# SAF-RC-040
# 300 Area D4 Waste Characterization Sampling - Other Solid
# FINAL DATA PACKAGE

**COMPLETE COPY OF DATA PACKAGE TO:**

No Distribution Required KW 11/27/12
INITIAL/DATE

**COMMENTS:**

**SDG K4015 SAF RC-040**

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

**Sample Location/Waste Site: 300 Area Welding Rods**

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

25 November 2012

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

| | |
|---|---|
| LvLI Batch # | 1210082 |
| SDG # | K4015 |
| SAF # | RC-040 |
| Date Received | 10/25/12 |
| # Samples | 1 |
| Matrix | OTHER SOLID |
| Volatiles | |
| Semivolatiles | |
| Pest/PCB | |
| Glycols | |
| DRO/KRO/GRO | |
| PAHs | |
| Herbicides | |
| Metals | X |
| Inorganics | |

The electronic data deliverable (EDD) has been emailed. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory
A Division of Eberline Analytical Corporation

Orlette S. Johnson
Project Manager

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 16 pages.

R:\GROUP\PM\ORLETTE\Hanford\Data\B_ltrs.DOC

# CHAIN OF CUSTODY

| Lionville Laboratory Use Only |
|---|
| 1210082 |

# Custody Transfer Record/Lab Work Request

Page 1 of 1

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client WC Hanford SAF# RC-040

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager O. Johnson

QC SW Del SH TAT 15 Days

Date Rec'd 10-25-12 Date Due 11-9-12

| | | |
|---|---|---|
| Refrigerator # | | |
| #/Type Container | Liquid | |
| | Solid | |
| Volume | Liquid | |
| | Solid | |
| Preservatives | | |

ANALYSES REQUESTED →

| ORGANIC | | | | INORG | |
|---|---|---|---|---|---|
| VOA | BNA | Pest/PCB | Herb | Metal Hg | CN |

Lionville Laboratory Use Only

MATRIX CODES:
W Water
WW Waste Water
GW Groundwater
WST Waste
WI Wipe
SO Solid
S Soil
SL Sludge
SE Sediment
PC Paint Chips
O Oil
NAL Non-Aqueous Liquid
L Leachate
A Air
T Tissue
F Fish

| Lab ID | Client ID/Description | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | VOA | BNA | Pest/PCB | Herb | | | | Metal Hg | CN | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | A | | | | | | | | |
| | | | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | | | 1AG | | | | | | | | |
| | | | | | | | | | | | | | | 60 | | | | | | | | |
| 01 | J1R4V3 | ✓ | ✓ | SOLID | 10/24/12 | 0900 | | | | | | | | X | | | | | | | | |

Special Instructions:

Special Instructions:

1.
2.
3.
4.
5.
6.

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| [signature] | [signature] | 10/25/12 | 1000 |
| | | | |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| | | | |
| | | | |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| | | | |
| | | | |

| Washington Closure Hanford | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | RC-040-781 | Page 1 of 1 |
|---|---|---|---|
| Collector: R L STRICKLAND | Company Contact: Tom Edmundson; Telephone No.: 509.947.5192 | Project Coordinator: KESSNER, JH | Price Code: 9K; Data Turnaround: 15 Days |
| Project Designation: 300 Area D4 Waste Characterization Sampling - Other Solid | Sampling Location: 300 Area Welding Rods | SAF No.: RC-040 | |
| Ice Chest No.: WCH-12-041 | Field Logbook No.: EL-1656; COA: RD4MXX2F00 | Method of Shipment: Fed Ex | |
| Shipped To: EBERLINE SERVICES LIONVILLE | Offsite Property No.: A11D415 | Bill of Lading/Air Bill No.: See OSPC | |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

*N/A*

**Special Handling and/or Storage**

*N/A*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation | None | | | | | | | | | | |
| Type of Container | aG | | | | | | | | | | |
| No. of Container(s) | 1 | | | | | | | | | | |
| Volume | 60mL | | | | | | | | | | |
| SAMPLE ANALYSIS | See item (1) in Special Instructions. | | | | | | | | | | |

| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J1R4V3 | OTHER SOLID | 10/24/12 | 0900 | ✓ | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

