1212406

# SAF-RC-211
# 100-IU-2 & 100-IU-6 Miscellaneous Restoration Sites Near 100-F – Soil In-Process
# FINAL DATA PACKAGE

**COMPLETE COPY OF DATA PACKAGE TO:**

Kathy Wendt H4-21 KW 2/21/12
INITIAL/DATE

**COMMENTS:**

**SDG J01412 SAF-RC-211**

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

**Sample Location: 600-299 Area (1)(4)(5)(6)**

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

Job Number: 280-25308-1

SDG Number: J01412

Job Description: SAF# RC-211

RECEIVED
FEB 2012

For:
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

Attention: Joan H Kessner

Approved for release.
Kae E Yoder
Project Manager II
2/16/2012 1:02 PM

Kae E Yoder
Project Manager II
kae.yoder@testamericainc.com
02/16/2012

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**
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Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

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# CASE NARRATIVE

## Client: Washington Closure Hanford

## Project: WASHINGTON CLOSURE HANFORD

## Report Number: 280-25308-1

**SDG #: J01412**
**SAF#: RC-211**

**Date SDG Closed: February 3, 2012**
**Data Deliverable: 15 Day / Summary**

| CLIENT ID | LAB ID | ANALYSES REQUESTED | ANALYSES PERFORMED |
|---|---|---|---|
| J1N3K8 | 280-25308-1 | 6010/7471/1311-6010-7470 | 6010B/7471A/1311-6010B-7470A |
| J1N3K9 | 280-25308-2 | 6010/7471/1311-6010-7470 | 6010B/7471A/1311-6010B-7470A |
| J1N3L0 | 280-25308-3 | 6010/7471/1311-6010-7470 | 6010B/7471A/1311-6010B-7470A |

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

**RECEIPT**
The samples were received on 2/3/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 4.6 C.

**TOTAL METALS - SW846 6010B/7471A**
Serial dilution of a digestate in batch 280-106957 indicates that physical and chemical interferences are present for Cobalt, Magnesium and Zinc. Results have been flagged with an "X".

Low levels of Barium, Calcium, Copper, Magnesium and Iron are present in the method blank associated with batch 280-106332. Because the concentrations in the method blank are not present at levels greater than half the reporting limit or the associated sample amounts are twenty times greater than the method blank concentration, corrective action is deemed unnecessary.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1N3K8; therefore, control limits are not applicable.

Mercury was recovered outside the control limits in the Matrix Spike performed on sample J1N3K8, and the associated sample result has been flagged "N". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

**TCLP METALS - SW846 1311/6010B/7470A**
Low levels of Barium and Selenium are present in the method blanks associated with batches 280-106643 and 280-106644. Because the concentrations in the method blanks are not present at levels greater than half the reporting limit, corrective action is deemed unnecessary.

The duplicate analysis of sample J1N3L0 exhibited RPD data outside the control limits for Chromium, and the duplicate analysis of sample J1N3K9 exhibited RPD data outside the control limits for Selenium, and the associated sample results have been flagged "M". There is no indication that the analytical systems were operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

Mercury was recovered outside the control limits in the Matrix Spike performed on sample J1N3K9, and the associated sample result has been flagged "N". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

# DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

| Lab Section | Qualifier | Description |
|---|---|---|
| Metals | | |
| | U | Analyzed for but not detected. |
| | B | Estimated result. Result is less than the RL, but greater than MDL |
| | 4 | MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable. |
| | N | Recovery exceeds upper or lower control limits |
| | M | Sample duplicate precision not met. |
| | X | Serial dilution in the analytical batch indicates that physical and chemical interferences are present. |
| | C | The analyte was detected in both the sample and the assoicated QC blank, and the sample concentration was </= 5X the blank concentration. |

# METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

| Description | Lab Location | Method | Preparation Method |
|---|---|---|---|
| **Matrix: Solid** | | | |
| Metals (ICP) | TAL DEN | SW846 6010B | |
| Preparation, Metals | TAL DEN | | SW846 3050B |
| TCLP Metals (ICP) | TAL DEN | SW846 6010B | |
| TCLP Extraction | TAL DEN | | SW846 1311 |
| Preparation, Total Metals | TAL DEN | | SW846 3010A |
| TCLP Mercury | TAL DEN | SW846 7470A | |
| TCLP Extraction | TAL DEN | | SW846 1311 |
| Preparation, Mercury | TAL DEN | | SW846 7470A |
| Mercury (CVAA) | TAL DEN | SW846 7471A | |
| Preparation, Mercury | TAL DEN | | SW846 7471A |
| ASTM D-2216 | TAL DEN | ASTM D-2216 | |

**Lab References:**

TAL DEN = TestAmerica Denver

**Method References:**

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

| Method | Analyst | Analyst ID |
|---|---|---|
| SW846 6010B | Bowen, Heidi E | HEB |
| SW846 6010B | Harre, John K | JKH |
| SW846 7470A | Rawlings, Brendon L | BLR |
| SW846 7471A | Rawlings, Brendon L | BLR |
| ASTM D-2216 | Berry III, Paul B | PBB |

## SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time Sampled | Date/Time Received |
|---|---|---|---|---|
| 280-25308-1 | J1N3K8 | Solid | 02/02/2012 0905 | 02/03/2012 1130 |
| 280-25308-2 | J1N3K9 | Solid | 02/02/2012 0935 | 02/03/2012 1130 |
| 280-25308-3 | J1N3L0 | Solid | 02/02/2012 1010 | 02/03/2012 1130 |

# SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Client Sample ID:** **J1N3K8**

Lab Sample ID: 280-25308-1
Client Matrix: Solid
% Moisture: 4.9

Date Sampled: 02/02/2012 0905
Date Received: 02/03/2012 1130

**6010B Metals (ICP)**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 6010B | Analysis Batch: | 280-107127 | Instrument ID: | MT_026 |
| Prep Method: | 3050B | Prep Batch: | 280-106332 | Lab File ID: | 26B020912.asc |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.06 g |
| Analysis Date: | 02/09/2012 2238 | | | Final Weight/Volume: | 100 mL |
| Prep Date: | 02/09/2012 1400 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Aluminum | | 7150 | | 1.5 | 5.0 |
| Antimony | | 0.38 | U | 0.38 | 0.59 |
| Arsenic | | 2.0 | | 0.65 | 0.99 |
| Barium | | 54.5 | | 0.075 | 0.50 |
| Beryllium | | 0.13 | B | 0.033 | 0.20 |
| Boron | | 0.97 | U | 0.97 | 2.0 |
| Cadmium | | 0.14 | B | 0.041 | 0.20 |
| Calcium | | 4320 | | 14.0 | 49.6 |
| Chromium | | 10.6 | | 0.058 | 0.20 |
| Cobalt | | 6.5 | X | 0.099 | 0.99 |
| Copper | | 24.6 | | 0.22 | 0.99 |
| Iron | | 15700 | | 3.8 | 5.0 |
| Lead | | 3.3 | | 0.27 | 0.50 |
| Magnesium | | 3870 | X | 3.7 | 19.8 |
| Manganese | | 221 | | 0.099 | 0.99 |
| Molybdenum | | 0.26 | U | 0.26 | 2.0 |
| Nickel | | 11.4 | | 0.12 | 4.0 |
| Potassium | | 1100 | | 40.7 | 297 |
| Selenium | | 0.85 | U | 0.85 | 0.99 |
| Silicon | | 347 | | 5.6 | 9.9 |
| Silver | | 0.16 | U | 0.16 | 0.20 |
| Sodium | | 218 | | 58.5 | 119 |
| Vanadium | | 38.8 | | 0.093 | 2.0 |
| Zinc | | 39.8 | X | 0.39 | 0.99 |

