018567 |
| %RSD | 356.5653 | 142.7768 | 729.1854 | 73.04194 | 310.7050 | 107.1247 | 845.7352 |
| #1 | -.000022 | -.000026 | -.007367 | -.000015 | -.000009 | .000047 | .0021840 |
| #2 | -.000010 | -.000093 | -.000782 | -.000064 | -.000036 | -.000395 | -.001506 |
| #3 | .000078 | .000010 | .005501 | -.000026 | .000133 | -.000305 | -.000019 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000100 | -.008604 | -.000115 | .0002679 | -.042584 | -.000218 | -.000029 |
| Stddev | .000271 | .003804 | .000087 | .0000408 | .004393 | .002667 | .000083 |
| %RSD | 272.0284 | 44.20872 | 75.55469 | 15.21585 | 10.31701 | 1221.148 | 281.1681 |
| #1 | -.000214 | -.011571 | -.000088 | .0002893 | -.045734 | .002816 | -.000068 |
| #2 | .000210 | -.009923 | -.000045 | .0002209 | -.037565 | -.002191 | -.000087 |
| #3 | -.000295 | -.004316 | -.000212 | .0002934 | -.044455 | -.001280 | .000066 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.087886 | .0101936 | .0003458 | -.000356 | .0001129 | .0019828 | -.004295 |
| Stddev | .022681 | .0005726 | .0001345 | .000085 | .0004878 | .0057886 | .001988 |
| %RSD | 25.80772 | 5.616949 | 38.90373 | 23.99084 | 432.0142 | 291.9465 | 46.28682 |
| #1 | -.082357 | .0098175 | .0003175 | -.000453 | .0005568 | -.001513 | -.006590 |
| #2 | -.068480 | .0108526 | .0002277 | -.000320 | -.000409 | .008665 | -.003119 |
| #3 | -.112820 | .0099109 | .0004923 | -.000293 | .000191 | -.001204 | -.003175 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB01 Acquired: 8/7/2024 16:25:11 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002144 | -.000985 | -.000002 |
| Stddev | .000401 | .001136 | .000029 |
| %RSD | 18.69129 | 115.3111 | 1557.269 |
| | | | |
| #1 | -.002047 | .000279 | -.000034 |
| #2 | -.002585 | -.001920 | .000023 |
| #3 | -.001801 | -.001314 | .000005 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2692.644 | 99302.72 | 13935.52 | 3798.022 | 4983.160 |
| Stddev | 11.142 | 351.10 | 167.90 | 4.435 | 12.223 |
| %RSD | .4137781 | .3535688 | 1.204846 | .1167699 | .2452919 |
| | | | | | |
| #1 | 2703.457 | 99072.58 | 13755.12 | 3793.196 | 4991.609 |
| #2 | 2693.275 | 99706.84 | 13964.22 | 3798.950 | 4988.726 |
| #3 | 2681.200 | 99128.75 | 14087.22 | 3801.919 | 4969.144 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BL Acquired: 8/7/2024 16:29:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000448 | -.000641 | -.000538 | .0009980 | .0002932 | .0069561 | .0006022 |
| Stddev | .001231 | .000506 | .000394 | .0016452 | .0012463 | .0066711 | .0006090 |
| %RSD | 274.8502 | 79.05617 | 73.21376 | 164.8533 | 425.0530 | 95.90250 | 101.1350 |
| #1 | .000974 | -.000405 | -.000600 | .0004446 | .0016211 | .0092985 | .0003464 |
| #2 | -.001147 | -.001222 | -.000116 | .0028485 | -.000851 | .0121401 | .0012974 |
| #3 | -.001171 | -.000295 | -.000896 | -.000299 | .000110 | -.000570 | .0001628 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000136 | .0000194 | -.000962 | -.000285 | .0001713 | -.000421 | -.002589 |
| Stddev | .0000490 | .0001002 | .002537 | .000185 | .0001261 | .000200 | .002895 |
| %RSD | 360.2685 | 517.4567 | 263.7881 | 64.83224 | 73.63253 | 47.48296 | 111.8476 |
| #1 | -.000029 | .0000514 | .001966 | -.000489 | .0001468 | -.000190 | .000358 |
| #2 | .000067 | -.000093 | -.002517 | -.000131 | .0000592 | -.000530 | -.002695 |
| #3 | .000003 | .000100 | -.002334 | -.000234 | .0003078 | -.000543 | -.005430 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000149 | -.005720 | -.000103 | .0001669 | -.041288 | -.000180 | -.000125 |
| Stddev | .000044 | .001989 | .000010 | .0000964 | .008143 | .001384 | .000056 |
| %RSD | 29.46831 | 34.76293 | 9.408037 | 57.75904 | 19.72307 | 768.1075 | 44.31408 |
| #1 | -.000110 | -.006025 | -.000114 | .0000558 | -.047031 | .001365 | -.000179 |
| #2 | -.000140 | -.003597 | -.000095 | .0002161 | -.044863 | -.000599 | -.000068 |
| #3 | -.000196 | -.007539 | -.000100 | .0002289 | -.031968 | -.001306 | -.000130 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.086089 | .0035532 | -.000010 | -.003393 | .0000661 | -.009504 | -.003128 |
| Stddev | .025392 | .0000986 | .000036 | .000123 | .0006103 | .006857 | .000489 |
| %RSD | 29.49547 | 2.775010 | 354.4600 | 3.614317 | 923.1028 | 72.14688 | 15.63573 |
| #1 | -.062363 | .0036491 | .000022 | -.003400 | -.000311 | -.002775 | -.002945 |
| #2 | -.112871 | .0034521 | -.000004 | -.003511 | .000770 | -.016481 | -.002756 |
| #3 | -.083034 | .0035585 | -.000048 | -.003266 | -.000261 | -.009256 | -.003682 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BL Acquired: 8/7/2024 16:29:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002425 | .0000643 | -.000055 |
| Stddev | .001883 | .0006262 | .000021 |
| %RSD | 77.65365 | 973.8152 | 37.57750 |
| | | | |
| #1 | -.004566 | .0007793 | -.000076 |
| #2 | -.001680 | -.000386 | -.000034 |
| #3 | -.001028 | -.000200 | -.000054 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2725.605 | 103022.5 | 13430.38 | 3874.155 | 5078.942 |
| Stddev | 13.986 | 297.1 | 32.97 | 6.308 | 23.158 |
| %RSD | .5131251 | .2884312 | .2454885 | .1628261 | .4559612 |
| | | | | | |
| #1 | 2741.719 | 102855.0 | 13419.58 | 3873.541 | 5105.509 |
| #2 | 2718.481 | 102846.9 | 13467.39 | 3868.176 | 5063.024 |
| #3 | 2716.617 | 103365.6 | 13404.16 | 3880.748 | 5068.294 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BS Acquired: 8/7/2024 16:34:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .7808905 | 2.001473 | .9981728 | 1.953020 | .8053177 | 2.046667 |
| Stddev | .0072820 | .022193 | .0097117 | .020293 | .0087633 | .007235 |
| %RSD | .9325207 | 1.108825 | .9729494 | 1.039074 | 1.088179 | .3535122 |
| #1 | .7851177 | 2.015521 | 1.004008 | 1.963541 | .8096550 | 2.052267 |
| #2 | .7724821 | 1.975888 | .986962 | 1.929626 | .7952315 | 2.049236 |
| #3 | .7850718 | 2.013010 | 1.003549 | 1.965892 | .8110664 | 2.038498 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2001124 | .2166001 | .1974336 | 1.077592 | .4093574 | .2005799 |
| Stddev | .0002638 | .0002711 | .0019637 | .004525 | .0010359 | .0016302 |
| %RSD | .1318210 | .1251635 | .9946284 | .4199426 | .2530491 | .8127212 |
| #1 | .2003700 | .2167267 | .1986189 | 1.073015 | .4081740 | .2013653 |
| #2 | .1998428 | .2167848 | .1951669 | 1.082064 | .4097987 | .1987057 |
| #3 | .2001245 | .2162889 | .1985151 | 1.077697 | .4100996 | .2016687 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .3090651 | 2.870622 | .2088188 | 2.009026 | .5118825 | .0742360 |
| Stddev | .0022256 | .017105 | .0003764 | .010307 | .0052592 | .0003266 |
| %RSD | .7201015 | .5958624 | .1802649 | .5130392 | 1.027418 | .4399261 |
| #1 | .3098912 | 2.857621 | .2084364 | 1.997426 | .5155433 | .0744584 |
| #2 | .3065446 | 2.864246 | .2088310 | 2.017132 | .5058559 | .0743885 |
| #3 | .3107596 | 2.890000 | .2091890 | 2.012520 | .5142483 | .0738611 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.670684 | .3037496 | .2118791 | 9.076245 | .3147306 | .4084700 |
| Stddev | .011959 | .0036181 | .0004818 | .037459 | .0013773 | .0036871 |
| %RSD | .4477782 | 1.191151 | .2274062 | .4127145 | .4375990 | .9026538 |
| #1 | 2.662258 | .3078387 | .2113388 | 9.043200 | .3162293 | .4107537 |
| #2 | 2.665424 | .3009633 | .2120341 | 9.068598 | .3135206 | .4042164 |
| #3 | 2.684372 | .3024468 | .2122643 | 9.116938 | .3144418 | .4104398 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: PB162493BS Acquired: 8/7/2024 16:34:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .7127224 | .2040740 | F .7285804 | 6.097537 | F -.009579 | .1878850 |
| Stddev | .0066863 | .0015594 | .0064506 | .059453 | .002145 | .0007188 |
| %RSD | .9381409 | .7641207 | .8853636 | .9750310 | 22.39004 | .3825769 |
| #1 | .7165983 | .2037543 | .7242202 | 6.127320 | -.007107 | .1873319 |
| #2 | .7050017 | .2057684 | .7359904 | 6.029079 | -.010687 | .1876255 |
| #3 | .7165673 | .2026992 | .7255307 | 6.136212 | -.010943 | .1886975 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .1994314 |
| Stddev | .0001396 |
| %RSD | .0700203 |
| #1 | .1995776 |
| #2 | .1994172 |
| #3 | .1992994 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2614.879 | 94859.32 | 12405.14 | 3687.233 | 4811.891 |
| Stddev | 23.943 | 436.43 | 8.49 | 21.962 | 43.558 |
| %RSD | .9156405 | .4600852 | .0684521 | .5956119 | .9052086 |
| #1 | 2598.087 | 95265.25 | 12408.03 | 3711.790 | 4779.962 |
| #2 | 2642.296 | 94914.99 | 12395.59 | 3669.474 | 4861.511 |
| #3 | 2604.255 | 94397.72 | 12411.82 | 3680.436 | 4794.200 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-01 Acquired: 8/7/2024 16:38:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000212 | -.005462 | -.001207 | -.001205 | .0010930 | .0371886 | .3523920 |
| Stddev | .001091 | .000999 | .002045 | .001455 | .0004277 | .0041502 | .0011550 |
| %RSD | 515.6621 | 18.29751 | 169.3579 | 120.7773 | 39.13242 | 11.15996 | .3277609 |
| #1 | -.000944 | -.006378 | -.001177 | -.001819 | .0007301 | .0324663 | .3511132 |
| #2 | -.000733 | -.005612 | -.003266 | .000457 | .0009843 | .0388428 | .3533592 |
| #3 | .001042 | -.004396 | .000822 | -.002253 | .0015646 | .0402566 | .3527037 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000511 | .0001165 | 53.21883 | .0021488 | .0023391 | -.001401 | 6.263706 |
| Stddev | .000036 | .0001099 | .05924 | .0005035 | .0000594 | .000343 | .036998 |
| %RSD | 7.031416 | 94.34884 | .1113123 | 23.43211 | 2.537969 | 24.51669 | .5906688 |
| #1 | -.000546 | .0001762 | 53.15047 | .0026379 | .0023655 | -.001018 | 6.226261 |
| #2 | -.000513 | .0001836 | 53.25102 | .0021765 | .0022712 | -.001681 | 6.300240 |
| #3 | -.000474 | -.000010 | 53.25501 | .0016320 | .0023807 | -.001504 | 6.264618 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.59163 | 18.02123 | .0040720 | .0005117 | 258.2646 | -.000018 | .0438305 |
| Stddev | .02696 | .04751 | .0003236 | .0001152 | 2.6068 | .000280 | .0001472 |
| %RSD | .2545666 | .2636495 | 7.946919 | 22.50447 | 1.009360 | 1525.014 | .3359001 |
| #1 | 10.56131 | 17.96694 | .0039718 | .0003850 | 256.2937 | -.000327 | .0437788 |
| #2 | 10.61289 | 18.04157 | .0038104 | .0006100 | 261.2204 | .000219 | .0439966 |
| #3 | 10.60070 | 18.05519 | .0044339 | .0005402 | 257.2798 | .000053 | .0437161 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.650645 | .1599309 | .0005663 | -.005598 | -.001298 | 6.152677 | .0976824 |
| Stddev | .003463 | .0008598 | .0001062 | .000183 | .000514 | .023754 | .0013345 |
| %RSD | .0358881 | .5375796 | 18.74552 | 3.265316 | 39.59063 | .3860819 | 1.366135 |
| #1 | 9.646691 | .1608867 | .0005309 | -.005696 | -.001275 | 6.129730 | .0971603 |
| #2 | 9.653141 | .1592207 | .0004823 | -.005711 | -.000796 | 6.177164 | .0966880 |
| #3 | 9.652102 | .1596852 | .0006856 | -.005387 | -.001823 | 6.151137 | .0991990 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-01 Acquired: 8/7/2024 16:38:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .9636732 | .0081722 | .3822318 |
| Stddev | .0028355 | .0012342 | .0002243 |
| %RSD | .2942363 | 15.10184 | .0586869 |
| | | | |
| #1 | .9613071 | .0083871 | .3820093 |
| #2 | .9628965 | .0092848 | .3822285 |
| #3 | .9668161 | .0068447 | .3824578 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2674.809 | 93248.87 | 13266.65 | 3509.283 | 4829.631 |
| Stddev | 4.989 | 95.77 | 29.48 | 19.402 | 9.798 |
| %RSD | .1865272 | .1027034 | .2221857 | .5528757 | .2028759 |
| | | | | | |
| #1 | 2673.175 | 93343.91 | 13247.60 | 3530.988 | 4829.963 |
| #2 | 2680.411 | 93152.39 | 13300.60 | 3493.623 | 4839.259 |
| #3 | 2670.842 | 93250.30 | 13251.75 | 3503.239 | 4819.671 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-02 Acquired: 8/7/2024 16:42:53 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000490 | -.006103 | -.002108 | -.000703 | .0000561 | .0257911 | .3580549 |
| Stddev | .002360 | .001160 | .000246 | .000705 | .0004275 | .0094509 | .0003589 |
| %RSD | 481.6664 | 19.00409 | 11.66966 | 100.2905 | 762.4141 | 36.64410 | .1002265 |
| #1 | -.003215 | -.007441 | -.002094 | -.000735 | .0004969 | .0347257 | .3584225 |
| #2 | .000904 | -.005490 | -.001870 | -.001392 | -.000357 | .0158971 | .3577055 |
| #3 | .000841 | -.005379 | -.002361 | .000017 | .000028 | .0267504 | .3580368 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000586 | -.000005 | 54.78151 | .0020533 | .0023294 | -.001733 | 6.291298 |
| Stddev | .000031 | .000024 | .26397 | .0000972 | .0000913 | .000521 | .063112 |
| %RSD | 5.243525 | 485.6166 | .4818682 | 4.733700 | 3.921339 | 30.07481 | 1.003165 |
| #1 | -.000593 | .000011 | 54.48160 | .0021608 | .0023662 | -.002334 | 6.356543 |
| #2 | -.000613 | -.000033 | 54.97863 | .0020274 | .0023966 | -.001412 | 6.230561 |
| #3 | -.000552 | .000007 | 54.88429 | .0019716 | .0022254 | -.001453 | 6.286790 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.87705 | 18.57561 | .0030825 | .0003625 | 268.3776 | .0011017 | .0210206 |
| Stddev | .02528 | .04462 | .0000139 | .0003509 | 1.3300 | .0011570 | .0005557 |
| %RSD | .2324064 | .2402094 | .4517601 | 96.82103 | .4955695 | 105.0215 | 2.643654 |
| #1 | 10.84819 | 18.52427 | .0030961 | .0007677 | 269.6088 | .0020728 | .0216481 |
| #2 | 10.89525 | 18.60496 | .0030682 | .0001590 | 266.9670 | .0014106 | .0205904 |
| #3 | 10.88772 | 18.59761 | .0030833 | .0001607 | 268.5570 | -.000178 | .0208234 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.924574 | .1663703 | .0007133 | -.005946 | -.001276 | 6.305781 | .1006222 |
| Stddev | .124233 | .0001332 | .0001707 | .000076 | .000540 | .093741 | .0022556 |
| %RSD | 1.251774 | .0800750 | 23.92390 | 1.282885 | 42.33808 | 1.486582 | 2.241669 |
| #1 | 10.06268 | .1663979 | .0007755 | -.005970 | -.000853 | 6.410302 | .0980943 |
| #2 | 9.82193 | .1664875 | .0005203 | -.005860 | -.001885 | 6.229153 | .1013429 |
| #3 | 9.88911 | .1662254 | .0008442 | -.006007 | -.001091 | 6.277888 | .1024294 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3426-02 Acquired: 8/7/2024 16:42:53 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .9555456 | .0078294 | .3906363 |
| Stddev | .0044152 | .0017045 | .0007920 |
| %RSD | .4620586 | 21.77009 | .2027335 |
| | | | |
| #1 | .9511205 | .0065017 | .3903996 |
| #2 | .9555657 | .0097515 | .3899897 |
| #3 | .9599508 | .0072351 | .3915197 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2610.191 | 90466.85 | 12800.29 | 3422.962 | 4716.864 |
| Stddev | 25.973 | 998.25 | 39.20 | 23.524 | 44.489 |
| %RSD | .9950639 | 1.103439 | .3062505 | .6872397 | .9431831 |
| | | | | | |
| #1 | 2639.470 | 89331.33 | 12834.05 | 3397.526 | 4766.093 |
| #2 | 2601.183 | 91206.18 | 12757.30 | 3443.935 | 4704.961 |
| #3 | 2589.922 | 90863.05 | 12809.53 | 3427.424 | 4679.537 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-01 Acquired: 8/7/2024 16:47:26 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000750 | -.006773 | .0070430 | .0005133 | .0010306 | .0177449 | .4019297 |
| Stddev | .000522 | .001386 | .0011814 | .0011905 | .0009558 | .0079030 | .0001082 |
| %RSD | 69.52572 | 20.46137 | 16.77477 | 231.9163 | 92.74687 | 44.53704 | .0269294 |
| #1 | -.001095 | -.007267 | .0060414 | .0013346 | -.000072 | .0121433 | .4018885 |
| #2 | -.000150 | -.005208 | .0067416 | -.000852 | .001534 | .0267846 | .4020524 |
| #3 | -.001005 | -.007845 | .0083459 | .001057 | .001630 | .0143067 | .4018481 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000771 | .0000690 | 60.14683 | .0018806 | .0017505 | -.002437 | 6.673150 |
| Stddev | .000053 | .0000536 | .21325 | .0002134 | .0001533 | .000162 | .039621 |
| %RSD | 6.902121 | 77.65524 | .3545420 | 11.34527 | 8.755619 | 6.650231 | .5937349 |
| #1 | -.000817 | .0000801 | 60.24988 | .0019469 | .0016123 | -.002256 | 6.699079 |
| #2 | -.000784 | .0000107 | 59.90164 | .0020529 | .0017240 | -.002486 | 6.627542 |
| #3 | -.000713 | .0001161 | 60.28898 | .0016419 | .0019153 | -.002569 | 6.692828 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 13.64142 | 20.43264 | .0030307 | .0003374 | 287.6184 | .0010351 | .0545054 |
| Stddev | .03793 | .11343 | .0000615 | .0003622 | .0432 | .0008206 | .0001368 |
| %RSD | .2780488 | .5551179 | 2.029905 | 107.3634 | .0150298 | 79.27637 | .2510230 |
| #1 | 13.65007 | 20.43969 | .0030838 | -.000027 | 287.6652 | .0006216 | .0543820 |
| #2 | 13.59991 | 20.31586 | .0029633 | .000697 | 287.5800 | .0005035 | .0544818 |
| #3 | 13.67428 | 20.54238 | .0030450 | .000342 | 287.6099 | .0019802 | .0546526 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.24239 | .1631266 | .0005821 | -.005434 | -.000982 | 6.005074 | .0722973 |
| Stddev | .03577 | .0002438 | .0002823 | .000188 | .000705 | .017495 | .0025379 |
| %RSD | .3492089 | .1494550 | 48.50341 | 3.452675 | 71.80582 | .2913348 | 3.510397 |
| #1 | 10.28102 | .1629533 | .0005098 | -.005300 | -.001389 | 6.023149 | .0748491 |
| #2 | 10.23572 | .1630212 | .0003429 | -.005648 | -.001390 | 5.988223 | .0722694 |
| #3 | 10.21042 | .1634054 | .0008935 | -.005353 | -.000168 | 6.003851 | .0697735 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-01 Acquired: 8/7/2024 16:47:26 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 1.112802 | .0093898 | .4379797 |
| Stddev | .003730 | .0020191 | .0005533 |
| %RSD | .3352349 | 21.50344 | .1263417 |
| #1 | 1.115033 | .0087351 | .4384928 |
| #2 | 1.114879 | .0116551 | .4373934 |
| #3 | 1.108496 | .0077793 | .4380529 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2599.467 | 92466.81 | 13102.85 | 3466.613 | 4688.954 |
| Stddev | 2.972 | 309.21 | 12.50 | 10.512 | 3.162 |
| %RSD | .1143479 | .3344027 | .0954062 | .3032442 | .0674405 |
| #1 | 2596.733 | 92190.87 | 13090.01 | 3454.739 | 4689.921 |
| #2 | 2602.631 | 92801.01 | 13114.98 | 3470.372 | 4691.519 |
| #3 | 2599.037 | 92408.56 | 13103.57 | 3474.730 | 4685.421 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-02 Acquired: 8/7/2024 16:51:56 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0082656 | -.003927 | .0040157 | -.001074 | .0009317 | .3728868 | .1994166 |
| Stddev | .0009349 | .001135 | .0003620 | .000360 | .0011083 | .0009077 | .0009232 |
| %RSD | 11.31119 | 28.90945 | 9.014479 | 33.51546 | 118.9620 | .2434164 | .4629664 |
| #1 | .0093058 | -.003966 | .0036001 | -.001400 | -.000250 | .3721281 | .1991080 |
| #2 | .0074954 | -.002773 | .0042620 | -.000688 | .001949 | .3726399 | .1986872 |
| #3 | .0079956 | -.005043 | .0041851 | -.001134 | .001096 | .3738924 | .2004546 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000003 | .0001250 | 17.61960 | .0042093 | .0109372 | .0090503 | 17.29884 |
| Stddev | .000031 | .0000783 | .05736 | .0001724 | .0000994 | .0003145 | .02742 |
| %RSD | 930.7606 | 62.62651 | .3255226 | 4.095405 | .9086101 | 3.474573 | .1585088 |
| #1 | .000012 | .0002152 | 17.57024 | .0044041 | .0108246 | .0093240 | 17.27979 |
| #2 | .000018 | .0000740 | 17.60605 | .0040766 | .0109742 | .0087068 | 17.33027 |
| #3 | -.000039 | .0000858 | 17.68252 | .0041471 | .0110127 | .0091200 | 17.28646 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.554199 | 5.963367 | .0185962 | .0005930 | 84.61980 | .0049921 | .0353836 |
| Stddev | .011083 | .023734 | .0002516 | .0000931 | .17217 | .0021315 | .0004033 |
| %RSD | .4339322 | .3979940 | 1.353035 | 15.69704 | .2034598 | 42.69838 | 1.139765 |
| #1 | 2.549796 | 5.961277 | .0185999 | .0006797 | 84.76965 | .0069160 | .0351134 |
| #2 | 2.545993 | 5.940747 | .0188459 | .0006047 | 84.65802 | .0053596 | .0358472 |
| #3 | 2.566807 | 5.988077 | .0183428 | .0004947 | 84.43173 | .0027007 | .0351903 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.374969 | .0534888 | .0007948 | -.004582 | .0059420 | 6.362613 | .3869256 |
| Stddev | .011332 | .0002927 | .0001241 | .000478 | .0005087 | .026129 | .0008229 |
| %RSD | .2590223 | .5472598 | 15.61489 | 10.42404 | 8.561977 | .4106652 | .2126677 |
| #1 | 4.363555 | .0531540 | .0006567 | -.004725 | .0062076 | 6.376644 | .3860395 |
| #2 | 4.386217 | .0536161 | .0008308 | -.004049 | .0062629 | 6.378729 | .3876657 |
| #3 | 4.375135 | .0536963 | .0008969 | -.004971 | .0053554 | 6.332466 | .3870716 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-02 Acquired: 8/7/2024 16:51:56 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 1.799009 | .0014037 | .0971995 |
| Stddev | .012474 | .0015953 | .0005500 |
| %RSD | .6933959 | 113.6537 | .5658863 |
| | | | |
| #1 | 1.787638 | .0021781 | .0973222 |
| #2 | 1.797037 | -.000431 | .0965985 |
| #3 | 1.812352 | .002464 | .0976778 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2658.866 | 95254.32 | 13276.32 | 3579.822 | 4922.456 |
| Stddev | 8.496 | 103.65 | 50.99 | 7.949 | 16.696 |
| %RSD | .3195164 | .1088190 | .3840322 | .2220408 | .3391855 |
| | | | | | |
| #1 | 2652.887 | 95291.91 | 13317.32 | 3588.934 | 4926.323 |
| #2 | 2668.591 | 95137.12 | 13292.41 | 3576.214 | 4936.879 |
| #3 | 2655.120 | 95333.94 | 13219.23 | 3574.316 | 4904.165 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-03 Acquired: 8/7/2024 16:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0035015 | -.006290 | .0016930 | -.004169 | .0016748 | .2850601 | .4843593 |
| Stddev | .0004677 | .000866 | .0005504 | .001694 | .0019255 | .0052953 | .0010686 |
| %RSD | 13.35759 | 13.76447 | 32.50663 | 40.62917 | 114.9640 | 1.857603 | .2206267 |
| #1 | .0039187 | -.005290 | .0013318 | -.002937 | -.000426 | .2893896 | .4843338 |
| #2 | .0035898 | -.006795 | .0023264 | -.003469 | .003355 | .2866345 | .4854405 |
| #3 | .0029959 | -.006784 | .0014209 | -.006100 | .002096 | .2791561 | .4833037 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000417 | .0004729 | 60.03829 | .0027674 | .0031132 | .0037211 | 38.40279 |
| Stddev | .000021 | .0000613 | .19444 | .0003001 | .0001321 | .0003527 | .11513 |
| %RSD | 4.942519 | 12.95891 | .3238566 | 10.84517 | 4.241854 | 9.479076 | .2997892 |
| #1 | -.000394 | .0005001 | 59.88892 | .0026609 | .0029796 | .0033654 | 38.36042 |
| #2 | -.000423 | .0005159 | 60.25814 | .0031062 | .0031164 | .0037271 | 38.53310 |
| #3 | -.000433 | .0004028 | 59.96781 | .0025350 | .0032436 | .0040707 | 38.31485 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 13.81421 | 20.07680 | .0106638 | .0037669 | 280.5210 | .0149991 | .1017343 |
| Stddev | .03526 | .03526 | .0002032 | .0004568 | 1.4971 | .0022367 | .0003394 |
| %RSD | .2552797 | .1756081 | 1.905346 | 12.12749 | .5336902 | 14.91251 | .3336009 |
| #1 | 13.82162 | 20.05289 | .0104344 | .0032396 | 280.5113 | .0124647 | .1018578 |
| #2 | 13.84518 | 20.11729 | .0108211 | .0040201 | 282.0229 | .0166973 | .1019947 |
| #3 | 13.77583 | 20.06023 | .0107358 | .0040412 | 279.0288 | .0158354 | .1013505 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 10.35596 | .1536551 | .0008065 | -.002419 | .0068411 | 7.355204 | .2677020 |
| Stddev | .05507 | .0007144 | .0002843 | .000583 | .0008349 | .028485 | .0024112 |
| %RSD | .5317501 | .4649480 | 35.25381 | 24.11416 | 12.20397 | .3872774 | .9006864 |
| #1 | 10.36308 | .1536904 | .0005965 | -.001932 | .0077393 | 7.362512 | .2654494 |
| #2 | 10.40712 | .1543512 | .0006930 | -.002260 | .0066952 | 7.379323 | .2674111 |
| #3 | 10.29768 | .1529237 | .0011300 | -.003066 | .0060887 | 7.323777 | .2702454 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3429-03 Acquired: 8/7/2024 16:56:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .9988808 | .0059557 | .4292358 |
| Stddev | .0100256 | .0003119 | .0019472 |
| %RSD | 1.003687 | 5.236537 | .4536480 |
| | | | |
| #1 | .9876860 | .0062915 | .4303412 |
| #2 | 1.007032 | .0056752 | .4303789 |
| #3 | 1.001925 | .0059005 | .4269875 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2570.799 | 89259.54 | 12951.64 | 3400.080 | 4635.107 |
| Stddev | 16.443 | 189.68 | 26.96 | 2.125 | 27.761 |
| %RSD | .6396218 | .2124999 | .2081477 | .0624956 | .5989381 |
| | | | | | |
| #1 | 2588.870 | 89265.96 | 12944.54 | 3397.955 | 4665.300 |
| #2 | 2566.807 | 89066.74 | 12928.94 | 3402.205 | 4629.335 |
| #3 | 2556.719 | 89445.93 | 12981.44 | 3400.080 | 4610.685 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01 Acquired: 8/7/2024 17:00:48 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.001741 | -.004326 | .0008645 | .0010573 | .0014085 | .1017045 | .1178899 |
| Stddev | .001023 | .000423 | .0010675 | .0000576 | .0002733 | .0033275 | .0010116 |
| %RSD | 58.74943 | 9.768777 | 123.4758 | 5.452394 | 19.40076 | 3.271735 | .8580985 |
| #1 | -.002114 | -.003849 | .0017094 | .0010628 | .0011036 | .0996973 | .1185993 |
| #2 | -.002525 | -.004653 | .0012194 | .0009971 | .0014906 | .0998708 | .1183391 |
| #3 | -.000584 | -.004478 | -.000335 | .0011121 | .0016313 | .1055455 | .1167315 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000196 | -.000118 | 38.85129 | .0015287 | .0008873 | .0021716 | 4.970221 |
| Stddev | .000064 | .000065 | .13061 | .0000575 | .0001385 | .0003715 | .015769 |
| %RSD | 32.77928 | 55.47811 | .3361862 | 3.759972 | 15.61390 | 17.10727 | .3172754 |
| #1 | -.000232 | -.000102 | 38.95228 | .0014623 | .0009413 | .0024652 | 4.967217 |
| #2 | -.000236 | -.000061 | 38.89780 | .0015603 | .0007299 | .0017540 | 4.956169 |
| #3 | -.000122 | -.000189 | 38.70378 | .0015634 | .0009907 | .0022957 | 4.987276 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.553252 | 7.352373 | .0023697 | .0003788 | 159.4088 | .0031138 | .0201273 |
| Stddev | .007626 | .058728 | .0001078 | .0001999 | .4456 | .0012802 | .0000223 |
| %RSD | .4909446 | .7987557 | 4.548734 | 52.76774 | .2795388 | 41.11492 | .1110080 |
| #1 | 1.561635 | 7.410140 | .0022456 | .0005697 | 158.8943 | .0016577 | .0201191 |
| #2 | 1.551397 | 7.292730 | .0024227 | .0001710 | 159.6579 | .0040629 | .0201102 |
| #3 | 1.546726 | 7.354249 | .0024406 | .0003958 | 159.6741 | .0036209 | .0201526 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 6.578974 | .0951990 | .0004923 | -.005588 | .0011915 | 4.989642 | .2590633 |
| Stddev | .012436 | .0011208 | .0002205 | .000405 | .0002284 | .009497 | .0023527 |
| %RSD | .1890257 | 1.177294 | 44.78915 | 7.251472 | 19.16702 | .1903434 | .9081704 |
| #1 | 6.579135 | .0964235 | .0004963 | -.005180 | .0010056 | 4.999903 | .2573133 |
| #2 | 6.591329 | .0942239 | .0007108 | -.005594 | .0014464 | 4.987864 | .2581387 |
| #3 | 6.566459 | .0949498 | .0002698 | -.005990 | .0011225 | 4.981159 | .2617379 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01 Acquired: 8/7/2024 17:00:48 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 2.544444 | .0061032 | .2582790 |
| Stddev | .005663 | .0004811 | .0017159 |
| %RSD | .2225510 | 7.882911 | .6643471 |
| #1 | 2.544779 | .0055951 | .2597742 |
| #2 | 2.549932 | .0061627 | .2586573 |
| #3 | 2.538621 | .0065518 | .2564056 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2660.485 | 91173.31 | 12741.43 | 3451.429 | 4885.127 |
| Stddev | 8.532 | 103.91 | 56.14 | 6.938 | 15.979 |
| %RSD | .3206759 | .1139720 | .4406275 | .2010279 | .3271005 |
| #1 | 2661.832 | 91282.00 | 12677.76 | 3454.320 | 4883.011 |
| #2 | 2651.360 | 91162.98 | 12762.69 | 3456.455 | 4870.312 |
| #3 | 2668.262 | 91074.94 | 12783.83 | 3443.513 | 4902.059 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01DUP Acquired: 8/7/2024 17:05:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002841 | -.004134 | .0012861 | .0008077 | .0004123 | .1123474 | .1147345 |
| Stddev | .001026 | .001077 | .0000910 | .0012323 | .0010088 | .0085077 | .0043609 |
| %RSD | 36.12193 | 26.05864 | 7.076414 | 152.5701 | 244.7070 | 7.572680 | 3.800908 |
| #1 | -.001921 | -.004986 | .0012295 | -.000123 | -.000619 | .1219091 | .1167540 |
| #2 | -.003948 | -.004492 | .0012377 | .000341 | .000460 | .1056143 | .1097298 |
| #3 | -.002656 | -.002923 | .0013911 | .002205 | .001396 | .1095189 | .1177195 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000142 | -.000115 | 37.81808 | .0016869 | .0009571 | .0020290 | 4.795094 |
| Stddev | .000018 | .000095 | 1.16882 | .0001084 | .0001285 | .0003687 | .008078 |
| %RSD | 12.98579 | 82.78452 | 3.090628 | 6.425778 | 13.42658 | 18.17149 | .1684681 |
| #1 | -.000151 | -.000152 | 38.37867 | .0015802 | .0010265 | .0018634 | 4.785910 |
| #2 | -.000154 | -.000187 | 36.47456 | .0016836 | .0010360 | .0017722 | 4.801100 |
| #3 | -.000121 | -.000007 | 38.60100 | .0017969 | .0008088 | .0024515 | 4.798271 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.515903 | 7.209701 | .0022925 | .0002670 | 153.7418 | .0010134 | .0191371 |
| Stddev | .048585 | .257622 | .0001614 | .0002338 | .5761 | .0021907 | .0001877 |
| %RSD | 3.204998 | 3.573272 | 7.041261 | 87.57936 | .3747516 | 216.1861 | .9806153 |
| #1 | 1.540056 | 7.324084 | .0021076 | .0004745 | 154.3339 | -.000562 | .0192337 |
| #2 | 1.459975 | 6.914694 | .0023651 | .0000137 | 153.7083 | .000087 | .0192569 |
| #3 | 1.547677 | 7.390326 | .0024049 | .0003127 | 153.1831 | .003515 | .0189209 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 6.375125 | .0927807 | .0005697 | -.005645 | .0018934 | 4.839634 | .2564539 |
| Stddev | .036312 | .0030283 | .0001643 | .000816 | .0002906 | .006337 | .0037095 |
| %RSD | .5695915 | 3.263966 | 28.83352 | 14.45456 | 15.34814 | .1309343 | 1.446438 |
| #1 | 6.389916 | .0946032 | .0004909 | -.004765 | .0021684 | 4.838197 | .2528534 |
| #2 | 6.401706 | .0892849 | .0007585 | -.005792 | .0019225 | 4.834140 | .2602635 |
| #3 | 6.333751 | .0944538 | .0004597 | -.006377 | .0015894 | 4.846566 | .2562449 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01DUP Acquired: 8/7/2024 17:05:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 2.507551 | .0043386 | .2515202 |
| Stddev | .006595 | .0009503 | .0081214 |
| %RSD | .2629944 | 21.90391 | 3.228922 |
| #1 | 2.508879 | .0032487 | .2560799 |
| #2 | 2.513381 | .0049941 | .2421436 |
| #3 | 2.500393 | .0047731 | .2563370 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2686.259 | 93679.37 | 12921.74 | 3509.797 | 4939.715 |
| Stddev | 12.267 | 243.50 | 414.52 | 2.112 | 26.764 |
| %RSD | .4566569 | .2599239 | 3.207904 | .0601826 | .5418046 |
| #1 | 2682.802 | 93485.28 | 12661.55 | 3507.392 | 4934.633 |
| #2 | 2676.091 | 93600.24 | 13399.75 | 3510.646 | 4915.856 |
| #3 | 2699.883 | 93952.59 | 12703.91 | 3511.353 | 4968.655 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01LX5 Acquired: 8/7/2024 17:09:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000766 | -.001183 | .0000658 | -.001609 | -.000107 | .0285907 | .0236303 |
| Stddev | .000748 | .001180 | .0007514 | .001128 | .001033 | .0056302 | .0005924 |
| %RSD | 97.57923 | 99.76994 | 1142.135 | 70.09722 | 962.0513 | 19.69259 | 2.506938 |
| #1 | -.001273 | -.001075 | .0006011 | -.002149 | .000116 | .0254236 | .0242832 |
| #2 | .000092 | -.000060 | -.000793 | -.000313 | -.001234 | .0252573 | .0234805 |
| #3 | -.001118 | -.002413 | .000389 | -.002364 | .000796 | .0350913 | .0231272 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000031 | -.000022 | 7.890441 | -.000046 | .0002145 | .0001997 | 1.018793 |
| Stddev | .000041 | .000071 | .033909 | .000237 | .0000648 | .0001422 | .012188 |
| %RSD | 133.1773 | 323.5588 | .4297525 | 510.6763 | 30.19810 | 71.20708 | 1.196328 |
| #1 | -.000035 | .000011 | 7.883366 | .000227 | .0002021 | .0003636 | 1.005867 |
| #2 | -.000069 | .000027 | 7.860628 | -.000174 | .0002846 | .0001243 | 1.020436 |
| #3 | .000012 | -.000104 | 7.927330 | -.000192 | .0001568 | .0001110 | 1.030076 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .3129266 | 1.440602 | .0004998 | .0001185 | 31.52275 | .0018325 | .0039581 |
| Stddev | .0010121 | .014594 | .0000881 | .0003054 | .00896 | .0005945 | .0002708 |
| %RSD | .3234149 | 1.013069 | 17.62260 | 257.5923 | .0284187 | 32.44024 | 6.841178 |
| #1 | .3140526 | 1.423981 | .0005977 | -.000212 | 31.51310 | .0024548 | .0039073 |
| #2 | .3120929 | 1.446506 | .0004748 | .000391 | 31.53081 | .0017722 | .0042506 |
| #3 | .3126343 | 1.451320 | .0004269 | .000177 | 31.52433 | .0012704 | .0037163 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.314162 | .0201184 | -.000006 | -.003922 | .0008271 | .9966508 | .0503632 |
| Stddev | .023773 | .0003882 | .000115 | .000318 | .0005404 | .0099276 | .0024006 |
| %RSD | 1.808979 | 1.929617 | 1930.698 | 8.116596 | 65.34145 | .9960986 | 4.766576 |
| #1 | 1.327560 | .0205322 | -.000118 | -.004023 | .0012545 | .9943135 | .0491576 |
| #2 | 1.328212 | .0197623 | .000113 | -.003565 | .0010072 | 1.007539 | .0531276 |
| #3 | 1.286714 | .0200606 | -.000012 | -.004177 | .0002196 | .988100 | .0488043 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01LX5 Acquired: 8/7/2024 17:09:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .5167801 | .0052266 | .0522196 |
| Stddev | .0032987 | .0009596 | .0003210 |
| %RSD | .6383168 | 18.35938 | .6146364 |
| | | | |
| #1 | .5205514 | .0058779 | .0523003 |
| #2 | .5144312 | .0056773 | .0518660 |
| #3 | .5153579 | .0041247 | .0524925 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2806.031 | 96151.81 | 13698.11 | 3660.661 | 5255.148 |
| Stddev | 13.985 | 81.86 | 73.62 | 11.550 | 28.920 |
| %RSD | .4983869 | .0851361 | .5374236 | .3155255 | .5503163 |
| | | | | | |
| #1 | 2791.426 | 96228.13 | 13635.69 | 3673.910 | 5226.328 |
| #2 | 2807.367 | 96161.93 | 13779.29 | 3655.360 | 5254.950 |
| #3 | 2819.299 | 96065.35 | 13679.35 | 3652.713 | 5284.167 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV02 Acquired: 8/7/2024 17:14:14 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.895758 | 5.133879 | 5.104507 | 4.852883 | 4.914654 | 9.762684 | 10.19056 |
| Stddev | .015471 | .024402 | .021040 | .012113 | .015613 | .030922 | .02318 |
| %RSD | .3160125 | .4753109 | .4121775 | .2496119 | .3176758 | .3167390 | .2274636 |
| #1 | 4.907200 | 5.141001 | 5.106410 | 4.851159 | 4.909735 | 9.743157 | 10.16401 |
| #2 | 4.878156 | 5.153927 | 5.082580 | 4.841724 | 4.902094 | 9.746559 | 10.20090 |
| #3 | 4.901918 | 5.106708 | 5.124530 | 4.865766 | 4.932134 | 9.798336 | 10.20676 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2498357 | 2.515324 | 25.54699 | 1.007856 | 2.487538 | 1.235717 | 5.086609 |
| Stddev | .0010817 | .009324 | .08476 | .018439 | .013338 | .005065 | .085941 |
| %RSD | .4329802 | .3706837 | .3317727 | 1.829521 | .5362040 | .4098965 | 1.689551 |
| #1 | .2486914 | 2.519076 | 25.51549 | 1.014902 | 2.492928 | 1.235876 | 5.136649 |
| #2 | .2499743 | 2.504708 | 25.48250 | 1.021734 | 2.472348 | 1.230574 | 5.135805 |
| #3 | .2508415 | 2.522186 | 25.64299 | .986933 | 2.497337 | 1.240701 | 4.987375 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 2.526300 | 24.76349 | 2.509085 | 1.247635 | 24.15815 | 2.493825 | 2.561423 |
| Stddev | .015777 | .15933 | .011885 | .020188 | .41753 | .021329 | .044253 |
| %RSD | .6245074 | .6433874 | .4736930 | 1.618114 | 1.728337 | .8552658 | 1.727658 |
| #1 | 2.523104 | 24.78061 | 2.513258 | 1.257521 | 24.41311 | 2.490852 | 2.580504 |
| #2 | 2.512366 | 24.59630 | 2.495676 | 1.260974 | 24.38505 | 2.474138 | 2.592934 |
| #3 | 2.543431 | 24.91357 | 2.518321 | 1.224409 | 23.67630 | 2.516484 | 2.510831 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 24.54410 | 4.885660 | 5.047881 | 5.025715 | 5.058047 | 4.902919 | 5.119357 |
| Stddev | .41217 | .024953 | .020198 | .020549 | .021107 | .072362 | .025597 |
| %RSD | 1.679323 | .5107458 | .4001321 | .4088743 | .4173046 | 1.475899 | .4999962 |
| #1 | 24.73782 | 4.864871 | 5.043976 | 5.029064 | 5.056869 | 4.926206 | 5.135089 |
| #2 | 24.82373 | 4.878777 | 5.029921 | 5.003697 | 5.037553 | 4.960770 | 5.089821 |
| #3 | 24.07075 | 4.913332 | 5.069747 | 5.044384 | 5.079719 | 4.821780 | 5.133160 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV02 Acquired: 8/7/2024 17:14:14 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.681528 | 4.661492 | 5.096903 |
| Stddev | .022243 | .018895 | .037801 |
| %RSD | .4751237 | .4053394 | .7416399 |
| | | | |
| #1 | 4.701021 | 4.654861 | 5.070759 |
| #2 | 4.657298 | 4.646807 | 5.079704 |
| #3 | 4.686267 | 4.682809 | 5.140244 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2705.459 | 94768.41 | 13405.29 | 3608.988 | 4885.182 |
| Stddev | 7.397 | 1801.94 | 34.35 | 64.636 | 16.547 |
| %RSD | .2734165 | 1.901415 | .2562092 | 1.790965 | .3387267 |
| | | | | | |
| #1 | 2705.729 | 94027.15 | 13441.45 | 3588.082 | 4879.582 |
| #2 | 2712.718 | 93455.34 | 13401.32 | 3557.393 | 4903.802 |
| #3 | 2697.931 | 96822.76 | 13373.10 | 3681.490 | 4872.161 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB02 Acquired: 8/7/2024 17:18:33 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0009152 | -.000820 | .0003238 | -.001479 | .0006691 | .0053632 | .0004554 |
| Stddev | .0004497 | .000801 | .0007685 | .000749 | .0009901 | .0048436 | .0009116 |
| %RSD | 49.13601 | 97.63833 | 237.3627 | 50.60586 | 147.9877 | 90.31050 | 200.1846 |
| #1 | .0006481 | -.001442 | .0009452 | -.000787 | .0013944 | .0006565 | -.000166 |
| #2 | .0014344 | -.001102 | .0005616 | -.002274 | .0010717 | .0051003 | .000030 |
| #3 | .0006631 | .000083 | -.000536 | -.001376 | -.000459 | .0103328 | .001502 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000342 | -.000021 | .0013224 | .0000732 | .0001261 | -.000335 | -.002244 |
| Stddev | .0000499 | .000016 | .0072472 | .0000451 | .0000961 | .000419 | .003591 |
| %RSD | 146.0391 | 77.75330 | 548.0403 | 61.67157 | 76.21075 | 125.1121 | 160.0084 |
| #1 | .0000117 | -.000012 | -.006253 | .0000834 | .0002367 | -.000815 | .000811 |
| #2 | -.000001 | -.000011 | .008189 | .0001123 | .0000643 | -.000142 | -.006200 |
| #3 | .000091 | -.000040 | .002032 | .0000238 | .0000771 | -.000047 | -.001345 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0001903 | -.002279 | -.000066 | .0001764 | .0191985 | .0005743 | .0000274 |
| Stddev | .0001957 | .016368 | .000129 | .0001096 | .0059285 | .0016971 | .0000530 |
| %RSD | 102.8155 | 718.2582 | 194.9548 | 62.09811 | 30.87991 | 295.5152 | 193.7560 |
| #1 | .0004049 | -.015355 | -.000037 | .0002704 | .0135399 | .0025014 | .0000083 |
| #2 | .0001444 | .016078 | -.000208 | .0002027 | .0253642 | -.000697 | -.000013 |
| #3 | .0000217 | -.007560 | .000046 | .0000561 | .0186913 | -.000081 | .000087 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.002729 | .0100291 | .0002247 | -.003396 | .0004704 | .0029321 | -.002554 |
| Stddev | .017690 | .0002953 | .0001875 | .000279 | .0002810 | .0041684 | .002122 |
| %RSD | 648.1359 | 2.944852 | 83.41783 | 8.202740 | 59.74426 | 142.1641 | 83.07130 |
| #1 | -.023153 | .0103321 | .0004388 | -.003691 | .0007912 | .0047761 | -.000115 |
| #2 | .007771 | .0097420 | .0000899 | -.003360 | .0003521 | -.001840 | -.003571 |
| #3 | .007195 | .0100133 | .0001455 | -.003137 | .0002679 | .005860 | -.003977 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB02 Acquired: 8/7/2024 17:18:33 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002767 | .0008179 | -.000000 |
| Stddev | .002344 | .0022315 | .000010 |
| %RSD | 84.71296 | 272.8296 | 10214.70 |
| | | | |
| #1 | -.005149 | .0015181 | .000011 |
| #2 | -.000464 | -.001680 | -.000005 |
| #3 | -.002687 | .002615 | -.000007 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2833.833 | 97074.23 | 13163.51 | 3747.365 | 5364.182 |
| Stddev | 13.944 | 345.60 | 93.02 | 11.402 | 25.696 |
| %RSD | .4920675 | .3560159 | .7066779 | .3042563 | .4790219 |
| | | | | | |
| #1 | 2846.040 | 96931.95 | 13064.02 | 3748.031 | 5383.277 |
| #2 | 2836.821 | 96822.47 | 13248.33 | 3735.646 | 5374.301 |
| #3 | 2818.636 | 97468.25 | 13178.19 | 3758.420 | 5334.967 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR2 Acquired: 8/7/2024 18:15:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0135203 | -.010643 | 229.7273 | .0036942 | -.002398 | .1009736 |
| Stddev | .0013773 | .001307 | .3143 | .0005160 | .001034 | .0076063 |
| %RSD | 10.18715 | 12.28202 | .1368295 | 13.96702 | 43.13007 | 7.532924 |
| #1 | .0141091 | -.011596 | 229.3649 | .0041646 | -.003158 | .1004644 |
| #2 | .0119464 | -.009153 | 229.8907 | .0031424 | -.001220 | .0936348 |
| #3 | .0145054 | -.011179 | 229.9262 | .0037758 | -.002817 | .1088217 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | F 89.73364 | -.001909 | -.006052 | .2292111 | .0253384 | -.027666 |
| Stddev | .92852 | .000014 | .000040 | .0059909 | .0004721 | .000156 |
| %RSD | 1.034755 | .7163412 | .6578382 | 2.613720 | 1.862970 | .5641833 |
| #1 | 89.80057 | -.001925 | -.006046 | .2319691 | .0248511 | -.027530 |
| #2 | 90.62688 | -.001898 | -.006015 | .2223379 | .0257935 | -.027836 |
| #3 | 88.77346 | -.001905 | -.006094 | .2333264 | .0253706 | -.027631 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 258.5760 | .1162616 | 43.49239 | -.022769 | F 44.84289 | .0022675 |
| Stddev | .7960 | .0027682 | .07405 | .006518 | .04191 | .0001427 |
| %RSD | .3078464 | 2.380972 | .1702535 | 28.62735 | .0934662 | 6.295108 |
| #1 | 259.4838 | .1166611 | 43.42220 | -.021994 | 44.79786 | .0024178 |
| #2 | 258.2470 | .1188082 | 43.56977 | -.029641 | 44.85005 | .0021337 |
| #3 | 257.9972 | .1133153 | 43.48519 | -.016673 | 44.88076 | .0022511 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.059606 | -.003307 | F 23.82602 | 1.345481 | .0019992 | .0031503 |
| Stddev | .041365 | .001100 | .11035 | .049528 | .0007097 | .0002588 |
| %RSD | 3.903802 | 33.27036 | .4631683 | 3.681089 | 35.50076 | 8.216322 |
| #1 | 1.084902 | -.002885 | 23.93764 | 1.392910 | .0012247 | .0028516 |
| #2 | 1.082045 | -.002480 | 23.71697 | 1.349442 | .0021544 | .0032912 |
| #3 | 1.011870 | -.004555 | 23.82346 | 1.294091 | .0026184 | .0033081 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR2 Acquired: 8/7/2024 18:15:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0137399 | -.047029 | -.008529 | -.291510 | -.046009 | .0008491 |
| Stddev | .0007189 | .000632 | .002282 | .005612 | .002375 | .0007609 |
| %RSD | 5.232403 | 1.344809 | 26.75498 | 1.925203 | 5.163114 | 89.61034 |
| #1 | .0136212 | -.046657 | -.011128 | -.285065 | -.043361 | .0001282 |
| #2 | .0145108 | -.046670 | -.006856 | -.294140 | -.046712 | .0016445 |
| #3 | .0130877 | -.047759 | -.007602 | -.295323 | -.047954 | .0007746 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .0019125 |
| Stddev | .0000477 |
| %RSD | 2.494950 |
| #1 | .0019651 |
| #2 | .0019006 |
| #3 | .0018719 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2511.165 | 97429.41 | 13168.97 | 3571.994 | 5143.108 |
| Stddev | 3.553 | 369.37 | 81.66 | 6.584 | 13.330 |
| %RSD | .1414820 | .3791131 | .6200591 | .1843306 | .2591862 |
| #1 | 2514.861 | 97349.02 | 13099.21 | 3567.900 | 5158.334 |
| #2 | 2510.859 | 97106.86 | 13148.93 | 3568.493 | 5133.537 |
| #3 | 2507.776 | 97832.35 | 13258.78 | 3579.589 | 5137.455 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-02 Acquired: 8/7/2024 18:20:27 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .7176244 | 1.767243 | .9057799 | 1.701784 | .7562700 | 2.008577 | .3100484 |
| Stddev | .0036564 | .014009 | .0047496 | .012246 | .0040371 | .005591 | .0007431 |
| %RSD | .5095199 | .7927236 | .5243671 | .7195693 | .5338119 | .2783444 | .2396743 |
| #1 | .7136037 | 1.752708 | .9005039 | 1.687876 | .7519579 | 2.012064 | .3097017 |
| #2 | .7185189 | 1.768359 | .9071210 | 1.706528 | .7568925 | 2.011539 | .3109016 |
| #3 | .7207505 | 1.780660 | .9097147 | 1.710947 | .7599597 | 2.002129 | .3095421 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1905821 | .1794821 | 40.36838 | .3919728 | .1872921 | .2796960 | 8.045790 |
| Stddev | .0008848 | .0015602 | .02514 | .0034048 | .0019499 | .0022012 | .074368 |
| %RSD | .4642508 | .8692901 | .0622668 | .8686256 | 1.041083 | .7870101 | .9243119 |
| #1 | .1914234 | .1777942 | 40.38410 | .3881552 | .1850533 | .2771641 | 7.965743 |
| #2 | .1896595 | .1797805 | 40.38164 | .3946951 | .1882041 | .2811562 | 8.112740 |
| #3 | .1906633 | .1808716 | 40.33939 | .3930681 | .1886188 | .2807676 | 8.058887 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.774675 | 9.186820 | .4726336 | .0679693 | 160.1264 | .2929637 | .2280801 |
| Stddev | .003475 | .038953 | .0038843 | .0007007 | .7649 | .0032953 | .0012999 |
| %RSD | .1958110 | .4240139 | .8218380 | 1.030882 | .4776764 | 1.124798 | .5699414 |
| #1 | 1.778452 | 9.229885 | .4686302 | .0671788 | 159.6417 | .2921113 | .2266773 |
| #2 | 1.773958 | 9.154045 | .4728842 | .0685137 | 161.0082 | .2966013 | .2292441 |
| #3 | 1.771614 | 9.176530 | .4763866 | .0682154 | 159.7294 | .2901783 | .2283188 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 16.11828 | .3563257 | .4097895 | .6618321 | .2000486 | 5.892113 | 5.906122 |
| Stddev | .13376 | .0018585 | .0026421 | .0068105 | .0007594 | .051311 | .062600 |
| %RSD | .8298593 | .5215671 | .6447443 | 1.029034 | .3796035 | .8708474 | 1.059915 |
| #1 | 15.99074 | .3583303 | .4068938 | .6539689 | .1993109 | 5.834200 | 5.834755 |
| #2 | 16.25749 | .3546599 | .4104054 | .6656623 | .2008280 | 5.931907 | 5.931870 |
| #3 | 16.10660 | .3559871 | .4120692 | .6658651 | .2000068 | 5.910231 | 5.951743 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-02 Acquired: 8/7/2024 18:20:27 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 2.695853 | .1706456 | .4573908 |
| Stddev | .032210 | .0003255 | .0013353 |
| %RSD | 1.194782 | .1907220 | .2919376 |
| #1 | 2.659529 | .1703296 | .4588505 |
| #2 | 2.707095 | .1709798 | .4570909 |
| #3 | 2.720935 | .1706274 | .4562309 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2628.807 | 92297.34 | 13049.23 | 3459.284 | 4812.667 |
| Stddev | 11.275 | 377.63 | 78.92 | 6.535 | 25.859 |
| %RSD | .4288884 | .4091454 | .6048064 | .1889106 | .5373147 |
| #1 | 2641.359 | 92627.57 | 12958.28 | 3457.400 | 4842.510 |
| #2 | 2619.537 | 91885.62 | 13089.80 | 3453.898 | 4796.871 |
| #3 | 2625.526 | 92378.84 | 13099.62 | 3466.554 | 4798.622 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-03 Acquired: 8/7/2024 18:24:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .7530533 | 1.879668 | .9540541 | 1.777888 | .7828631 | 2.098021 | .3223955 |
| Stddev | .0042591 | .014096 | .0014944 | .007168 | .0031845 | .014779 | .0016113 |
| %RSD | .5655807 | .7499149 | .1566383 | .4031531 | .4067737 | .7044408 | .4998065 |
| #1 | .7547348 | 1.881325 | .9526325 | 1.775285 | .7802011 | 2.087579 | .3223940 |
| #2 | .7482101 | 1.892862 | .9539179 | 1.772385 | .7819972 | 2.114932 | .3240076 |
| #3 | .7562150 | 1.864817 | .9556120 | 1.785993 | .7863910 | 2.091553 | .3207849 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2038357 | .1896487 | 41.29357 | .4100529 | .1981496 | .2927984 | 8.218837 |
| Stddev | .0005015 | .0005927 | .14668 | .0026842 | .0005144 | .0015000 | .048979 |
| %RSD | .2460355 | .3125028 | .3552118 | .6545912 | .2596015 | .5123018 | .5959405 |
| #1 | .2042269 | .1897874 | 41.30818 | .4116164 | .1980745 | .2923800 | 8.210300 |
| #2 | .2040097 | .1889990 | 41.43239 | .4115888 | .1976768 | .2915520 | 8.271523 |
| #3 | .2032703 | .1901597 | 41.14013 | .4069535 | .1986973 | .2944632 | 8.174687 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.811924 | 9.456084 | .4975020 | .0710136 | 160.2292 | .3090486 | .2375753 |
| Stddev | .009425 | .081781 | .0006725 | .0004878 | 1.1104 | .0017960 | .0016010 |
| %RSD | .5201908 | .8648478 | .1351688 | .6869469 | .6930189 | .5811489 | .6738932 |
| #1 | 1.811044 | 9.439424 | .4977999 | .0708289 | 160.2111 | .3086631 | .2380433 |
| #2 | 1.821759 | 9.544911 | .4967321 | .0715669 | 161.3486 | .3110060 | .2388901 |
| #3 | 1.802969 | 9.383915 | .4979742 | .0706452 | 159.1280 | .3074766 | .2357924 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 16.58503 | .3753553 | .4253774 | .6880172 | .2067583 | 5.929796 | 6.154587 |
| Stddev | .14253 | .0013018 | .0006162 | .0025341 | .0022188 | .044967 | .017484 |
| %RSD | .8594070 | .3468188 | .1448596 | .3683145 | 1.073138 | .7583159 | .2840818 |
| #1 | 16.61809 | .3768321 | .4247479 | .6858471 | .2070454 | 5.900103 | 6.166204 |
| #2 | 16.70814 | .3743741 | .4254047 | .6874024 | .2088195 | 5.981531 | 6.134479 |
| #3 | 16.42888 | .3748598 | .4259794 | .6908021 | .2044099 | 5.907754 | 6.163078 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-03 Acquired: 8/7/2024 18:24:40 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 2.653894 | .1762400 | .4724996 |
| Stddev | .003656 | .0013959 | .0024762 |
| %RSD | .1377451 | .7920235 | .5240585 |
| #1 | 2.657972 | .1751149 | .4720007 |
| #2 | 2.650911 | .1778021 | .4751872 |
| #3 | 2.652798 | .1758030 | .4703108 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2676.862 | 93043.25 | 13031.26 | 3498.275 | 4903.956 |
| Stddev | 11.993 | 424.81 | 20.73 | 11.766 | 15.913 |
| %RSD | .4480245 | .4565746 | .1591137 | .3363411 | .3244995 |
| #1 | 2689.680 | 92987.28 | 13020.63 | 3502.430 | 4919.880 |
| #2 | 2674.992 | 92649.20 | 13018.00 | 3484.995 | 4903.935 |
| #3 | 2665.913 | 93493.27 | 13055.15 | 3507.400 | 4888.053 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01A Acquired: 8/7/2024 18:33:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .7023645 | 1.732868 | .8869900 | 1.654630 | .7440037 | 1.913258 | .2862744 |
| Stddev | .0052726 | .014162 | .0109879 | .012869 | .0065868 | .142578 | .0217107 |
| %RSD | .7506952 | .8172669 | 1.238779 | .7777637 | .8853129 | 7.452113 | 7.583884 |
| #1 | .6964088 | 1.716633 | .8747858 | 1.639872 | .7367273 | 1.999360 | .2995962 |
| #2 | .7064370 | 1.739289 | .8960965 | 1.663515 | .7495592 | 1.748682 | .2612218 |
| #3 | .7042476 | 1.742683 | .8900876 | 1.660502 | .7457247 | 1.991732 | .2980051 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1831402 | .1777687 | 36.75425 | .3879442 | .1870162 | .2748460 | 7.682022 |
| Stddev | .0117744 | .0020409 | 2.68981 | .0011818 | .0021719 | .0018567 | .085815 |
| %RSD | 6.429148 | 1.148053 | 7.318355 | .3046402 | 1.161329 | .6755570 | 1.117086 |
| #1 | .1897782 | .1754199 | 38.30390 | .3872118 | .1846231 | .2727092 | 7.755537 |
| #2 | .1695456 | .1791090 | 33.64833 | .3893077 | .1888623 | .2760663 | 7.587724 |
| #3 | .1900969 | .1787772 | 38.31050 | .3873133 | .1875631 | .2757624 | 7.702803 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.609142 | 8.399464 | .4677947 | .0671498 | 149.3443 | .2750053 | .2248427 |
| Stddev | .118323 | .605229 | .0058349 | .0003789 | .3323 | .0216432 | .0013325 |
| %RSD | 7.353196 | 7.205567 | 1.247328 | .5642877 | .2225232 | 7.870090 | .5926429 |
| #1 | 1.677758 | 8.784073 | .4611828 | .0675859 | 148.9701 | .2890085 | .2237551 |
| #2 | 1.472514 | 7.701829 | .4722224 | .0669016 | 149.6052 | .2500772 | .2263291 |
| #3 | 1.677154 | 8.712492 | .4699789 | .0669617 | 149.4575 | .2859302 | .2244439 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 15.52364 | .3345079 | .4117046 | .6489941 | .1891654 | 5.527527 | 5.676680 |
| Stddev | .15746 | .0208438 | .0042558 | .0081766 | .0141442 | .063181 | .068435 |
| %RSD | 1.014331 | 6.231190 | 1.033711 | 1.259889 | 7.477137 | 1.143024 | 1.205553 |
| #1 | 15.66395 | .3462597 | .4068025 | .6396145 | .1975319 | 5.578558 | 5.597764 |
| #2 | 15.35334 | .3104417 | .4144552 | .6546192 | .1728348 | 5.456859 | 5.712579 |
| #3 | 15.55363 | .3468223 | .4138559 | .6527485 | .1971295 | 5.547164 | 5.719696 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-01A Acquired: 8/7/2024 18:33:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 2.404723 | .1559343 | .4200114 |
| Stddev | .028613 | .0123243 | .0318411 |
| %RSD | 1.189855 | 7.903534 | 7.581004 |
| | | | |
| #1 | 2.372104 | .1645212 | .4384133 |
| #2 | 2.425581 | .1418130 | .3832445 |
| #3 | 2.416485 | .1614688 | .4383764 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2696.245 | 92816.43 | 13670.19 | 3469.518 | 4984.383 |
| Stddev | 19.003 | 351.79 | 946.28 | 10.727 | 47.266 |
| %RSD | .7047996 | .3790116 | 6.922201 | .3091694 | .9482759 |
| | | | | | |
| #1 | 2718.023 | 92410.40 | 13101.79 | 3458.428 | 5037.575 |
| #2 | 2683.030 | 93029.72 | 14762.56 | 3470.286 | 4947.202 |
| #3 | 2687.682 | 93009.18 | 13146.22 | 3479.840 | 4968.374 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-04 Acquired: 8/7/2024 18:38:12 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002295 | -.004012 | -.000011 | .0015831 | .0030966 | .0913062 |
| Stddev | .000882 | .001155 | .000412 | .0000757 | .0009259 | .0079925 |
| %RSD | 38.41285 | 28.79282 | 3663.753 | 4.780614 | 29.90217 | 8.753510 |
| #1 | -.002265 | -.004155 | -.000442 | .0016529 | .0036359 | .0851683 |
| #2 | -.001429 | -.005090 | .000379 | .0015937 | .0020274 | .1003438 |
| #3 | -.003191 | -.002792 | .000029 | .0015027 | .0036264 | .0884066 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1644325 | -.000099 | .0000166 | 70.25034 | .0011287 | .0094538 |
| Stddev | .0014504 | .000057 | .0000281 | .39439 | .0001646 | .0001741 |
| %RSD | .8820444 | 57.70064 | 169.0270 | .5614087 | 14.58758 | 1.841597 |
| #1 | .1632957 | -.000077 | .0000294 | 70.15631 | .0013117 | .0092708 |
| #2 | .1639360 | -.000056 | .0000360 | 69.91146 | .0009925 | .0096174 |
| #3 | .1660660 | -.000163 | -.000016 | 70.68325 | .0010818 | .0094733 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0005635 | 8.167336 | 2.048104 | 16.13867 | .0018971 | .0001761 |
| Stddev | .0003848 | .022965 | .011950 | .10703 | .0000411 | .0002899 |
| %RSD | 68.29097 | .2811830 | .5834763 | .6632108 | 2.168232 | 164.6041 |
| #1 | .0002250 | 8.155097 | 2.043374 | 16.09720 | .0019351 | .0001119 |
| #2 | .0004835 | 8.193828 | 2.039242 | 16.05857 | .0019026 | -.000076 |
| #3 | .0009820 | 8.153083 | 2.061695 | 16.26023 | .0018534 | .000493 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 373.3099 | .0021295 | .0454913 | 12.65069 | .1164012 | .0001009 |
| Stddev | 2.7325 | .0012323 | .0000787 | .04147 | .0010589 | .0000717 |
| %RSD | .7319746 | 57.86884 | .1730636 | .3278167 | .9097309 | 71.00249 |
| #1 | 373.9609 | .0010516 | .0454139 | 12.65943 | .1154789 | .0001218 |
| #2 | 370.3106 | .0034730 | .0455713 | 12.60555 | .1161670 | .0001598 |
| #3 | 375.6581 | .0018640 | .0454887 | 12.68710 | .1175576 | .0000211 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3440-04 Acquired: 8/7/2024 18:38:12 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.006266 | -.000743 | 4.437786 | .4790917 | F 16.48325 | .0069215 |
| Stddev | .000318 | .000677 | .007954 | .0027004 | .02104 | .0017833 |
| %RSD | 5.081406 | 91.19001 | .1792254 | .5636446 | .1276574 | 25.76504 |
| | | | | | | |
| #1 | -.006234 | -.000006 | 4.445163 | .4808882 | 16.49556 | .0048829 |
| #2 | -.006599 | -.000883 | 4.438834 | .4759863 | 16.45896 | .0081924 |
| #3 | -.005965 | -.001339 | 4.429360 | .4804006 | 16.49524 | .0076892 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .4856174 |
| Stddev | .0028538 |
| %RSD | .5876705 |
| | |
| #1 | .4857304 |
| #2 | .4827088 |
| #3 | .4884131 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2553.751 | 92582.51 | 12755.99 | 3454.153 | 4533.046 |
| Stddev | 1.276 | 43.35 | 72.82 | 5.233 | .581 |
| %RSD | .0499486 | .0468188 | .5708377 | .1514997 | .0128077 |
| | | | | | |
| #1 | 2553.851 | 92544.59 | 12750.17 | 3459.138 | 4533.713 |
| #2 | 2554.974 | 92629.76 | 12831.53 | 3448.703 | 4532.770 |
| #3 | 2552.429 | 92573.17 | 12686.25 | 3454.619 | 4532.655 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3443-01 Acquired: 8/7/2024 18:42:43 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.003083 | -.002628 | .0028164 | .0007365 | .0027036 | 12.06319 |
| Stddev | .001467 | .000638 | .0004199 | .0023011 | .0008954 | .05412 |
| %RSD | 47.57112 | 24.28310 | 14.90826 | 312.4452 | 33.12060 | .4486343 |
| #1 | -.001476 | -.003364 | .0025507 | .0016671 | .0021202 | 12.12561 |
| #2 | -.003424 | -.002276 | .0033005 | -.001884 | .0037345 | 12.02941 |
| #3 | -.004349 | -.002242 | .0025981 | .002427 | .0022559 | 12.03456 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0290957 | -.000079 | -.000003 | 40.91678 | .0854025 | .0026894 |
| Stddev | .0004178 | .000057 | .000053 | .01446 | .0004455 | .0001649 |
| %RSD | 1.436129 | 71.95493 | 1548.037 | .0353301 | .5216452 | 6.130274 |
| #1 | .0286626 | -.000117 | -.000012 | 40.92656 | .0854167 | .0025709 |
| #2 | .0291282 | -.000108 | .000053 | 40.90017 | .0858407 | .0026197 |
| #3 | .0294964 | -.000014 | -.000051 | 40.92360 | .0849500 | .0028777 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .3568542 | 2.067872 | .0385686 | 12.66479 | .0638173 | .0002448 |
| Stddev | .0007386 | .017351 | .0005711 | .04998 | .0002702 | .0000335 |
| %RSD | .2069834 | .8390920 | 1.480700 | .3946488 | .4234225 | 13.67313 |
| #1 | .3560978 | 2.048901 | .0381242 | 12.63194 | .0636282 | .0002081 |
| #2 | .3568909 | 2.071775 | .0383690 | 12.64013 | .0636968 | .0002524 |
| #3 | .3575737 | 2.082939 | .0392127 | 12.72231 | .0641268 | .0002737 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 359.4202 | .0020157 | 1.643699 | 46.98219 | 1.006890 | .0091419 |
| Stddev | 1.9063 | .0013356 | .007443 | .19561 | .003424 | .0000347 |
| %RSD | .5303777 | 66.25950 | .4528280 | .4163582 | .3400830 | .3796816 |
| #1 | 361.3041 | .0025380 | 1.640540 | 47.17686 | 1.005565 | .0091669 |
| #2 | 357.4923 | .0004979 | 1.638357 | 46.98405 | 1.004327 | .0091566 |
| #3 | 359.4642 | .0030112 | 1.652201 | 46.78565 | 1.010779 | .0091023 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3443-01 Acquired: 8/7/2024 18:42:43 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0289670 | -.000914 | 3.523942 | F 11.64807 | F 153.4612 | .0096917 |
| Stddev | .0001989 | .000536 | .002726 | .02189 | .3179 | .0012893 |
| %RSD | .6867144 | 58.62878 | .0773620 | .1879534 | .2071630 | 13.30342 |
| #1 | .0288599 | -.001444 | 3.525625 | 11.65304 | 153.8208 | .0103222 |
| #2 | .0288446 | -.000372 | 3.525404 | 11.66705 | 153.3452 | .0105444 |
| #3 | .0291965 | -.000926 | 3.520797 | 11.62412 | 153.2175 | .0082084 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | .1866675 |
| Stddev | .0007263 |
| %RSD | .3890855 |
| #1 | .1874488 |
| #2 | .1860129 |
| #3 | .1865407 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2601.353 | 91795.84 | 13362.67 | 3453.115 | 4649.369 |
| Stddev | 12.657 | 264.90 | 44.13 | 6.880 | 7.724 |
| %RSD | .4865528 | .2885758 | .3302111 | .1992379 | .1661357 |
| #1 | 2614.346 | 91611.00 | 13318.40 | 3453.664 | 4656.669 |
| #2 | 2600.652 | 91677.19 | 13406.64 | 3459.704 | 4650.159 |
| #3 | 2589.061 | 92099.32 | 13362.96 | 3445.977 | 4641.281 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3451-01 Acquired: 8/7/2024 18:47:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0006023 | -.003505 | .0059157 | .0014224 | .0012686 | .3222773 | .0952579 |
| Stddev | .0006469 | .000578 | .0007543 | .0012286 | .0008430 | .0159260 | .0019014 |
| %RSD | 107.4158 | 16.50283 | 12.75034 | 86.37413 | 66.45219 | 4.941698 | 1.996034 |
| #1 | .0002177 | -.004160 | .0056639 | .0004166 | .0020428 | .3039442 | .0954102 |
| #2 | .0013492 | -.003065 | .0067636 | .0027917 | .0013925 | .3301949 | .0932850 |
| #3 | .0002399 | -.003290 | .0053195 | .0010589 | .0003705 | .3326928 | .0970786 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000108 | -.000121 | 28.36200 | .0018079 | .0009044 | .0053841 | 5.846488 |
| Stddev | .000062 | .000110 | .52958 | .0003138 | .0000480 | .0001531 | .026736 |
| %RSD | 57.44055 | 90.92679 | 1.867225 | 17.35880 | 5.311668 | 2.844073 | .4573001 |
| #1 | -.000153 | -.000134 | 28.29889 | .0021131 | .0008989 | .0052080 | 5.835738 |
| #2 | -.000037 | -.000005 | 27.86679 | .0014861 | .0008594 | .0054584 | 5.826799 |
| #3 | -.000133 | -.000225 | 28.92030 | .0018245 | .0009550 | .0054860 | 5.876925 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6720243 | 4.605694 | .0020960 | .0004288 | 92.59170 | .0057109 | .0252302 |
| Stddev | .0141485 | .087826 | .0003129 | .0001489 | .13648 | .0007491 | .0002328 |
| %RSD | 2.105357 | 1.906898 | 14.92792 | 34.71645 | .1473948 | 13.11684 | .9228658 |
| #1 | .6694004 | 4.567336 | .0017531 | .0002605 | 92.63577 | .0064790 | .0254852 |
| #2 | .6593714 | 4.543571 | .0021688 | .0004829 | 92.43864 | .0056714 | .0250288 |
| #3 | .6873011 | 4.706174 | .0023661 | .0005431 | 92.70070 | .0049824 | .0251768 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.584466 | .0952135 | .0010688 | -.004939 | .0055260 | 3.335363 | .2121433 |
| Stddev | .032930 | .0014731 | .0000987 | .000142 | .0003958 | .026907 | .0014979 |
| %RSD | .7182886 | 1.547193 | 9.238340 | 2.877871 | 7.163214 | .8067186 | .7060782 |
| #1 | 4.622473 | .0952971 | .0009942 | -.004801 | .0058626 | 3.305224 | .2111210 |
| #2 | 4.564497 | .0937003 | .0011808 | -.005085 | .0056255 | 3.343896 | .2114462 |
| #3 | 4.566427 | .0966430 | .0010314 | -.004933 | .0050899 | 3.356968 | .2138627 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3451-01 Acquired: 8/7/2024 18:47:08 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.206540 | .0023358 | .1913931 |
| Stddev | .006981 | .0012237 | .0031308 |
| %RSD | .1659484 | 52.38669 | 1.635791 |
| #1 | 4.204876 | .0018297 | .1916704 |
| #2 | 4.214202 | .0014464 | .1881329 |
| #3 | 4.200541 | .0037314 | .1943760 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2713.020 | 93314.21 | 13613.43 | 3509.915 | 5028.052 |
| Stddev | 9.384 | 296.79 | 243.11 | 20.363 | 19.280 |
| %RSD | .3458883 | .3180590 | 1.785780 | .5801475 | .3834475 |
| #1 | 2704.181 | 93040.35 | 13550.75 | 3488.019 | 5010.356 |
| #2 | 2712.010 | 93629.57 | 13881.74 | 3528.283 | 5025.200 |
| #3 | 2722.868 | 93272.71 | 13407.80 | 3513.443 | 5048.599 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV03 Acquired: 8/7/2024 18:51:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