**CHAIN OF POSSESSION** — **Sign/Print Names**

| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
|---|---|---|---|
| R L STRICKLAND | WCH 10/24/12 0945 | FED EX | |
| FED EX | 10-25-12 1000 | VICTOR HERNANDEZ | 10-25-12 1000 |
| | | | |
| | | | |
| | | | |
| | | | |

**SPECIAL INSTRUCTIONS**

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470

REVIEWED BY JRE
DATE 10/24/12

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

| | | | |
|---|---|---|---|
| LABORATORY SECTION | Received By | Title | Date/Time |
| FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time |

WCH-EE-011

000000004

Lionville Laboratory

# SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford
Project/SAF/SOW/Release #: RC-040 Date: 10/25/12

LvL Batch #: 1210082 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

| | | | |
|---|---|---|---|
| 1. Samples Hand Delivered or Shipped? | Carrier [signature] | | Airbill # 7939 2067 -041 |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated? | ☑ Yes | ☐ No | ☐ No Seals |
| 3. Outside of coolers or shipping containers are free from damage? | ☑ Yes | ☐ No | *Comments:* |
| 4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible? | ☑ Yes | ☐ No | |
| 5. Samples received cooled or ambient? | Temp 13.2 °C | | Cooler # WCH-12-014 |
| How was the temperature taken? | ☑ IR | ☐ Temp. Blank | ☐ Other (Specify): |
| Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) | ☑ Yes OSJ 10/26/12 | ☑ No TCLP Hg out of temperature | |
| 6. Custody seals on sample containers intact, signed and dated? | ☑ Yes | ☐ No | ☐ No Seals |
| 7. COC (Client & LvL) signed & dated? | ☑ Yes | ☐ No | |
| 8. Sample containers are intact? | ☑ Yes | ☐ No | |
| 9. All samples on COC received? | ☑ Yes | ☐ No | |
| All samples received on COC? | ☑ Yes | ☐ No | |
| 10. All sample label information matches COC? | ☑ Yes | ☐ No | |
| 11. Samples properly preserved? (If #5 is no, then this is no.) | ☑ Yes | ☐ No | |
| 12. Samples received within hold times? | ☑ Yes | ☐ No | |
| Short holds taken to wet lab? | ☐ Yes | ☐ No | ☑ N/A |
| 13. VOA, TOC, TOX free of headspace? | ☐ Yes | ☐ No | ☑ N/A |
| 14. QC stickers placed on bottles designated by client? | ☑ Yes | ☐ No | ☐ N/A |
| 15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | ☑ Yes OSJ 10/26/12 | ☑ No see item 5 | |
| 16. Project Manager contacted concerning any discrepancies? | ☐ Yes | ☐ No | ☑ N/A |

Person Contacted _____ Date _____

SR-002-B.doc

# METALS

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-040 | |
| 2620 Fermi Avenue | Project Number: K4015 | **Reported:** |
| Richland WA, 99354 | Project Manager: Joan Kessner | 11/09/2012 07:34 |

## Analytical Report for TCLP Metals by SW846 1311 6000/7000 series

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| J1R4V3 | 1210082-01 | Other Solid | 10/24/2012 09:00 | 10/25/2012 10:00 |

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# Case Narrative

**Client:** WC-HANFORD RC-040
**LVL#:** 1210082
**SDG/SAF#:** K4015/RC-040

**W.O.#:** 60049-001-001-0001-00
**Date Received:** 10-25-12

## METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

1. This narrative covers the analysis of 1 TCLP leachate sample.

2. The sample was prepared and analyzed in accordance with methods listed on the data report forms.

   The TCLP leachate sample was analyzed with a 5-fold dilution for ICP metals due to sample matrix.

3. All analyses were performed within the required holding times.

4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvL's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ). The CCB2 result for Barium was above the MRL, however less than 5% of the RCRA limit.

7. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation, MB value less than 5% of the RCRA limit, or samples were greater than 20X MB value}.

8. All ICP Interference Check Standards were within control limits.

9. All laboratory control samples (LCS) were within the 80-120% control limits.

10. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL.


The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

11. The TCLP extract from sample J1R4V3 was selected for the matrix spike (MS) for this analytical batch.

The MS recoveries for all analytes in the TCLP extract were above 50%.

The matrix spike (MS) concentration for Mercury was equivalent to the regulatory level (200 ppb) as per SW846 method 1311. The required spike concentration is above the linear range of the instrument, resulting in a 50-fold dilution. The MS recovery was greater than 50% as per method criteria.

12. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

11/23/12
Date

alm/10-082tcccb

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| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-040 | |
| 2620 Fermi Avenue | Project Number: K4015 | **Reported:** |
| Richland WA, 99354 | Project Manager: Joan Kessner | 11/09/2012 07:34 |

## Notes and Definitions

| | |
|---|---|
| U | Analyte included in the analysis, but not detected |
| J | Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). |
| B | Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag) |
| * | Value outside QC acceptance criteria |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| wet | Sample results reported on a wet weight basis |
| RPD | Relative Percent Difference |

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| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-040 | |
| 2620 Fermi Avenue | Project Number: K4015 | **Reported:** |
| Richland WA, 99354 | Project Manager: Joan Kessner | 11/09/2012 07:34 |

## J1R4V3

### 1210082-01 (Other Solid)

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0750 | U | 0.0750 | mg/L | 5 | L211049 | 11/06/2012 | 11/07/2012 | 6010 |
| **Barium** | **0.298** | | 0.00500 | mg/L | 5 | L211049 | 11/06/2012 | 11/07/2012 | 6010 |
| Cadmium | 0.0150 | U | 0.0150 | mg/L | 5 | L211049 | 11/06/2012 | 11/07/2012 | 6010 |
| **Chromium** | **0.0165** | B | 0.0250 | mg/L | 5 | L211049 | 11/06/2012 | 11/07/2012 | 6010 |
| Lead | 0.0500 | U | 0.0500 | mg/L | 5 | L211049 | 11/06/2012 | 11/07/2012 | 6010 |
| Selenium | 0.100 | U | 0.100 | mg/L | 5 | L211049 | 11/06/2012 | 11/07/2012 | 6010 |
| **Silver** | **0.00900** | B | 0.0300 | mg/L | 5 | L211049 | 11/06/2012 | 11/07/2012 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L211055 | 11/07/2012 | 11/08/2012 | 7470 |

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Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-040 | |
| 2620 Fermi Avenue | Project Number: K4015 | **Reported:** |
| Richland WA, 99354 | Project Manager: Joan Kessner | 11/09/2012 07:34 |