**6010B TCLP Metals (ICP)-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 6010B | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Prep Method: | 3010A | Prep Batch: | 280-106643 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1803 | | | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Arsenic | | 0.022 | U | 0.022 | 0.50 |
| Barium | | 0.087 | B | 0.0020 | 1.0 |
| Cadmium | | 0.0020 | U | 0.0020 | 0.10 |
| Chromium | | 0.0030 | U | 0.0030 | 0.50 |
| Lead | | 0.013 | U | 0.013 | 0.50 |
| Selenium | | 0.024 | U | 0.024 | 0.10 |
| Silver | | 0.0040 | U | 0.0040 | 0.50 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Client Sample ID:** **J1N3K8**

Lab Sample ID: 280-25308-1
Client Matrix: Solid

Date Sampled: 02/02/2012 0905
Date Received: 02/03/2012 1130

**7470A TCLP Mercury-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 7470A | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Prep Method: | 7470A | Prep Batch: | 280-106585 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2002 | | | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.000030 | U | 0.000030 | 0.0020 |

**7471A Mercury (CVAA)**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 7471A | Analysis Batch: | 280-107061 | Instrument ID: | MT_033 |
| Prep Method: | 7471A | Prep Batch: | 280-106605 | Lab File ID: | 120209aa2.txt |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 0.60 g |
| Analysis Date: | 02/09/2012 2121 | | | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 1330 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.0058 | U N | 0.0058 | 0.018 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Client Sample ID:** **J1N3K9**

Lab Sample ID: 280-25308-2
Client Matrix: Solid
% Moisture: 2.7

Date Sampled: 02/02/2012 0935
Date Received: 02/03/2012 1130

**6010B Metals (ICP)**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 6010B | Analysis Batch: | 280-107127 | Instrument ID: | MT_026 |
| Prep Method: | 3050B | Prep Batch: | 280-106332 | Lab File ID: | 26B020912.asc |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.00 g |
| Analysis Date: | 02/09/2012 2248 | | | Final Weight/Volume: | 100 mL |
| Prep Date: | 02/09/2012 1400 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Aluminum | | 7940 | | 1.6 | 5.1 |
| Antimony | | 0.39 | U | 0.39 | 0.62 |
| Arsenic | | 2.5 | | 0.68 | 1.0 |
| Barium | | 79.5 | | 0.078 | 0.51 |
| Beryllium | | 0.15 | B | 0.034 | 0.21 |
| Boron | | 1.6 | B | 1.0 | 2.1 |
| Cadmium | | 2.6 | | 0.042 | 0.21 |
| Calcium | | 12500 | | 14.5 | 51.4 |
| Chromium | | 12.8 | | 0.060 | 0.21 |
| Cobalt | | 7.1 | X | 0.10 | 1.0 |
| Copper | | 17.7 | | 0.22 | 1.0 |
| Iron | | 17900 | | 3.9 | 5.1 |
| Lead | | 4.6 | | 0.28 | 0.51 |
| Magnesium | | 5250 | X | 3.8 | 20.6 |
| Manganese | | 312 | | 0.10 | 1.0 |
| Molybdenum | | 0.37 | B | 0.27 | 2.1 |
| Nickel | | 13.7 | | 0.13 | 4.1 |
| Potassium | | 1220 | | 42.1 | 308 |
| Selenium | | 0.88 | U | 0.88 | 1.0 |
| Silicon | | 479 | | 5.8 | 10.3 |
| Silver | | 0.16 | U | 0.16 | 0.21 |
| Sodium | | 266 | | 60.6 | 123 |
| Vanadium | | 41.4 | | 0.097 | 2.1 |
| Zinc | | 378 | X | 0.41 | 1.0 |