| Elem | As1890 | Tl1908 | Pb2203 | Se1960 | Sb2068 | Al3961 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.716102 | 4.988259 | 4.950342 | 4.666678 | 4.776040 | 9.392072 |
| Stddev | .031280 | .006447 | .032507 | .029365 | .033850 | .014605 |
| %RSD | .6632638 | .1292351 | .6566612 | .6292460 | .7087459 | .1555034 |
| #1 | 4.687075 | 4.983148 | 4.925730 | 4.637479 | 4.746340 | 9.405751 |
| #2 | 4.712002 | 4.995502 | 4.938104 | 4.666351 | 4.768883 | 9.393774 |
| #3 | 4.749231 | 4.986128 | 4.987192 | 4.696206 | 4.812896 | 9.376690 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.844111 | .2518247 | 2.438146 | 24.71112 | .9959542 | 2.426973 |
| Stddev | .080295 | .0005956 | .015644 | .04125 | .0053665 | .016381 |
| %RSD | .8156626 | .2365245 | .6416406 | .1669445 | .5388264 | .6749609 |
| #1 | 9.932265 | .2521886 | 2.426821 | 24.73516 | .9973099 | 2.415134 |
| #2 | 9.775157 | .2511373 | 2.431620 | 24.66349 | 1.000513 | 2.420117 |
| #3 | 9.824912 | .2521482 | 2.455996 | 24.73472 | .990040 | 2.445669 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.199036 | 4.922774 | 2.455917 | 24.18515 | 2.436072 | 1.238580 |
| Stddev | .011676 | .006828 | .002425 | .06593 | .015597 | .001316 |
| %RSD | .9738005 | .1386991 | .0987271 | .2726235 | .6402403 | .1062705 |
| #1 | 1.188543 | 4.930285 | 2.456765 | 24.16893 | 2.424922 | 1.239572 |
| #2 | 1.196951 | 4.921094 | 2.453182 | 24.12884 | 2.429400 | 1.239081 |
| #3 | 1.211614 | 4.916943 | 2.457804 | 24.25768 | 2.453896 | 1.237087 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 23.63713 | 2.418437 | 2.501466 | 24.23197 | 4.905832 | 4.967234 |
| Stddev | .04239 | .002036 | .011504 | .02577 | .008893 | .029499 |
| %RSD | .1793390 | .0841839 | .4598717 | .1063579 | .1812744 | .5938724 |
| #1 | 23.67727 | 2.418071 | 2.508591 | 24.25573 | 4.915921 | 4.939168 |
| #2 | 23.64133 | 2.416610 | 2.507611 | 24.23562 | 4.899127 | 4.964552 |
| #3 | 23.59280 | 2.420632 | 2.488195 | 24.20457 | 4.902450 | 4.997983 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV03 Acquired: 8/7/2024 18:51:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