# TCLP Metals by SW846 1311 6000/7000 series - Quality Control

## Lionville Laboratory

| Analyte | Result and Qualifiers | | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch L211049 - SW 3010A** | | | | | | | | | | |
| **Blank (L211049-BLK1)** | | | | Prepared: 11/06/2012 Analyzed: 11/07/2012 | | | | | | |
| Arsenic | 0.0150 | U | 0.0150 | mg/L | | | | | | |
| Barium | 0.00100 | U | 0.00100 | mg/L | | | | | | |
| Cadmium | 0.00300 | U | 0.00300 | mg/L | | | | | | |
| Chromium | 0.00500 | U | 0.00500 | mg/L | | | | | | |
| Lead | 0.0100 | U | 0.0100 | mg/L | | | | | | |
| Selenium | 0.0200 | U | 0.0200 | mg/L | | | | | | |
| Silver | 0.00600 | U | 0.00600 | mg/L | | | | | | |
| **Blank (L211049-BLK2)** | | | | Prepared: 11/06/2012 Analyzed: 11/07/2012 | | | | | | |
| Arsenic | 0.0750 | U | 0.0750 | mg/L | | | | | | |
| Barium | 0.00500 | U | 0.00500 | mg/L | | | | | | |
| Cadmium | 0.0150 | U | 0.0150 | mg/L | | | | | | |
| Chromium | 0.0250 | U | 0.0250 | mg/L | | | | | | |
| Lead | 0.0500 | U | 0.0500 | mg/L | | | | | | |
| Selenium | 0.100 | U | 0.100 | mg/L | | | | | | |
| Silver | 0.0300 | U | 0.0300 | mg/L | | | | | | |
| **LCS (L211049-BS1)** | | | | Prepared: 11/06/2012 Analyzed: 11/07/2012 | | | | | | |
| Arsenic | 9.77 | | 0.0150 | mg/L | 10.000 | | 97.7 | 80-120 | | |
| Barium | 5.00 | | 0.00100 | mg/L | 5.0000 | | 99.9 | 80-120 | | |
| Cadmium | 0.254 | | 0.00300 | mg/L | 0.25000 | | 102 | 80-120 | | |
| Chromium | 0.492 | | 0.00500 | mg/L | 0.50000 | | 98.4 | 80-120 | | |
| Lead | 2.39 | | 0.0100 | mg/L | 2.5000 | | 95.8 | 80-120 | | |
| Selenium | 9.40 | | 0.0200 | mg/L | 10.000 | | 94.0 | 80-120 | | |
| Silver | 0.499 | | 0.00600 | mg/L | 0.50000 | | 99.9 | 80-120 | | |
| **Duplicate (L211049-DUP1)** | | **Source: 1210082-01** | | Prepared: 11/06/2012 Analyzed: 11/07/2012 | | | | | | |
| Arsenic | 0.0750 | U | 0.0750 | mg/L | | 0.0750 U | | | | 20 |
| Barium | 0.302 | | 0.00500 | mg/L | | 0.298 | | | 1.22 | 20 |
| Cadmium | 0.0150 | U | 0.0150 | mg/L | | 0.0150 U | | | | 20 |
| Chromium | 0.0164 | B | 0.0250 | mg/L | | 0.0165 | | | 0.0912 | 20 |
| Lead | 0.0500 | U | 0.0500 | mg/L | | 0.0500 U | | | | 20 |
| Selenium | 0.0294 | B | 0.100 | mg/L | | 0.100 U | | | | 20 |
| Silver | 0.00828 | B | 0.0300 | mg/L | | 0.00900 | | | 8.33 | 20 |

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| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-040 | |
| 2620 Fermi Avenue | Project Number: K4015 | **Reported:** |
| Richland WA, 99354 | Project Manager: Joan Kessner | 11/09/2012 07:34 |

# TCLP Metals by SW846 1311 6000/7000 series - Quality Control

## Lionville Laboratory

| Analyte | Result and Qualifiers | | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch L211049 - SW 3010A** | | | | | | | | | | |
| **Matrix Spike (L211049-MS1)** | | **Source: 1210082-01** | | Prepared: 11/06/2012 Analyzed: 11/07/2012 | | | | | | |
| Arsenic | 5.22 | | 0.0750 | mg/L | 5.0000 | 0.0750 U | 104 | 50-1000 | | |
| Barium | 99.8 | | 0.00500 | mg/L | 100.00 | 0.298 | 99.6 | 50-1000 | | |
| Cadmium | 1.02 | | 0.0150 | mg/L | 1.0000 | 0.0150 U | 102 | 50-1000 | | |
| Chromium | 4.99 | | 0.0250 | mg/L | 5.0000 | 0.0165 | 99.6 | 50-1000 | | |
| Lead | 4.73 | | 0.0500 | mg/L | 5.0000 | 0.0500 U | 94.6 | 50-1000 | | |
| Selenium | 1.02 | | 0.100 | mg/L | 1.0000 | 0.100 U | 102 | 50-1000 | | |
| Silver | 5.22 | | 0.0300 | mg/L | 5.0000 | 0.00900 | 104 | 50-1000 | | |
| **Batch L211055 - SW 7470A Prep** | | | | | | | | | | |
| **Blank (L211055-BLK1)** | | | | Prepared: 11/07/2012 Analyzed: 11/08/2012 | | | | | | |
| Mercury | 0.000200 | U | 0.000200 | mg/L | | | | | | |
| **Blank (L211055-BLK2)** | | | | Prepared: 11/07/2012 Analyzed: 11/08/2012 | | | | | | |
| Mercury | 0.000200 | U | 0.000200 | mg/L | | | | | | |
| **LCS (L211055-BS1)** | | | | Prepared: 11/07/2012 Analyzed: 11/08/2012 | | | | | | |
| Mercury | 0.00582 | | 0.000200 | mg/L | 0.0050000 | | 116 | 80-120 | | |
| **Duplicate (L211055-DUP1)** | | **Source: 1210082-01** | | Prepared: 11/07/2012 Analyzed: 11/08/2012 | | | | | | |
| Mercury | 0.000200 | U | 0.000200 | mg/L | | 0.000200 U | | | | 20 |
| **Matrix Spike (L211055-MS1)** | | **Source: 1210082-01** | | Prepared: 11/07/2012 Analyzed: 11/08/2012 | | | | | | |
| Mercury | 0.210 | | 0.0100 | mg/L | 0.20000 | 0.000200 U | 105 | 50-1000 | | |