**6010B TCLP Metals (ICP)-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 6010B | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Prep Method: | 3010A | Prep Batch: | 280-106644 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1829 | | | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Arsenic | | 0.031 | B | 0.022 | 0.50 |
| Barium | | 0.60 | B | 0.0020 | 1.0 |
| Cadmium | | 0.065 | B | 0.0020 | 0.10 |
| Chromium | | 0.0036 | B | 0.0030 | 0.50 |
| Lead | | 0.013 | U | 0.013 | 0.50 |
| Selenium | | 0.029 | B M C | 0.024 | 0.10 |
| Silver | | 0.0040 | U | 0.0040 | 0.50 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Client Sample ID:** **J1N3K9**

Lab Sample ID: 280-25308-2
Client Matrix: Solid

Date Sampled: 02/02/2012 0935
Date Received: 02/03/2012 1130

**7470A TCLP Mercury-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 7470A | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Prep Method: | 7470A | Prep Batch: | 280-106586 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2020 | | | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.000030 | U N | 0.000030 | 0.0020 |

**7471A Mercury (CVAA)**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 7471A | Analysis Batch: | 280-107061 | Instrument ID: | MT_033 |
| Prep Method: | 7471A | Prep Batch: | 280-106605 | Lab File ID: | 120209aa2.txt |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 0.62 g |
| Analysis Date: | 02/09/2012 2128 | | | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 1330 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.0055 | U | 0.0055 | 0.017 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Client Sample ID:** **J1N3L0**

Lab Sample ID: 280-25308-3
Client Matrix: Solid
% Moisture: 3.0

Date Sampled: 02/02/2012 1010
Date Received: 02/03/2012 1130

**6010B Metals (ICP)**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 6010B | Analysis Batch: | 280-107127 | Instrument ID: | MT_026 |
| Prep Method: | 3050B | Prep Batch: | 280-106332 | Lab File ID: | 26B020912.asc |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.09 g |
| Analysis Date: | 02/09/2012 2251 | | | Final Weight/Volume: | 100 mL |
| Prep Date: | 02/09/2012 1400 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Aluminum | | 5740 | | 1.5 | 4.7 |
| Antimony | | 0.36 | U | 0.36 | 0.57 |
| Arsenic | | 1.7 | | 0.62 | 0.95 |
| Barium | | 74.4 | | 0.072 | 0.47 |
| Beryllium | | 0.031 | U | 0.031 | 0.19 |
| Boron | | 0.93 | U | 0.93 | 1.9 |
| Cadmium | | 0.19 | | 0.039 | 0.19 |
| Calcium | | 4070 | | 13.3 | 47.3 |
| Chromium | | 7.0 | | 0.055 | 0.19 |
| Cobalt | | 8.3 | X | 0.095 | 0.95 |
| Copper | | 15.0 | | 0.21 | 0.95 |
| Iron | | 22600 | | 3.6 | 4.7 |
| Lead | | 3.3 | | 0.26 | 0.47 |
| Magnesium | | 4620 | X | 3.5 | 18.9 |
| Manganese | | 309 | | 0.095 | 0.95 |
| Molybdenum | | 0.25 | U | 0.25 | 1.9 |
| Nickel | | 12.2 | | 0.12 | 3.8 |
| Potassium | | 1070 | | 38.8 | 284 |
| Selenium | | 0.81 | U | 0.81 | 0.95 |
| Silicon | | 372 | | 5.4 | 9.5 |
| Silver | | 0.15 | U | 0.15 | 0.19 |
| Sodium | | 198 | | 55.8 | 113 |
| Vanadium | | 59.9 | | 0.089 | 1.9 |
| Zinc | | 48.3 | X | 0.38 | 0.95 |

**6010B TCLP Metals (ICP)-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 6010B | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Prep Method: | 3010A | Prep Batch: | 280-106643 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1805 | | | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Arsenic | | 0.022 | U | 0.022 | 0.50 |
| Barium | | 0.26 | B | 0.0020 | 1.0 |
| Cadmium | | 0.0020 | U | 0.0020 | 0.10 |
| Chromium | | 0.0039 | B M | 0.0030 | 0.50 |
| Lead | | 0.013 | U | 0.013 | 0.50 |
| Selenium | | 0.024 | U | 0.024 | 0.10 |
| Silver | | 0.0040 | U | 0.0040 | 0.50 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Client Sample ID:** **J1N3L0**