| Elem | Sn1899 | Ti3361 | Si2881 | P_1774 | S_1820 | Li6707 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 4.861240 | 4.894870 | 4.733723 | 4.884098 | F 4.439280 | F 4.322959 |
| Stddev | .026609 | .011567 | .025703 | .030845 | .037183 | .008950 |
| %RSD | .5473780 | .2363016 | .5429727 | .6315443 | .8375949 | .2070296 |
| #1 | 4.842780 | 4.902315 | 4.708590 | 4.853008 | 4.414902 | 4.333195 |
| #2 | 4.849198 | 4.881545 | 4.732618 | 4.884595 | 4.420861 | 4.319072 |
| #3 | 4.891741 | 4.900752 | 4.759961 | 4.914692 | 4.482077 | 4.316610 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | 4.896201 |
| Stddev | .017178 |
| %RSD | .3508453 |
| #1 | 4.893584 |
| #2 | 4.880481 |
| #3 | 4.914537 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2789.040 | 94570.96 | 13297.07 | 3619.921 | 5078.113 |
| Stddev | 21.278 | 56.31 | 31.47 | 4.934 | 39.595 |
| %RSD | .7629193 | .0595441 | .2366867 | .1363008 | .7797143 |
| #1 | 2808.174 | 94514.18 | 13260.79 | 3614.925 | 5110.441 |
| #2 | 2792.821 | 94571.89 | 13317.07 | 3620.048 | 5089.949 |
| #3 | 2766.125 | 94626.79 | 13313.35 | 3624.791 | 5033.951 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB03 Acquired: 8/7/2024 18:55:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000100 | .0008465 | -.000327 | -.000182 | .0005633 | .0070506 | -.001617 |
| Stddev | .000657 | .0002679 | .000917 | .001762 | .0006536 | .0034893 | .001313 |
| %RSD | 660.0981 | 31.65151 | 280.6403 | 966.3903 | 116.0322 | 49.48933 | 81.19174 |
| #1 | -.000001 | .0008749 | .000090 | -.002170 | .0001422 | .0110597 | -.001905 |
| #2 | -.000801 | .0005655 | .000308 | .000434 | .0002315 | .0053930 | -.000184 |
| #3 | .000503 | .0010990 | -.001379 | .001189 | .0013163 | .0046990 | -.002763 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000352 | -.000009 | -.005233 | .0000832 | .0001984 | .0001804 | -.000790 |
| Stddev | .0000412 | .000075 | .003201 | .0001407 | .0001228 | .0001688 | .001467 |
| %RSD | 117.0090 | 797.9349 | 61.16341 | 169.0720 | 61.89744 | 93.55058 | 185.6436 |
| #1 | .0000090 | -.000001 | -.004958 | -.000067 | .0002245 | .0001301 | .000902 |
| #2 | .0000139 | .000061 | -.008562 | .000211 | .0003061 | .0000425 | -.001701 |
| #3 | .0000828 | -.000089 | -.002179 | .000106 | .0000647 | .0003687 | -.001571 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000229 | -.006234 | -.000080 | -.000015 | .5090810 | .0006119 | -.000204 |
| Stddev | .000204 | .014552 | .000118 | .000153 | .0228407 | .0010545 | .000122 |
| %RSD | 88.99752 | 233.4268 | 146.5993 | 989.2887 | 4.486643 | 172.3411 | 59.64150 |
| #1 | -.000021 | -.008518 | -.000128 | -.000058 | .4831905 | .0017935 | -.000079 |
| #2 | -.000429 | -.019509 | .000054 | .000154 | .5176726 | -.000233 | -.000321 |
| #3 | -.000237 | .009324 | -.000167 | -.000142 | .5263800 | .000275 | -.000212 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .8344575 | .0040639 | .0002669 | -.003414 | -.000225 | -.007415 | -.004557 |
| Stddev | .0311816 | .0004957 | .0001939 | .000515 | .000782 | .002555 | .000367 |
| %RSD | 3.736752 | 12.19795 | 72.64187 | 15.08702 | 347.1210 | 34.46495 | 8.051713 |
| #1 | .8061688 | .0046191 | .0004905 | -.004004 | -.000755 | -.007565 | -.004324 |
| #2 | .8293119 | .0039066 | .0001630 | -.003057 | .000672 | -.009891 | -.004367 |
| #3 | .8678919 | .0036659 | .0001471 | -.003181 | -.000593 | -.004787 | -.004980 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB03 Acquired: 8/7/2024 18:55:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.001850 | .0029548 | -.000066 |
| Stddev | .000447 | .0002331 | .000010 |
| %RSD | 24.18780 | 7.888046 | 15.03376 |
| | | | |
| #1 | -.002242 | .0027656 | -.000063 |
| #2 | -.001945 | .0028836 | -.000057 |
| #3 | -.001362 | .0032151 | -.000077 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2717.416 | 103644.1 | 13797.95 | 3904.276 | 5032.866 |
| Stddev | 24.415 | 323.8 | 62.83 | 8.994 | 54.577 |
| %RSD | .8984513 | .3123970 | .4553314 | .2303705 | 1.084404 |
| | | | | | |
| #1 | 2745.078 | 103719.0 | 13857.56 | 3894.134 | 5093.364 |
| #2 | 2708.296 | 103289.4 | 13732.34 | 3907.407 | 5017.903 |
| #3 | 2698.874 | 103923.8 | 13803.97 | 3911.286 | 4987.332 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR1 Acquired: 8/7/2024 19:07:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0419043 | -.012289 | .0492429 | -.115214 | -.002260 | 1988.991 | .0157141 |
| Stddev | .0079528 | .003413 | .0038997 | .005546 | .005091 | 14.391 | .0005246 |
| %RSD | 18.97847 | 27.77458 | 7.919374 | 4.813397 | 225.2593 | .7235155 | 3.338527 |
| #1 | .0328227 | -.016052 | .0533994 | -.116634 | -.006593 | 2005.376 | .0151821 |
| #2 | .0476241 | -.011423 | .0486647 | -.119911 | .003347 | 1983.197 | .0157291 |
| #3 | .0452660 | -.009392 | .0456645 | -.109096 | -.003533 | 1978.401 | .0162310 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0069283 | .0696885 | 1646.331 | .0243813 | .0397801 | -.019714 | 907.7457 |
| Stddev | .0000923 | .0021672 | 16.180 | .0001140 | .0004876 | .009507 | 3.9674 |
| %RSD | 1.332333 | 3.109853 | .9827863 | .4677797 | 1.225744 | 48.22263 | .4370588 |
| #1 | .0070041 | .0714574 | 1662.362 | .0242802 | .0403151 | -.012490 | 903.6156 |
| #2 | .0068255 | .0672711 | 1646.623 | .0243588 | .0396645 | -.030484 | 911.5274 |
| #3 | .0069553 | .0703372 | 1630.007 | .0245049 | .0393607 | -.016169 | 908.0941 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0108810 | 1734.212 | .0410891 | .0114347 | 1806.618 | .0139198 | .0478760 |
| Stddev | .0007811 | 23.490 | .0003866 | .0004829 | 3.001 | .0008998 | .0008252 |
| %RSD | 7.178866 | 1.354519 | .9410017 | 4.222983 | .1661310 | 6.464049 | 1.723672 |
| #1 | .0117563 | 1760.554 | .0415132 | .0119506 | 1803.615 | .0131780 | .0482926 |
| #2 | .0102549 | 1715.440 | .0409978 | .0109935 | 1809.618 | .0149207 | .0484099 |
| #3 | .0106317 | 1726.641 | .0407562 | .0113600 | 1806.622 | .0136606 | .0469256 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1407.191 | .0371593 | -.000003 | -.000205 | -.053455 | .1333908 | .0601927 |
| Stddev | 1.388 | .0164595 | .001806 | .000989 | .001969 | .0083745 | .0031629 |
| %RSD | .0986470 | 44.29455 | 70206.63 | 482.3052 | 3.684049 | 6.278145 | 5.254648 |
| #1 | 1408.319 | .0223238 | -.001872 | .000451 | -.054154 | .1400213 | .0626941 |
| #2 | 1405.641 | .0548653 | .001731 | -.001342 | -.051232 | .1239797 | .0612466 |
| #3 | 1407.615 | .0342887 | .000133 | .000276 | -.054980 | .1361714 | .0566374 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: LR1 Acquired: 8/7/2024 19:07:49 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.199870 | .3125616 | -.895953 |
| Stddev | .007291 | .0013233 | .003936 |
| %RSD | 3.647731 | .4233703 | .4393241 |
| | | | |
| #1 | -.198976 | .3111114 | -.891844 |
| #2 | -.193068 | .3137037 | -.899690 |
| #3 | -.207566 | .3128698 | -.896325 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 1840.516 | 69187.81 | 11116.11 | 2492.633 | 2952.148 |
| Stddev | 15.525 | 373.55 | 74.16 | 22.427 | 25.511 |
| %RSD | .8435366 | .5399099 | .6671112 | .8997355 | .8641598 |
| | | | | | |
| #1 | 1829.153 | 69598.54 | 11040.70 | 2504.374 | 2934.795 |
| #2 | 1858.206 | 68868.37 | 11188.95 | 2466.773 | 2981.440 |
| #3 | 1834.189 | 69096.52 | 11118.67 | 2506.752 | 2940.210 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-01 Acquired: 8/7/2024 19:12:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.003215 | -.003699 | .0019290 | -.001494 | .0007554 | .0821130 | .0032424 |
| Stddev | .002605 | .000875 | .0003370 | .001561 | .0008593 | .0022862 | .0006438 |
| %RSD | 81.00304 | 23.65892 | 17.46955 | 104.5227 | 113.7627 | 2.784205 | 19.85463 |
| #1 | -.001838 | -.004534 | .0022096 | .000302 | .0001184 | .0845739 | .0028179 |
| #2 | -.006219 | -.003775 | .0020222 | -.002529 | .0017327 | .0817099 | .0039831 |
| #3 | -.001589 | -.002789 | .0015552 | -.002254 | .0004149 | .0800551 | .0029262 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000868 | .0000756 | 6.683393 | .0010197 | .0103924 | .0041586 | 14.56159 |
| Stddev | .0000304 | .0001330 | .035837 | .0002170 | .0000970 | .0001691 | .13764 |
| %RSD | 34.99713 | 175.8786 | .5362113 | 21.28227 | .9337824 | 4.066786 | .9452357 |
| #1 | .0000831 | .0001286 | 6.666737 | .0007777 | .0102804 | .0042153 | 14.41445 |
| #2 | .0000585 | -.000076 | 6.724527 | .0011970 | .0104483 | .0042921 | 14.68720 |
| #3 | .0001189 | .000174 | 6.658915 | .0010845 | .0104486 | .0039684 | 14.58311 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .6120579 | 2.982767 | .0106335 | .0005162 | 13.66353 | .0026377 | .0388074 |
| Stddev | .0031069 | .017366 | .0002251 | .0002467 | .08861 | .0014998 | .0003110 |
| %RSD | .5076197 | .5822130 | 2.116980 | 47.79612 | .6485091 | 56.85921 | .8014379 |
| #1 | .6118929 | 3.002819 | .0108443 | .0002355 | 13.56797 | .0043483 | .0390752 |
| #2 | .6152440 | 2.972575 | .0103964 | .0006147 | 13.74299 | .0015484 | .0384663 |
| #3 | .6090367 | 2.972908 | .0106598 | .0006985 | 13.67961 | .0020164 | .0388809 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.274603 | .0078482 | .0001449 | -.004686 | .0016824 | 4.641398 | .0037430 |
| Stddev | .038003 | .0001002 | .0000871 | .000226 | .0005183 | .029369 | .0009064 |
| %RSD | 2.981563 | 1.277141 | 60.07372 | 4.813480 | 30.80520 | .6327540 | 24.21524 |
| #1 | 1.231021 | .0079313 | .0000449 | -.004574 | .0020940 | 4.611270 | .0046155 |
| #2 | 1.300828 | .0077369 | .0001859 | -.004539 | .0011004 | 4.669943 | .0028062 |
| #3 | 1.291961 | .0078764 | .0002040 | -.004946 | .0018529 | 4.642980 | .0038072 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-01 Acquired: 8/7/2024 19:12:57 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .7568199 | .0001410 | .0287921 |
| Stddev | .0038593 | .0004675 | .0003412 |
| %RSD | .5099308 | 331.4931 | 1.185138 |
| | | | |
| #1 | .7534976 | -.000074 | .0291324 |
| #2 | .7559089 | -.000180 | .0287939 |
| #3 | .7610531 | .000677 | .0284499 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2690.173 | 98403.24 | 12992.79 | 3726.910 | 5024.333 |
| Stddev | 14.035 | 499.81 | 54.58 | 22.597 | 24.014 |
| %RSD | .5217098 | .5079173 | .4201063 | .6063283 | .4779518 |
| | | | | | |
| #1 | 2702.776 | 98979.38 | 12929.81 | 3752.279 | 5045.330 |
| #2 | 2692.696 | 98144.40 | 13022.00 | 3719.513 | 5029.520 |
| #3 | 2675.048 | 98085.94 | 13026.55 | 3708.939 | 4998.150 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-03 Acquired: 8/7/2024 19:17:20 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002381 | -.003243 | .0015723 | -.000503 | .0013219 | -.034611 |
| Stddev | .001680 | .000975 | .0012457 | .001356 | .0005540 | .011532 |
| %RSD | 70.56097 | 30.06719 | 79.22518 | 269.6462 | 41.90955 | 33.31964 |
| #1 | -.004251 | -.002496 | .0028038 | -.001848 | .0012031 | -.037445 |
| #2 | -.000998 | -.004346 | .0003129 | -.000523 | .0019257 | -.044462 |
| #3 | -.001894 | -.002886 | .0016002 | .000863 | .0008370 | -.021926 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2423551 | -.000134 | -.000079 | 140.7153 | .0009246 | .0040123 |
| Stddev | .0197857 | .000037 | .000054 | 10.8961 | .0001017 | .0001501 |
| %RSD | 8.163935 | 27.58252 | 68.15512 | 7.743363 | 10.99705 | 3.741168 |
| #1 | .2567284 | -.000173 | -.000135 | 148.7539 | .0008950 | .0040740 |
| #2 | .2197889 | -.000098 | -.000073 | 128.3138 | .0010377 | .0038412 |
| #3 | .2505479 | -.000132 | -.000028 | 145.0782 | .0008409 | .0041218 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0256240 | .0234739 | .0761782 | 18.01932 | .0062477 | .0001984 |
| Stddev | .0001330 | .0032649 | .0058455 | 1.41482 | .0001525 | .0001155 |
| %RSD | .5191689 | 13.90863 | 7.673503 | 7.851701 | 2.440905 | 58.20276 |
| #1 | .0256818 | .0209009 | .0802525 | 19.08737 | .0061681 | .0001174 |
| #2 | .0254719 | .0223740 | .0694805 | 16.41470 | .0061515 | .0003306 |
| #3 | .0257184 | .0271466 | .0788016 | 18.55590 | .0064236 | .0001472 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 18.23418 | .0012802 | .0347847 | 12.60891 | 1.700724 | .0039758 |
| Stddev | .39541 | .0004565 | .0011066 | .31290 | .116157 | .0001103 |
| %RSD | 2.168516 | 35.66095 | 3.181181 | 2.481558 | 6.829874 | 2.773587 |
| #1 | 17.83668 | .0013164 | .0335169 | 12.27313 | 1.787234 | .0040862 |
| #2 | 18.23839 | .0008067 | .0352811 | 12.66130 | 1.568702 | .0038657 |
| #3 | 18.62747 | .0017176 | .0355562 | 12.89231 | 1.746236 | .0039754 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-03 Acquired: 8/7/2024 19:17:20 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.006423 | -.004706 | 5.000674 | .1088872 | F 14.09720 | .0147304 |
| Stddev | .001157 | .000987 | .120721 | .0003348 | .04048 | .0008432 |
| %RSD | 18.01856 | 20.97017 | 2.414087 | .3075198 | .2871232 | 5.723997 |
| #1 | -.006176 | -.005807 | 4.879449 | .1088995 | 14.13905 | .0157036 |
| #2 | -.005408 | -.003901 | 5.001687 | .1092158 | 14.09429 | .0142679 |
| #3 | -.007683 | -.004409 | 5.120884 | .1085464 | 14.05826 | .0142197 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | 1.833959 |
| Stddev | .123501 |
| %RSD | 6.734137 |
| #1 | 1.938686 |
| #2 | 1.697770 |
| #3 | 1.865421 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2697.631 | 93358.48 | 13736.90 | 3496.218 | 5065.154 |
| Stddev | 15.934 | 2292.54 | 1010.98 | 64.105 | 26.028 |
| %RSD | .5906504 | 2.455628 | 7.359587 | 1.833556 | .5138729 |
| #1 | 2679.528 | 96003.42 | 12988.88 | 3568.892 | 5035.126 |
| #2 | 2709.529 | 92130.44 | 14887.07 | 3472.056 | 5081.270 |
| #3 | 2703.835 | 91941.57 | 13334.74 | 3447.705 | 5079.066 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-04 Acquired: 8/7/2024 19:21:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.001594 | -.003735 | .0010098 | .0016207 | .0018945 | -.026623 |
| Stddev | .001117 | .000942 | .0001060 | .0010979 | .0010699 | .010148 |
| %RSD | 70.08349 | 25.21329 | 10.49735 | 67.74107 | 56.47180 | 38.11814 |
| #1 | -.002842 | -.004598 | .0009252 | .0018500 | .0022021 | -.016765 |
| #2 | -.001255 | -.002731 | .0009755 | .0004263 | .0027769 | -.026067 |
| #3 | -.000686 | -.003877 | .0011288 | .0025858 | .0007045 | -.037038 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .2302924 | -.000171 | -.000211 | 134.2441 | .0005349 | .0036445 |
| Stddev | .0013561 | .000046 | .000067 | .8379 | .0001707 | .0000296 |
| %RSD | .5888457 | 27.20323 | 31.97706 | .6241446 | 31.90294 | .8114971 |
| #1 | .2288792 | -.000139 | -.000157 | 133.2810 | .0003847 | .0036359 |
| #2 | .2304152 | -.000149 | -.000287 | 134.6456 | .0007205 | .0036202 |
| #3 | .2315830 | -.000224 | -.000189 | 134.8056 | .0004996 | .0036774 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0009329 | .0293989 | .0710370 | 17.54178 | .0023871 | -.000156 |
| Stddev | .0004284 | .0012794 | .0000687 | .17252 | .0000549 | .000372 |
| %RSD | 45.92315 | 4.351882 | .0966672 | .9834570 | 2.300216 | 239.3069 |
| #1 | .0011570 | .0289618 | .0710056 | 17.34891 | .0024175 | .000002 |
| #2 | .0004389 | .0283954 | .0711158 | 17.68136 | .0023237 | .000112 |
| #3 | .0012027 | .0308396 | .0709897 | 17.59508 | .0024201 | -.000581 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 16.49458 | .0023841 | .0091719 | 11.69560 | 1.680360 | .0038273 |
| Stddev | .04822 | .0007614 | .0000599 | .04581 | .003224 | .0003507 |
| %RSD | .2923527 | 31.93438 | .6531737 | .3917251 | .1918548 | 9.162425 |
| #1 | 16.43927 | .0031626 | .0091270 | 11.64382 | 1.678630 | .0042274 |
| #2 | 16.52780 | .0016412 | .0092399 | 11.73089 | 1.684080 | .0036812 |
| #3 | 16.51667 | .0023486 | .0091488 | 11.71208 | 1.678371 | .0035733 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-04 Acquired: 8/7/2024 19:21:50 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.005768 | -.004081 | 4.628938 | .0967713 | F 14.17086 | .0151909 |
| Stddev | .000462 | .000944 | .027390 | .0003887 | .01206 | .0027447 |
| %RSD | 8.010285 | 23.14475 | .5917046 | .4016955 | .0850961 | 18.06794 |
| #1 | -.005430 | -.003071 | 4.599253 | .0963757 | 14.15694 | .0152200 |
| #2 | -.005580 | -.004227 | 4.653230 | .0967853 | 14.17753 | .0124318 |
| #3 | -.006295 | -.004943 | 4.634330 | .0971528 | 14.17811 | .0179210 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | 1.740057 |
| Stddev | .008807 |
| %RSD | .5061221 |
| #1 | 1.730169 |
| #2 | 1.742945 |
| #3 | 1.747057 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2679.230 | 94290.64 | 12706.49 | 3538.417 | 5028.489 |
| Stddev | 1.007 | 54.67 | 5.64 | 7.190 | 4.025 |
| %RSD | .0375733 | .0579803 | .0443965 | .2032019 | .0800476 |
| #1 | 2680.005 | 94251.70 | 12710.90 | 3545.892 | 5026.079 |
| #2 | 2679.593 | 94267.07 | 12700.14 | 3531.550 | 5026.253 |
| #3 | 2678.092 | 94353.14 | 12708.44 | 3537.809 | 5033.136 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-05 Acquired: 8/7/2024 19:26:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002754 | -.003626 | .0129906 | .0010572 | .0002699 | .0457534 | .0025134 |
| Stddev | .001430 | .001296 | .0002772 | .0009915 | .0014121 | .0042113 | .0007670 |
| %RSD | 51.92241 | 35.75458 | 2.133831 | 93.78843 | 523.1767 | 9.204401 | 30.51779 |
| #1 | -.003526 | -.002129 | .0132019 | .0020986 | -.001354 | .0457323 | .0016974 |
| #2 | -.003631 | -.004367 | .0126768 | .0001245 | .000953 | .0415526 | .0026230 |
| #3 | -.001104 | -.004381 | .0130932 | .0009485 | .001211 | .0499752 | .0032197 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000088 | -.000053 | 5.862373 | .0039729 | .0115713 | .0066634 | 3.113201 |
| Stddev | .000027 | .000058 | .036406 | .0001498 | .0000117 | .0003032 | .033118 |
| %RSD | 30.32938 | 108.5038 | .6210109 | 3.769379 | .1013157 | 4.549616 | 1.063795 |
| #1 | -.000117 | .000004 | 5.824943 | .0040135 | .0115618 | .0066390 | 3.076477 |
| #2 | -.000082 | -.000111 | 5.897660 | .0038071 | .0115844 | .0063732 | 3.122328 |
| #3 | -.000065 | -.000052 | 5.864516 | .0040983 | .0115678 | .0069781 | 3.140799 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .1105253 | 2.637795 | .0152368 | .0001041 | 11.95466 | .0027467 | .0550598 |
| Stddev | .0002174 | .009430 | .0000909 | .0001481 | .14156 | .0004253 | .0012476 |
| %RSD | .1966573 | .3575144 | .5968758 | 142.2808 | 1.184129 | 15.48528 | 2.265941 |
| #1 | .1106917 | 2.634508 | .0151789 | .0001981 | 11.81551 | .0024418 | .0536610 |
| #2 | .1106048 | 2.630449 | .0153417 | -.000067 | 11.94996 | .0032326 | .0554608 |
| #3 | .1102793 | 2.648430 | .0151900 | .000181 | 12.09851 | .0025657 | .0560576 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.016307 | .0091379 | .0001814 | .0627456 | .0005181 | 4.898596 | .0029891 |
| Stddev | .016324 | .0004684 | .0001385 | .0005259 | .0005445 | .033264 | .0005085 |
| %RSD | 1.606185 | 5.125962 | 76.35137 | .8382316 | 105.1049 | .6790509 | 17.01302 |
| #1 | .999951 | .0096541 | .0000788 | .0623384 | .0002555 | 4.860416 | .0024104 |
| #2 | 1.016370 | .0087400 | .0001265 | .0625589 | .0011442 | 4.914056 | .0031920 |
| #3 | 1.032599 | .0090196 | .0003390 | .0633394 | .0001546 | 4.921317 | .0033649 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-05 Acquired: 8/7/2024 19:26:19 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .6822536 | .0009194 | .0355439 |
| Stddev | .0026087 | .0007612 | .0000557 |
| %RSD | .3823594 | 82.79264 | .1566959 |
| | | | |
| #1 | .6802116 | .0011552 | .0355738 |
| #2 | .6813569 | .0000682 | .0355783 |
| #3 | .6851924 | .0015349 | .0354796 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2826.700 | 98105.47 | 13120.79 | 3733.432 | 5442.881 |
| Stddev | 2.840 | 1048.76 | 15.11 | 38.237 | 7.238 |
| %RSD | .1004793 | 1.069013 | .1151978 | 1.024174 | .1329792 |
| | | | | | |
| #1 | 2829.715 | 99192.94 | 13116.30 | 3769.553 | 5447.877 |
| #2 | 2824.075 | 98023.22 | 13108.43 | 3737.360 | 5446.186 |
| #3 | 2826.311 | 97100.26 | 13137.65 | 3693.383 | 5434.581 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-07 Acquired: 8/7/2024 19:30:44 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.002000 | -.002639 | .0016905 | .0003409 | .0004399 | -.009706 | .1712434 |
| Stddev | .001516 | .000515 | .0008810 | .0028231 | .0005828 | .006533 | .0007706 |
| %RSD | 75.78485 | 19.51560 | 52.11293 | 828.1963 | 132.5011 | 67.31283 | .4500144 |
| #1 | -.002951 | -.002955 | .0018467 | .0015762 | .0008597 | -.017250 | .1711311 |
| #2 | -.002797 | -.002045 | .0007418 | .0023358 | .0006855 | -.005885 | .1720640 |
| #3 | -.000252 | -.002918 | .0024829 | -.002889 | -.000226 | -.005983 | .1705351 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000146 | -.000082 | 88.84222 | .0008073 | .0025619 | .0036497 | .0352899 |
| Stddev | .000039 | .000032 | .32308 | .0001653 | .0001112 | .0004794 | .0015788 |
| %RSD | 26.92566 | 38.62756 | .3636565 | 20.47338 | 4.338604 | 13.13411 | 4.473838 |
| #1 | -.000104 | -.000108 | 88.65679 | .0007179 | .0026804 | .0031230 | .0341903 |
| #2 | -.000182 | -.000047 | 89.21528 | .0007060 | .0025454 | .0040604 | .0345803 |
| #3 | -.000152 | -.000091 | 88.65459 | .0009981 | .0024599 | .0037658 | .0370990 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0482889 | 11.82936 | .0020575 | .0000917 | 13.65362 | .0001345 | .0184012 |
| Stddev | .0001236 | .09633 | .0002316 | .0002804 | .03372 | .0023163 | .0006050 |
| %RSD | .2558965 | .8143198 | 11.25513 | 305.7134 | .2469569 | 1721.900 | 3.288126 |
| #1 | .0483028 | 11.83575 | .0020423 | .0000656 | 13.62663 | .0028086 | .0178765 |
| #2 | .0484048 | 11.92233 | .0022963 | .0003843 | 13.64280 | -.001158 | .0182640 |
| #3 | .0481589 | 11.72999 | .0018339 | -.000175 | 13.69141 | -.001247 | .0190631 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 6.047953 | 1.186847 | .0026643 | -.006171 | -.003012 | 3.243778 | .1157209 |
| Stddev | .009699 | .004730 | .0000518 | .000005 | .000857 | .015922 | .0009726 |
| %RSD | .1603713 | .3985471 | 1.943896 | .0831323 | 28.46122 | .4908421 | .8404701 |
| #1 | 6.037132 | 1.181922 | .0026052 | -.006165 | -.003408 | 3.251373 | .1163683 |
| #2 | 6.055864 | 1.191354 | .0027014 | -.006171 | -.002028 | 3.225481 | .1161919 |
| #3 | 6.050864 | 1.187264 | .0026865 | -.006176 | -.003598 | 3.254480 | .1146024 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-07 Acquired: 8/7/2024 19:30:44 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.599890 | .0091027 | 1.118246 |
| Stddev | .021987 | .0023405 | .006958 |
| %RSD | .4779859 | 25.71158 | .6222325 |
| #1 | 4.620528 | .0064633 | 1.111760 |
| #2 | 4.602377 | .0099194 | 1.125595 |
| #3 | 4.576766 | .0109254 | 1.117381 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2655.952 | 93338.26 | 12972.96 | 3528.294 | 4938.611 |
| Stddev | 15.670 | 204.26 | 64.65 | 11.814 | 30.504 |
| %RSD | .5899891 | .2188399 | .4983496 | .3348393 | .6176688 |
| #1 | 2642.186 | 93445.05 | 13028.77 | 3541.579 | 4910.897 |
| #2 | 2652.667 | 93466.98 | 12902.12 | 3518.966 | 4933.640 |
| #3 | 2673.004 | 93102.74 | 12987.99 | 3524.338 | 4971.295 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-08 Acquired: 8/7/2024 19:35:06 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.000841 | -.001736 | -.000186 | .0010090 | .0016470 | -.025251 | .1900451 |
| Stddev | .001244 | .000700 | .001443 | .0005934 | .0003910 | .009700 | .0008982 |
| %RSD | 147.8480 | 40.28530 | 776.3100 | 58.80967 | 23.73850 | 38.41397 | .4726111 |
| #1 | -.001973 | -.000934 | -.001168 | .0003630 | .0020981 | -.019265 | .1910780 |
| #2 | -.001042 | -.002059 | -.000861 | .0015298 | .0014046 | -.020045 | .1896093 |
| #3 | .000491 | -.002217 | .001471 | .0011343 | .0014385 | -.036442 | .1894479 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000110 | -.000020 | 102.3292 | .0016678 | .0028079 | .0004341 | .0400955 |
| Stddev | .000026 | .000049 | .7023 | .0001099 | .0001578 | .0005747 | .0027957 |
| %RSD | 23.52276 | 239.8680 | .6862956 | 6.589186 | 5.619110 | 132.3742 | 6.972570 |
| #1 | -.000123 | .000034 | 102.8368 | .0016752 | .0029790 | -.000229 | .0399764 |
| #2 | -.000126 | -.000059 | 102.6231 | .0015544 | .0027766 | .000762 | .0373612 |
| #3 | -.000080 | -.000036 | 101.5277 | .0017738 | .0026681 | .000770 | .0429488 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0619860 | 13.24583 | .0031163 | .0001491 | 14.99395 | .0018330 | .0098234 |
| Stddev | .0001907 | .11284 | .0001121 | .0001994 | .17486 | .0001707 | .0001430 |
| %RSD | .3076849 | .8518780 | 3.597952 | 133.7058 | 1.166225 | 9.313842 | 1.455264 |
| #1 | .0621892 | 13.37403 | .0031926 | .0002817 | 14.87492 | .0017254 | .0097707 |
| #2 | .0618108 | 13.20186 | .0029876 | .0002459 | 14.91222 | .0017438 | .0099853 |
| #3 | .0619579 | 13.16159 | .0031688 | -.000080 | 15.19471 | .0020298 | .0097144 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 7.788004 | 1.280686 | .0028551 | -.007059 | -.003640 | 3.549347 | .1155134 |
| Stddev | .085785 | .006437 | .0001423 | .000331 | .000229 | .048044 | .0013040 |
| %RSD | 1.101504 | .5026077 | 4.984268 | 4.683537 | 6.299543 | 1.353603 | 1.128874 |
| #1 | 7.705997 | 1.287869 | .0029085 | -.006738 | -.003556 | 3.505136 | .1168565 |
| #2 | 7.780892 | 1.275441 | .0029629 | -.007040 | -.003900 | 3.542430 | .1154312 |
| #3 | 7.877124 | 1.278748 | .0026938 | -.007398 | -.003465 | 3.600474 | .1142524 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3455-08 Acquired: 8/7/2024 19:35:06 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 6.450552 | .0114434 | 1.305318 |
| Stddev | .036568 | .0006370 | .008224 |
| %RSD | .5668948 | 5.566623 | .6300419 |
| | | | |
| #1 | 6.425974 | .0112886 | 1.314812 |
| #2 | 6.492576 | .0108980 | 1.300404 |
| #3 | 6.433107 | .0121435 | 1.300738 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2714.428 | 93689.02 | 13723.23 | 3559.310 | 5083.811 |
| Stddev | 5.359 | 821.84 | 66.47 | 37.745 | 16.012 |
| %RSD | .1974372 | .8771966 | .4843884 | 1.060453 | .3149564 |
| | | | | | |
| #1 | 2720.614 | 94563.84 | 13652.95 | 3600.350 | 5097.913 |
| #2 | 2711.183 | 93570.10 | 13731.64 | 3551.497 | 5066.405 |
| #3 | 2711.486 | 92933.12 | 13785.10 | 3526.083 | 5087.114 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-01 Acquired: 8/7/2024 19:39:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.001885 | -.003736 | -.000129 | .0012231 | .0002179 | .0928999 | .3652654 |
| Stddev | .002159 | .001127 | .000676 | .0013073 | .0002018 | .0130595 | .0011354 |
| %RSD | 114.5505 | 30.15320 | 524.4237 | 106.8852 | 92.61031 | 14.05759 | .3108277 |
| #1 | .000260 | -.004310 | .000034 | .0019098 | .0002360 | .0891365 | .3642767 |
| #2 | -.001856 | -.002438 | .000451 | .0020440 | .0000077 | .1074279 | .3665053 |
| #3 | -.004059 | -.004461 | -.000871 | -.000284 | .0004101 | .0821354 | .3650141 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000152 | -.000020 | 67.23367 | .0017188 | .0044633 | .0012044 | 7.307816 |
| Stddev | .000029 | .000064 | .24183 | .0002585 | .0001015 | .0001501 | .044523 |
| %RSD | 19.40455 | 318.2060 | .3596888 | 15.03990 | 2.274775 | 12.46622 | .6092529 |
| #1 | -.000154 | .000039 | 66.99457 | .0014289 | .0043909 | .0011374 | 7.285138 |
| #2 | -.000180 | -.000087 | 67.47815 | .0019252 | .0044196 | .0010993 | 7.359113 |
| #3 | -.000121 | -.000011 | 67.22828 | .0018023 | .0045793 | .0013763 | 7.279198 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 3.863904 | 17.76596 | .0034561 | .0015470 | 308.8348 | .0023215 | .0205021 |
| Stddev | .014869 | .09835 | .0001076 | .0001144 | 2.0926 | .0030983 | .0001936 |
| %RSD | .3848233 | .5536127 | 3.114388 | 7.394262 | .6775790 | 133.4629 | .9441939 |
| #1 | 3.850361 | 17.67727 | .0035514 | .0014492 | 311.2184 | .0056239 | .0202786 |
| #2 | 3.879815 | 17.87174 | .0034775 | .0016728 | 307.9863 | -.000521 | .0206166 |
| #3 | 3.861536 | 17.74888 | .0033394 | .0015190 | 307.2997 | .001862 | .0206111 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.466872 | .1538675 | .0002768 | -.006579 | -.000671 | 4.861045 | .0817294 |
| Stddev | .046074 | .0002696 | .0000885 | .000801 | .001014 | .033948 | .0005019 |
| %RSD | .4866840 | .1751879 | 31.95896 | 12.18084 | 151.1585 | .6983746 | .6140807 |
| #1 | 9.449671 | .1541474 | .0003524 | -.006166 | .000497 | 4.858801 | .0811883 |
| #2 | 9.519072 | .1538453 | .0002985 | -.007503 | -.001187 | 4.896059 | .0821795 |
| #3 | 9.431873 | .1536097 | .0001795 | -.006069 | -.001323 | 4.828274 | .0818205 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-01 Acquired: 8/7/2024 19:39:30 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .9850976 | .0093004 | .4619843 |
| Stddev | .0045010 | .0003063 | .0012947 |
| %RSD | .4569043 | 3.293829 | .2802456 |
| #1 | .9898929 | .0089469 | .4613729 |
| #2 | .9809644 | .0094656 | .4634714 |
| #3 | .9844355 | .0094887 | .4611085 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2646.214 | 91900.90 | 12806.18 | 3444.174 | 4718.392 |
| Stddev | 11.875 | 461.02 | 23.56 | 22.104 | 20.363 |
| %RSD | .4487530 | .5016533 | .1839364 | .6417848 | .4315649 |
| #1 | 2632.835 | 91701.39 | 12806.16 | 3450.768 | 4697.862 |
| #2 | 2650.307 | 91573.22 | 12782.64 | 3419.523 | 4718.732 |
| #3 | 2655.502 | 92428.07 | 12829.75 | 3462.231 | 4738.583 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-02 Acquired: 8/7/2024 19:44:04 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | -.001796 | -.004255 | .0001751 | .0012284 | .0019234 | .0428085 | .3927475 |
| Stddev | .000731 | .001722 | .0001818 | .0013286 | .0017897 | .0120608 | .0047670 |
| %RSD | 40.72952 | 40.46866 | 103.8218 | 108.1495 | 93.04638 | 28.17379 | 1.213752 |
| #1 | -.000985 | -.002957 | -.000034 | .0025862 | .0036210 | .0566289 | .3935679 |
| #2 | -.002406 | -.003600 | .000263 | .0011679 | .0000540 | .0344118 | .3970510 |
| #3 | -.001997 | -.006209 | .000296 | -.000069 | .0020953 | .0373847 | .3876236 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | -.000212 | .0000501 | 73.28622 | .0027100 | .0044849 | .0005648 | 9.297937 |
| Stddev | .000013 | .0001158 | .69971 | .0001169 | .0000505 | .0002425 | .045837 |
| %RSD | 6.264989 | 231.2258 | .9547691 | 4.312844 | 1.125526 | 42.93822 | .4929787 |
| #1 | -.000203 | -.000036 | 73.42188 | .0026700 | .0044269 | .0005825 | 9.247316 |
| #2 | -.000227 | .000004 | 73.90817 | .0028416 | .0045190 | .0007981 | 9.309860 |
| #3 | -.000205 | .000182 | 72.52861 | .0026184 | .0045088 | .0003140 | 9.336633 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 3.687144 | 19.32544 | .0056360 | .0010362 | 321.3888 | .0013746 | .0122922 |
| Stddev | .042304 | .30239 | .0004600 | .0004252 | 4.4655 | .0029395 | .0002339 |
| %RSD | 1.147343 | 1.564730 | 8.162182 | 41.03567 | 1.389429 | 213.8530 | 1.902579 |
| #1 | 3.680063 | 19.27744 | .0054110 | .0005684 | 316.2495 | .0037048 | .0120667 |
| #2 | 3.732542 | 19.64897 | .0053317 | .0011408 | 324.3201 | -.001928 | .0125336 |
| #3 | 3.648828 | 19.04993 | .0061652 | .0013993 | 323.5969 | .002347 | .0122764 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.874995 | .1656774 | .0006066 | -.006152 | -.000493 | 4.951905 | .0970737 |
| Stddev | .086594 | .0004411 | .0001043 | .000195 | .000542 | .016735 | .0016956 |
| %RSD | .8768991 | .2662137 | 17.18906 | 3.167653 | 109.9132 | .3379601 | 1.746707 |
| #1 | 9.775068 | .1658987 | .0006238 | -.005954 | -.000008 | 4.932617 | .0985333 |
| #2 | 9.928028 | .1659640 | .0007012 | -.006344 | -.001077 | 4.962569 | .0952138 |
| #3 | 9.921890 | .1651695 | .0004948 | -.006157 | -.000393 | 4.960530 | .0974741 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: P3457-02 Acquired: 8/7/2024 19:44:04 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 1.292977 | .0090260 | .5024761 |
| Stddev | .025468 | .0011237 | .0065851 |
| %RSD | 1.969730 | 12.44981 | 1.310526 |
| | | | |
| #1 | 1.283294 | .0099394 | .5024066 |
| #2 | 1.273770 | .0077711 | .5090957 |
| #3 | 1.321866 | .0093674 | .4959261 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2532.613 | 94757.10 | 12852.25 | 3536.202 | 4469.007 |
| Stddev | 43.811 | 502.85 | 179.38 | 21.135 | 83.766 |
| %RSD | 1.729882 | .5306737 | 1.395688 | .5976812 | 1.874373 |
| | | | | | |
| #1 | 2540.485 | 95293.08 | 12841.71 | 3560.266 | 4490.691 |
| #2 | 2571.954 | 94295.71 | 12678.37 | 3520.650 | 4539.798 |
| #3 | 2485.399 | 94682.50 | 13036.66 | 3527.689 | 4376.531 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV04 Acquired: 8/7/2024 19:48:36 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.736491 | 5.024569 | 5.004903 | 4.690939 | 4.784970 | 9.192762 |
| Stddev | .021043 | .035369 | .014654 | .024592 | .016697 | .145143 |
| %RSD | .4442827 | .7039291 | .2927996 | .5242442 | .3489389 | 1.578885 |
| #1 | 4.741221 | 5.057320 | 5.003281 | 4.678111 | 4.780425 | 9.360190 |
| #2 | 4.713485 | 4.987062 | 4.991128 | 4.675413 | 4.771017 | 9.115548 |
| #3 | 4.754767 | 5.029323 | 5.020302 | 4.719292 | 4.803469 | 9.102546 |

| Elem | Ba4934 | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 9.878383 | .2415191 | 2.456213 | 24.62556 | .9954956 | 2.434848 |
| Stddev | .325416 | .0037722 | .007967 | .45062 | .0140971 | .008522 |
| %RSD | 3.294219 | 1.561860 | .3243572 | 1.829894 | 1.416085 | .3499990 |
| #1 | 10.21720 | .2456329 | 2.458279 | 25.13483 | .9896252 | 2.438007 |
| #2 | 9.84967 | .2407021 | 2.447416 | 24.46338 | .9852824 | 2.425197 |
| #3 | 9.56827 | .2382224 | 2.462943 | 24.27848 | 1.011579 | 2.441339 |

| Elem | Cu2247 | Fe2404 | Mn2576 | Mg2790 | Ni2316 | Ag3280 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 1.198248 | 5.104744 | 2.436786 | 23.86816 | 2.450410 | 1.239063 |
| Stddev | .003429 | .102991 | .043904 | .41363 | .007224 | .019292 |
| %RSD | .2861935 | 2.017554 | 1.801705 | 1.732994 | .2948191 | 1.556956 |
| #1 | 1.197990 | 5.069037 | 2.486987 | 24.34514 | 2.452790 | 1.224338 |
| #2 | 1.194955 | 5.024358 | 2.417801 | 23.65111 | 2.442296 | 1.231949 |
| #3 | 1.201799 | 5.220836 | 2.405570 | 23.60822 | 2.456144 | 1.260901 |

| Elem | Na5895 | V_2924 | Zn2138 | K_7664 | B_2496 | Mo2020 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | 23.88950 | 2.407907 | 2.501987 | 24.56625 | 4.698525 | 4.945224 |
| Stddev | .39871 | .045722 | .030263 | .42324 | .068847 | .011869 |
| %RSD | 1.668966 | 1.898845 | 1.209571 | 1.722832 | 1.465282 | .2400110 |
| #1 | 23.75682 | 2.460330 | 2.485869 | 24.38990 | 4.768051 | 4.948298 |
| #2 | 23.57404 | 2.387125 | 2.483194 | 24.25970 | 4.697145 | 4.932120 |
| #3 | 24.33763 | 2.376267 | 2.536898 | 25.04914 | 4.630378 | 4.955254 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCV04 Acquired: 8/7/2024 19:48:36 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | 4.895710 | 4.857913 | 4.842371 | 4.976170 | F 4.482540 | F 4.112950 |
| Stddev | .020112 | .091792 | .107743 | .022306 | .007990 | .065735 |
| %RSD | .4108174 | 1.889529 | 2.225002 | .4482507 | .1782573 | 1.598249 |
| #1 | 4.904248 | 4.963640 | 4.784729 | 4.981082 | 4.480856 | 4.188840 |
| #2 | 4.872737 | 4.811544 | 4.775710 | 4.951817 | 4.475526 | 4.076308 |
| #3 | 4.910144 | 4.798556 | 4.966672 | 4.995610 | 4.491238 | 4.073703 |

| Elem | Sr4077 |
|---|---|
| Units | ppm |
| Avg | 4.892043 |
| Stddev | .111196 |
| %RSD | 2.272988 |
| #1 | 5.010885 |
| #2 | 4.874714 |
| #3 | 4.790529 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2802.938 | 95658.43 | 14078.15 | 3677.440 | 5077.238 |
| Stddev | 12.018 | 1559.03 | 205.00 | 59.586 | 22.749 |
| %RSD | .4287468 | 1.629785 | 1.456147 | 1.620307 | .4480508 |
| #1 | 2807.087 | 96728.95 | 13856.55 | 3721.938 | 5082.384 |
| #2 | 2812.332 | 96376.59 | 14116.87 | 3700.638 | 5096.973 |
| #3 | 2789.396 | 93869.75 | 14261.03 | 3609.744 | 5052.357 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB04 Acquired: 8/7/2024 19:52:54 Type: Unk
Method: NON EPA-6010-200.7(v2342) 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 | .0001600 | .0008296 | .0001849 | .0005847 | .0006339 | .0046916 | .0003226 |
| Stddev | .0015345 | .0018666 | .0004140 | .0010539 | .0001400 | .0012964 | .0012587 |
| %RSD | 959.3519 | 225.0075 | 223.9355 | 180.2588 | 22.08573 | 27.63214 | 390.1187 |
| #1 | -.000083 | .0029835 | -.000274 | .0017946 | .0007582 | .0031993 | .0005905 |
| #2 | -.001239 | -.000315 | .000529 | .0000930 | .0004823 | .0053354 | .0014258 |
| #3 | .001801 | -.000180 | .000300 | -.000134 | .0006613 | .0055401 | -.001048 |

| Elem | Be2348 | Cd2265 | Ca3736 | Cr2677 | Co2286 | Cu2247 | Fe2404 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000223 | -.000007 | -.003734 | -.000154 | .0001094 | -.000442 | -.001195 |
| Stddev | .0000273 | .000051 | .006525 | .000100 | .0000829 | .000224 | .001997 |
| %RSD | 122.2383 | 686.3183 | 174.7529 | 64.69779 | 75.74007 | 50.56743 | 167.0549 |
| #1 | .0000275 | -.000061 | -.000128 | -.000041 | .0001816 | -.000252 | -.002208 |
| #2 | .0000466 | .000040 | .000192 | -.000228 | .0001276 | -.000386 | .001105 |
| #3 | -.000007 | -.000001 | -.011265 | -.000194 | .0000190 | -.000688 | -.002483 |

| Elem | Mn2576 | Mg2790 | Ni2316 | Ag3280 | Na5895 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .0000670 | -.005525 | -.000003 | .0002285 | .4627515 | .0004945 | -.000112 |
| Stddev | .0000415 | .014072 | .000263 | .0000793 | .0188412 | .0007342 | .000050 |
| %RSD | 61.93378 | 254.6936 | 8100.544 | 34.72466 | 4.071558 | 148.4592 | 44.91425 |
| #1 | .0000669 | .005469 | .000239 | .0002954 | .4433168 | -.000153 | -.000087 |
| #2 | .0000256 | -.000659 | .000035 | .0002491 | .4640005 | .000344 | -.000170 |
| #3 | .0001086 | -.021385 | -.000284 | .0001409 | .4809371 | .001292 | -.000079 |

| Elem | K_7664 | B_2496 | Mo2020 | Sn1899 | Ti3361 | Si2881 | P_1774 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avg | .7190283 | .0047351 | .0002933 | -.003640 | -.000060 | -.000549 | -.004990 |
| Stddev | .0596489 | .0006138 | .0001011 | .000123 | .000407 | .008090 | .000854 |
| %RSD | 8.295767 | 12.96371 | 34.46221 | 3.382236 | 674.8013 | 1473.707 | 17.10591 |
| #1 | .6542358 | .0049124 | .0003220 | -.003779 | .000327 | .001139 | -.005569 |
| #2 | .7311897 | .0052408 | .0003769 | -.003543 | -.000023 | -.009350 | -.005393 |
| #3 | .7716593 | .0040521 | .0001810 | -.003599 | -.000484 | .006564 | -.004010 |