Lionville Laboratory

Logbook #: 1154

# SAMPLE DIGESTION RECORD

Digestion Batch #: L211049
Date/Time Initiated: 11/6/12 1325
Date/Time Completed: 11/7/12 1345
Analyst: EP
Matrix (circle): Soil Water Other TCLP
Method (circle one): 3005A 3010A 3050 200.7 (1994)
pH/Turbidity: N/A for Solids.
NOTE: All temperatures are recorded as corrected temperatures

Digested / Undigested (circle one)
Balance #:
Balance Cal Verification: Y NA
Temp: 96°
BLOCK 1 2 3 (circle one)

| Work Order # | Spike Vol (mL) | Initial Wt/Vol (g/mL) | Final Vol (mL) | pH <2 | Type: To/Sol/ TC | Texture | Color / Appearance | Artifact | Turb |
|---|---|---|---|---|---|---|---|---|---|
| 1210082-01 | | 50 | 50 | < | TC | NA | ORANGE Cloudy | | |
| L211049-Dupl | | 50 | 50 | < | TC | | ORANGE Cloudy | | |
| MS1 | 0.5 | 50 | 50 | | | | ORANGE Cloudy | | |
| BLK1 | | 50 | 50 | | | | Clear Colorless | | |
| BLK2 | | 50 | 50 | < | TC | | Clear Colorless | (L211012-BLK1) | |
| BS1 | 0.5 | 50 | 50 | | | | Clear Colorless | | |

EAB 11/7/12

Spiking IDs / Expiration Date:
MS#: 1200388
1201195
LCS#: 1201373

Reagent IDs:
$HNO_3$ 0000003390
HCl
$H_2O_2$
1:1 $HNO_3$
1:1 HCl 637-075-02

File ID#:

Data Review By/Date: 11/8/12

R:\group\QA\SOP\
Signed\SPI\Metals Digestion log.doc

Page #:

Lionville Laboratory

# MERCURY PREPARATION

Logbook # 1153

Analyst: TEB
Date 11/7/12
Start Time/Temp: 1320 | 94°
End Time/Temp: 1525 97°

Instrument ID: HG3.1
Balance # NA
Pipette Calibration (Daily) Y ✓

Prep Batch: L211055
Worksheet: HG110801
SOP No. ME-HgCVAA
BLOCK 1 2 (circle one)