Lab Sample ID: 280-25308-3
Client Matrix: Solid

Date Sampled: 02/02/2012 1010
Date Received: 02/03/2012 1130

**7470A TCLP Mercury-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 7470A | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Prep Method: | 7470A | Prep Batch: | 280-106585 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2009 | | | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.000030 | U | 0.000030 | 0.0020 |

**7471A Mercury (CVAA)**

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | 7471A | Analysis Batch: | 280-107061 | Instrument ID: | MT_033 |
| Prep Method: | 7471A | Prep Batch: | 280-106605 | Lab File ID: | 120209aa2.txt |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 0.68 g |
| Analysis Date: | 02/09/2012 2130 | | | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 1330 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.0050 | U | 0.0050 | 0.015 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**General Chemistry**

**Client Sample ID:** **J1N3K8**

Lab Sample ID: 280-25308-1
Client Matrix: Solid

Date Sampled: 02/02/2012 0905
Date Received: 02/03/2012 1130

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 4.9 | | % | 0.10 | 0.10 | 1.0 | D-2216 |

Analysis Batch: 280-106410 Analysis Date: 02/06/2012 1416 DryWt Corrected: N

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**General Chemistry**

**Client Sample ID:** **J1N3K9**

Lab Sample ID: 280-25308-2
Client Matrix: Solid

Date Sampled: 02/02/2012 0935
Date Received: 02/03/2012 1130

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 2.7 | | % | 0.10 | 0.10 | 1.0 | D-2216 |

Analysis Batch: 280-106410 Analysis Date: 02/06/2012 1416 DryWt Corrected: N

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**General Chemistry**

**Client Sample ID:** **J1N3L0**

Lab Sample ID: 280-25308-3
Client Matrix: Solid

Date Sampled: 02/02/2012 1010
Date Received: 02/03/2012 1130

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 3.0 | | % | 0.10 | 0.10 | 1.0 | D-2216 |