Reviewed By:Mohan
On:8/8/2024 5:24:08 AM
Inst Id :P4
LB :LB131900

Sample Name: CCB04 Acquired: 8/7/2024 19:52:54 Type: Unk
Method: NON EPA-6010-200.7(v2342) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

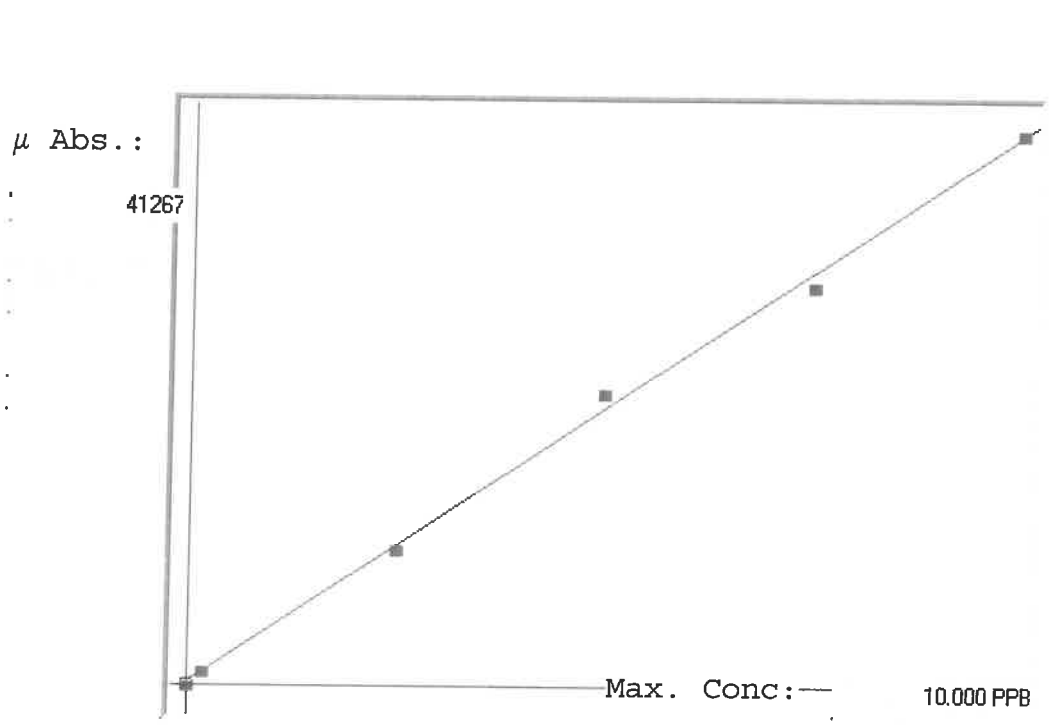
| Elem | S_1820 | Li6707 | Sr4077 |
|---|---|---|---|
| Units | ppm | ppm | ppm |
| Avg | -.002020 | -.000980 | .0000256 |
| Stddev | .003082 | .000835 | .0000052 |
| %RSD | 152.5666 | 85.20761 | 20.16908 |
| | | | |
| #1 | -.000041 | -.001878 | .0000261 |
| #2 | -.005570 | -.000835 | .0000202 |
| #3 | -.000448 | -.000227 | .0000305 |

| Int. Std. | Y_2243 | Y_3600 | Y_3710 | Y_2243 | In2306 |
|---|---|---|---|---|---|
| Units | Cts/S | Cts/S | Cts/S | Cts/S | Cts/S |
| Avg | 2914.028 | 99014.07 | 13846.38 | 3825.398 | 5495.786 |
| Stddev | 27.822 | 421.32 | 100.77 | 14.533 | 39.608 |
| %RSD | .9547638 | .4255188 | .7277464 | .3798970 | .7206989 |
| | | | | | |
| #1 | 2882.201 | 99253.12 | 13906.24 | 3828.262 | 5451.257 |
| #2 | 2933.730 | 98527.59 | 13902.85 | 3809.646 | 5527.089 |
| #3 | 2926.154 | 99261.49 | 13730.04 | 3838.285 | 5509.010 |

Reviewed By:mohan
On:8/13/2024 10:47:32 PM
Inst Id :CV1
LB :LB131960

LB131960

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 | -0.028 | -0.028 | 123 | 0.000 | 123 | 0 | | | | 1 |
| 0.2 | 0.200 | 0.194 | -0.006 | 1032 | 0.0 % | 1032 | | | | | 3 |
| 2.5 | 2.500 | 2.456 | -0.044 | 10275 | 0.0 % | 10275 | | | | | 2 |
| 5.0 | 5.000 | 5.292 | 0.292 | 21867 | 0.0 % | 21867 | | | | | 6 |
| 7.5 | 7.500 | 7.247 | -0.253 | 29857 | 0.0 % | 29857 | | | | | 3 |
| 10.0 | 10.000 | 10.039 | 0.039 | 41267 | 0.0 % | 41267 | | | | | 0 |

Reviewed By:mohan
On:8/13/2024 10:47:32 PM
Inst Id :CV1
LB :LB131960

# LB131960 INSTRUMKENT ID : CV1

Method: 7470A Operator: Admin Date of Analysis: 13 Aug 2024 08:29:57

| Sample ID | Extended ID | µ Abs. | Conc. | Stnd Conc | Method | Units | Date | Type | Type |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 - 1 | S0 | 123 | - | 0.0000 | 7470A | PPB | 13 Aug 2024 08:36:49 | S | Std |
| 0.2 - 1 | S0.2 | 1032 | - | 0.2000 | 7470A | PPB | 13 Aug 2024 08:39:05 | S | Std |
| 2.5 - 1 | S2.5 | 10275 | - | 2.5000 | 7470A | PPB | 13 Aug 2024 08:41:23 | S | Std |
| 5.0 - 1 | S5 | 21867 | - | 5.0000 | 7470A | PPB | 13 Aug 2024 08:43:40 | S | Std |
| 7.5 - 1 | S7.5 | 29857 | - | 7.5000 | 7470A | PPB | 13 Aug 2024 08:45:57 | S | Std |
| 10.0 - 1 | S10 | 41267 | - | 10.0000 | 7470A | PPB | 13 Aug 2024 08:50:50 | S | Std |
| ICV72 - 1 | ICV72 | 16618 | 4.0078 | | -7470A | PPB | 13 Aug 2024 08:53:41 | U | SMPL |
| ICB72 - 1 | ICB72 | -81 | -0.0784 | | -7470A | PPB | 13 Aug 2024 08:55:55 | U | SMPL |
| CCV35 - 1 | CCV35 | 18763 | 4.5327 | | -7470A | PPB | 13 Aug 2024 08:58:12 | U | SMPL |
| CCB35 - 1 | CCB35 | -64 | -0.0742 | | -7470A | PPB | 13 Aug 2024 09:03:02 | U | SMPL |
| CRA - 1 | CRA | 1203 | 0.2358 | | -7470A | PPB | 13 Aug 2024 09:10:24 | U | SMPL |
| HighStd - 1 | HighStd | 41121 | 10.0035 | | -7470A | PPB | 13 Aug 2024 09:12:39 | U | SMPL |
| ChkStd - 1 | ChkStd | 27661 | 6.7100 | | -7470A | PPB | 13 Aug 2024 09:14:54 | U | SMPL |
| PB162665BL - 1 | PBW | -169 | -0.0999 | | -7470A | PPB | 13 Aug 2024 09:17:12 | U | SMPL |
| PB162665BS - 1 | LCSW | 16637 | 4.0124 | | -7470A | PPB | 13 Aug 2024 09:19:29 | U | SMPL |
| P3526-02 - 1 | SP-1-COMP | -178 | -0.1021 | | -7470A | PPB | 13 Aug 2024 09:21:45 | U | SMPL |
| P3534-01 - 1 | PIPE-BLAST-GRIT | 6 | -0.0571 | | -7470A | PPB | 13 Aug 2024 09:24:03 | U | SMPL |
| P3534-03 - 1 | HP-IP | 24 | -0.0527 | | -7470A | PPB | 13 Aug 2024 09:26:20 | U | SMPL |
| P3534-03DUP - 1 | HP-IPDUP | 31 | -0.0510 | | -7470A | PPB | 13 Aug 2024 09:28:37 | U | SMPL |
| P3534-03MS - 1 | HP-IPMS | 19735 | 4.7705 | | -7470A | PPB | 13 Aug 2024 09:30:53 | U | SMPL |
| CCV36 - 1 | CCV36 | 19728 | 4.7688 | | -7470A | PPB | 13 Aug 2024 09:33:08 | U | SMPL |
| CCB36 - 1 | CCB36 | -104 | -0.0840 | | -7470A | PPB | 13 Aug 2024 09:35:25 | U | SMPL |
| P3534-03MSD - 1 | HP-IPMSD | 15594 | 3.7572 | | -7470A | PPB | 13 Aug 2024 09:37:42 | U | SMPL |
| PB162681BL - 1 | PBW | -62 | -0.0737 | | -7470A | PPB | 13 Aug 2024 09:39:57 | U | SMPL |
| PB162681BS - 1 | LCSW | 16751 | 4.0403 | | -7470A | PPB | 13 Aug 2024 09:42:14 | U | SMPL |
| P3530-02 - 1 | WC-A-04-202408 | -188 | -0.1045 | | -7470A | PPB | 13 Aug 2024 09:44:29 | U | SMPL |
| P3530-02DUP - 1 | WC-A-04-202408DUP | -28 | -0.0654 | | -7470A | PPB | 13 Aug 2024 09:46:47 | U | SMPL |
| P3530-02MS - 1 | WC-A-04-202408MS | 14987 | 3.6087 | | -7470A | PPB | 13 Aug 2024 09:49:03 | U | SMPL |
| P3530-02MSD - 1 | WC-A-04-202408MSD | 13826 | 3.3246 | | -7470A | PPB | 13 Aug 2024 09:51:19 | U | SMPL |
| P3530-03 - 1 | WC-A-05-202408 | -95 | -0.0818 | | -7470A | PPB | 13 Aug 2024 09:53:38 | U | SMPL |
| P3534-05 - 1 | PIPE-BLAST-GRIT(FB) | 11 | -0.0558 | | -7470A | PPB | 13 Aug 2024 09:55:57 | U | SMPL |
| P3534-06 - 1 | HP-IP(FB) | 32 | -0.0507 | | -7470A | PPB | 13 Aug 2024 09:58:13 | U | SMPL |
| CCV37 - 1 | CCV37 | 20451 | 4.9457 | | -7470A | PPB | 13 Aug 2024 10:00:28 | U | SMPL |
| CCB37 - 1 | CCB37 | 14 | -0.0551 | | -7470A | PPB | 13 Aug 2024 10:05:27 | U | SMPL |
| PB162680BL - 1 | PBW | 120 | -0.0292 | | -7470A | PPB | 13 Aug 2024 10:07:43 | U | SMPL |
| PB162680BS - 1 | LCSW | 15043 | 3.6224 | | -7470A | PPB | 13 Aug 2024 10:09:58 | U | SMPL |
| P3426-01 - 1 | 927-K1-WS-073124 | -94 | -0.0815 | | -7470A | PPB | 13 Aug 2024 10:12:13 | U | SMPL |
| P3426-02 - 1 | 927-K1-WS-073124-FD | 31 | -0.0510 | | -7470A | PPB | 13 Aug 2024 10:14:30 | U | SMPL |
| P3429-01 - 1 | 926-K1-WS-073124 | 6 | -0.0571 | | -7470A | PPB | 13 Aug 2024 10:16:46 | U | SMPL |
| P3429-02 - 1 | 931-K1-WS-073124 | 309 | 0.0171 | | -7470A | PPB | 13 Aug 2024 10:19:02 | U | SMPL |
| P3429-03 - 1 | 925-K1-WS-073124 | 778 | 0.1318 | | -7470A | PPB | 13 Aug 2024 10:21:19 | U | SMPL |
| P3440-01 - 1 | 923-K1-WS-080124 | -109 | -0.0852 | | -7470A | PPB | 13 Aug 2024 10:23:35 | U | SMPL |
| P3440-01DUP - 1 | 923-K1-WS-080124DUP | 17 | -0.0544 | | -7470A | PPB | 13 Aug 2024 10:25:53 | U | SMPL |
| P3440-02 - 1 | P3440-01MS | 13643 | 3.2798 | | -7470A | PPB | 13 Aug 2024 10:28:09 | U | SMPL |
| CCV38 - 1 | CCV38 | 20089 | 4.8571 | | -7470A | PPB | 13 Aug 2024 10:30:24 | U | SMPL |
| CCB38 - 1 | CCB38 | 14 | -0.0551 | | -7470A | PPB | 13 Aug 2024 10:35:27 | U | SMPL |
| P3440-03 - 1 | P3440-01MSD | 13205 | 3.1727 | | -7470A | PPB | 13 Aug 2024 10:37:42 | U | SMPL |
| P3440-04 - 1 | 922-K1-WS-080124 | -73 | -0.0764 | | -7470A | PPB | 13 Aug 2024 10:39:57 | U | SMPL |
| P3451-01 - 1 | 921-J-WS-080124 | 37 | -0.0495 | | -7470A | PPB | 13 Aug 2024 10:42:15 | U | SMPL |
| P3457-01 - 1 | 924-K1-WS-080224 | 100 | -0.0341 | | -7470A | PPB | 13 Aug 2024 10:44:30 | U | SMPL |
| P3457-02 - 1 | 932-K1-WS-080224 | 141 | -0.0240 | | -7470A | PPB | 13 Aug 2024 10:46:46 | U | SMPL |
| P3467-01 - 1 | 919-J-WS-080224 | 1257 | 0.2490 | | -7470A | PPB | 13 Aug 2024 10:49:02 | U | SMPL |
| P3497-02 - 1 | COMP | 33 | -0.0505 | | -7470A | PPB | 13 Aug 2024 10:51:19 | U | SMPL |
| P3532-01 - 1 | 806-C | 950 | 0.1739 | | -7470A | PPB | 13 Aug 2024 10:53:36 | U | SMPL |
| P3545-01 - 1 | BUR-1295 | 914 | 0.1651 | | -7470A | PPB | 13 Aug 2024 10:55:52 | U | SMPL |
| CCV39 - 1 | CCV39 | 21395 | 5.1767 | | -7470A | PPB | 13 Aug 2024 10:58:08 | U | SMPL |
| CCB39 - 1 | CCB39 | 221 | -0.0045 | | -7470A | PPB | 13 Aug 2024 11:04:09 | U | SMPL |
| PB162588TB - 1 | PB162588TB | -23 | -0.0642 | | -7470A | PPB | 13 Aug 2024 11:06:24 | U | SMPL |
| PB162590TB - 1 | PB162590TB | -2 | -0.0590 | | -7470A | PPB | 13 Aug 2024 11:08:39 | U | SMPL |
| P3534-03LX5 - 1 | | -32 | -0.0664 | | -7470A | PPB | 13 Aug 2024 11:10:54 | U | SMPL |
| P3534-03A - 1 | | 15658 | 3.7729 | | -7470A | PPB | 13 Aug 2024 11:13:10 | U | SMPL |
| P3530-02LX5 - 1 | | -459 | -0.1709 | | -7470A | PPB | 13 Aug 2024 11:15:25 | U | SMPL |
| P3530-02A - 1 | | 16246 | 3.9168 | | -7470A | PPB | 13 Aug 2024 11:17:42 | U | SMPL |
| P3440-01LX5 - 1 | | -388 | -0.1535 | | -7470A | PPB | 13 Aug 2024 11:19:58 | U | SMPL |
| P3440-01A - 1 | | 16290 | 3.9275 | | -7470A | PPB | 13 Aug 2024 11:22:17 | U | SMPL |
| CCV40 - 1 | CCV40 | 21055 | 5.0935 | | -7470A | PPB | 13 Aug 2024 11:24:33 | U | SMPL |
| CCB40 - 1 | CCB40 | -469 | -0.1733 | | -7470A | PPB | 13 Aug 2024 11:26:51 | U | SMPL |

Alliance TECHNICAL GROUP

# Water Metals Preparation Sheet

PB162493

**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 :** M4909

**Hood ID :** #3

**Block ID:** 1. HOT BLOCK #3 2. N/A

**Start Digest Date:** 08/05/2024 **Time :** 09:15 **Temp :** 94 °C

**End Digest Date:** ~~08/06/2024~~ 08/05/2024 **Time :** 11:30 **Temp :** 95 °C

**Digestion tube ID:** M5586

**Block thermometer ID:** N/A

**Dig Technician Signature:**

**Supervisor Signature:**

**Temp :** 1. 96°C 2. N/A

| Standared Name | MLS USED | STD REF. # FROM LOG |
|---|---|---|
| LFS-1 | 0.25 | M5643 |
| LFS-2 | 0.25 | M5649 |
| 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 | M5904 |
| 1:1 HCL | 5.00 | MP81559 |
| 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:**

N/A

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|---|---|---|
| 08/05/24 12:10 | | |
| | Preparation Group | Analysis Group |

| Lab Sample ID | Client Sample ID | pH | Initial Vol (ml) | Final Vol (ml) | Color Before | Color After | Clarity Before | Clarity After | Comment | Prep Pos |
|---|---|---|---|---|---|---|---|---|---|---|
| P3426-01 | 927-K1-WS-073124 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 21 |
| P3426-02 | 927-K1-WS-073124-FD | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 22 |
| P3429-01 | 926-K1-WS-073124 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 23 |
| P3429-02 | 931-K1-WS-073124 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 24 |
| P3429-03 | 925-K1-WS-073124 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 25 |
| P3440-01 | 923-K1-WS-080124 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 26 |
| P3440-01DUP | 923-K1-WS-080124DUP | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 20 |
| P3440-02 | P3440-01MS | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | M5643,M5649 | 27 |
| P3440-03 | P3440-01MSD | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | M5643,M5649 | 28 |
| P3440-04 | 922-K1-WS-080124 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 29 |
| P3443-01 | WATER TREATMENT DISCHARGE | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 30 |
| P3451-01 | 921-J-WS-080124 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 31 |
| P3455-01 | RW7-SP100-50-20240801 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 32 |
| P3455-03 | RW7-S301A-50-20240801 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 33 |
| P3455-04 | RW7-SP303-50-20240801 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 34 |
| P3455-05 | RW7-SP100-90-20240801 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 35 |
| P3455-07 | RW7-SP301A-90-20240801 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 36 |
| P3455-08 | RW7-SP303-90-20240801 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 37 |
| P3457-01 | 924-KI-WS-080224 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 38 |
| P3457-02 | 932-KI-WS-080224 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 39 |
| P3467-01 | 919-J-WS-080224 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 40 |
| PB162493BL | PBW493 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | N/A | 41 |
| PB162493BS | LCS493 | <2 | 50 | 25 | Colorless | Colorless | Clear | Clear | M5643,M5649 | 42 |

# WORKLIST(Hardcopy Internal Chain)

**WorkList Name :** PB162493 **WorkList ID :** 182358 **Department :** Digestion **Date :** 08-05-2024 08:44:50

| Sample | Customer Sample | Matrix | Test | Preservative | Customer | Raw Sample Storage Location | Collect Date | Method |
|---|---|---|---|---|---|---|---|---|
| P3426-01 | 927-K1-WS-073124 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | E21 | 07/31/2024 | 6010D |
| P3426-02 | 927-K1-WS-073124-FD | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | E21 | 07/31/2024 | 6010D |
| P3429-01 | 926-K1-WS-073124 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 6010D |
| P3429-02 | 931-K1-WS-073124 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 6010D |
| P3429-03 | 925-K1-WS-073124 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 6010D |
| P3440-01 | 923-K1-WS-080124 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 6010D |
| P3440-02 | P3440-01MS | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 6010D |
| P3440-03 | P3440-01MSD | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 6010D |
| P3440-04 | 922-K1-WS-080124 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 6010D |
| P3443-01 | Water Treatment Discharge | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 6010D |
| P3451-01 | 921-J-WS-080124 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | VERI01 | K11 | 08/01/2024 | 6010D |
| P3455-01 | RW7-SP100-50-20240801 | Water | Metals ICP-TAL | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 6010D |
| P3455-03 | RW7-S301A-50-20240801 | Water | Metals ICP-TAL | 1:1 HNO3 to pH < 2 | TETR06 | D31 | 08/01/2024 | 6010D |
| P3455-04 | RW7-SP303-50-20240801 | Water | Metals ICP-TAL | 1:1 HNO3 to pH < 2 | TETR06 | D31 | 08/01/2024 | 6010D |
| P3455-05 | RW7-SP100-90-20240801 | Water | Metals ICP-TAL | 1:1 HNO3 to pH < 2 | TETR06 | D31 | 08/01/2024 | 6010D |
| P3455-07 | RW7-SP301A-90-20240801 | Water | Metals ICP-TAL | 1:1 HNO3 to pH < 2 | TETR06 | D31 | 08/01/2024 | 6010D |
| P3455-08 | RW7-SP303-90-20240801 | Water | Metals ICP-TAL | 1:1 HNO3 to pH < 2 | TETR06 | D31 | 08/01/2024 | 6010D |
| P3457-01 | 924-KI-WS-080224 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | J21 | 08/02/2024 | 6010D |
| P3457-02 | 932-KI-WS-080224 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | J21 | 08/02/2024 | 6010D |
| P3467-01 | 919-J-WS-080224 | Water | Metals Group4 | 1:1 HNO3 to pH < 2 | JACO05 | D21 | 08/02/2024 | 6010D |

**Date/Time** 08/05/24 08:50

**Raw Sample Received by:** [illegible]

**Raw Sample Relinquished by:** JT (SM)

**Date/Time** 08/05/24 13:00

**Raw Sample Received by:** JT (SM)

**Raw Sample Relinquished by:** [illegible]

Alliance TECHNICAL GROUP

**Water Mercury Preparation Sheet**

PB162680

**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 :** M4909

**Hood ID :** #1

**Block ID:** 1. HG HOT BLOCK#3 2. N/A

**Start Digest Date:** 08/12/2024 **Time :** 16:13 **Temp :** 94 °C

**End Digest Date:** 08/12/2024 **Time :** 18:13 **Temp :** 95 °C

**Digestion tube ID:** M5586

**Block thermometer ID:** HG-DIG#3

**Dig Technician Signature:** pB

**Supervisor Signature:** JL

**Temp :** 1. 94°C 2. N/A

| Standared Name | MLS USED | STD REF. # FROM LOG |
|---|---|---|
| ICV | 30mL | MP81786 |
| CCV | 30mL | MP81788 |
| CRA | 30mL | MP81790 |
| Blank Spike | 0.48mL | MP81779 |
| Matrix Spike | 0.48mL | MP81779 |

| Chemical Used | ML/SAMPLE USED | Lot Number |
|---|---|---|
| HNO3/H2SO4(1:2) | 2.5mL | MP81818 |
| KMnO4 | 4.5mL | MP81819 |
| K2S2O8 | 2.5mL | MP81820 |
| Hydroxylamine HCL | 2.0mL | MP81821 |
| 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 | MP81780 |
| 0.05 ppb | S0.05 | N/A | N/A |
| 0.2 ppb | S0.2 | 30mL | MP81781 |
| 2.5 ppb | S2.5 | 30mL | MP81782 |
| 5.0 ppb | S5.0 | 30mL | MP81783 |
| 7.5 ppb | S7.5 | 30mL | MP81784 |
| 10.0 ppb | S10.0 | 30mL | MP81785 |
| ICV | ICV | 30mL | MP81786 |
| ICB | ICB | 30mL | MP81787 |
| CCV | CCV | 30mL | MP81788 |
| CCB | CCB | 30mL | MP81789 |
| CRI | CRI | 30mL | MP81790 |
| CHK STD | CHK STD | 30mL | MP81791 |

**Extraction Conformance/Non-Conformance Comments:**

N/A

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|---|---|---|
| 8/13/24 @ 7:40 | pB Dig. Lab | PRO - Metals Lab |
| | **Preparation Group** | **Analysis Group** |

Alliance TECHNICAL GROUP

**Water Mercury Preparation Sheet**

**PB162680**

| Lab Sample ID | Client Sample ID | Initial Vol (ml) | Final Vol (ml) | pH | Comment | Prep Pos |
|---|---|---|---|---|---|---|
| P3426-01 | 927-K1-WS-073124 | 30 | 30 | <2 | N/A | 3-20 |
| P3426-02 | 927-K1-WS-073124-FD | 30 | 30 | <2 | N/A | 21 |
| P3429-01 | 926-K1-WS-073124 | 30 | 30 | <2 | N/A | 22 |
| P3429-02 | 931-K1-WS-073124 | 30 | 30 | <2 | N/A | 23 |
| P3429-03 | 925-K1-WS-073124 | 30 | 30 | <2 | N/A | 24 |
| P3440-01 | 923-K1-WS-080124 | 30 | 30 | <2 | N/A | 25 |
| P3440-01DUP | 923-K1-WS-080124DUP | 30 | 30 | <2 | N/A | 26 |
| P3440-02 | P3440-01MS | 30 | 30 | <2 | MP81779 | 27 |
| P3440-03 | P3440-01MSD | 30 | 30 | <2 | MP81779 | 28 |
| P3440-04 | 922-K1-WS-080124 | 30 | 30 | <2 | N/A | 29 |
| P3451-01 | 921-J-WS-080124 | 30 | 30 | <2 | N/A | 30 |
| P3457-01 | 924-K1-WS-080224 | 30 | 30 | <2 | N/A | 31 |
| P3457-02 | 932-K1-WS-080224 | 30 | 30 | <2 | N/A | 32 |
| P3467-01 | 919-J-WS-080224 | 30 | 30 | <2 | N/A | 33 |
| P3497-02 | COMP | 30 | 30 | <2 | N/A | 34 |
| P3532-01 | 806-C | 30 | 30 | <2 | N/A | 35 |
| P3545-01 | BUR-1295 | 30 | 30 | <2 | N/A | 36 |
| PB162680BL | PBW680 | 30 | 30 | <2 | N/A | 37 |
| PB162680BS | LCS680 | 30 | 30 | <2 | MP81779 | 38 |

# WORKLIST(Hardcopy Internal Chain)

**WorkList Name :** 081224_7470 **WorkList ID :** 182542 **Department :** Digestion **Date :** 08-12-2024 07:28:42

| Sample | Customer Sample | Matrix | Test | Preservative | Customer | Raw Sample Storage Location | Collect Date | Method |
|---|---|---|---|---|---|---|---|---|
| P3497-02 | COMP | Water | Mercury | 1:1 HNO3 to pH < 2 | ARAM01 | K11 | 08/07/2024 | 7470A |
| P3426-01 | 927-K1-WS-073124 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | E21 | 07/31/2024 | 7470A |
| P3426-02 | 927-K1-WS-073124-FD | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | E21 | 07/31/2024 | 7470A |
| P3429-01 | 926-K1-WS-073124 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 7470A |
| P3429-02 | 931-K1-WS-073124 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 7470A |
| P3429-03 | 925-K1-WS-073124 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 7470A |
| P3440-01 | 923-K1-WS-080124 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 07/31/2024 | 7470A |
| P3467-01 | 919-J-WS-080224 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 7470A |
| P3440-02 | P3440-01MS | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D21 | 08/02/2024 | 7470A |
| P3440-03 | P3440-01MSD | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 7470A |
| P3440-04 | 922-K1-WS-080124 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 7470A |
| P3451-01 | 921-J-WS-080124 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 7470A |
| P3457-01 | 924-K1-WS-080224 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | D31 | 08/01/2024 | 7470A |
| P3457-02 | 932-K1-WS-080224 | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | J21 | 08/02/2024 | 7470A |
| P3532-01 | 806-C | Water | Mercury | 1:1 HNO3 to pH < 2 | JACO05 | J21 | 08/02/2024 | 7470A |
| P3545-01 | BUR-1295 | Water | Mercury | 1:1 HNO3 to pH < 2 | PSEG03 | D21 | 08/08/2024 | 7470A |



**Date/Time** 8/12/24 @ 15:40

**Raw Sample Received by:** [illegible]

**Raw Sample Relinquished by:** [illegible]

**Date/Time** 8/12/24 @ 16:20

**Raw Sample Received by:** [illegible]

**Raw Sample Relinquished by:** [illegible]

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

**Instrument ID:** P4

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131900

| | | | |
|---|---|---|---|
| Review By | Jaswal | Review On | 8/8/2024 5:19:27 AM |
| Supervise By | Mohan | Supervise On | 8/8/2024 5:24:08 AM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP81528,MP81645,MP81646,MP81647,MP81648,MP81650 |
| ICV Standard | MP81651 |
| CCV Standard | MP81654 |
| ICSA Standard | MP81652,MP81653 |
| CRI Standard | MP81650 |
| LCS Standard | |
| Chk Standard | MP81661,MP81662 |

| Sr# | SampleId | ClientID | QcType | Date | Comment | Operator | Status |
|---|---|---|---|---|---|---|---|
| 1 | S0 | S0 | CAL1 | 08/07/24 14:16 | | Kareem | OK |
| 2 | S1 | S1 | CAL2 | 08/07/24 14:21 | | Kareem | OK |
| 3 | S2 | S2 | CAL3 | 08/07/24 14:25 | | Kareem | OK |
| 4 | S3 | S3 | CAL4 | 08/07/24 14:29 | | Kareem | OK |
| 5 | S4 | S4 | CAL5 | 08/07/24 14:33 | | Kareem | OK |
| 6 | S5 | S5 | CAL6 | 08/07/24 14:38 | | Kareem | OK |
| 7 | ICV01 | ICV01 | ICV | 08/07/24 15:52 | | Kareem | OK |
| 8 | LLICV01 | LLICV01 | LLICV | 08/07/24 15:56 | | Kareem | OK |
| 9 | ICB01 | ICB01 | ICB | 08/07/24 16:03 | | Kareem | OK |
| 10 | CRI01 | CRI01 | CRDL | 08/07/24 16:07 | | Kareem | OK |
| 11 | ICSA01 | ICSA01 | ICSA | 08/07/24 16:12 | | Kareem | OK |
| 12 | ICSAB01 | ICSAB01 | ICSAB | 08/07/24 16:16 | | Kareem | OK |
| 13 | CCV01 | CCV01 | CCV | 08/07/24 16:20 | | Kareem | OK |
| 14 | CCB01 | CCB01 | CCB | 08/07/24 16:25 | | Kareem | OK |
| 15 | PB162493BL | PB162493BL | MB | 08/07/24 16:29 | | Kareem | OK |
| 16 | PB162493BS | PB162493BS | LCS | 08/07/24 16:34 | 0.1ML OF M5921 AND M5922 WERE ADDED TO 10ML OF THE SAMPLE | Kareem | OK |
| 17 | P3426-01 | 927-K1-WS-073124 | SAM | 08/07/24 16:38 | | Kareem | OK |
| 18 | P3426-02 | 927-K1-WS-073124-F | SAM | 08/07/24 16:42 | | Kareem | OK |

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

**Instrument ID:** P4

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131900

| | | | |
|---|---|---|---|
| Review By | Jaswal | Review On | 8/8/2024 5:19:27 AM |
| Supervise By | Mohan | Supervise On | 8/8/2024 5:24:08 AM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP81528,MP81645,MP81646,MP81647,MP81648,MP81650 |
| ICV Standard | MP81651 |
| CCV Standard | MP81654 |
| ICSA Standard | MP81652,MP81653 |
| CRI Standard | MP81650 |
| LCS Standard | |
| Chk Standard | MP81661,MP81662 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19 | P3429-01 | 926-K1-WS-073124 | SAM | 08/07/24 16:47 | | Kareem | OK |
| 20 | P3429-02 | 931-K1-WS-073124 | SAM | 08/07/24 16:51 | | Kareem | OK |
| 21 | P3429-03 | 925-K1-WS-073124 | SAM | 08/07/24 16:56 | | Kareem | OK |
| 22 | P3440-01 | 923-K1-WS-080124 | SAM | 08/07/24 17:00 | | Kareem | OK |
| 23 | P3440-01DUP | 923-K1-WS-080124DU | DUP | 08/07/24 17:05 | | Kareem | OK |
| 24 | P3440-01L | 923-K1-WS-080124L | SD | 08/07/24 17:09 | | Kareem | OK |
| 25 | CCV02 | CCV02 | CCV | 08/07/24 17:14 | | Kareem | OK |
| 26 | CCB02 | CCB02 | CCB | 08/07/24 17:18 | | Kareem | OK |
| 27 | LR2 | LR2 | HIGH STD | 08/07/24 18:15 | | Kareem | OK |
| 28 | P3440-02 | 923-K1-WS-080124M | MS | 08/07/24 18:20 | | Kareem | OK |
| 29 | P3440-03 | 923-K1-WS-080124M | MSD | 08/07/24 18:24 | | Kareem | OK |
| 30 | P3440-01A | 923-K1-WS-080124A | PS | 08/07/24 18:33 | 0.1ML OF M5921 AND M5922 WERE ADDED TO 10ML OF THE SAMPLE | Kareem | OK |
| 31 | P3440-04 | 922-K1-WS-080124 | SAM | 08/07/24 18:38 | | Kareem | OK |
| 32 | P3443-01 | Water Treatment Disc | SAM | 08/07/24 18:42 | | Kareem | OK |
| 33 | P3451-01 | 921-J-WS-080124 | SAM | 08/07/24 18:47 | | Kareem | OK |
| 34 | CCV03 | CCV03 | CCV | 08/07/24 18:51 | | Kareem | OK |
| 35 | CCB03 | CCB03 | CCB | 08/07/24 18:55 | | Kareem | OK |
| 36 | LR1 | LR1 | HIGH STD | 08/07/24 19:07 | | Kareem | OK |
| 37 | P3455-01 | RW7-SP100-50-2024( | SAM | 08/07/24 19:12 | | Kareem | OK |

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

**Instrument ID:** P4

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131900

| | | | |
|---|---|---|---|
| Review By | Jaswal | Review On | 8/8/2024 5:19:27 AM |
| Supervise By | Mohan | Supervise On | 8/8/2024 5:24:08 AM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP81528,MP81645,MP81646,MP81647,MP81648,MP81650 |
| ICV Standard | MP81651 |
| CCV Standard | MP81654 |
| ICSA Standard | MP81652,MP81653 |
| CRI Standard | MP81650 |
| LCS Standard | |
| Chk Standard | MP81661,MP81662 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 38 | P3455-03 | RW7-SP301A-50-202 | SAM | 08/07/24 19:17 | | Kareem | OK |
| 39 | P3455-04 | RW7-SP303-50-2024( | SAM | 08/07/24 19:21 | | Kareem | OK |
| 40 | P3455-05 | RW7-SP100-90-2024( | SAM | 08/07/24 19:26 | | Kareem | OK |
| 41 | P3455-07 | RW7-SP301A-90-202 | SAM | 08/07/24 19:30 | | Kareem | OK |
| 42 | P3455-08 | RW7-SP303-90-2024( | SAM | 08/07/24 19:35 | | Kareem | OK |
| 43 | P3457-01 | 924-K1-WS-080224 | SAM | 08/07/24 19:39 | | Kareem | OK |
| 44 | P3457-02 | 932-K1-WS-080224 | SAM | 08/07/24 19:44 | | Kareem | OK |
| 45 | CCV04 | CCV04 | CCV | 08/07/24 19:48 | | Kareem | OK |
| 46 | CCB04 | CCB04 | CCB | 08/07/24 19:52 | | Kareem | OK |

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

**Instrument ID:** CV1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131960

| | | | |
|---|---|---|---|
| Review By | jaswal | Review On | 8/13/2024 10:45:46 PM |
| Supervise By | mohan | Supervise On | 8/13/2024 10:47:32 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP81780,MP81781,MP81782,MP81783,MP81784,MP81785 |
| ICV Standard | MP81786 |
| CCV Standard | MP81788 |
| ICSA Standard | |
| CRI Standard | MP81790 |
| LCS Standard | |
| Chk Standard | MP81787,MP81789,MP81791,MP81804 |

| Sr# | SampleId | ClientID | QcType | Date | Comment | Operator | Status |
|---|---|---|---|---|---|---|---|
| 1 | S0 | S0 | CAL1 | 08/13/24 08:36 | | mohan | OK |
| 2 | S0.2 | S0.2 | CAL2 | 08/13/24 08:39 | | mohan | OK |
| 3 | S2.5 | S2.5 | CAL3 | 08/13/24 08:41 | | mohan | OK |
| 4 | S5 | S5 | CAL4 | 08/13/24 08:43 | | mohan | OK |
| 5 | S7.5 | S7.5 | CAL5 | 08/13/24 08:45 | | mohan | OK |
| 6 | S10 | S10 | CAL6 | 08/13/24 08:50 | | mohan | OK |
| 7 | ICV72 | ICV72 | ICV | 08/13/24 08:53 | | mohan | OK |
| 8 | ICB72 | ICB72 | ICB | 08/13/24 08:55 | | mohan | OK |
| 9 | CCV35 | CCV35 | CCV | 08/13/24 08:58 | | mohan | OK |
| 10 | CCB35 | CCB35 | CCB | 08/13/24 09:03 | | mohan | OK |
| 11 | CRA | CRA | CRDL | 08/13/24 09:10 | | mohan | OK |
| 12 | HighStd | HighStd | HIGH STD | 08/13/24 09:12 | | mohan | OK |
| 13 | ChkStd | ChkStd | SAM | 08/13/24 09:14 | | mohan | OK |
| 14 | PB162665BL | PB162665BL | MB | 08/13/24 09:17 | | mohan | OK |
| 15 | PB162665BS | PB162665BS | LCS | 08/13/24 09:19 | | mohan | OK |
| 16 | P3526-02 | SP-1-COMP | SAM | 08/13/24 09:21 | | mohan | OK |
| 17 | P3534-01 | PIPE-BLAST-GRIT | SAM | 08/13/24 09:24 | | mohan | OK |
| 18 | P3534-03 | HP-IP | SAM | 08/13/24 09:26 | | mohan | OK |