**NOTE: All temperatures are recorded as corrected temperatures.**

| LvL Work Order# | pH < 2 (Liq) | Spike Vol (mL) | Spike Conc. (µg/L) | Initial Wt. or Vol (g or mL) | Final Sample Vol (mL) | Comments, % Solids, etc. |
|---|---|---|---|---|---|---|
| Blank | | | | 35 | 35 | |
| 0.2 µg/L | | 0.070 | | 35 | 35 | |
| 1.0 | | 0.350 | | 35 | 35 | |
| 2.0 | | 0.700 | | 35 | 35 | |
| 5.0 | | 1.750 | | 35 | 35 | |
| 10.0 | | 3.500 | | 35 | 35 | |
| ICV | | 0.0875 | 2.5 | 35 | 35 | |
| CCV | | 0.175 | 5.0 | 35 | 35 | |
| ICB/CCB | | | | 35 | 35 | |
| L211055-BLK1 | | | | 35 | 35 | |
| BLK2 | < | | | 35 | 35 | (L211012-BLK1) |
| BS1 | | 0.175 | 5.0 | 35 | 35 | |
| ~~L211006~~ 1210082-01 | < | | | 35 | 35 | |
| L211055-DUP1 | < | | | 35 | 35 | |
| MS1 | | 0.700 | 200 | 35 | 35 | |

| Standard: | ID | Prep Date/Time |
|---|---|---|
| ICAL/MS | RI 1201235 | 11/7/12 1115 |
| ICV/CCV/LCS | IV 1200532 | NA |

Reviewed By/Date: 11/8/12

see book # 1153 for std traceability information

Soil LCS True Value = NA mg/Kg
Standard #

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Soil LCS Spiking Concentration: 1.0 µg/ml

A

ME-HgCVAA-Prep0910

Page #:

000000015

**Lionville Laboratory**

# TCLP EXTRACTION RECORD
## (NON-VOLATILES)

LOGBOOK # 1168

| | | |
|---|---|---|
| Start Date: 11-2-~~2~~ 12 RH<br>Start Time: 13:03<br>Analyst: RH<br>SOP: SPI-1311.1 | End Date: 11-3-12<br>End Time: 7:00<br>Analyst: RH<br>Method: 1311.1 | Tumbler Speed: 31 RPM<br>Leachate Batch #: L211012<br>Leachate Page: 1 of 1<br>Room Temp. (°C):<br>Start 21 /Finish 21<br>**Room Temp. Acceptance Criteria: 23°C ± 2°** |

| | |
|---|---|
| LvL #: 1210082-01<br>Client ID#: JLR4V3<br>pH After 5 Min: 4.59<br>pH After Acid/Heat: 1.93<br>Extraction Fluid/pH: #1 4.91<br>Sample Wt.(g): 25<br>Extract Fluid Vol.(mL): 500<br>pH After Extraction: 6.73 | Initial Filtration Data and Comments:<br>Solids: _____% / NA<br><br>Initial Filtrate Added: _____ |
| LvL #: L211012<br>Client ID#:<br>pH After 5 Min: N/A<br>pH After Acid/Heat:<br>Extraction Fluid/pH:<br>Sample Wt.(g): N/A<br>Extract Fluid Vol.(mL):<br>pH After Extraction: | Initial Filtration Data and Comments:<br>Solids: _____% / NA<br><br>Initial Filtrate Added: Blank |
| LvL #<br>Client ID#:<br>pH After 5 Min:<br>pH After Acid/Heat:<br>Extraction Fluid/pH:<br>Sample Wt.(g):<br>Extract Fluid Vol.(mL):<br>pH After Extraction: | Initial Filtration Data and Comments:<br>Solids: _____% / NA<br><br>Initial Filtrate Added: 11-3-12 |
| LvL #:<br>Client ID#:<br>pH After 5 Min:<br>pH After Acid/Heat:<br>Extraction Fluid/pH:<br>Sample Wt.(g):<br>Extract Fluid Vol.(mL):<br>pH After Extraction: | Initial Filtration Data and Comments:<br>Solids: _____% / NA<br>RH<br>Initial Filtrate Added: |

| Standard | ID | Prep Date | Expir Date | pH Acceptance Criteria |
|---|---|---|---|---|
| Fluid #1 | 1201342 | 10-24-12 | 4-24-13 | 4.93 ± 0.05 |
| Fluid # 2 | | | | 2.88 ± 0.05 |

SPI-1311.1-A-0310 Reviewed By/Date [signature] 11/8/12 Page #