Analysis Batch: 280-106410 Analysis Date: 02/06/2012 1416 DryWt Corrected: N

# QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **Metals** | | | | | |
| **Prep Batch: 280-106234** | | | | | |
| LCS 280-106234/2-B | Lab Control Sample | P | Solid | 1311 | |
| LCS 280-106234/2-C | Lab Control Sample | P | Solid | 1311 | |
| LB 280-106234/1-B | TCLP SPLPE Leachate Blank | P | Solid | 1311 | |
| LB 280-106234/1-C | TCLP SPLPE Leachate Blank | P | Solid | 1311 | |
| 280-25308-1 | J1N3K8 | P | Solid | 1311 | |
| 280-25308-3 | J1N3L0 | P | Solid | 1311 | |
| 280-25308-3DU | Duplicate | P | Solid | 1311 | |
| 280-25308-3MS | Matrix Spike | P | Solid | 1311 | |
| **Prep Batch: 280-106235** | | | | | |
| LCS 280-106235/2-B | Lab Control Sample | P | Solid | 1311 | |
| LCS 280-106235/2-C | Lab Control Sample | P | Solid | 1311 | |
| LB2 280-106235/1-B | TCLP SPLPW Leachate Blank | P | Solid | 1311 | |
| LB2 280-106235/1-C | TCLP SPLPW Leachate Blank | P | Solid | 1311 | |
| 280-25308-2 | J1N3K9 | P | Solid | 1311 | |
| 280-25308-2DU | Duplicate | P | Solid | 1311 | |
| 280-25308-2MS | Matrix Spike | P | Solid | 1311 | |
| **Prep Batch: 280-106332** | | | | | |
| LCS 280-106332/2-A | Lab Control Sample | T | Solid | 3050B | |
| MB 280-106332/1-A | Method Blank | T | Solid | 3050B | |
| 280-25308-1 | J1N3K8 | T | Solid | 3050B | |
| 280-25308-1DU | Duplicate | T | Solid | 3050B | |
| 280-25308-1MS | Matrix Spike | T | Solid | 3050B | |
| 280-25308-2 | J1N3K9 | T | Solid | 3050B | |
| 280-25308-3 | J1N3L0 | T | Solid | 3050B | |
| **Prep Batch: 280-106585** | | | | | |
| LCS 280-106234/2-B | Lab Control Sample | P | Solid | 7470A | 280-106234 |
| LB 280-106234/1-B | TCLP SPLPE Leachate Blank | P | Solid | 7470A | 280-106234 |
| 280-25308-1 | J1N3K8 | P | Solid | 7470A | 280-106234 |
| 280-25308-3 | J1N3L0 | P | Solid | 7470A | 280-106234 |
| 280-25308-3DU | Duplicate | P | Solid | 7470A | 280-106234 |
| 280-25308-3MS | Matrix Spike | P | Solid | 7470A | 280-106234 |
| **Prep Batch: 280-106586** | | | | | |
| LCS 280-106235/2-B | Lab Control Sample | P | Solid | 7470A | 280-106235 |
| LB2 280-106235/1-B | TCLP SPLPW Leachate Blank | P | Solid | 7470A | 280-106235 |
| 280-25308-2 | J1N3K9 | P | Solid | 7470A | 280-106235 |
| 280-25308-2DU | Duplicate | P | Solid | 7470A | 280-106235 |
| 280-25308-2MS | Matrix Spike | P | Solid | 7470A | 280-106235 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **Metals** | | | | | |
| **Prep Batch: 280-106605** | | | | | |
| LCS 280-106605/2-A | Lab Control Sample | T | Solid | 7471A | |
| MB 280-106605/1-A | Method Blank | T | Solid | 7471A | |
| 280-25308-1 | J1N3K8 | T | Solid | 7471A | |
| 280-25308-1DU | Duplicate | T | Solid | 7471A | |
| 280-25308-1MS | Matrix Spike | T | Solid | 7471A | |
| 280-25308-2 | J1N3K9 | T | Solid | 7471A | |
| 280-25308-3 | J1N3L0 | T | Solid | 7471A | |
| **Prep Batch: 280-106643** | | | | | |
| LCS 280-106234/2-C | Lab Control Sample | P | Solid | 3010A | 280-106234 |
| LB 280-106234/1-C | TCLP SPLPE Leachate Blank | P | Solid | 3010A | 280-106234 |
| 280-25308-1 | J1N3K8 | P | Solid | 3010A | 280-106234 |
| 280-25308-3 | J1N3L0 | P | Solid | 3010A | 280-106234 |