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**Instrument ID:** CV1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131960

| | | | |
|---|---|---|---|
| Review By | jaswal | Review On | 8/13/2024 10:45:46 PM |
| Supervise By | mohan | Supervise On | 8/13/2024 10:47:32 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP81780,MP81781,MP81782,MP81783,MP81784,MP81785 |
| ICV Standard | MP81786 |
| CCV Standard | MP81788 |
| ICSA Standard | |
| CRI Standard | MP81790 |
| LCS Standard | |
| Chk Standard | MP81787,MP81789,MP81791,MP81804 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19 | P3534-03DUP | HP-IPDUP | DUP | 08/13/24 09:28 | | mohan | OK |
| 20 | P3534-03MS | HP-IPMS | MS | 08/13/24 09:30 | | mohan | OK |
| 21 | CCV36 | CCV36 | CCV | 08/13/24 09:33 | | mohan | OK |
| 22 | CCB36 | CCB36 | CCB | 08/13/24 09:35 | | mohan | OK |
| 23 | P3534-03MSD | HP-IPMSD | MSD | 08/13/24 09:37 | | mohan | OK |
| 24 | PB162681BL | PB162681BL | MB | 08/13/24 09:39 | | mohan | OK |
| 25 | PB162681BS | PB162681BS | LCS | 08/13/24 09:42 | | mohan | OK |
| 26 | P3530-02 | WC-A-04-202408 | SAM | 08/13/24 09:44 | | mohan | OK |
| 27 | P3530-02DUP | WC-A-04-202408DUP | DUP | 08/13/24 09:46 | | mohan | OK |
| 28 | P3530-02MS | WC-A-04-202408MS | MS | 08/13/24 09:49 | | mohan | OK |
| 29 | P3530-02MSD | WC-A-04-202408MSD | MSD | 08/13/24 09:51 | | mohan | OK |
| 30 | P3530-03 | WC-A-05-202408 | SAM | 08/13/24 09:53 | | mohan | OK |
| 31 | P3534-05 | PIPE-BLAST-GRIT(FB | SAM | 08/13/24 09:55 | | mohan | OK |
| 32 | P3534-06 | HP-IP(FB) | SAM | 08/13/24 09:58 | | mohan | OK |
| 33 | CCV37 | CCV37 | CCV | 08/13/24 10:00 | | mohan | OK |
| 34 | CCB37 | CCB37 | CCB | 08/13/24 10:05 | | mohan | OK |
| 35 | PB162680BL | PB162680BL | MB | 08/13/24 10:07 | | mohan | OK |
| 36 | PB162680BS | PB162680BS | LCS | 08/13/24 10:09 | | mohan | OK |
| 37 | P3426-01 | 927-K1-WS-073124 | SAM | 08/13/24 10:12 | | mohan | OK |
| 38 | P3426-02 | 927-K1-WS-073124-F | SAM | 08/13/24 10:14 | | mohan | OK |

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**Instrument ID:** CV1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131960

| | | | |
|---|---|---|---|
| Review By | jaswal | Review On | 8/13/2024 10:45:46 PM |
| Supervise By | mohan | Supervise On | 8/13/2024 10:47:32 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP81780,MP81781,MP81782,MP81783,MP81784,MP81785 |
| ICV Standard | MP81786 |
| CCV Standard | MP81788 |
| ICSA Standard | |
| CRI Standard | MP81790 |
| LCS Standard | |
| Chk Standard | MP81787,MP81789,MP81791,MP81804 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 39 | P3429-01 | 926-K1-WS-073124 | SAM | 08/13/24 10:16 | | mohan | OK |
| 40 | P3429-02 | 931-K1-WS-073124 | SAM | 08/13/24 10:19 | | mohan | OK |
| 41 | P3429-03 | 925-K1-WS-073124 | SAM | 08/13/24 10:21 | | mohan | OK |
| 42 | P3440-01 | 923-K1-WS-080124 | SAM | 08/13/24 10:23 | | mohan | OK |
| 43 | P3440-01DUP | 923-K1-WS-080124DU | DUP | 08/13/24 10:25 | | mohan | OK |
| 44 | P3440-02 | 923-K1-WS-080124M | MS | 08/13/24 10:28 | | mohan | OK |
| 45 | CCV38 | CCV38 | CCV | 08/13/24 10:30 | | mohan | OK |
| 46 | CCB38 | CCB38 | CCB | 08/13/24 10:35 | | mohan | OK |
| 47 | P3440-03 | 923-K1-WS-080124M | MSD | 08/13/24 10:37 | | mohan | OK |
| 48 | P3440-04 | 922-K1-WS-080124 | SAM | 08/13/24 10:39 | | mohan | OK |
| 49 | P3451-01 | 921-J-WS-080124 | SAM | 08/13/24 10:42 | | mohan | OK |
| 50 | P3457-01 | 924-K1-WS-080224 | SAM | 08/13/24 10:44 | | mohan | OK |
| 51 | P3457-02 | 932-K1-WS-080224 | SAM | 08/13/24 10:46 | | mohan | OK |
| 52 | P3467-01 | 919-J-WS-080224 | SAM | 08/13/24 10:49 | | mohan | OK |
| 53 | P3497-02 | COMP | SAM | 08/13/24 10:51 | | mohan | OK |
| 54 | P3532-01 | 806-C | SAM | 08/13/24 10:53 | | mohan | OK |
| 55 | P3545-01 | BUR-1295 | SAM | 08/13/24 10:55 | | mohan | OK |
| 56 | CCV39 | CCV39 | CCV | 08/13/24 10:58 | | mohan | OK |
| 57 | CCB39 | CCB39 | CCB | 08/13/24 11:04 | | mohan | OK |
| 58 | PB162588TB | PB162588TB | MB | 08/13/24 11:06 | | mohan | OK |

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**Instrument ID:** CV1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131960

| | | | |
|---|---|---|---|
| Review By | jaswal | Review On | 8/13/2024 10:45:46 PM |
| Supervise By | mohan | Supervise On | 8/13/2024 10:47:32 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | MP81780,MP81781,MP81782,MP81783,MP81784,MP81785 |
| ICV Standard | MP81786 |
| CCV Standard | MP81788 |
| ICSA Standard | |
| CRI Standard | MP81790 |
| LCS Standard | |
| Chk Standard | MP81787,MP81789,MP81791,MP81804 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 59 | PB162590TB | PB162590TB | MB | 08/13/24 11:08 | | mohan | OK |
| 60 | P3534-03L | HP-IPL | SD | 08/13/24 11:10 | | mohan | OK |
| 61 | P3534-03A | HP-IPA | PS | 08/13/24 11:13 | | mohan | OK |
| 62 | P3530-02L | WC-A-04-202408L | SD | 08/13/24 11:15 | | mohan | OK |
| 63 | P3530-02A | WC-A-04-202408A | PS | 08/13/24 11:17 | | mohan | OK |
| 64 | P3440-01L | 923-K1-WS-080124L | SD | 08/13/24 11:19 | | mohan | OK |
| 65 | P3440-01A | 923-K1-WS-080124A | PS | 08/13/24 11:22 | | mohan | OK |
| 66 | CCV40 | CCV40 | CCV | 08/13/24 11:24 | | mohan | OK |
| 67 | CCB40 | CCB40 | CCB | 08/13/24 11:26 | | mohan | OK |

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# Prep Standard - Chemical Standard Summary

**Order ID :** P3426

**Test :** Mercury,Metals Group4

**Prepbatch ID :** PB162493,PB162680,

**Sequence ID/Qc Batch ID:** LB131900,LB131900,LB131960,

**Standard ID :**
MP81528,MP81559,MP81645,MP81646,MP81647,MP81648,MP81649,MP81650,MP81651,MP81652,MP81653,MP81654,
MP81661,MP81662,MP81779,MP81780,MP81781,MP81782,MP81783,MP81784,MP81785,MP81786,MP81787,MP81788,
MP81789,MP81790,MP81791,MP81804,

**Chemical ID :**
M4877,M4885,M4889,M4960,M5062,M5130,M5184,M5192,M5200,M5223,M5224,M5227,M5288,M5294,M5296,M5298,M5
387,M5393,M5466,M5497,M5643,M5649,M5658,M5697,M5747,M5748,M5768,M5776,M5798,M5799,M5800,M5801,M5809
,M5814,M5816,M5818,M5819,M5820,M5875,M5904,M5929,M5942,M5951,M5953,M5959,M5962,M5963,M5965,M5970,M5
982,W3112,

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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) | MP81528 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | None | Mohan Bera 07/23/2024 |

**FROM** 125.00000ml of M5929 + 2350.00000ml of W3112 + 25.00000ml of M5963 = Final Quantity: 2500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 170 | 1:1HCL | MP81559 | 07/23/2024 | 12/08/2024 | Rubina Mughal | None | None | Mohan Bera 07/23/2024 |

**FROM** 1250.00000ml of M5929 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 907 | ICP AES STD S ( S5 ) | MP81645 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | None | Mohan Bera 07/31/2024 |

**FROM** 5.00000ml of M5224 + 5.00000ml of M5296 + 5.00000ml of M5393 + 5.00000ml of M5466 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M5982 + 455.00000ml of MP81528 = Final Quantity: 500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 910 | ICP AES STD S4 | MP81646 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 50.00000ml of MP81528 + 50.00000ml of MP81645 = 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 | MP81647 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 25.00000ml of MP81645 + 75.00000ml of MP81528 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3913 | ICP AES STD S2 | MP81648 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 16.00000ml of MP81645 + 184.00000ml of MP81528 = 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 | MP81649 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 0.03000ml of M4877 + 0.03000ml of M5798 + 0.05000ml of M4885 + 0.05000ml of M5298 + 0.05000ml of M5658 + 0.05000ml of M5809 + 0.06000ml of M5747 + 0.10000ml of M5184 + 0.10000ml of M5697 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M5982 + 0.15000ml of M5800 + 0.20000ml of M4889 + 0.20000ml of M5224 + 0.20000ml of M5227 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5819 + 0.25000ml of M5466 + 0.50000ml of M5387 + 0.50000ml of M5814 + 1.00000ml of M5192 + 1.00000ml of M5200 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M5768 + 1.00000ml of M5942 + 2.00000ml of M5816 + 2.00000ml of M5818 + 86.38000ml of MP81528 = 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 | MP81650 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 2.00000ml of MP81649 + 98.00000ml of MP81528 = 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 | MP81651 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 10.00000ml of M5294 + 90.00000ml of MP81528 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 904 | ICP AES ICSA SOLN | MP81652 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 10.00000ml of M5130 + 90.00000ml of MP81528 = 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 |
|---|---|---|---|---|---|---|---|---|
| 905 | ICP AES ICSAB SOLN | MP81653 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 10.00000ml of M5130 + 10.00000ml of M5223 + 80.00000ml of MP81528 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 911 | ICP AES CCV SOLN | MP81654 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 125.00000ml of MP81528 + 125.00000ml of MP81645 = 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 |
|---|---|---|---|---|---|---|---|---|
| 919 | ICP AES INTERNAL STD | MP81661 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | METALS_PIPETTE_3 (A) | Mohan Bera 07/31/2024 |

**FROM** 1.00000ml of M5959 + 10.00000ml of M4960 + 1969.00000ml of W3112 + 20.00000ml of M5963 = Final Quantity: 2000.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 903 | ICP AES RINSE SOLN | MP81662 | 07/22/2024 | 08/21/2024 | Sarabjit Jaswal | None | None | Mohan Bera 07/31/2024 |

**FROM** 200.00000ml of M5963 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 871 | MERCURY INTERMEDIATE B 250PPB WORKING STD. | MP81779 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 1.00000ml of M5965 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1340 | Hg 0.00 PPB STD | MP81780 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1341 | Hg 0.2 PPB STD | MP81781 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 247.30000ml of W3112 + 0.20000ml of MP81779 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1342 | Hg 2.5 PPB STD | MP81782 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 245.00000ml of W3112 + 2.50000ml of MP81779 = 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 |
|---|---|---|---|---|---|---|---|---|
| 1343 | Hg 5.0 PPB STD | MP81783 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 242.50000ml of W3112 + 5.00000ml of MP81779 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1344 | Hg 7.5 PPB STD | MP81784 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 240.00000ml of W3112 + 7.50000ml of MP81779 = Final Quantity: 250.000 ml

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Fax : 908 789 8922

# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1345 | Hg 10.0 PPB STD | MP81785 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 237.50000ml of W3112 + 10.00000ml of MP81779 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1346 | Hg ICV SOLUTION | MP81786 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5953 + 2.50000ml of M5965 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

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# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1351 | ICB (Hg 0.00 PPB SOLUTION) | MP81787 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1358 | CCV (Hg 5.0 PPB SOLUTION) | MP81788 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 485.00000ml of W3112 + 5.00000ml of M5965 + 10.00000ml of MP81779 = Final Quantity: 500.000 ml

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Fax : 908 789 8922

# Metals STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1352 | CCB (Hg 0.00 PPB SOLUTION) | MP81789 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 495.00000ml of W3112 + 5.00000ml of M5965 = Final Quantity: 500.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1349 | CRA/CRI (Hg 0.2 PPB SOLUTION) | MP81790 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 247.30000ml of W3112 + 0.20000ml of MP81779 = 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 |
|---|---|---|---|---|---|---|---|---|
| 1350 | CHK STD (Hg 7.0 PPB SOLUTION) | MP81791 | 08/12/2024 | 08/13/2024 | Mohan Bera | None | METALS_PIPETTE_5 (HG A) | Sarabjit Jaswal 08/13/2024 |

**FROM** 2.50000ml of M5965 + 240.50000ml of W3112 + 7.00000ml of MP81779 = Final Quantity: 250.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 68 | STANNOUS CHLORIDE SOLUTION | MP81804 | 08/13/2024 | 08/14/2024 | Mohan Bera | METALS_SCALE_3 (M SC-3) | None | Sarabjit Jaswal 08/13/2024 |

**FROM** 450.00000ml of W3112 + 50.00000gram of M5776 + 50.00000ml of M5951 = Final Quantity: 500.000 ml

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57048 / Cd, 1000 PPM, 125 ml | 072821 | 08/28/2024 | 08/06/2021 / jaswal | 08/05/2021 / jaswal | M4877 |

| 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 | 072921 | 08/29/2024 | 08/06/2021 / jaswal | 08/05/2021 / jaswal | M4885 |

| 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 | 073021 | 08/30/2024 | 08/06/2021 / jaswal | 08/05/2021 / jaswal | M4889 |

| 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 | 100721 | 10/07/2024 | 10/09/2021 / jaswal | 10/08/2021 / jaswal | M4960 |

| 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 | 11/19/2024 | 05/20/2024 / jaswal | 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. | 58025 / Mn, 1000 PPM, 500 ml | 060122 | 06/01/2025 | 07/01/2022 / bin | 06/02/2022 / jaswal | M5184 |

| 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 # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58111 / Na, 10000 PPM, 500 ml | 092121 | 09/21/2024 | 06/23/2022 / bin | 10/05/2021 / bin | M5200 |

| 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 | 11/19/2024 | 05/20/2024 / jaswal | 04/20/2021 / bin | M5223 |

| 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 | 101521 | 10/15/2024 | 06/29/2022 / bin | 10/18/2021 / bin | M5224 |

| 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 | 100121 | 10/01/2024 | 07/01/2022 / bin | 10/18/2021 / bin | M5227 |

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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. | 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 # |
|---|---|---|---|---|---|---|
| EPA | ICV-1 / ICV ( ICP/ICPMS ) STOCK SOLN | ICV-1014 | 01/01/2025 | 12/13/2023 / bin | 02/20/2020 / bin | M5294 |

| 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 |

| 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 | 072122 | 07/21/2025 | 11/01/2022 / jaswal | 09/18/2022 / jaswal | M5387 |

| 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 |

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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. | 57058 / Cerium, 1000PPM, 100ML | 061322 | 06/13/2025 | 03/06/2023 / bin | 03/01/2023 / bin | M5466 |

| 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 # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml | T2-MEB723367 | 08/17/2024 | 08/18/2023 / bin | 04/16/2023 / bin | M5643 |

| 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 | T2-MEB715594 | 02/17/2027 | 12/11/2023 / bin | 04/16/2023 / bin | M5649 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58024 / Chromium, Cr, 500 ml, 1000 PPM | 060523 | 06/05/2026 | 08/28/2023 / jaswal | 08/25/2023 / jaswal | M5658 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 58029 / Cu, 1000 PPM, 500 ml | 102523 | 10/25/2026 | 04/03/2024 / jaswal | 10/27/2023 / jaswal | M5697 |

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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. | / 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. | 58112 / Mg, 10000 PPM, 500 ml | 091823 | 09/18/2026 | 01/08/2024 / bin | 01/03/2024 / bin | M5768 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-3980-01 / Stannous Chloride (cs/4x500g) | 0000281938 | 07/06/2026 | 06/26/2023 / mohan | 07/18/2023 / mohan | M5776 |

| 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 |

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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. | 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. | 58113 / Al, 10000 PPM, 500 ml | 122926 | 12/29/2026 | 06/28/2024 / Jaswal | 01/03/2024 / jaswal | M5809 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57005 / B, 1000 PPM, 125 ml | 071123 | 07/11/2026 | 03/26/2024 / Sohil | 01/03/2024 / jaswal | M5814 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57016 / S, 1000 PPM, 125 ml | 122923 | 12/29/2026 | 05/20/2024 / Jaswal | 02/09/2024 / jaswal | M5816 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57014 / Si, 1000 PPM, 125 ml | 122023 | 12/20/2026 | 03/06/2024 / jaswal | 02/09/2024 / jaswal | M5818 |

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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. | 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 |

| 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-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L) | 24D1062002 | 11/16/2024 | 05/15/2024 / Al-Terek | 05/07/2024 / Al-Terek | M5904 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 22G2862015 | 12/08/2024 | 06/24/2024 / Al-Terek | 06/07/2024 / Al-Terek | M5929 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Inorganic Ventures | CGTI1-1 / TITANIUM 125mL 1000ug/mL | T2-TI719972 | 06/17/2027 | 06/18/2024 / Jaswal | 02/22/2024 / Jaswal | M5942 |

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# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 22G2862015 | 12/27/2024 | 07/04/2024 / Jaswal | 06/23/2024 / Al-Terek | M5951 |

| 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 | 01/01/2025 | 07/01/2024 / mohan | 03/30/2023 / mohan | M5953 |

| 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. | 57034 / Se, 1000 PPM, 125 ml | 060624 | 06/06/2027 | 07/02/2024 / Jaswal | 06/14/2024 / Jaswal | M5962 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L) | 24B1362001 | 01/04/2025 | 07/09/2024 / Al-Terek | 07/03/2024 / Al-Terek | M5963 |

| 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) | 24B1362001 | 01/04/2025 | 07/05/2024 / Jaswal | 07/03/2024 / Al-Terek | M5965 |

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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. | 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 # |
|---|---|---|---|---|---|---|
| Absolute Standards, Inc. | 57038 / Sr, 1000 PPM, 125 ml | 031524 | 03/15/2027 | 07/01/2024 / Jaswal | 06/11/2024 / Jaswal | M5982 |

| 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 |

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

***Certified Reference Material CRM***

R: 01/03/24 M5808, M5809

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

CERTIFIED WEIGHT REPORT:

**Part Number:** 58113
**Lot Number:** 122923
**Description:** Aluminum (Al)

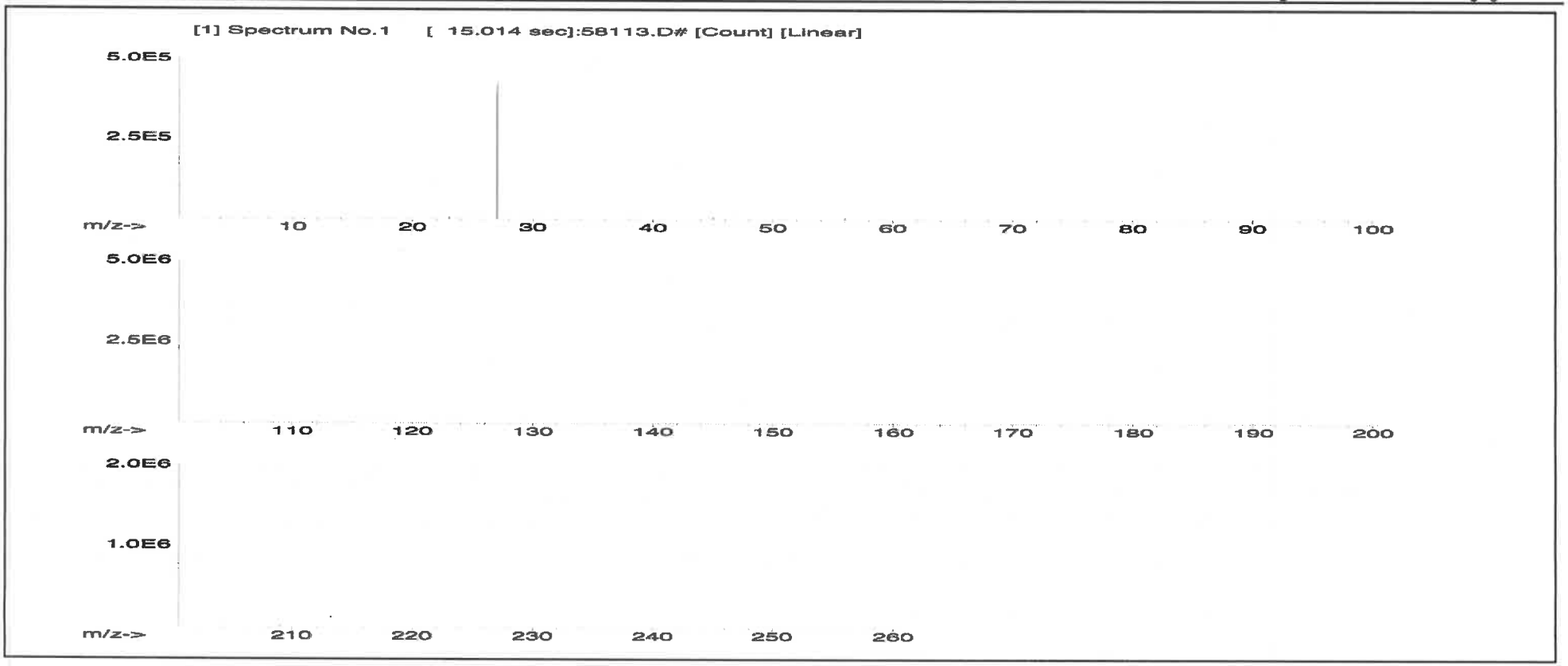
**Expiration Date:** 122926
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 2000.02

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid | |
| 2% | 40.0 (mL) | Nitric Acid | |
| | 5E-05 | Balance Uncertainty | |
| | 0.058 | Flask Uncertainty | |

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 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. Aluminum nitrate nonahydrate (Al) | IN022 | ALM092022A1 | 10000 | 99.999 | 0.10 | 7.30 | 273.9779 | 273.9813 | **10000.1** | **20.0** | 7784-27-2 | 2 mg/m3 | orl-rat 3671 mg/kg | 3101a |



**Absolute Standards, Inc.**
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*Certified Reference Material CRM*

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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | T | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | 17 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | 0.03 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | 4.5 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | 0.56 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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

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
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## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | CHEM-CLP-4 |
| Lot Number: | S2-MEB711673 |
| Matrix: | 3% (v/v) HNO3<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

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## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

November 02, 2021

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

### 11.2 Lot Expiration Date

- **November 02, 2026**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Michael Booth
Director, Quality Control

**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director

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Refine your results. Redefine your industry.

# Certificate of Analysis

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## 1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Multi Analyte Custom Grade Solution |
| Catalog Number: | CLPP-CAL-1 |
| Lot Number: | T2-MEB714417 |
| Matrix: | 5% (v/v) HNO3 |
| Value / Analyte(s): | 5 000 µg/mL ea:<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:

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

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

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

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$u_{ts}$ = transport stability standard uncertainty

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

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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

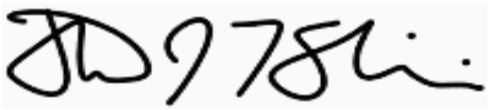
- Sealed TCT Bag Open Date: _____

- 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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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.

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k = coverage factor = 2

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

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

N/A

## 6.0 INTENDED USE

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

## 9.0 HOMOGENEITY

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- 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

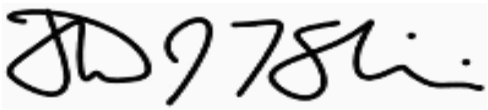
- Sealed TCT Bag Open Date: _____

- 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

Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

M5776-83
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

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800-368-1131
www.absolutestandards.com

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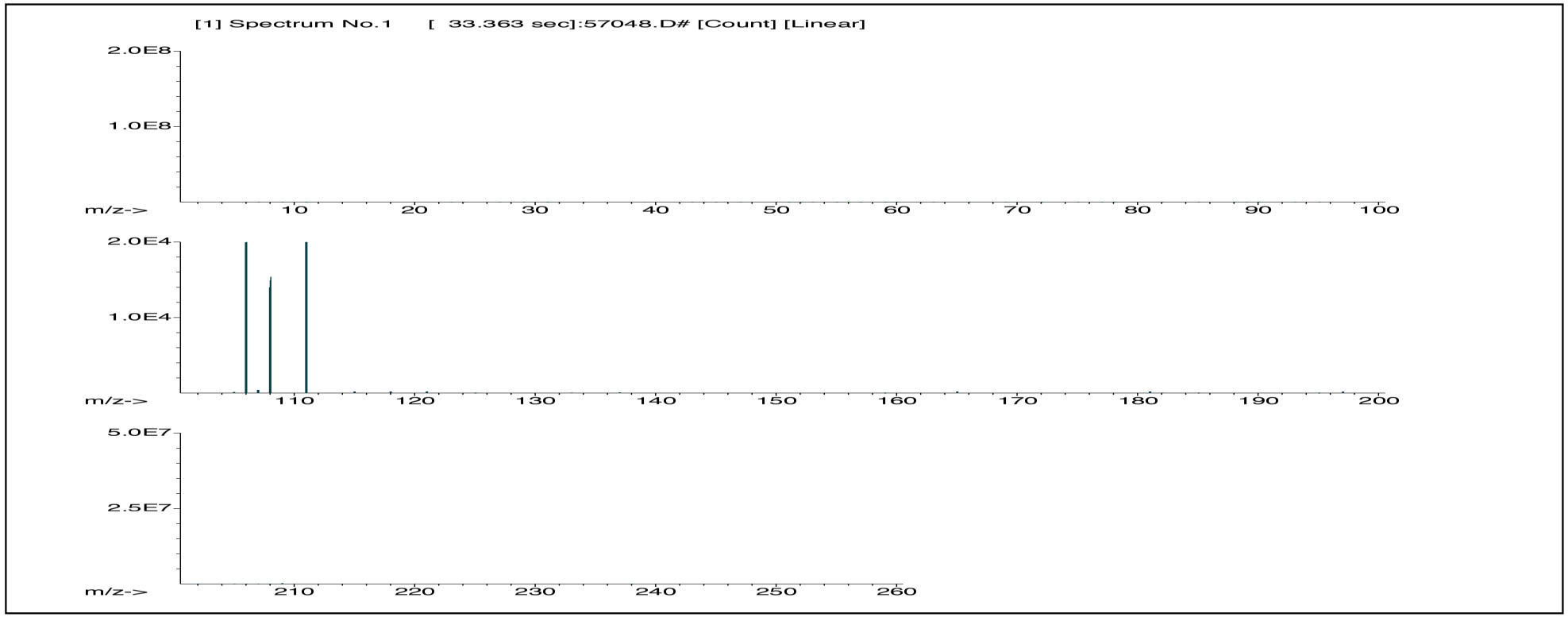
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57048** | 20370011 | Nitric Acid | |
| **Lot Number:** | **072821** | | | |
| **Description:** | **Cadmium (Cd)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 072824 | | | |
| **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: | Giovanni Esposito 072821 |
| Reviewed By: | Pedro L. Rentas 072821 |

| 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. Cadmium nitrate tetrahydrate (Cd) | 58148 | 010920 | 0.1000 | 200.0 | 0.084 | 1000 | 10000.5 | **1000.0** | **2.2** | 10022-68-1 | 0.2 mg/m3 | orl-rat 300 mg/kg | 3108 |



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

(T)= Target analyte

**Physical Characterization:**

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

**Certified by:**

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

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CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57047** | 20370011 | Nitric Acid | |
| **Lot Number:** | **072921** | | | |
| **Description:** | **Silver (Ag)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 072924 | | | |
| **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 | |

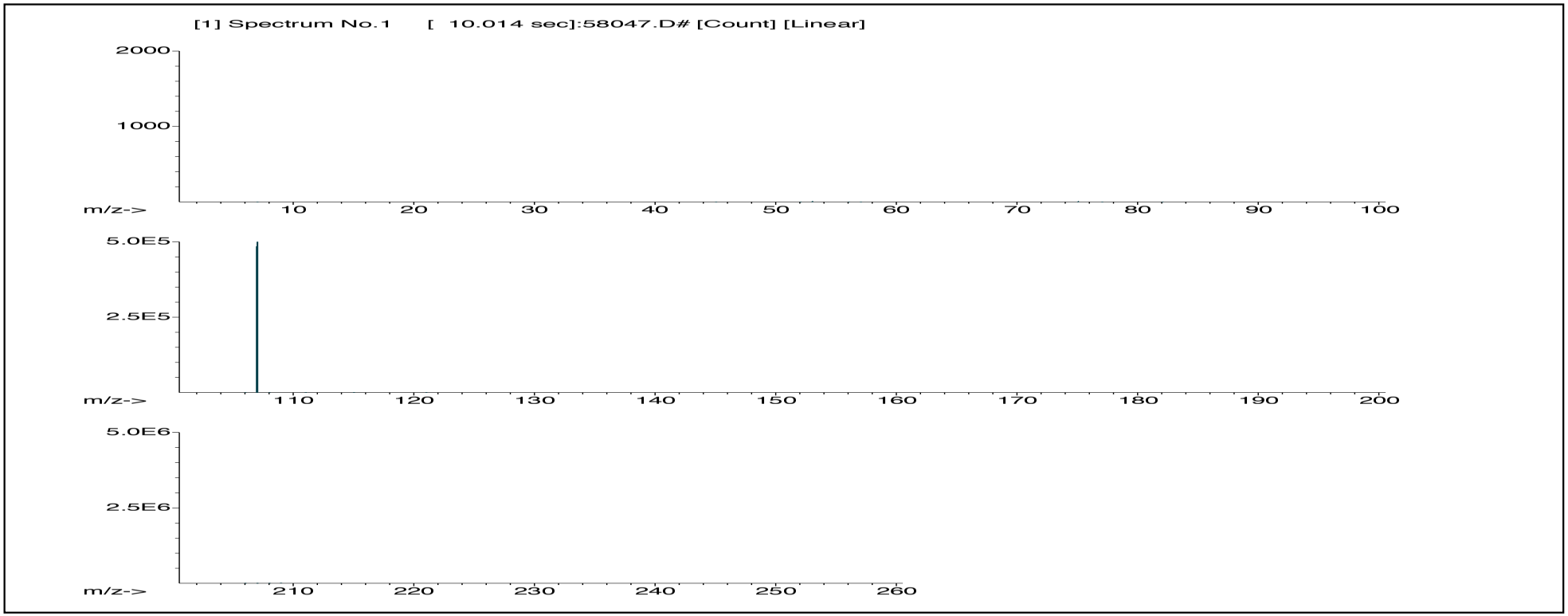
Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 072921 |

Pedro Rentas

| | | |
|---|---|---|
| Reviewed By: | Pedro L. Rentas | 072921 |

| 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. Silver nitrate (Ag) | 58147 | 010820 | 0.1000 | 200.0 | 0.084 | 1000 | 10000.4 | **1000.0** | **2.2** | 7761-88-8 | 10 ug/m3 | N/A | 3151 |



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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 | T | Tl | <0.02 | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T)= Target analyte

**Physical Characterization:**

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

**Certified by:**

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
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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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CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57081** | 20370011 | Nitric Acid | |
| **Lot Number:** | **073021** | | | |
| **Description:** | **Thallium (Tl)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 073024 | | | |
| **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):** | 2000.02 | 0.058 | Flask Uncertainty | |

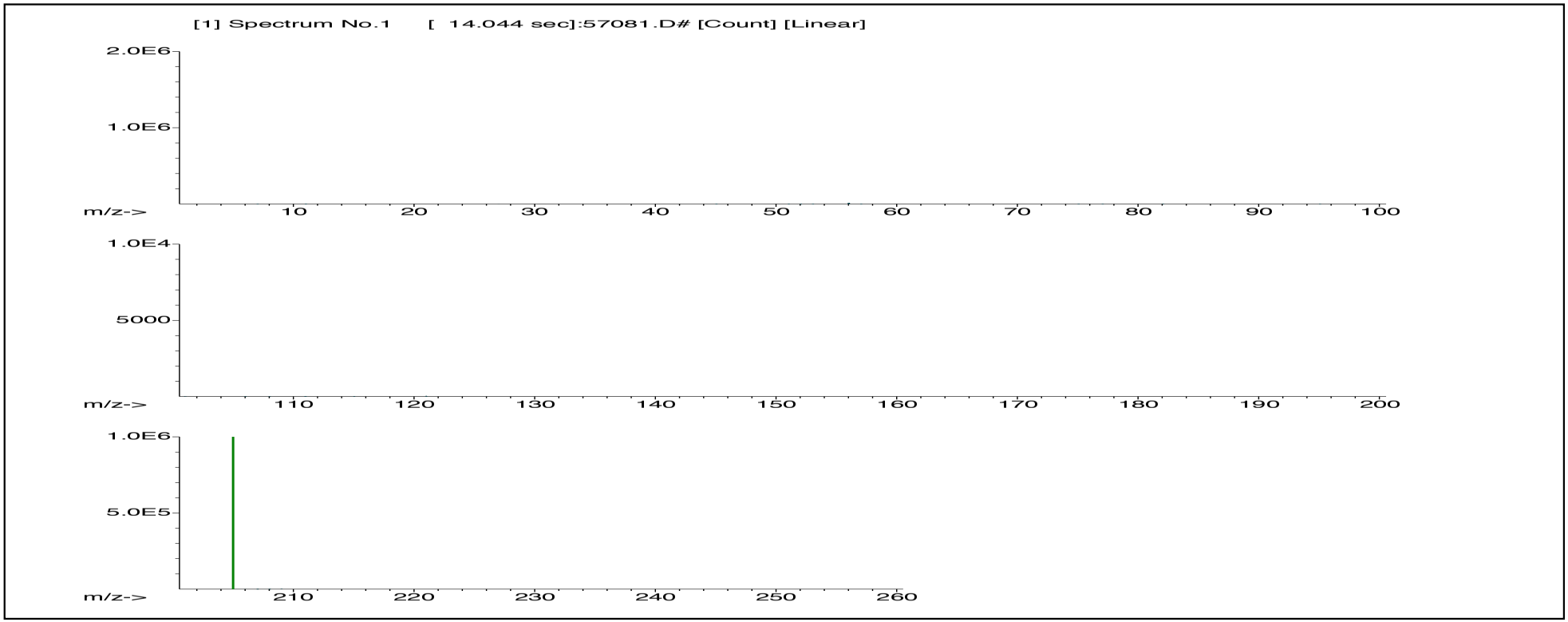
Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 073021 |

Pedro Rentas

| | | |
|---|---|---|
| Reviewed By: | Pedro L. Rentas | 073021 |

| 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. Thallium (Tl) | 58181 | 060920 | 0.1000 | 200.0 | 0.084 | 1000 | 10001.0 | **1000.0** | **2.2** | 7440-28-0 | 0.1 mg/m3 | orl-rat 6700 mg/kg | 3158 |



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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 | 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.
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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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M4960 R: 10/08/21 BH

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CERTIFIED WEIGHT REPORT:

**Part Number:** 58149
**Lot Number:** 100721
**Description:** Indium (In)

**Expiration Date:** 100724
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB

**Weight shown below was diluted to (mL):** 500.06 0.058 Flask Uncertainty

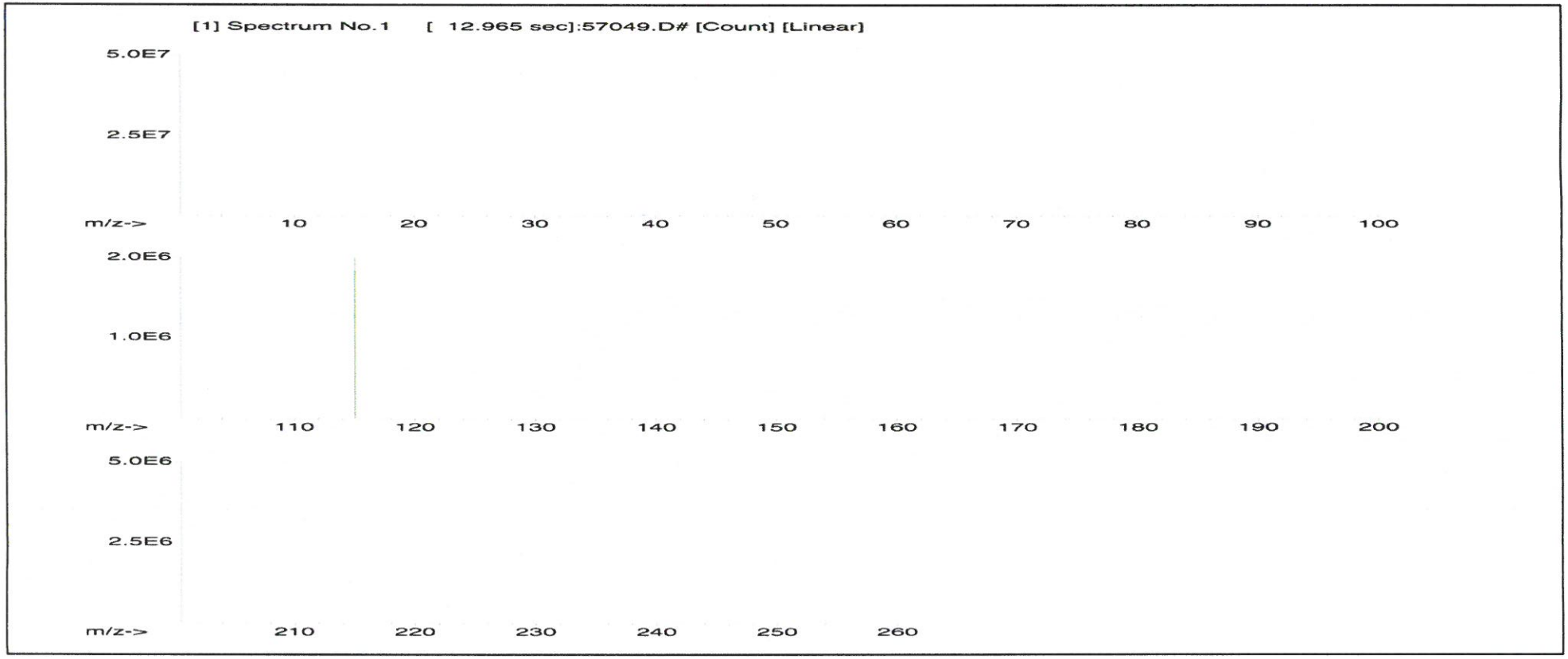
| | | Lot # | |
|---|---|---|---|
| **Solvent:** | 20370011 | Nitric Acid | |
| 5% | 25.0 (mL) | Nitric Acid | |

5E-05 Balance Uncertainty

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 100721 |
| Reviewed By: | Pedro L. Rentas | 100721 |

| 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. Indium Oxide (In) | IN086 | W1096A | 10000 | 99.999 | 0.10 | 82.6 | 6.05408 | 6.05441 | **10000.6** | **20.1** | 1312-43-2 | NA | NA | 3124a |



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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 | T | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <0.2 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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

# Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

M5062
M5063
M3

## 1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

## 2.0 PRODUCT DESCRIPTION

| | |
|---|---|
| Product Code: | Single Analyte Mass Spec Solution |
| Catalog Number: | MSHG-10PPM |
| Lot Number: | S2-HG709270 |
| Matrix: | 10% (v/v) HCl |
| Value / Analyte(s): | 10 µg/mL ea: Mercury |
| Starting Material: | Hg metal |
| Starting Material Lot#: | 1959 |
| Starting Material Purity: | 99.9994% |

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 10.001 ± 0.053 µg/mL

**Density:** 1.020 g/mL (measured at 20 ± 4 °C)

### Assay Information:

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| Hg | ICP Assay | 3133 | 160921 |
| Hg | EDTA | 928 | 928 |
| Hg | Calculated | | See Sec. 4.2 |

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

**CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$**

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

**CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$**

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O | Ag | | 0.000011 | M | Eu | < | 0.000201 | O | Na | | 0.000004 | M | Se | < | 0.015915 | O | Zn | < | 0.001510 |
| O | Al | | 0.000001 | O | Fe | | 0.000001 | M | Nb | < | 0.000201 | O | Si | | 0.000005 | M | Zr | < | 0.000201 |
| M | As | < | 0.000402 | M | Ga | < | 0.000201 | M | Nd | < | 0.000201 | M | Sm | < | 0.000201 | | | | |
| M | Au | < | 0.003631 | M | Gd | < | 0.000201 | M | Ni | < | 0.000402 | M | Sn | < | 0.001007 | | | | |
| M | B | < | 0.001208 | M | Ge | < | 0.000201 | M | Os | < | 0.000605 | M | Sr | < | 0.000201 | | | | |
| M | Ba | < | 0.000201 | M | Hf | < | 0.000201 | O | P | < | 0.032370 | M | Ta | < | 0.000201 | | | | |
| M | Be | < | 0.000201 | s | Hg | < | | M | Pb | < | 0.000201 | M | Tb | < | 0.000201 | | | | |
| M | Bi | < | 0.000201 | M | Ho | < | 0.000201 | M | Pd | < | 0.000403 | M | Te | < | 0.002216 | | | | |
| O | Ca | | 0.000007 | M | In | < | 0.000201 | M | Pr | < | 0.000201 | M | Th | < | 0.000201 | | | | |
| M | Cd | < | 0.000201 | M | Ir | < | 0.000201 | M | Pt | < | 0.000402 | M | Ti | < | 0.000402 | | | | |
| M | Ce | < | 0.000201 | O | K | | 0.000020 | M | Rb | < | 0.000201 | O | Tl | < | 0.016508 | | | | |
| M | Co | < | 0.000201 | M | La | < | 0.000201 | M | Re | < | 0.000201 | M | Tm | < | 0.000201 | | | | |
| O | Cr | < | 0.003021 | O | Li | < | 0.000107 | M | Rh | < | 0.000201 | M | U | < | 0.008058 | | | | |
| M | Cs | < | 0.001208 | M | Lu | < | 0.000201 | M | Ru | < | 0.000201 | M | V | < | 0.000201 | | | | |
| M | Cu | < | 0.000402 | O | Mg | | 0.000001 | O | S | < | 0.053950 | M | W | < | 0.000604 | | | | |
| M | Dy | < | 0.000201 | M | Mn | < | 0.000604 | M | Sb | < | 0.001208 | M | Y | < | 0.000201 | | | | |
| M | Er | < | 0.000201 | M | Mo | | 0.000009 | M | Sc | < | 0.000201 | M | Yb | < | 0.000201 | | | | |

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

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution -** 200.59 +2 4 Hg(OH)(aq) 1+

**Chemical Compatibility -** Stable in 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.

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R: 6/2/22

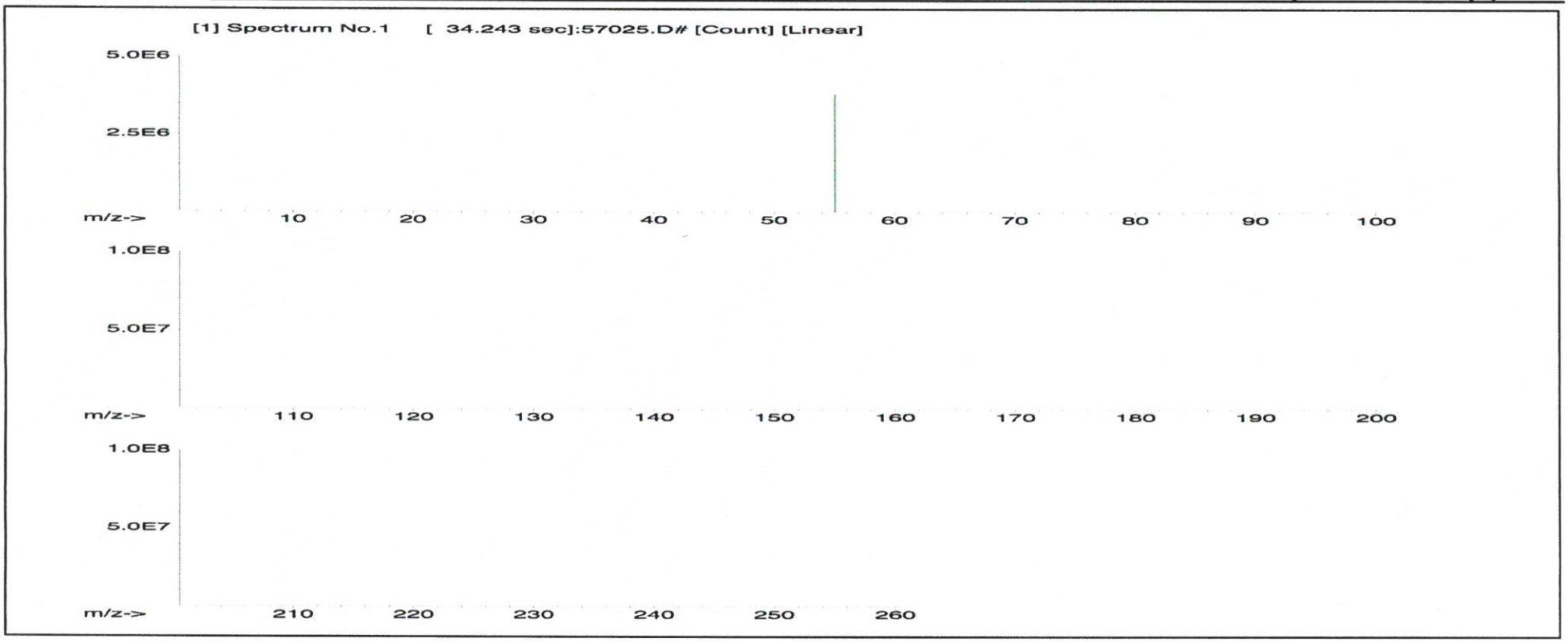
CERTIFIED WEIGHT REPORT:

M5184

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **58025** | 20510011 | Nitric Acid | |
| **Lot Number:** | **060122** | | | |
| **Description:** | **Manganese (Mn)** | 2.0% | 60.0 (mL) | Nitric Acid |
| **Expiration Date:** | 060125 | | | |
| **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 060122 |
| Reviewed By: | Pedro L. Rentas 060122 |

| 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. Manganese(II) nitrate tetrahydrate (Mn) | 58125 | 021022 | 0.1000 | 300.0 | 0.084 | 1000 | 10000.5 | **1000.0** | **2.1** | 20694-39-7 | 5 mg/m3 | orl-rat >300mg/kg | 3132 |



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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 | 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 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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M5192 R: 06/17/22

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CERTIFIED WEIGHT REPORT:

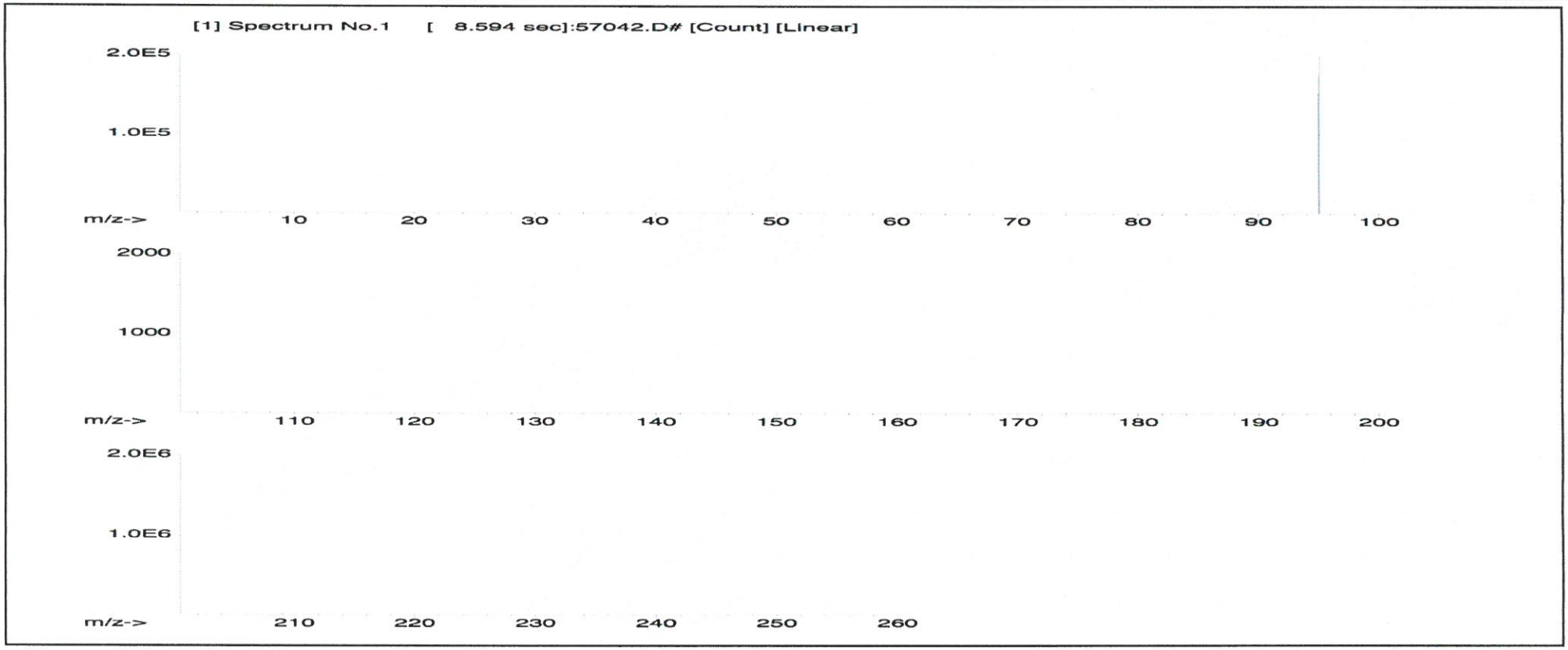
**Part Number:** 57042
**Lot Number:** 051722
**Description:** Molybdenum (Mo)
**Expiration Date:** 051725
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Volume shown below was diluted to (mL):** 3000.41

| 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 |



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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 | 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).

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*Certified Reference Material CRM*

M 5700 R: 10/05/21 BH

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CERTIFIED WEIGHT REPORT:

**Part Number:** 58111
**Lot Number:** 092121
**Description:** Sodium (Na)

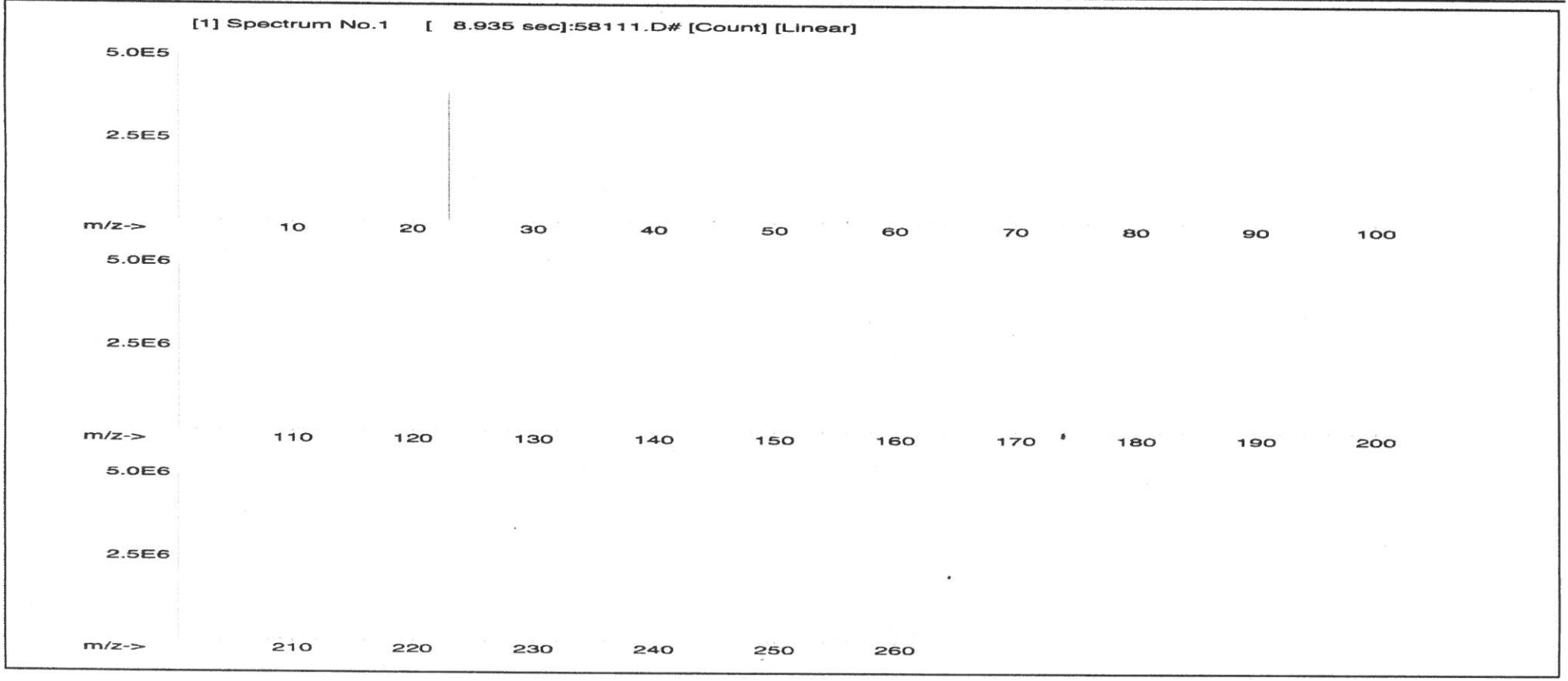
**Expiration Date:** 092124
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.41

| Lot # | | |
|---|---|---|
| **Solvent:** 20370011 | Nitric Acid | |
| 2% | 60.0 (mL) | Nitric Acid |
| | 5E-05 | Balance Uncertainty |
| | 0.058 | Flask Uncertainty |

Giovanni Esposito

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 092121 |
| Reviewed By: | Pedro L. Rentas | 092121 |

| 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 | 27.0 | 111.1274 | 111.1433 | **10001.4** | **20.0** | 7631-99-4 | 5 mg/m3 | orl-rat 3236 mg/kg | 3152a |



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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 | T | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | <0.02 | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

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

## 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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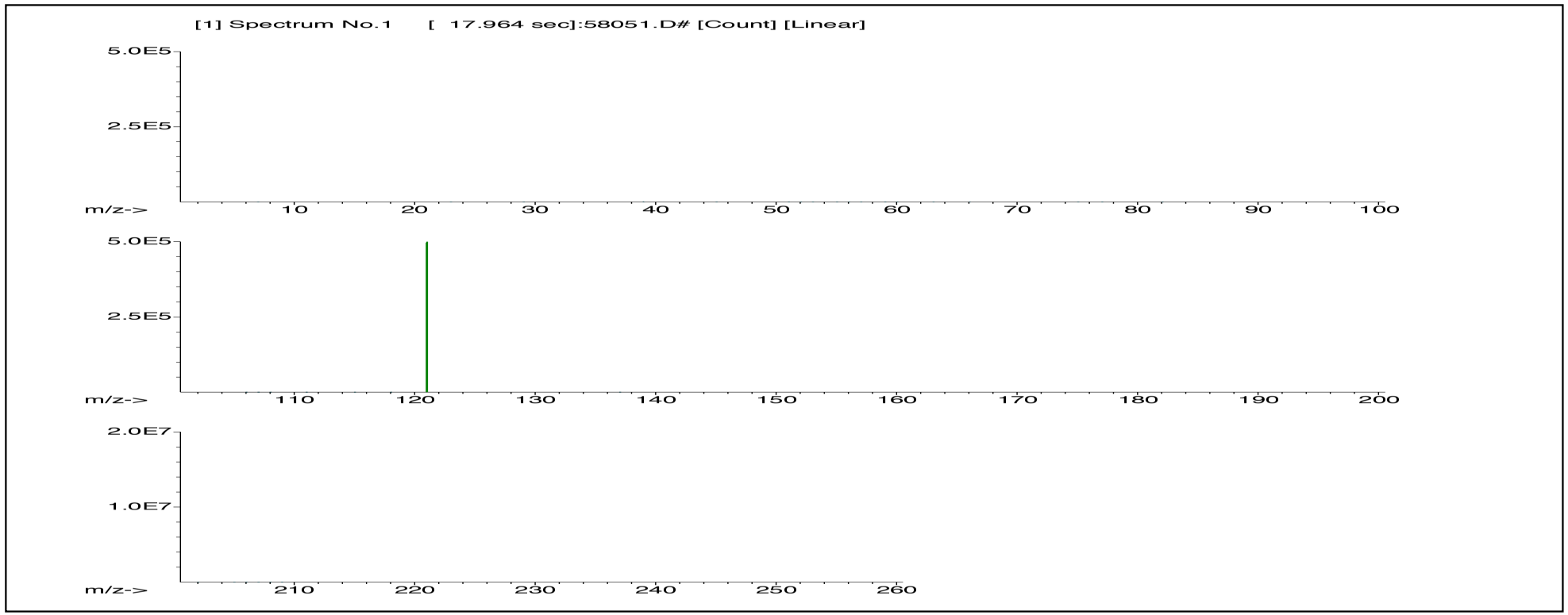
CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57051** | | | |
| **Lot Number:** | **101521** | 20370011 | Nitric Acid | |
| **Description:** | **Antimony (Sb)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 101524 | | | |
| **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):** | 2000.25 | 0.116 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Giovanni Esposito | 101521 |
| Reviewed By: | Pedro L. Rentas | 101521 |

| 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 | 081820 | 0.1000 | 200.0 | 0.084 | 1000 | 10001.5 | **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 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 | 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).

M527 R: 10/18/2021

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CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57023** | 20370011 | Nitric Acid | |
| **Lot Number:** | **100121** | | | |
| **Description:** | **Vanadium (V)** | | | |
| | | 2.0% | 60.0 (mL) | Nitric Acid |
| **Expiration Date:** | 100124 | | | |
| **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):** | 3000.4 | 0.06 | Flask Uncertainty | |

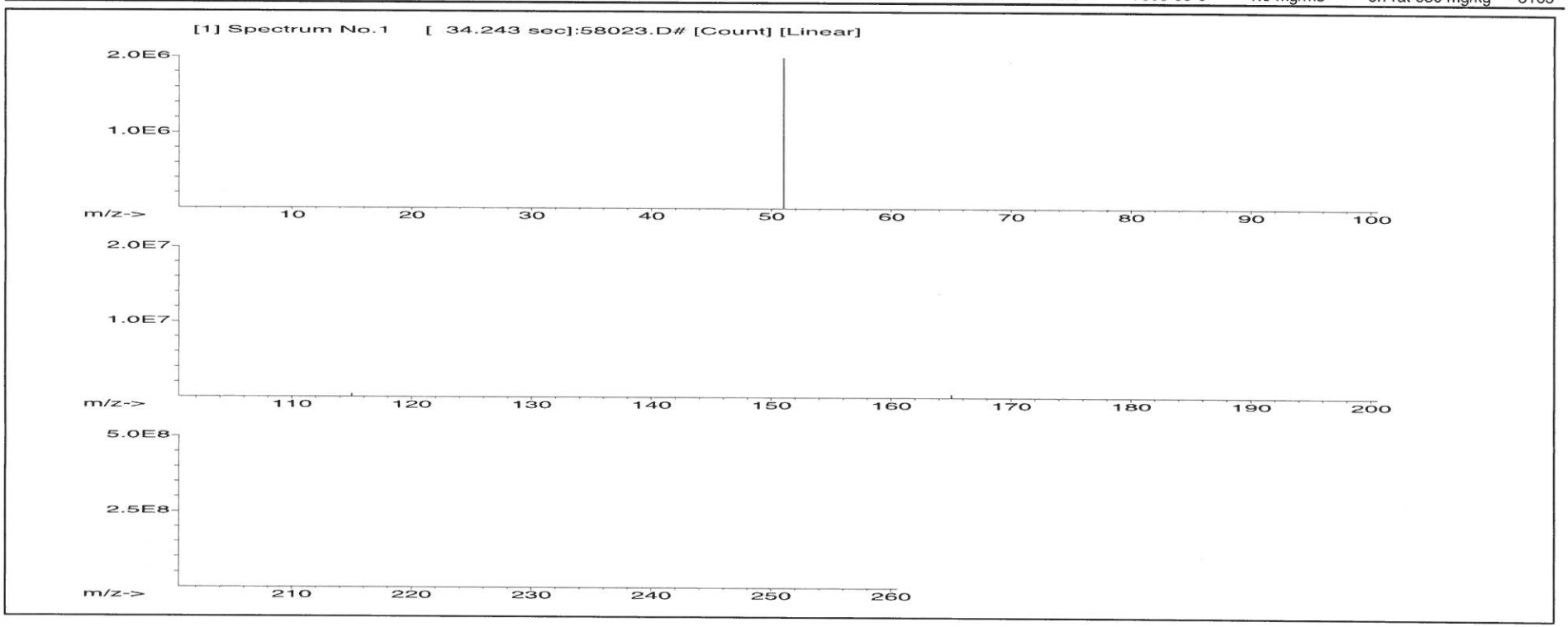
Giovanni Esposito

| Formulated By: | Giovanni Esposito | 100121 |
|---|---|---|

Pedro Rentas

| Reviewed By: | Pedro L. Rentas | 100121 |
|---|---|---|

| 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 | 070721 | 0.1000 | 300.0 | 0.084 | 1000 | 10000.4 | **1000.0** | **2.1** | 7803-55-6 | 1.0 mg/m3 | orl-rat 630 mg/kg | 3165 |



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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 | 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).

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CERTIFIED WEIGHT REPORT:

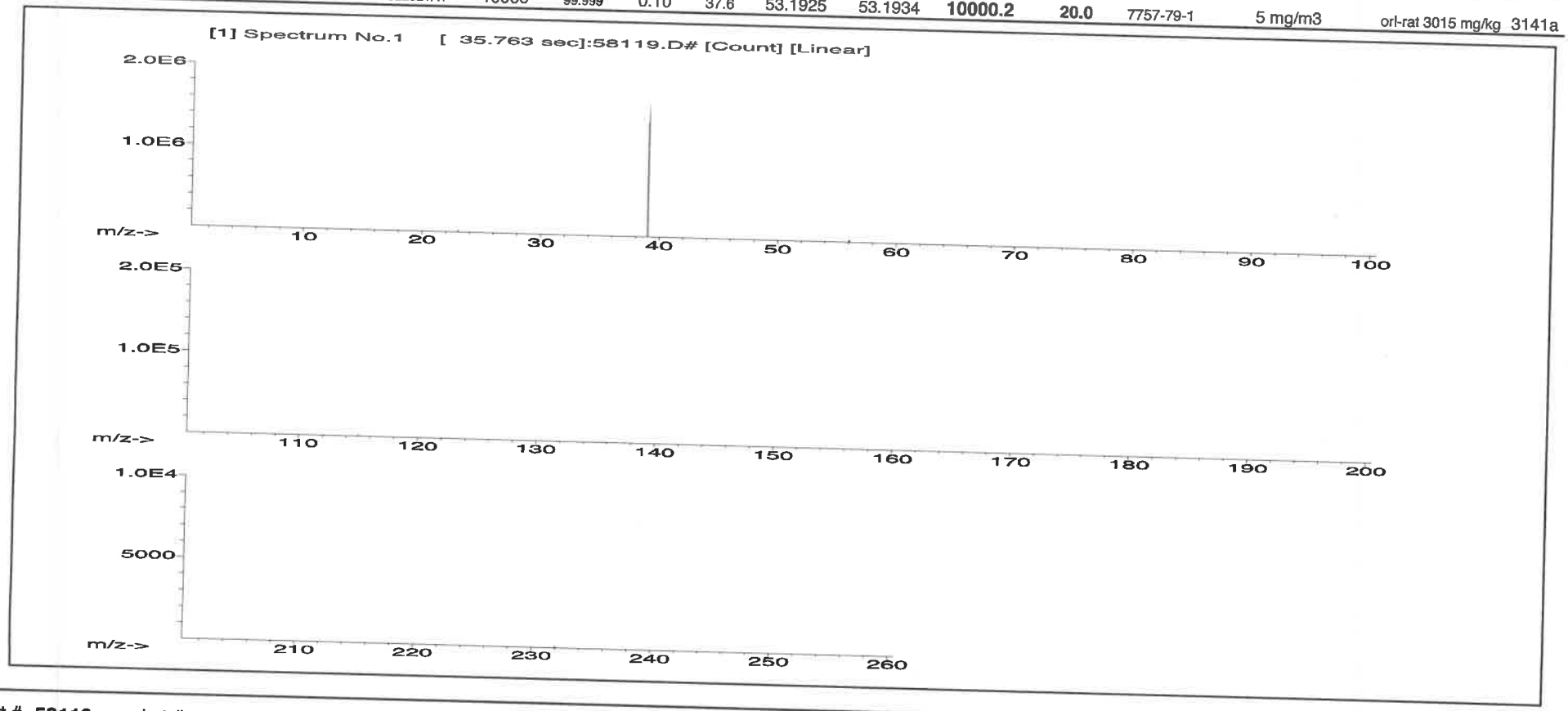
**Part Number:** 58119
**Lot Number:** 071122
**Description:** Potassium (K)

**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 |



**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).

R : 4/20/21

## 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.

Contains Metals in Dilute Acidic or
Cyanide in Basic Aqueous Solutions
**HAZARDOUS MATERIAL**

Safety Data Sheets
Available Upon Request

M5291
M5292
M5293
M5294
M5295

### (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.

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**APTIM Federal Services, LLC**
**2700 Chandler Avenue - Building C**
**Las Vegas, NV 89120**

### (C) *ANALYSIS OF SAMPLES*

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

**ICV1-1014** For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.

**ICV1-1014** For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

**ICV5-0415** For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

**ICV6-0400** For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

**NOTE:** USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

## (D) *CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS*

| ICV1-1014 | | |
|---|---|---|
| **Element** | **Concentration (µg/L) (after 10-fold dilution)** | **Concentration (µg/L) (after 50-fold dilution)** |
| **Al** | 2500 | 500 |
| **Sb** | 1000 | 200 |
| **As** | 1000 | 200 |
| **Ba** | 520 | 100 |
| **Be** | 510 | 100 |
| **Cd** | 510 | 100 |
| **Ca** | 10000 | 2000 |
| **Cr** | 520 | 100 |
| **Co** | 520 | 100 |
| **Cu** | 510 | 100 |
| **Fe** | 10000 | 2000 |
| **Pb** | 1000 | 200 |
| **Mg** | 6000 | 1200 |
| **Mn** | 520 | 100 |
| **Ni** | 530 | 110 |
| **K** | 9900 | 2000 |
| **Se** | 1000 | 200 |
| **Ag** | 250 | 50 |
| **Na** | 10000 | 2000 |
| **Tl** | 1000 | 210 |
| **V** | 500 | 100 |
| **Zn** | 1000 | 200 |

| ICV5-0415 | | ICV6-0400 | |
|---|---|---|---|
| **Element** | **Concentration (µg/L) (after 100-fold dilution)** | **Analyte** | **Concentration (µg/L) (after 100-fold dilution)** |
| **Hg** | 4.0 | **$CN^-$** | 99 |

SJ 6/15/22

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CERTIFIED WEIGHT REPORT:

**Part Number:** 58126
**Lot Number:** 020422
**Description:** Iron (Fe)

M5298

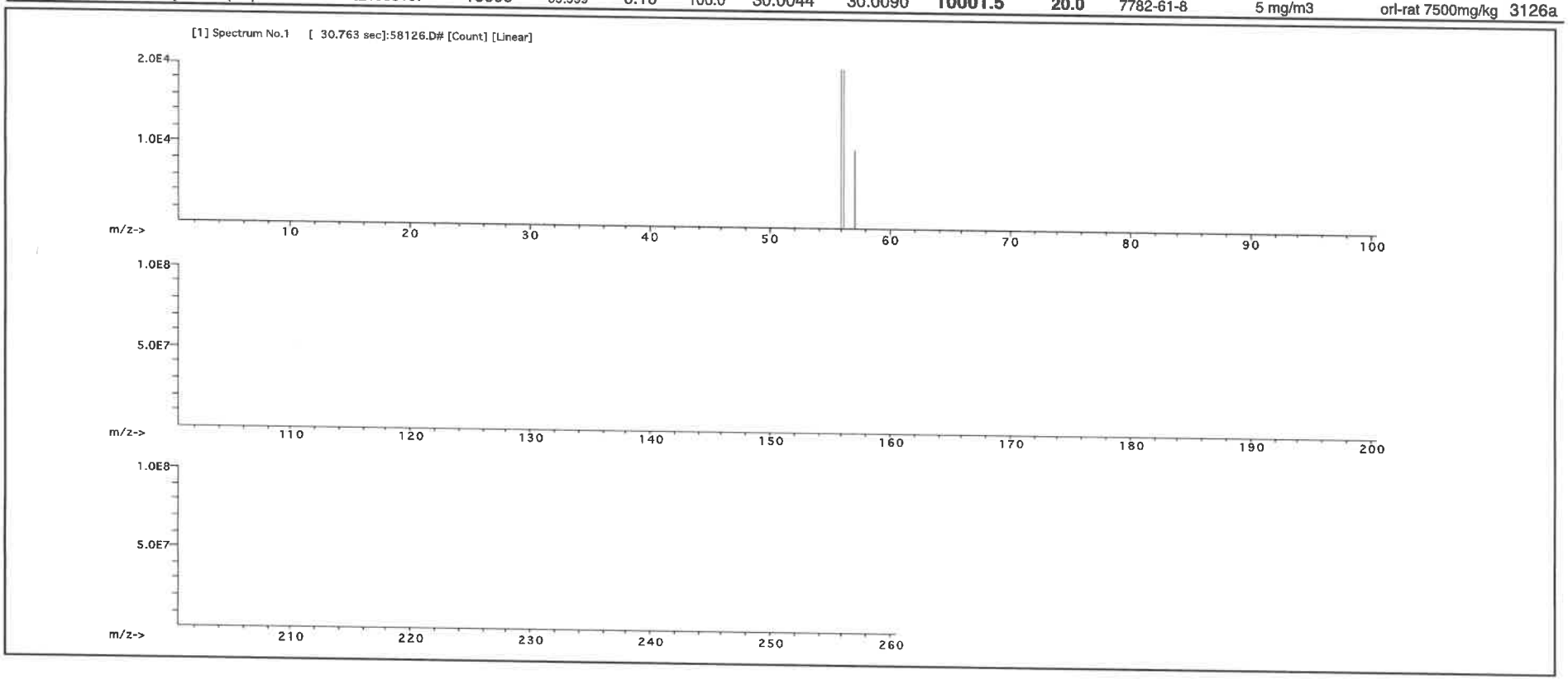
**Expiration Date:** 020425
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.41

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 20370011 | Nitric Acid | |
| 5.0% | 150.0 (mL) | Nitric Acid | |
| 5E-05 | Balance Uncertainty | | |
| 0.058 | Flask Uncertainty | | |

Giovanni Esposito
Formulated By: Giovanni Esposito 020422

Pedro Rentas
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).

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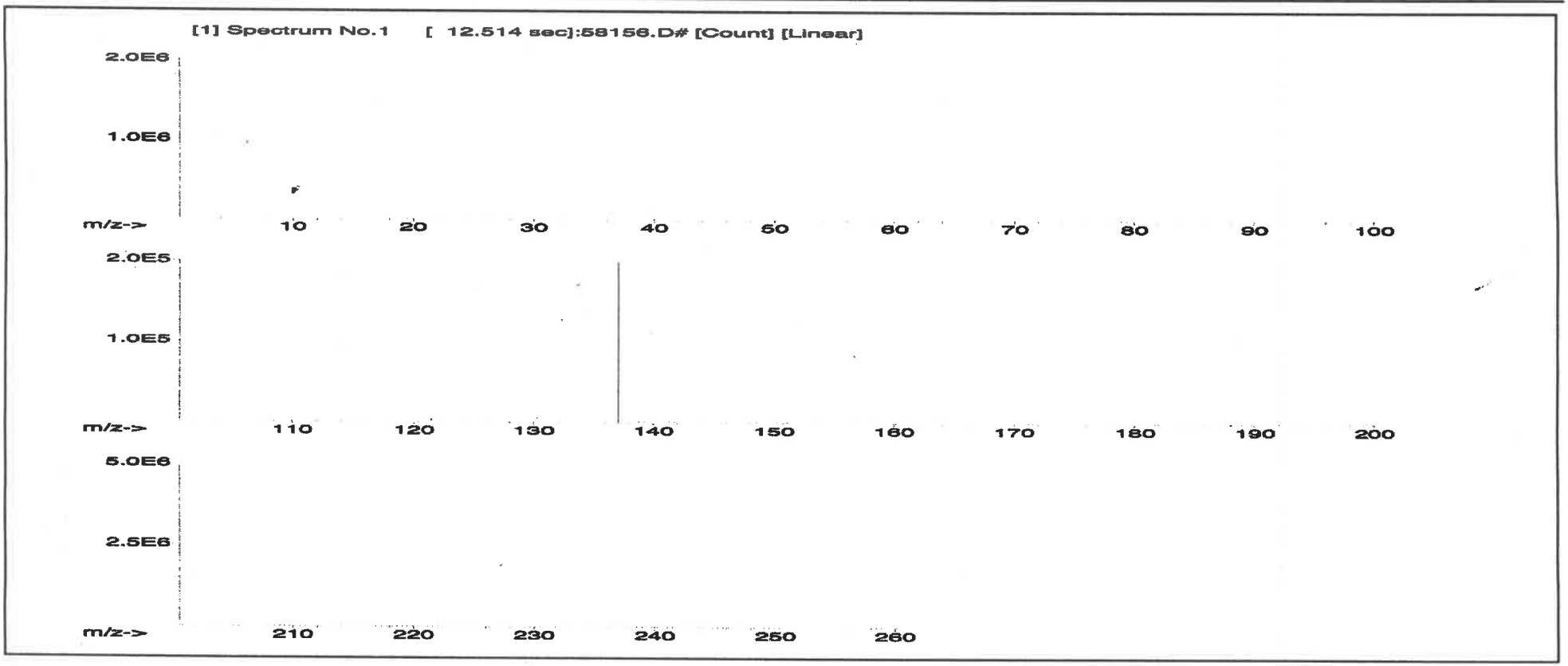
## CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **57056** | | **Lot #** | | |
| **Lot Number:** | **072122** | **Solvent:** | 20510011 | Nitric Acid | |
| **Description:** | **Barium (Ba)** | 2% | 40.0 (mL) | Nitric Acid | |
| **Expiration Date:** | 072125 | | | | |
| **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 | 072122 |
| Reviewed By: | Pedro L. Rentas | 072122 |

| 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 | 3.82426 | **1000.0** | **2.0** | 10022-31-8 | 0.5 mg/m3 | orl-rat 355 mg/kg | 3104a |



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

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

(T)= Target analyte

**Physical Characterization:**

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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## CERTIFIED WEIGHT REPORT:

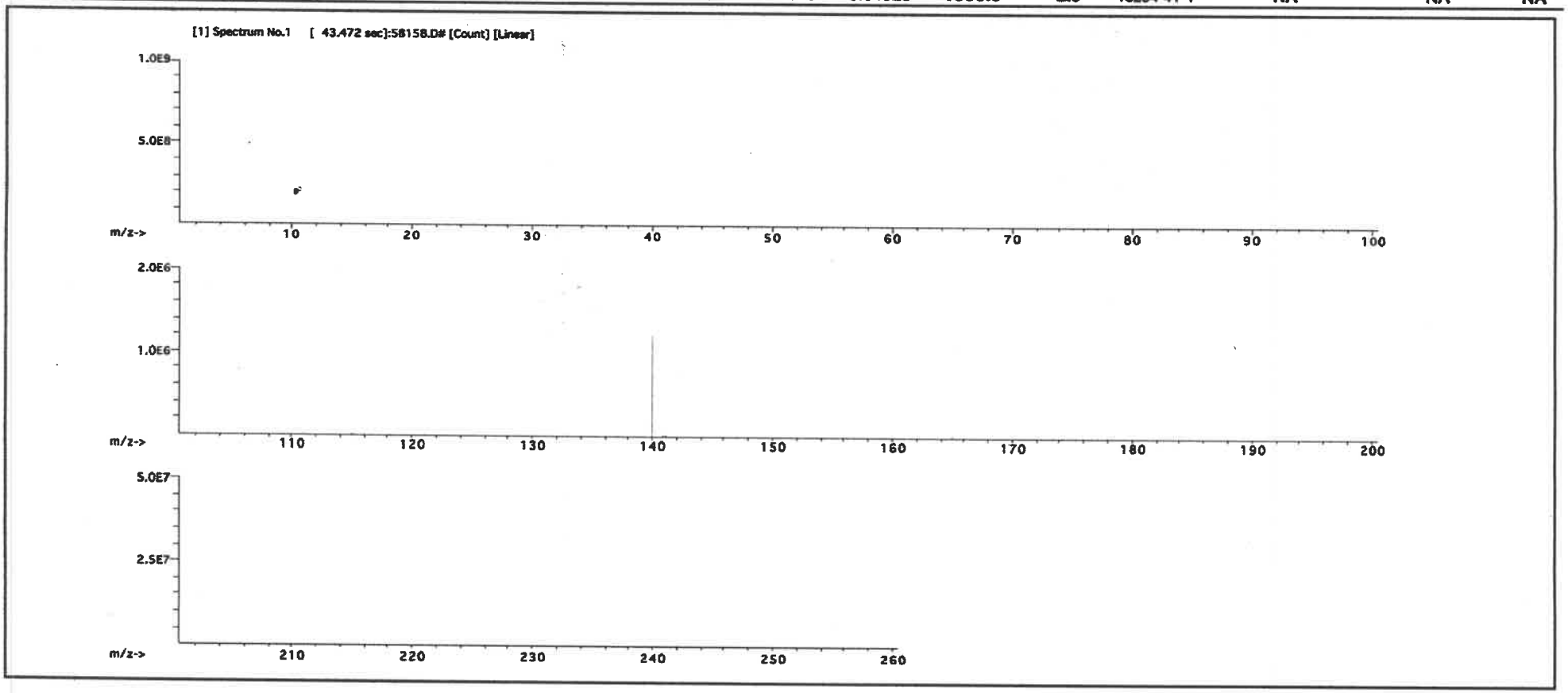
**Part Number:** 57058
**Lot Number:** 061322
**Description:** Cerium (Ce)

**Expiration Date:** 061325
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**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 | 061322 |
| Reviewed By: | Pedro L. Rentas | 061322 |

| 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 | 3.04923 | 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.