| 280-25308-3DU | Duplicate | P | Solid | 3010A | 280-106234 |
| 280-25308-3MS | Matrix Spike | P | Solid | 3010A | 280-106234 |
| **Prep Batch: 280-106644** | | | | | |
| LCS 280-106235/2-C | Lab Control Sample | P | Solid | 3010A | 280-106235 |
| LB2 280-106235/1-C | TCLP SPLPW Leachate Blank | P | Solid | 3010A | 280-106235 |
| 280-25308-2 | J1N3K9 | P | Solid | 3010A | 280-106235 |
| 280-25308-2DU | Duplicate | P | Solid | 3010A | 280-106235 |
| 280-25308-2MS | Matrix Spike | P | Solid | 3010A | 280-106235 |
| **Analysis Batch:280-106859** | | | | | |
| LCS 280-106234/2-B | Lab Control Sample | P | Solid | 7470A | 280-106585 |
| LB 280-106234/1-B | TCLP SPLPE Leachate Blank | P | Solid | 7470A | 280-106585 |
| LCS 280-106235/2-B | Lab Control Sample | P | Solid | 7470A | 280-106586 |
| LB2 280-106235/1-B | TCLP SPLPW Leachate Blank | P | Solid | 7470A | 280-106586 |
| 280-25308-1 | J1N3K8 | P | Solid | 7470A | 280-106585 |
| 280-25308-2 | J1N3K9 | P | Solid | 7470A | 280-106586 |
| 280-25308-2DU | Duplicate | P | Solid | 7470A | 280-106586 |
| 280-25308-2MS | Matrix Spike | P | Solid | 7470A | 280-106586 |
| 280-25308-3 | J1N3L0 | P | Solid | 7470A | 280-106585 |
| 280-25308-3DU | Duplicate | P | Solid | 7470A | 280-106585 |
| 280-25308-3MS | Matrix Spike | P | Solid | 7470A | 280-106585 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **Metals** | | | | | |
| **Analysis Batch:280-107044** | | | | | |
| LCS 280-106234/2-C | Lab Control Sample | P | Solid | 6010B | 280-106643 |
| LB 280-106234/1-C | TCLP SPLPE Leachate Blank | P | Solid | 6010B | 280-106643 |
| LCS 280-106235/2-C | Lab Control Sample | P | Solid | 6010B | 280-106644 |
| LB2 280-106235/1-C | TCLP SPLPW Leachate Blank | P | Solid | 6010B | 280-106644 |
| 280-25308-1 | J1N3K8 | P | Solid | 6010B | 280-106643 |
| 280-25308-2 | J1N3K9 | P | Solid | 6010B | 280-106644 |
| 280-25308-2DU | Duplicate | P | Solid | 6010B | 280-106644 |
| 280-25308-2MS | Matrix Spike | P | Solid | 6010B | 280-106644 |
| 280-25308-3 | J1N3L0 | P | Solid | 6010B | 280-106643 |
| 280-25308-3DU | Duplicate | P | Solid | 6010B | 280-106643 |
| 280-25308-3MS | Matrix Spike | P | Solid | 6010B | 280-106643 |
| **Analysis Batch:280-107061** | | | | | |
| LCS 280-106605/2-A | Lab Control Sample | T | Solid | 7471A | 280-106605 |
| MB 280-106605/1-A | Method Blank | T | Solid | 7471A | 280-106605 |
| 280-25308-1 | J1N3K8 | T | Solid | 7471A | 280-106605 |
| 280-25308-1DU | Duplicate | T | Solid | 7471A | 280-106605 |
| 280-25308-1MS | Matrix Spike | T | Solid | 7471A | 280-106605 |
| 280-25308-2 | J1N3K9 | T | Solid | 7471A | 280-106605 |
| 280-25308-3 | J1N3L0 | T | Solid | 7471A | 280-106605 |
| **Analysis Batch:280-107127** | | | | | |
| LCS 280-106332/2-A | Lab Control Sample | T | Solid | 6010B | 280-106332 |
| MB 280-106332/1-A | Method Blank | T | Solid | 6010B | 280-106332 |
| 280-25308-1 | J1N3K8 | T | Solid | 6010B | 280-106332 |
| 280-25308-1DU | Duplicate | T | Solid | 6010B | 280-106332 |
| 280-25308-1MS | Matrix Spike | T | Solid | 6010B | 280-106332 |
| 280-25308-2 | J1N3K9 | T | Solid | 6010B | 280-106332 |
| 280-25308-3 | J1N3L0 | T | Solid | 6010B | 280-106332 |