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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)

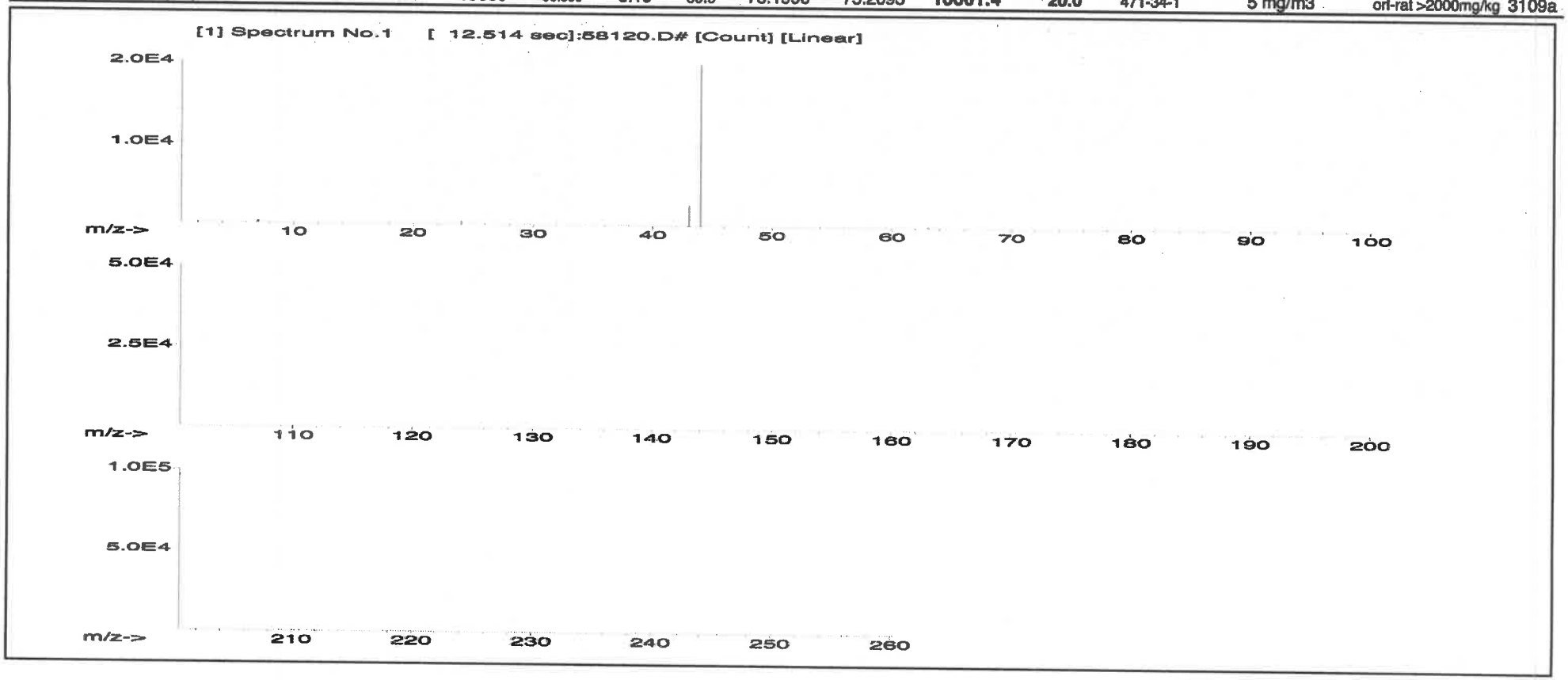
**Expiration Date:** 031526
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.41

| | 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.
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M5658 R ! 8/25/23

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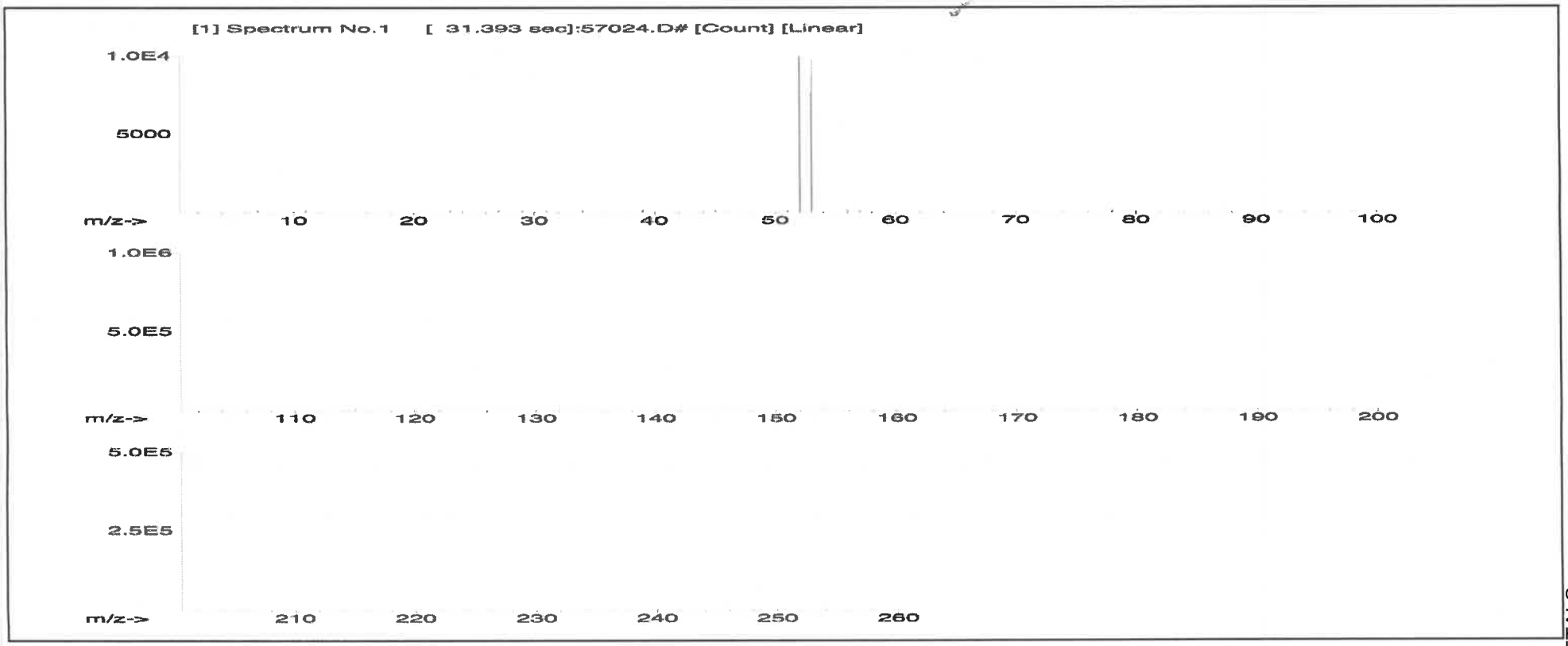
CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **58024** | 21110221 | Nitric Acid | |
| **Lot Number:** | **060523** | | | |
| **Description:** | **Chromium (Cr)** | | | |
| | | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 060526 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 060523 |
| Reviewed By: | Pedro L. Rentas | 060523 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Chromium(III) nitrate nonahydrate (Cr) | 58124 | 071122 | 0.1000 | 200.0 | 0.084 | 1000 | 10000.1 | **1000.0** | **2.2** | 7789-02-8 | 0.5 mg(Cr)/m3 | orl-rat 3250 mg/kg | 3112a |



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

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

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

(T)= Target analyte

**Physical Characterization:**

**Certified by:**

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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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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M5697 R: 10/27/23

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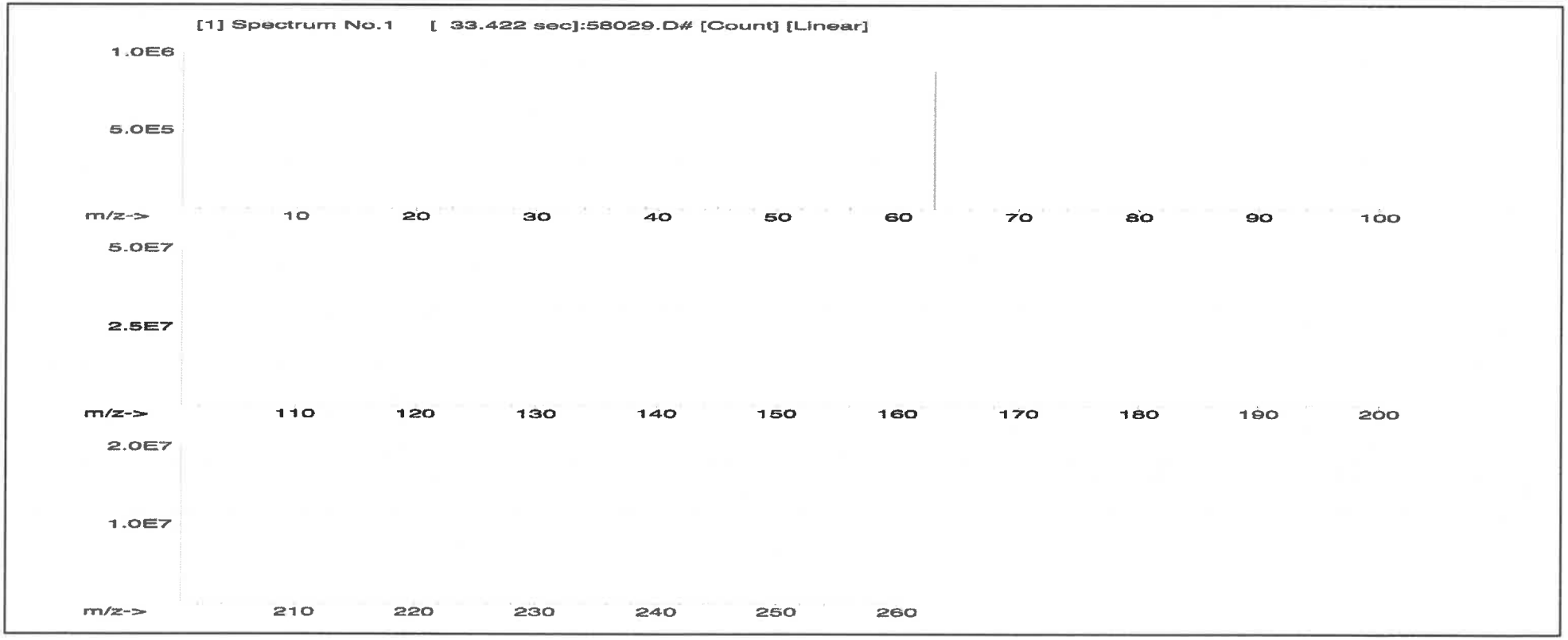
CERTIFIED WEIGHT REPORT:

| | | 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.
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* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
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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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R: 12/20/23 M5747

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CERTIFIED WEIGHT REPORT:

**Part Number:** 57082
**Lot Number:** 100923
**Description:** Lead (Pb)

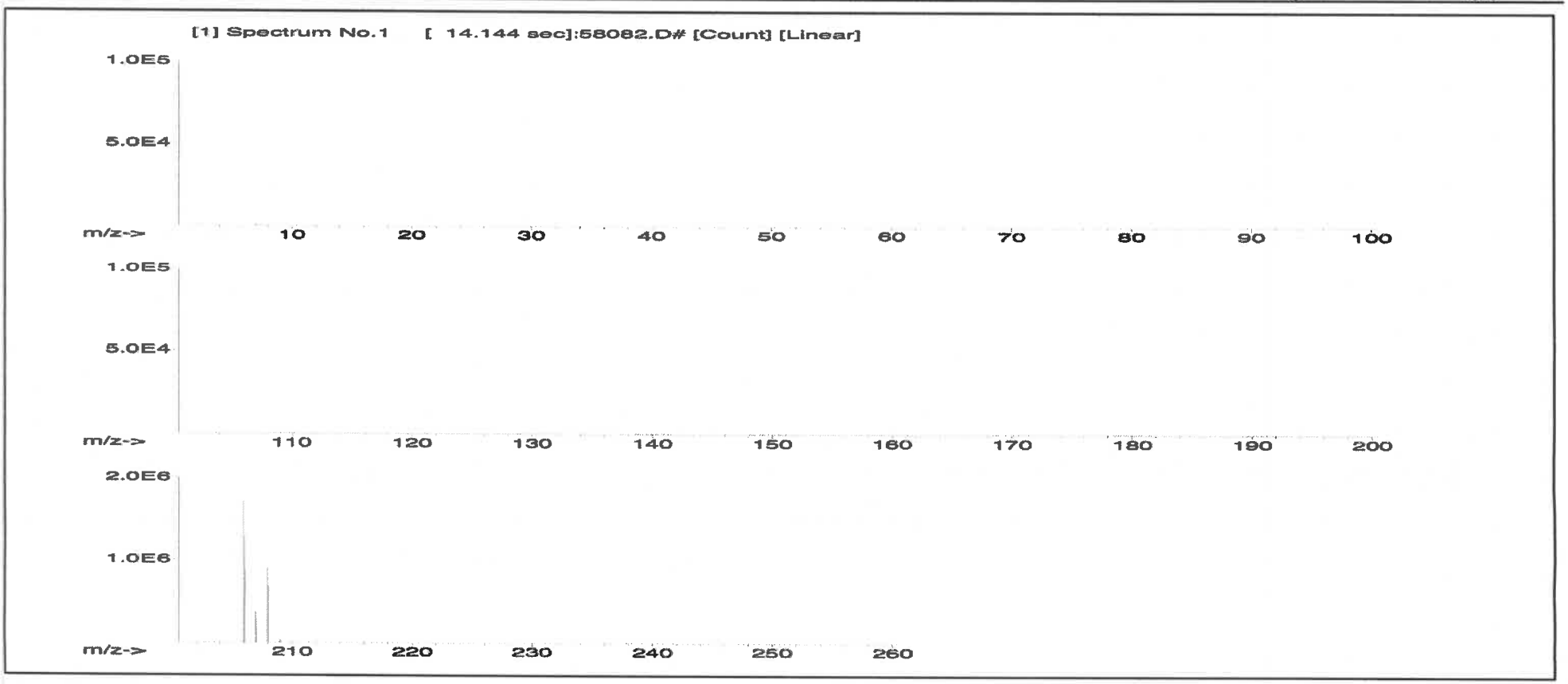
**Expiration Date:** 100926
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 3000.41 0.06 Flask Uncertainty

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid | |
| 2% | 60.0 (mL) | Nitric Acid | |

5E-05 Balance Uncertainty

| | | |
|---|---|---|
| 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.

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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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R: 12/20/23 M5748

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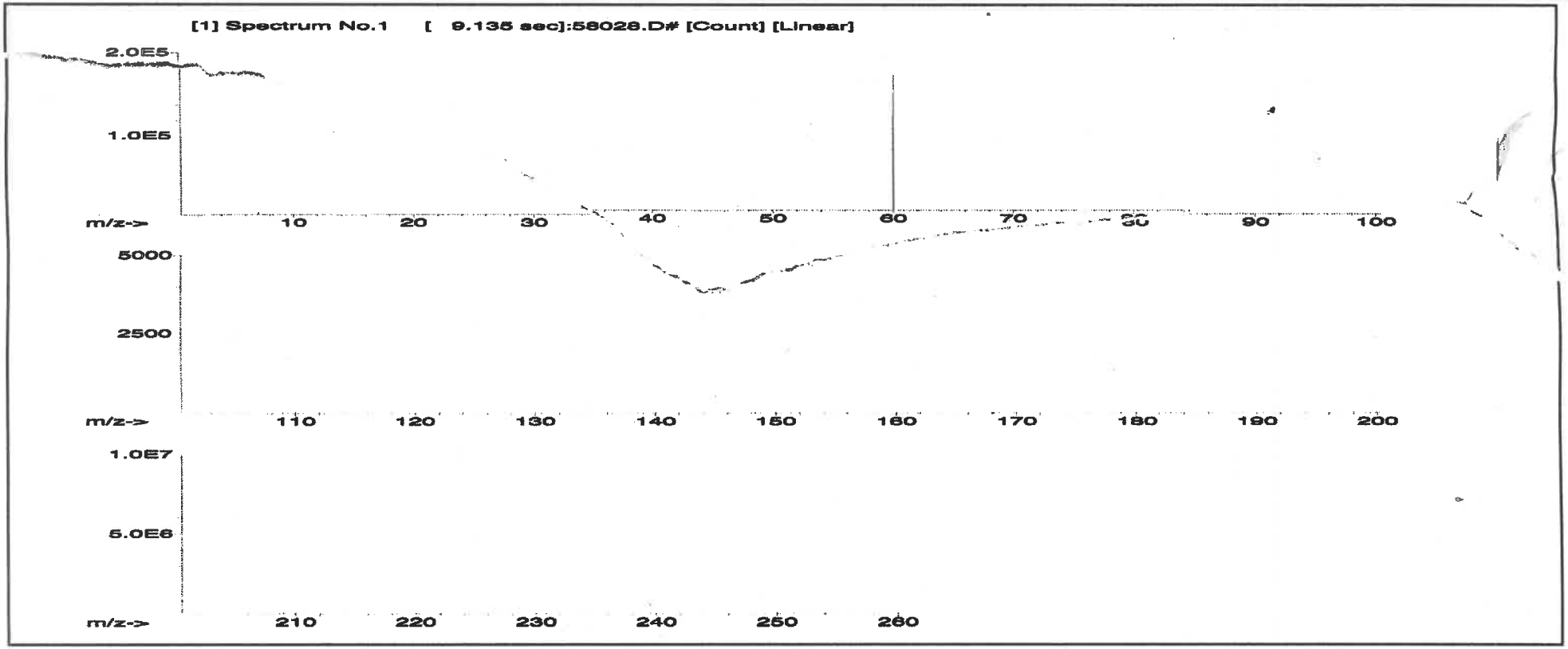
**CERTIFIED WEIGHT REPORT:**

| | | 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.

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M5768 M5769 BP R:1/3/24

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## CERTIFIED WEIGHT REPORT:

**Part Number:** 58112
**Lot Number:** 091823
**Description:** Magnesium (Mg)

**Expiration Date:** 091826
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 10000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 2000.02 0.058 Flask Uncertainty

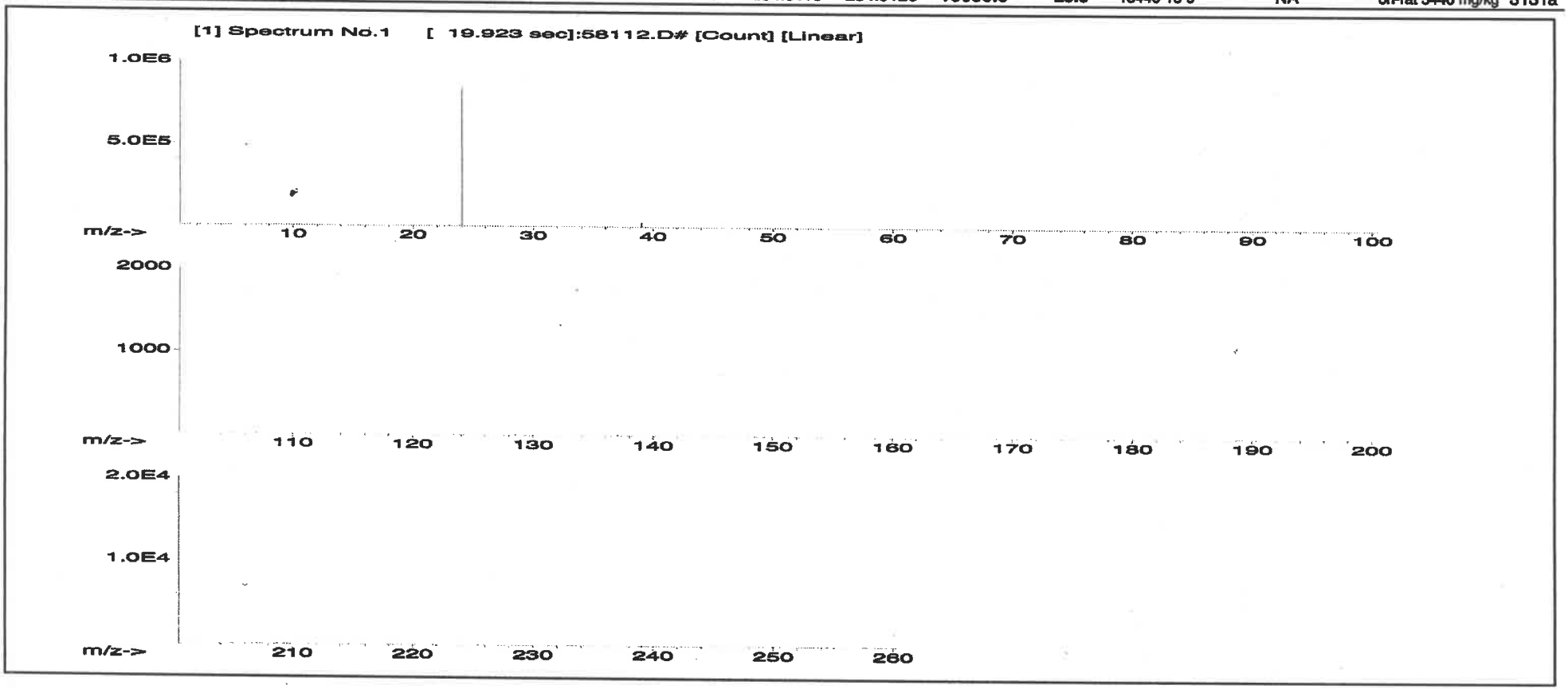
| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid | |
| 2% | 40.0 (mL) | Nitric Acid | |

M5768, M5769 BP R: 1/3/24

5E-05 Balance Uncertainty

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 091823 |
| Reviewed By: | Pedro L. Rentas | 091823 |

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



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

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

(T) = Target analyte

**Physical Characterization:**

Certified by:

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

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R: 02/09/24 M5798

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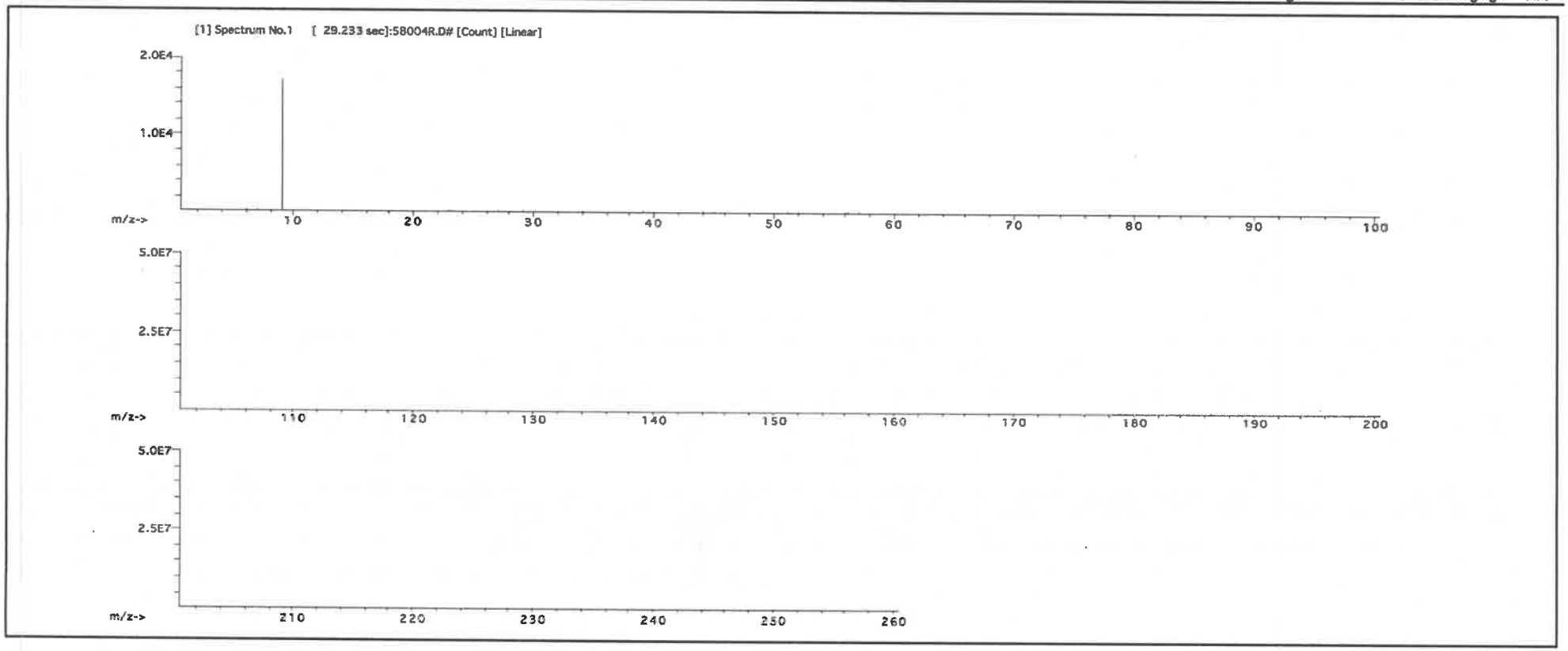
CERTIFIED WEIGHT REPORT:

| | | Lot # | Solvent: | |
|---|---|---|---|---|
| **Part Number:** | **57004** | 24002546 | Nitric Acid | |
| **Lot Number:** | **102523** | | | |
| **Description:** | **Beryllium (Be)** | 2.0% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 102526 | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | |
| **Volume shown below was diluted to (mL):** | 2000.02 | 0.058 | Flask Uncertainty | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 102523 |
| Reviewed By: | Pedro L. Rentas | 102523 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Beryllium nitrate (Be) | 58104 | 091423 | 0.1000 | 200.0 | 0.084 | 1000 | 10001.5 | **1000.0** | **2.2** | 13597-99-4 | 0.2ug/m3 | intrvns-rat 3.16mg/kg | NA |



A3425-METALS

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

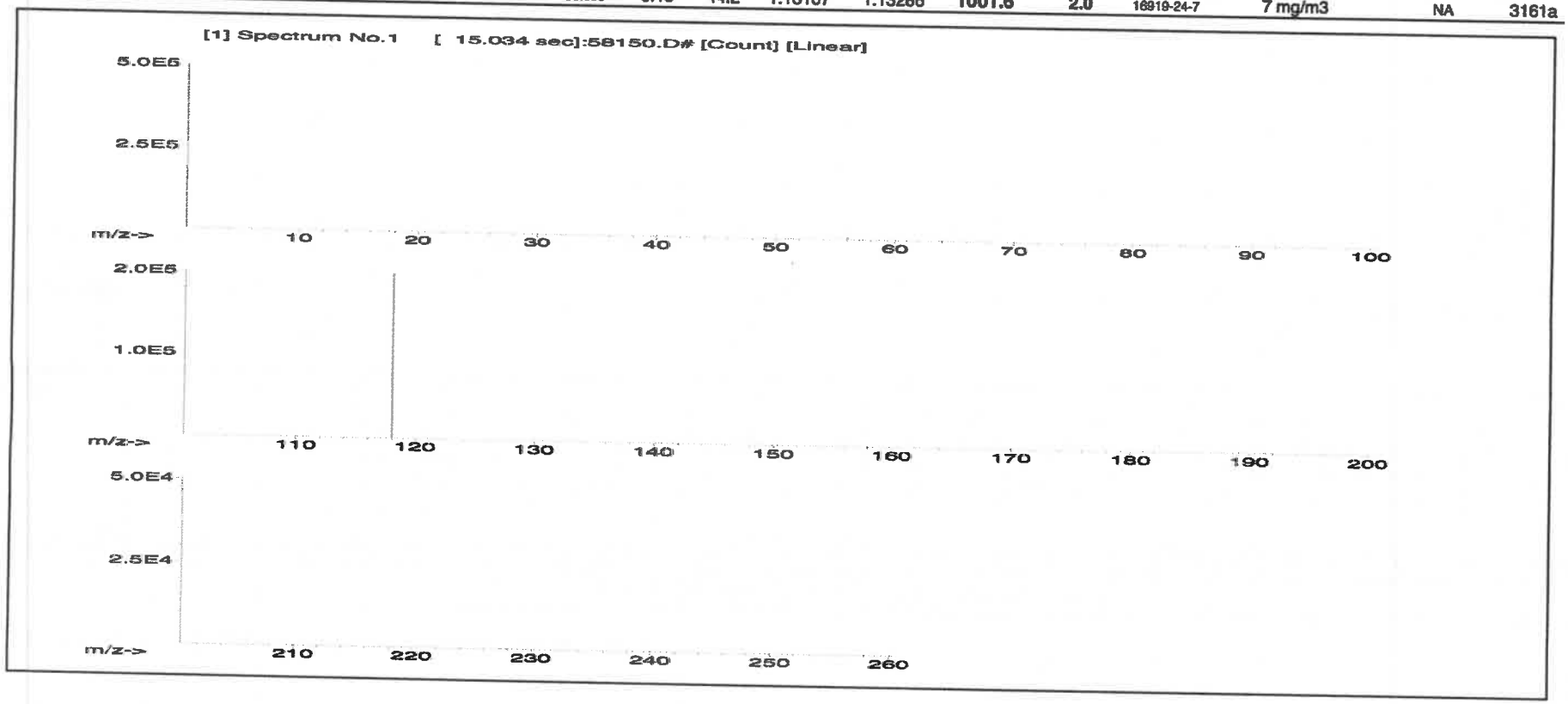
**Expiration Date:** 071126
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 499.93

| | Lot # | |
|---|---|---|
| **Solvents:** | 21110221 | Nitric Acid |
| | 22D0562008 | Hydrochloric acid |
| 2% | 10.0 | Nitric Acid |
| 6% | 30.0 | Hydrochloric acid |
| | (mL) | |

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 071123 |
| Reviewed By: | Pedro L. Rentas | 071123 |

| Compound | RM# | Lot Number | Nominal Conc. (µg/mL) | Purity (%) | Uncertainty Purity (%) | Assay (%) | Target Weight (g) | Actual Weight (g) | Actual Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ammonium hexafluorostannate(IV) (Sn) | IN010 | SND042023A1 | 1000 | 99.999 | 0.10 | 44.2 | 1.13107 | 1.13286 | **1001.6** | **2.0** | 16919-24-7 | 7 mg/m3 | NA | 3161a |



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

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Al | <0.02 | Cd | <0.02 | Dy | <0.02 | Hf | <0.02 | Li | <0.02 | Ni | <0.02 | Pr | <0.02 | Se | <0.2 | Tb | <0.02 | W | <0.02 |
| Sb | <0.02 | Ca | <0.2 | Er | <0.02 | Ho | <0.02 | Lu | <0.02 | Nb | <0.02 | Re | <0.02 | Si | <0.02 | Te | <0.02 | U | <0.02 |
| As | <0.2 | Ce | <0.02 | Eu | <0.02 | In | <0.02 | Mg | <0.01 | Os | <0.02 | Rh | <0.02 | Ag | <0.02 | Tl | <0.02 | V | <0.02 |
| Ba | <0.02 | Cs | <0.02 | Gd | <0.02 | Ir | <0.02 | Mn | <0.02 | Pd | <0.02 | Rb | <0.02 | Na | <500 | Th | <0.02 | Yb | <0.02 |
| Be | <0.01 | Cr | <0.02 | Ga | <0.02 | Fe | <0.2 | Hg | <0.2 | P | <0.02 | Ru | <0.02 | Sr | <0.02 | Tm | <0.02 | Y | <0.02 |
| Bi | <0.02 | Co | <0.02 | Ge | <0.02 | La | <0.02 | Mo | <0.02 | Pt | <0.02 | Sm | <0.02 | S | <0.02 | Sn | T | Zn | <0.02 |
| B | <0.02 | Cu | <0.02 | Au | <0.02 | Pb | <0.02 | Nd | <0.02 | K | <0.2 | Sc | <0.02 | Ta | <0.02 | Ti | <0.02 | Zr | <0.02 |

(T) = Target analyte

**Physical Characterization:**

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

Certified by:

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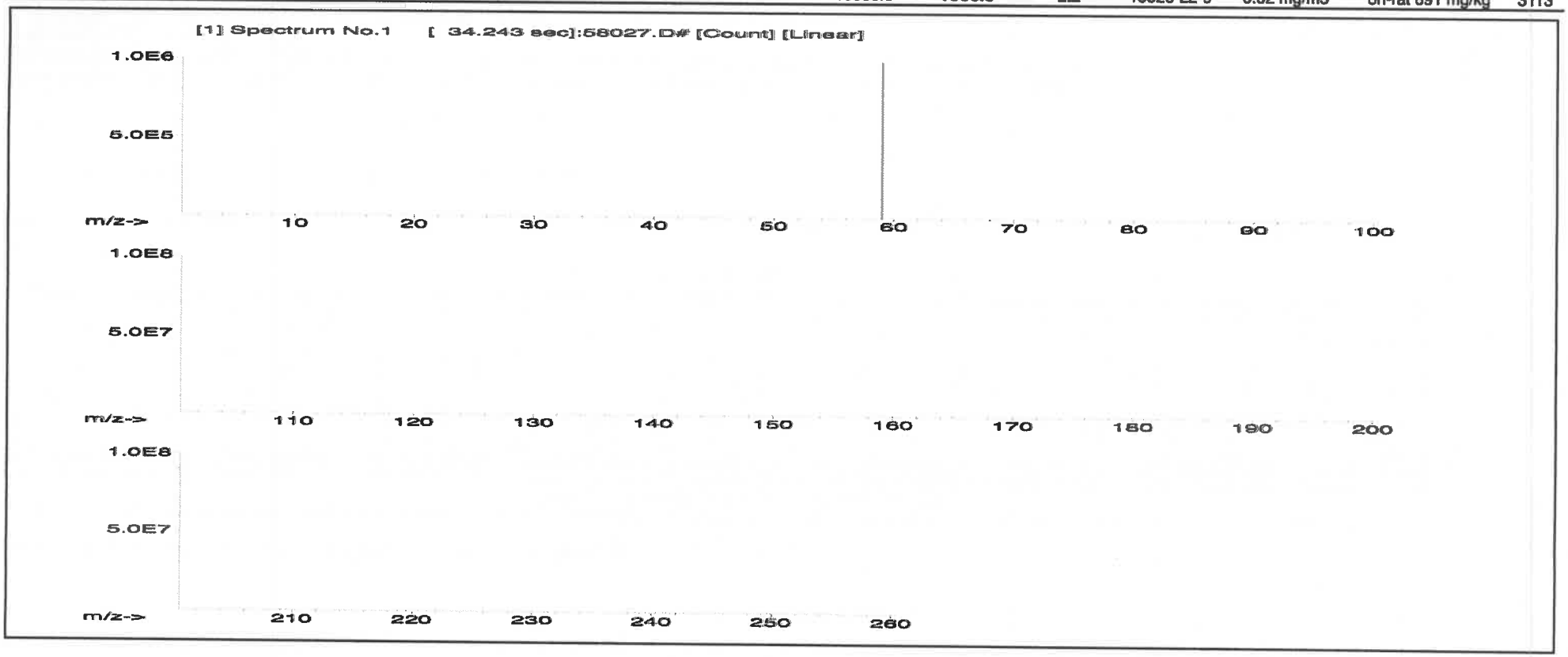
CERTIFIED WEIGHT REPORT:

| | | 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.
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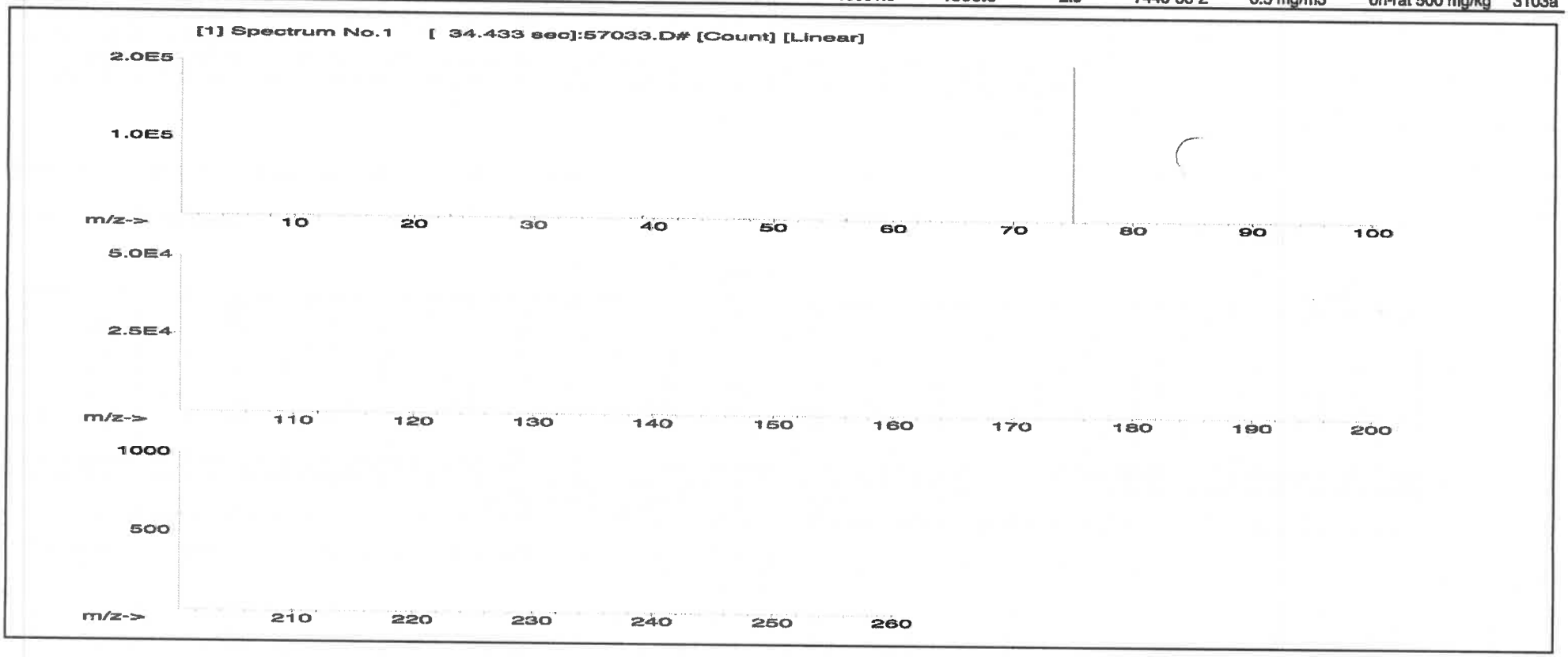
CERTIFIED **WEIGHT** REPORT:

| | | Lot # | Solvent: | | |
|---|---|---|---|---|---|
| **Part Number:** | **57033** | | | | |
| **Lot Number:** | **111323** | 24002546 | Nitric Acid | | |
| **Description:** | **Arsenic (As)** | | | | |
| | | 2.0% | 80.0 (mL) | Nitric Acid | |
| **Expiration Date:** | 111326 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Volume shown below was diluted to (mL):** | 4000.0 | 0.06 | Flask Uncertainty | | |

| | | |
|---|---|---|
| Formulated By: | Lawrence Barry | 111323 |
| Reviewed By: | Pedro L. Rentas | 111323 |

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Arsenic (As) | 58133 | 020522 | 0.1000 | 400.0 | 0.084 | 1000 | 10001.0 | **1000.0** | 2.0 | 7440-38-2 | 0.5 mg/m3 | orl-rat 500 mg/kg | 3103a |



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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.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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## CERTIFIED WEIGHT REPORT:

**Part Number:** 57005
**Lot Number:** 071123
**Description:** Boron (B)

**Expiration Date:** 071126
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB

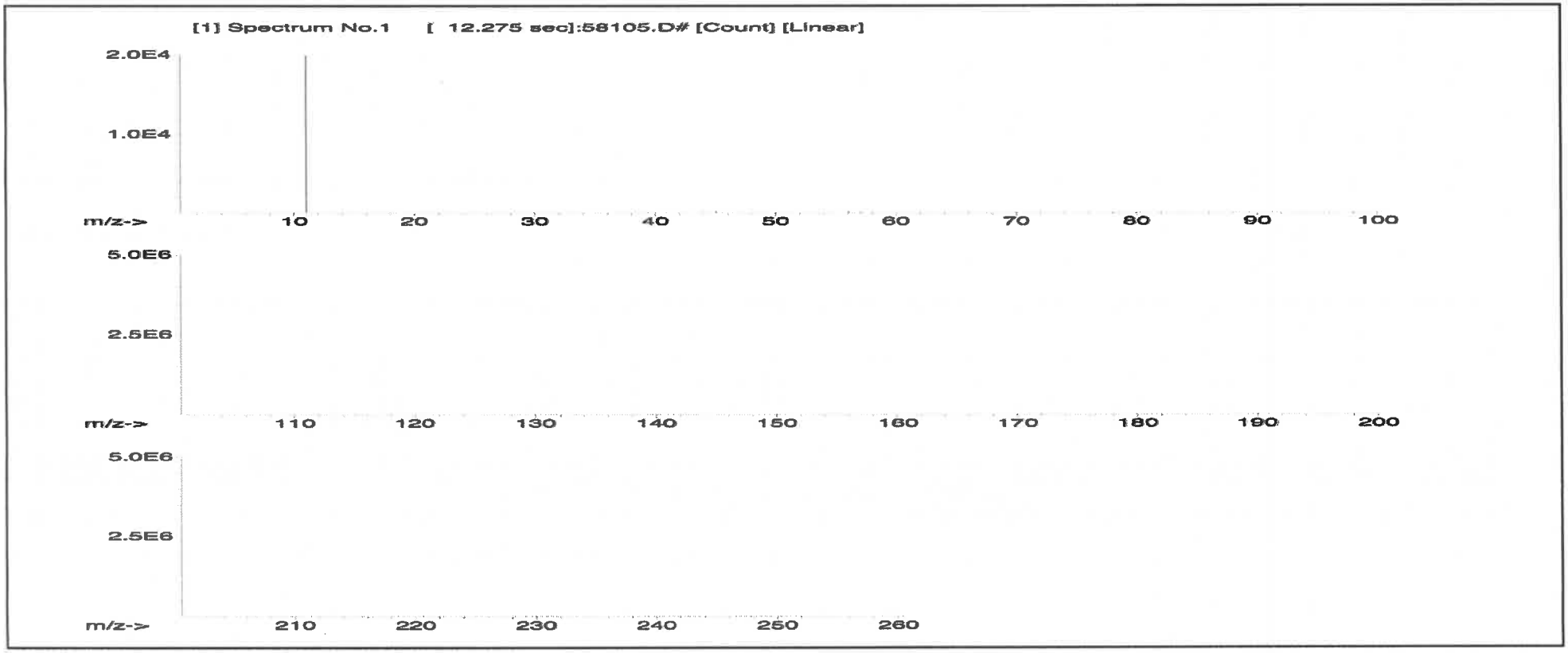
**Weight shown below was diluted to (mL):** 1999.48 0.058 Flask Uncertainty

| Lot # | | | |
|---|---|---|---|
| **Solvent:** | MKBQ8597V | Ammonium hydroxide | |
| | 2.0% | 40.0 (mL) | Ammonium hydroxide |
| | 5E-05 | Balance 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 |



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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:

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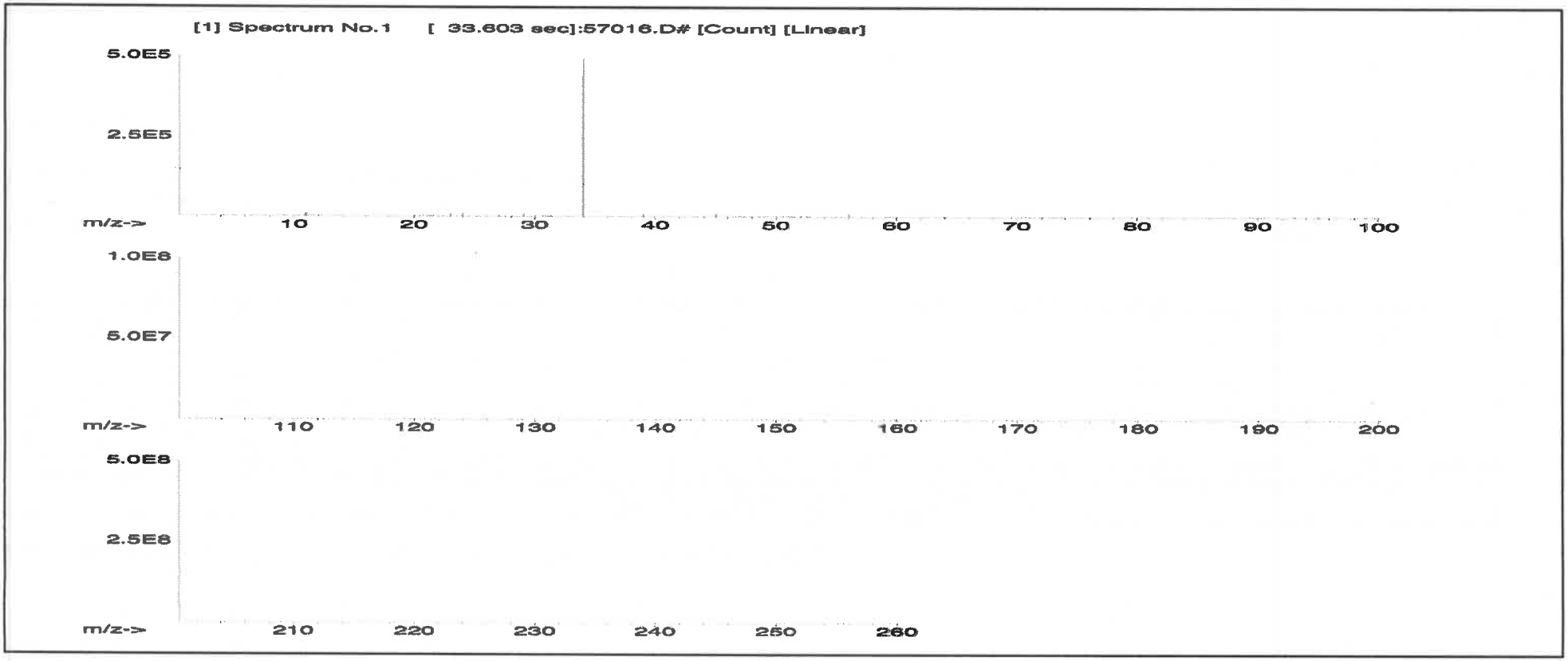
CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **57016** | | **Solvent:** | Lot # 122923 | ASTM Type 1 Water |
| **Lot Number:** | **122923** | | | | |
| **Description:** | **Sulfur (S)** | | | | |
| **Expiration Date:** | 122926 | | | | |
| **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):** | 4000.0 | 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:

* 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:** 57014
**Lot Number:** 122023
**Description:** Silicon (Si)

**Expiration Date:** 122026
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB
**Weight shown below was diluted to (mL):** 1999.48 ± 0.058 Flask Uncertainty

**Solvent:** 24002546 Nitric Acid

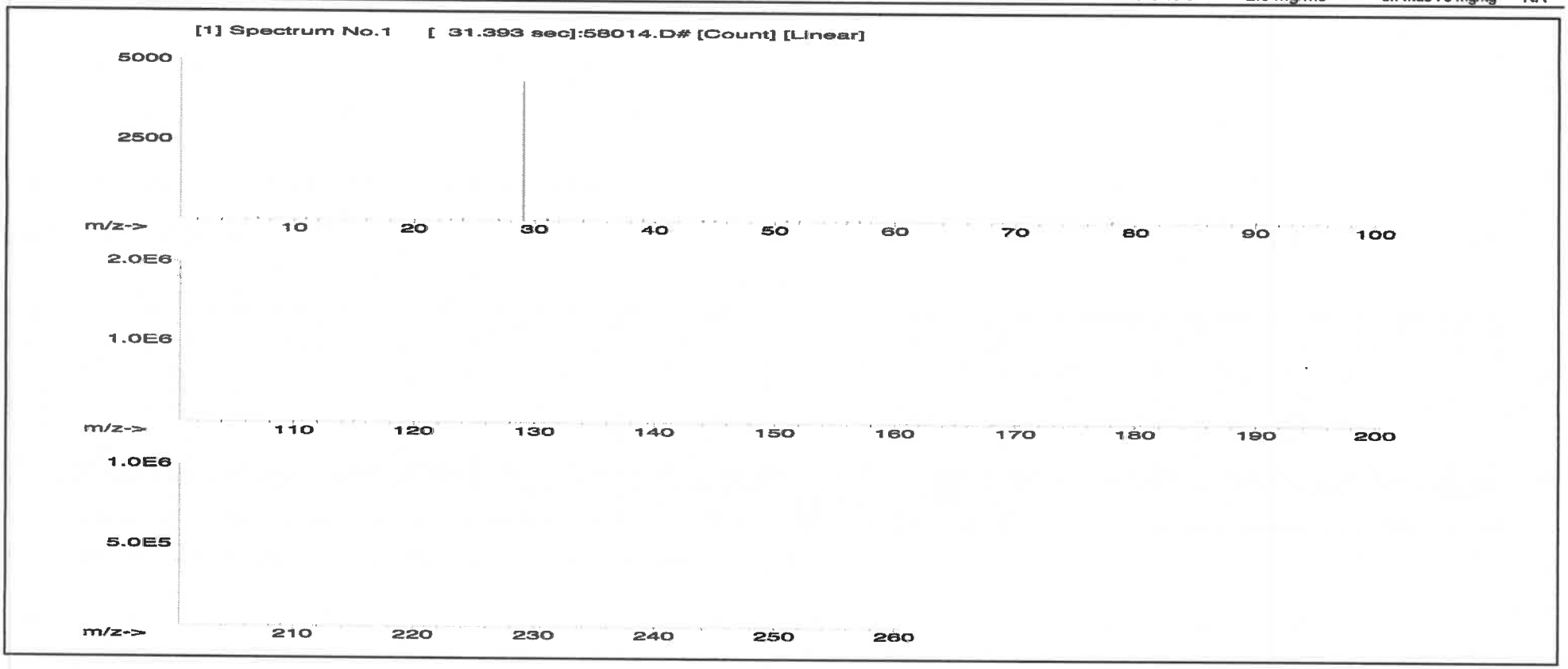
2% 40.0 (mL) Nitric Acid

5E-05 Balance Uncertainty

Aleah O'Brady
Formulated By: Aleah O'Brady 122023

Pedro Rentas
Reviewed By: Pedro L. Rentas 122023

| 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 hexafluorosilicate (Si) | IN009 | SID082022A1 | 1000 | 99.999 | 0.10 | 14.4 | 13.8854 | 13.8855 | **1000.0** | **2.0** | 16919-19-0 | 2.5 mg/m3 | orl-mus 70 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 | <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.
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* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

**Part Number:** 58030
**Lot Number:** 111623
**Description:** Zinc (Zn)

**Expiration Date:** 111626
**Recommended Storage:** Ambient (20 °C)
**Nominal Concentration (µg/mL):** 1000
**NIST Test Number:** 6UTB

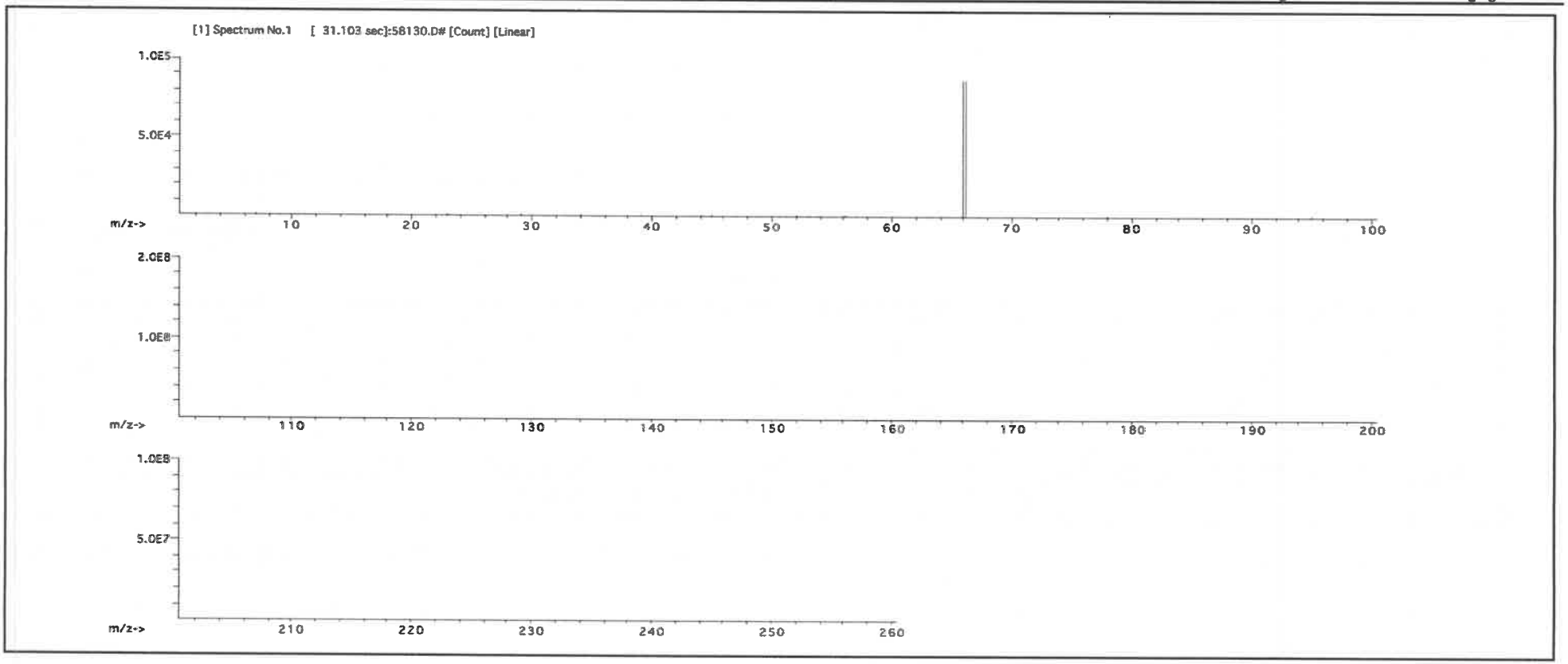
**Weight shown below was diluted to (mL):** 3000.4 0.06 Flask Uncertainty

| | Lot # | | |
|---|---|---|---|
| **Solvent:** | 24002546 | Nitric Acid | |
| 2% | 60.0 (mL) | Nitric Acid | |

5E-05 Balance 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:**

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

Certified by:

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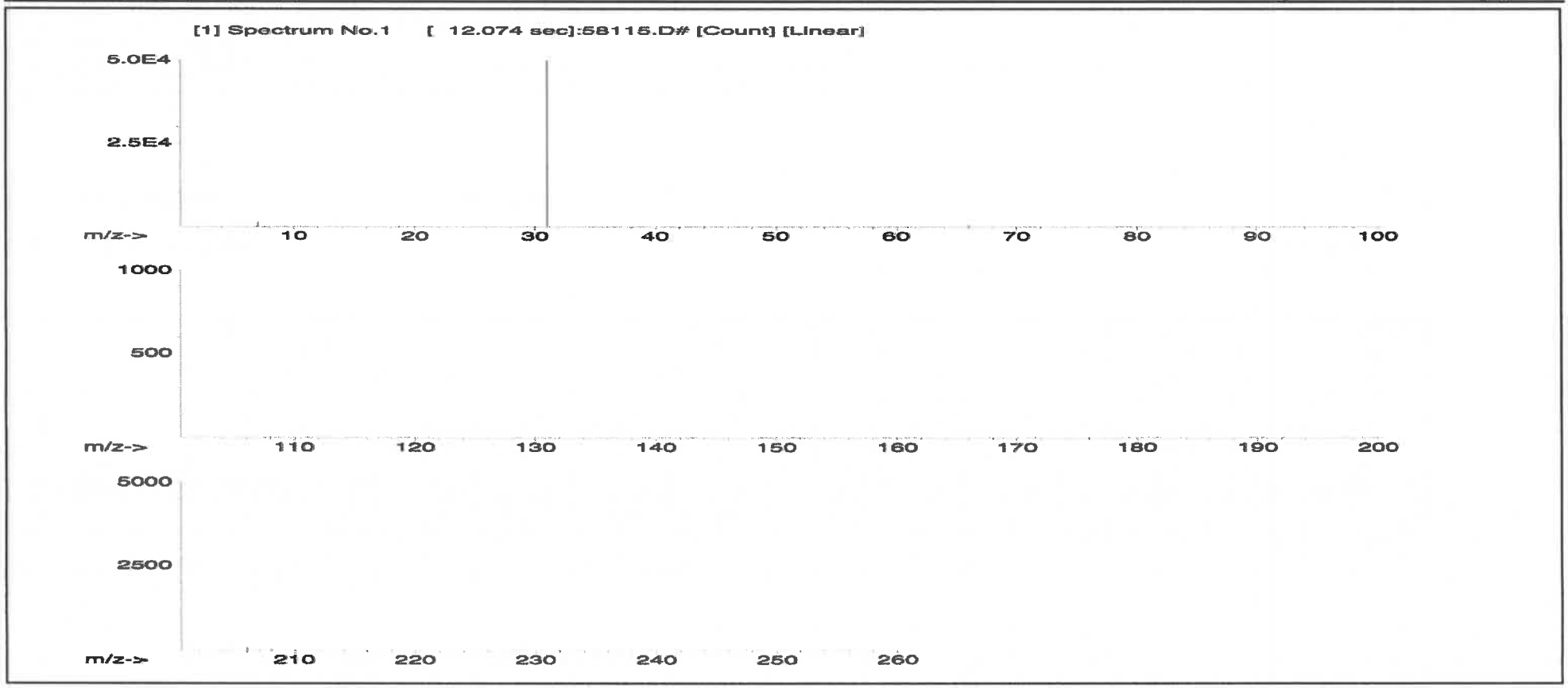
CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **57015** | | **Lot #** | | |
| **Lot Number:** | **091123** | **Solvent:** | 24002546 | Nitric Acid | |
| **Description:** | **Phosphorous (P)** | | | | |
| | | 2% | 40.0 (mL) | Nitric Acid | |
| **Expiration Date:** | 091126 | | | | |
| **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 | | |

| | | |
|---|---|---|
| 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:**

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

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# Certificate of Analysis

R: 02/22/24 M5942

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

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 1002 ± 5 µg/mL

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

**Assay Information:**

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

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

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

### Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

### Characterization of CRM/RM by One Method

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

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

$X_a$ = mean of Assay Method A with

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

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

k = coverage factor = 2

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

$u_{bb}$ = bottle to bottle homogeneity standard uncertainty

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

$u_{ts}$ = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

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

### 4.1 Thermometer Calibration

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

### 4.2 Balance Calibration

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

### 4.3 Glassware Calibration

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

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

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

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

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

## 6.0 INTENDED USE

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

## 7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

### 7.1 Storage and Handling Recommendations

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

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

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

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

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

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

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

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

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

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

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

## 8.0 HAZARDOUS INFORMATION

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

## 9.0 HOMOGENEITY

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

## 10.0 QUALITY STANDARD DOCUMENTATION

### 10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

June 17, 2022

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

### 11.2 Lot Expiration Date

- **June 17, 2027**

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

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

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control

**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

MS947 MS948 MS949
MS950 MS951 MS952

Material No.: 9530-33
Batch No.: 22G2862015
Manufactured Date: 2022-06-15
Retest Date: 2027-06-14
Revision No.: 0

# Certificate of Analysis

| Test | Specification | Result |
|---|---|---|
| ACS – Assay (as HCl) (by acid-base titrn) | 36.5 – 38.0 % | 37.9 % |
| ACS – Color (APHA) | ≤ 10 | 5 |
| ACS – Residue after Ignition | ≤ 3 ppm | < 1 ppm |
| ACS – Specific Gravity at 60°/60°F | 1.185 – 1.192 | 1.191 |
| ACS – Bromide (Br) | ≤ 0.005 % | < 0.005 % |
| ACS – Extractable Organic Substances | ≤ 5 ppm | < 1 ppm |
| ACS – Free Chlorine (as $Cl_2$) | ≤ 0.5 ppm | < 0.5 ppm |
| Phosphate ($PO_4$) | ≤ 0.05 ppm | < 0.03 ppm |
| Sulfate ($SO_4$) | ≤ 0.5 ppm | < 0.3 ppm |
| Sulfite ($SO_3$) | ≤ 0.8 ppm | 0.3 ppm |
| Ammonium ($NH_4$) | ≤ 3 ppm | < 1 ppm |
| Trace Impurities – Arsenic (As) | ≤ 0.010 ppm | < 0.003 ppm |
| Trace Impurities – Aluminum (Al) | ≤ 10.0 ppb | 1.3 ppb |
| Arsenic and Antimony (as As) | ≤ 5.0 ppb | < 3.0 ppb |
| Trace Impurities – Barium (Ba) | ≤ 1.0 ppb | 0.2 ppb |
| Trace Impurities – Beryllium (Be) | ≤ 1.0 ppb | < 0.2 ppb |
| Trace Impurities – Bismuth (Bi) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities – Boron (B) | ≤ 20.0 ppb | < 5.0 ppb |
| Trace Impurities – Cadmium (Cd) | ≤ 1.0 ppb | < 0.3 ppb |
| Trace Impurities – Calcium (Ca) | ≤ 50.0 ppb | 163.0 ppb |
| Trace Impurities – Chromium (Cr) | ≤ 1.0 ppb | 0.7 ppb |
| Trace Impurities – Cobalt (Co) | ≤ 1.0 ppb | < 0.3 ppb |
| Trace Impurities – Copper (Cu) | ≤ 1.0 ppb | < 0.1 ppb |
| Trace Impurities – Gallium (Ga) | ≤ 1.0 ppb | < 0.2 ppb |
| Trace Impurities – Germanium (Ge) | ≤ 3.0 ppb | < 2.0 ppb |
| Trace Impurities – Gold (Au) | ≤ 4.0 ppb | 0.6 ppb |
| Heavy Metals (as Pb) | ≤ 100 ppb | < 50 ppb |
| Trace Impurities – Iron (Fe) | ≤ 15 ppb | 6 ppb |

>>> Continued on page 2 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

| Test | Specification | Result |
|---|---|---|
| Trace Impurities - Lead (Pb) | ≤ 1.0 ppb | < 0.5 ppb |
| Trace Impurities - Lithium (Li) | ≤ 1.0 ppb | < 0.2 ppb |
| Trace Impurities - Magnesium (Mg) | ≤ 10.0 ppb | 2.9 ppb |
| Trace Impurities - Manganese (Mn) | ≤ 1.0 ppb | < 0.4 ppb |
| Trace Impurities - Mercury (Hg) | ≤ 0.5 ppb | 0.1 ppb |
| Trace Impurities - Molybdenum (Mo) | ≤ 10.0 ppb | < 3.0 ppb |
| Trace Impurities - Nickel (Ni) | ≤ 4.0 ppb | < 0.3 ppb |
| Trace Impurities - Niobium (Nb) | ≤ 1.0 ppb | 0.8 ppb |
| Trace Impurities - Potassium (K) | ≤ 9.0 ppb | < 2.0 ppb |
| Trace Impurities - Selenium (Se), For Information Only | | < 1.0 ppb |
| Trace Impurities - Silicon (Si) | ≤ 100.0 ppb | < 10.0 ppb |
| Trace Impurities - Silver (Ag) | ≤ 1.0 ppb | 0.5 ppb |
| Trace Impurities - Sodium (Na) | ≤ 100.0 ppb | 2.3 ppb |
| Trace Impurities - Strontium (Sr) | ≤ 1.0 ppb | < 0.2 ppb |
| Trace Impurities - Tantalum (Ta) | ≤ 1.0 ppb | 1.6 ppb |
| Trace Impurities - Thallium (Tl) | ≤ 5.0 ppb | < 2.0 ppb |
| Trace Impurities - Tin (Sn) | ≤ 5.0 ppb | 4.0 ppb |
| Trace Impurities - Titanium (Ti) | ≤ 1.0 ppb | 1.5 ppb |
| Trace Impurities - Vanadium (V) | ≤ 1.0 ppb | < 0.2 ppb |
| Trace Impurities - Zinc (Zn) | ≤ 5.0 ppb | 0.8 ppb |
| Trace Impurities - Zirconium (Zr) | ≤ 1.0 ppb | 0.3 ppb |

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

Material No.: 9530-33
Batch No.: 22G2862015

| Test | Specification | Result |
|---|---|---|

For Laboratory,Research,or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

## 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
MSS53
3/30/23

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 |

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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***Certified Reference Material CRM***

M5962 R! 06/14/24.

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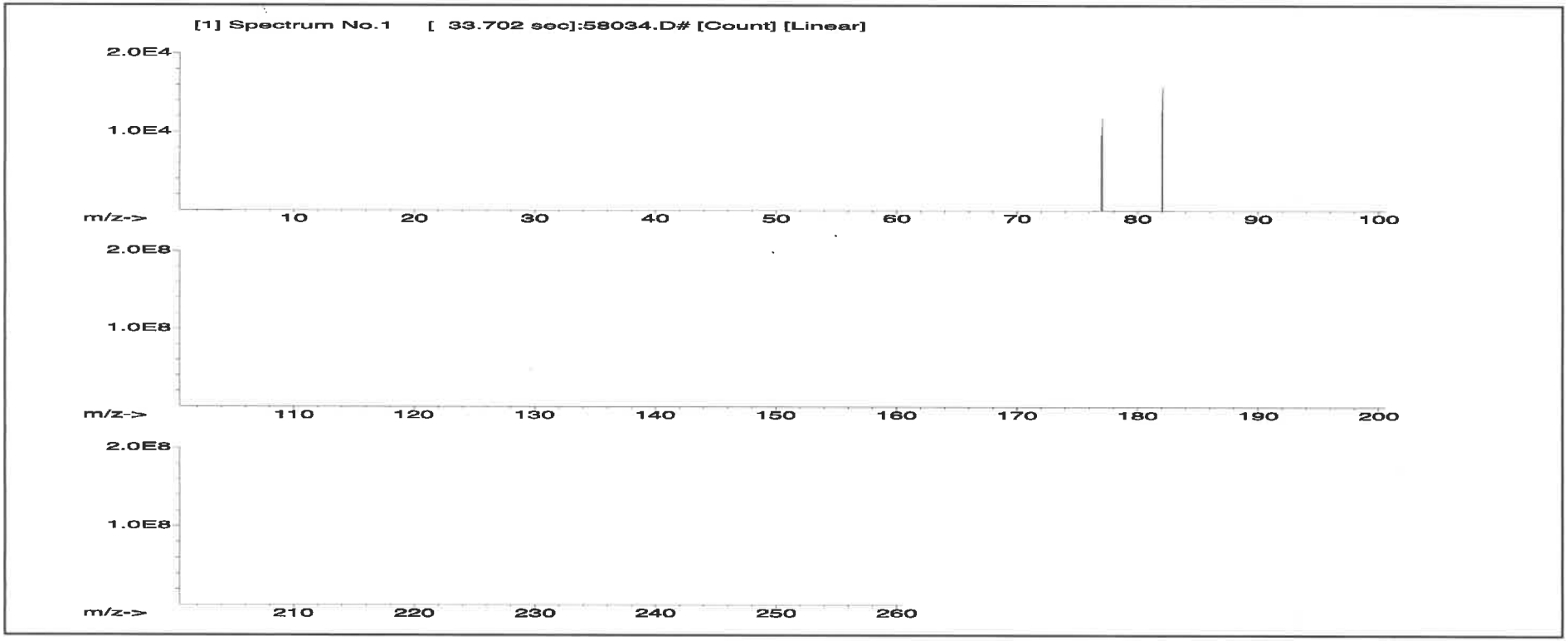
CERTIFIED WEIGHT REPORT:

| | | 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).

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

MS963 MS964 MS965
MS966 MS967 MS968

Material No.: 9606-03
Batch No.: 24B1362001
Manufactured Date: 2024-01-25
Retest Date: 2029-01-23
Revision No.: 0

# Certificate of Analysis

| Test | Specification | Result |
|---|---|---|
| Assay ($HNO_3$) | 69.0 - 70.0 % | 69.6 % |
| 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 | < 0.2 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 | < 50 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.: 24B1362001

| Test | Specification | Result |
|---|---|---|
| Trace Impurities – Niobium (Nb) | ≤ 50.0 ppb | < 1.0 ppb |
| Trace Impurities – Potassium (K) | ≤ 50 ppb | < 10 ppb |
| Trace Impurities – Silicon (Si) | ≤ 50 ppb | < 10 ppb |
| Trace Impurities – Silver (Ag) | ≤ 20.0 ppb | < 1.0 ppb |
| Trace Impurities – Sodium (Na) | ≤ 150.0 ppb | < 5.0 ppb |
| Trace Impurities – Strontium (Sr) | ≤ 30.0 ppb | < 1.0 ppb |
| Trace Impurities – Tantalum (Ta) | ≤ 10.0 ppb | < 5.0 ppb |
| Trace Impurities – Thallium (Tl) | ≤ 10.0 ppb | < 5.0 ppb |
| Trace Impurities – Tin (Sn) | ≤ 20.0 ppb | < 10.0 ppb |
| Trace Impurities – Titanium (Ti) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities – Vanadium (V) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities – Zinc (Zn) | ≤ 20.0 ppb | < 1.0 ppb |
| Trace Impurities – Zirconium (Zr) | ≤ 10.0 ppb | < 1.0 ppb |
| Particle Count – 0.5 µm and greater | ≤ 60 par/ml | 3 par/ml |
| Particle Count – 1.0 µm and greater | ≤ 10 par/ml | 1 par/ml |

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24B1362001

| Test | Specification | Result |
|---|---|---|

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein
Sr. Manager, Quality Assurance

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

MS963 MS964 MS965
MS966 MS967 MS968

Material No.: 9606-03
Batch No.: 24B1362001
Manufactured Date: 2024-01-25
Retest Date: 2029-01-23
Revision No.: 0

# Certificate of Analysis

| Test | Specification | Result |
|---|---|---|
| Assay ($HNO_3$) | 69.0 - 70.0 % | 69.6 % |
| 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 | < 0.2 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 | < 50 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.: 24B1362001

| Test | Specification | Result |
|---|---|---|
| Trace Impurities – Niobium (Nb) | ≤ 50.0 ppb | < 1.0 ppb |
| Trace Impurities – Potassium (K) | ≤ 50 ppb | < 10 ppb |
| Trace Impurities – Silicon (Si) | ≤ 50 ppb | < 10 ppb |
| Trace Impurities – Silver (Ag) | ≤ 20.0 ppb | < 1.0 ppb |
| Trace Impurities – Sodium (Na) | ≤ 150.0 ppb | < 5.0 ppb |
| Trace Impurities – Strontium (Sr) | ≤ 30.0 ppb | < 1.0 ppb |
| Trace Impurities – Tantalum (Ta) | ≤ 10.0 ppb | < 5.0 ppb |
| Trace Impurities – Thallium (Tl) | ≤ 10.0 ppb | < 5.0 ppb |
| Trace Impurities – Tin (Sn) | ≤ 20.0 ppb | < 10.0 ppb |
| Trace Impurities – Titanium (Ti) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities – Vanadium (V) | ≤ 10.0 ppb | < 1.0 ppb |
| Trace Impurities – Zinc (Zn) | ≤ 20.0 ppb | < 1.0 ppb |
| Trace Impurities – Zirconium (Zr) | ≤ 10.0 ppb | < 1.0 ppb |
| Particle Count – 0.5 µm and greater | ≤ 60 par/ml | 3 par/ml |
| Particle Count – 1.0 µm and greater | ≤ 10 par/ml | 1 par/ml |

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24B1362001

| Test | Specification | Result |
|---|---|---|

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein
Sr. Manager, Quality Assurance

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M5970, M5971 R: 7/01/24

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CERTIFIED WEIGHT REPORT:

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

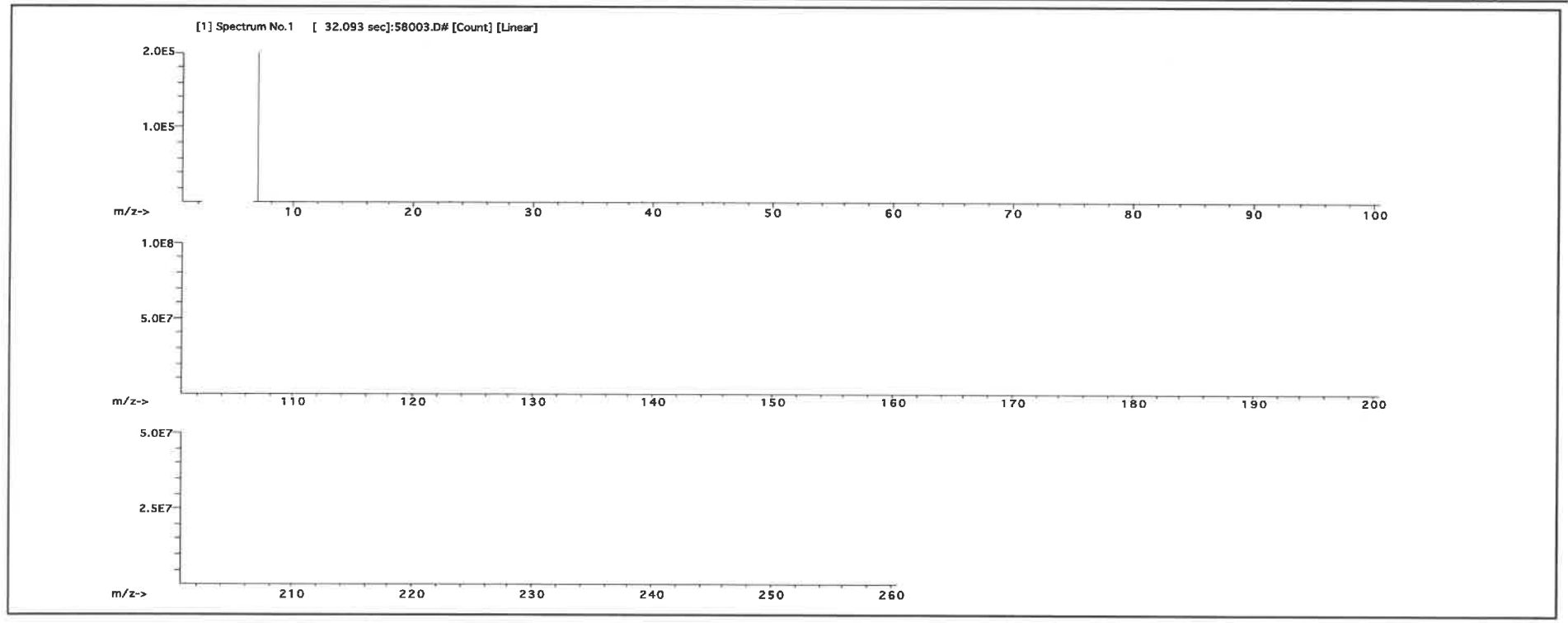
Giovanni Esposito

| Formulated By: | Giovanni Esposito | 062124 |
|---|---|---|

Pedro Rentas

| Reviewed By: | Pedro L. Rentas | 062124 |
|---|---|---|

| Compound | Part Number | Lot Number | Dilution Factor | Initial Vol. (mL) | Uncertainty Pipette (mL) | Nominal Conc. (µg/mL) | Initial Conc. (µg/mL) | Final Conc. (µg/mL) | Expanded Uncertainty +/- (µg/mL) | SDS Information (Solvent Safety Info. On Attached pg.) CAS# | OSHA PEL (TWA) | LD50 | NIST SRM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Lithium nitrate (Li) | 58103 | 070622 | 0.1000 | 25.0 | 0.004 | 1000 | 10000.4 | **1000.0** | **2.0** | 7790-69-4 | 5 mg/m3 | orl-rat 1426 mg/kg | NA |



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**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.
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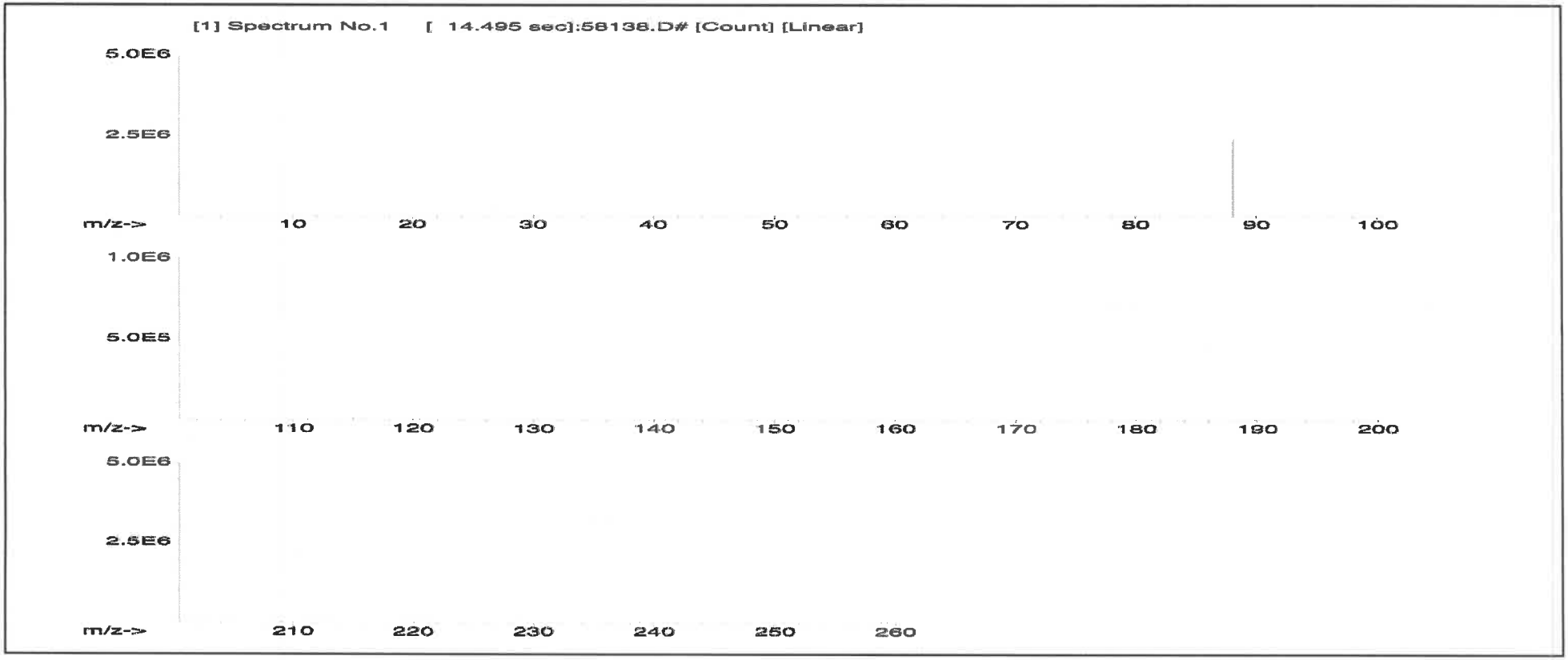
45982 R: 6/11/24

CERTIFIED WEIGHT REPORT:

| | | | | | |
|---|---|---|---|---|---|
| **Part Number:** | **57038** | | | **Lot #** | |
| **Lot Number:** | **031524** | | **Solvent:** | 24002546 | Nitric Acid |
| **Description:** | **Strontium (Sr)** | | | | |
| | | | 2% | 40.0 (mL) | Nitric Acid |
| **Expiration Date:** | 031527 | | | | |
| **Recommended Storage:** | Ambient (20 °C) | | | | |
| **Nominal Concentration (µg/mL):** | **1000** | | | | |
| **NIST Test Number:** | 6UTB | 5E-05 | Balance Uncertainty | | |
| **Weight shown below was diluted to (mL):** | 2000.07 | 0.100 | Flask Uncertainty | | |

| | | |
|---|---|---|
| Formulated By: | Benson Chan | 031524 |
| Reviewed By: | Pedro L. Rentas | 031524 |

| 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 | 1000 | 99.997 | 0.10 | 41.2 | 4.85470 | 4.85502 | **1000.1** | **2.0** | 10042-76-9 | NA | orl-rat >2000mg/kg | 3153a |



**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 | 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).

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: | 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 ºC)

## 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

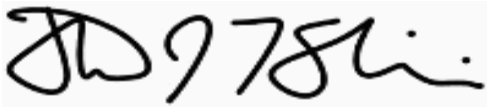
- Sealed TCT Bag Open Date: _____

- 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

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-2 |
| Lot Number: | T2-MEB715594 |
| 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** | **40.04 ± 0.24 µg/mL** |
| **Silica, SiO2** | **200.2 ± 1.1 µg/mL** | **Tin, Sn** | **70.1 ± 0.4 µg/mL** |
| **Titanium, Ti** | **20.02 ± 0.14 µg/mL** | | |

**Density:** 1.025 g/mL (measured at 20 ± 4 ºC)

### Assay Information:

| ANALYTE | METHOD | NIST SRM# | SRM LOT# |
|---|---|---|---|
| Mo | ICP Assay | 3134 | 130418 |
| Sb | ICP Assay | 3102a | 140911 |
| SiO2 | Calculated | | See Sec. 4.2 |
| 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

February 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

- **February 17, 2027**

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

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

### 11.3 Period of Validity

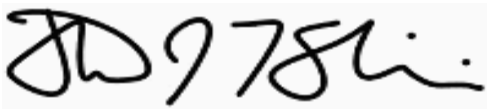
- Sealed TCT Bag Open Date: _____

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

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

**Certificate Approved By:**

Thomas Kozikowski
Manager, Quality Control



**Certifying Officer:**

Paul Gaines
Chairman / Senior Technical Director

# SHIPPING DOCUMENTS

# CHEMTECH
## CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. P3426
QUOTE NO.
COC Number 2041303

### CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Jacobs
ADDRESS: 412 Mt Kemble Ave Suite H100
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: John Infante
PHONE: FAX:

### CLIENT PROJECT INFORMATION

PROJECT NAME: STC PTC
PROJECT NO.: D3779922 LOCATION: Princeton Junction
PROJECT MANAGER: Mary Murphy
e-mail: Mary.Murphy@Jacobs.com
PHONE: FAX:

### CLIENT BILLING INFORMATION

BILL TO: Mary Murphy PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

### DATA TURNAROUND INFORMATION

FAX (RUSH) Standard TAT DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

### DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☒ Level 3 (Results + QC + Raw Data)
- ☐ EDD FORMAT
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other

### ANALYSIS

1 ECO-VOCs 8260D
2 SVOCs + PAHs 8270E + SIM
3 Metals 6010B, Hg 7470B
4 Cr(VI) 7196A
5
6
7
8
9

| CHEMTECH SAMPLE ID | PROJECT SAMPLE IDENTIFICATION | SAMPLE MATRIX | SAMPLE TYPE COMP | SAMPLE TYPE GRAB | SAMPLE COLLECTION DATE | SAMPLE COLLECTION TIME | # OF BOTTLES | PRESERVATIVES 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | A/E | E | B/E | E | | | | | | ← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER |
| 1. | 927-KI-WS-073124 | WS | | X | 7/31/24 | 1050 | 6 | 2 | 2 | 1 | 1 | | | | | | See attached table for analytes |
| 2. | 927-KI-WS-073124-FD | WS | | X | 7/31/24 | 1055 | 5 | 2 | 1 | 1 | 1 | | | | | | |
| 3. | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | | | | |

### SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

| RELINQUISHED BY SAMPLER: | DATE/TIME: | RECEIVED BY: |
|---|---|---|
| 1. | 7/31/24 1220 | 1. 7-31-24 1220 |
| 2. | | 2. |
| 3. | 7-31-24 1430 | 3. |

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.0 °C
Comments: 4th preservative is HNO3 (TR)
See attached table for required analytes list of ECO-VOCs, ECO-SVOCs, and ECO Metals

Page 1 of 1

CLIENT: ☐ Hand Delivered ☐ Other
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☐ YES ☐ NO


WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

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

# Laboratory Certification

| Certified By | License No. |
|---|---|
| | |
| CAS EPA CLP Contract | 68HERH20D0011 |
| | |
| Connecticut | PH-0830 |
| | |
| DOD ELAP (L-A-B) | L2219 |
| | |
| Maine | 2022022 |
| | |
| Maryland | 296 |
| | |
| New Hampshire | 255423 |
| | |
| New Jersey | 20012 |
| | |
| New York | 11376 |
| | |
| Pennsylvania | 68-00548 |
| | |
| Soil Permit | P330-21-00137 |
| | |
| Texas | T104704488 |

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

# LOGIN REPORT/SAMPLE TRANSFER

**Order ID :** P3426 JACO05
**Client Name :** JACOBS Engineering Grou
**Client Contact :** Mary I. Murphy
**Invoice Name :** JACOBS Engineering Grou
**Invoice Contact :** Mary I. Murphy

**Order Date :** 7/31/2024 2:33:00 PM
**Project Name :** Former Schlumberger Site I
**Receive DateTime :** 7/31/2024 2:30:00 PM
**Purchase Order :**

**Project Mgr :**
**Report Type :** Level 4
**EDD Type :** CH2MHILL
**Hard Copy Date :**
**Date Signoff :**

| LAB ID | CLIENT ID | MATRIX | SAMPLE DATE | SAMPLE TIME | TEST | TEST GROUP | METHOD | FAX DATE | DUE DATES |
|---|---|---|---|---|---|---|---|---|---|
| P3426-01 | 927-K1-WS-~~072124~~ 073124 | Water | 07/31/2024 | 10:50 | | | | | |
| | | | | | VOCMS Group6 | | 8260-Low | | ~~5 Bus~~. Days 10Bus |
| P3426-02 | 927-K1-WS-~~072124~~-FD 073124 | Water | 07/31/2024 | 10:55 | | | | | |
| | | | | | VOCMS Group6 | | 8260-Low | | ~~5~~ Bus. Days 10 |

**Relinguished By :**
**Date / Time :** 7-31-24 1500

**Received By :** Sam
**Date / Time :** 7/31/24 1510

15.1°C Ng# 4

**Storage Area :** VOA Refridgerator Room