**Report Basis**
P = TCLP
T = Total

**General Chemistry**

| | | | | |
|---|---|---|---|---|
| **Analysis Batch:280-106410** | | | | |
| 280-25308-1 | J1N3K8 | T | Solid | D-2216 |
| 280-25308-1DU | Duplicate | T | Solid | D-2216 |
| 280-25308-2 | J1N3K9 | T | Solid | D-2216 |
| 280-25308-3 | J1N3L0 | T | Solid | D-2216 |

**Report Basis**
T = Total

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Method Blank - Batch: 280-106332**

**Method: 6010B**
**Preparation: 3050B**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | MB 280-106332/1-A | Analysis Batch: | 280-107127 | Instrument ID: | MT_026 |
| Client Matrix: | Solid | Prep Batch: | 280-106332 | Lab File ID: | 26B020912.asc |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 1 g |
| Analysis Date: | 02/09/2012 2234 | Units: | mg/Kg | Final Weight/Volume: | 100 mL |
| Prep Date: | 02/09/2012 1400 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Aluminum | 1.6 | U | 1.6 | 5.0 |
| Antimony | 0.38 | U | 0.38 | 0.60 |
| Arsenic | 0.66 | U | 0.66 | 1.0 |
| Barium | 0.129 | B | 0.076 | 0.50 |
| Beryllium | 0.033 | U | 0.033 | 0.20 |
| Boron | 0.98 | U | 0.98 | 2.0 |
| Cadmium | 0.041 | U | 0.041 | 0.20 |
| Calcium | 20.92 | B | 14.1 | 50.0 |
| Chromium | 0.058 | U | 0.058 | 0.20 |
| Cobalt | 0.10 | U | 0.10 | 1.0 |
| Copper | 0.241 | B | 0.22 | 1.0 |
| Iron | 4.74 | B | 3.8 | 5.0 |
| Lead | 0.27 | U | 0.27 | 0.50 |
| Magnesium | 6.65 | B | 3.7 | 20.0 |
| Manganese | 0.10 | U | 0.10 | 1.0 |
| Molybdenum | 0.26 | U | 0.26 | 2.0 |
| Nickel | 0.12 | U | 0.12 | 4.0 |
| Potassium | 41.0 | U | 41.0 | 300 |
| Selenium | 0.86 | U | 0.86 | 1.0 |
| Silicon | 5.7 | U | 5.7 | 10.0 |
| Silver | 0.16 | U | 0.16 | 0.20 |
| Sodium | 59.0 | U | 59.0 | 120 |
| Vanadium | 0.094 | U | 0.094 | 2.0 |
| Zinc | 0.40 | U | 0.40 | 1.0 |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Lab Control Sample - Batch: 280-106332**

**Method: 6010B**
**Preparation: 3050B**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 280-106332/2-A | Analysis Batch: | 280-107127 | Instrument ID: | MT_026 |
| Client Matrix: | Solid | Prep Batch: | 280-106332 | Lab File ID: | 26B020912.asc |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 1 g |
| Analysis Date: | 02/09/2012 2236 | Units: | mg/Kg | Final Weight/Volume: | 100 mL |
| Prep Date: | 02/09/2012 1400 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Aluminum | 200 | 196.3 | 98 | 82 - 116 | |
| Antimony | 50.0 | 49.36 | 99 | 82 - 110 | |
| Arsenic | 100 | 100.2 | 100 | 85 - 110 | |
| Barium | 200 | 199.1 | 100 | 87 - 112 | |
| Beryllium | 5.00 | 4.87 | 97 | 84 - 114 | |
| Boron | 100 | 99.87 | 100 | 81 - 110 | |
| Cadmium | 10.0 | 10.44 | 104 | 87 - 110 | |
| Calcium | 5000 | 4949 | 99 | 82 - 114 | |
| Chromium | 20.0 | 19.83 | 99 | 84 - 114 | |
| Cobalt | 50.0 | 49.24 | 98 | 87 - 110 | |
| Copper | 25.0 | 27.06 | 108 | 88 - 110 | |
| Iron | 100 | 100.2 | 100 | 87 - 120 | |
| Lead | 50.0 | 50.89 | 102 | 86 - 110 | |
| Magnesium | 5000 | 4998 | 100 | 90 - 110 | |
| Manganese | 50.0 | 49.92 | 100 | 88 - 110 | |
| Molybdenum | 100 | 100.0 | 100 | 86 - 110 | |
| Nickel | 50.0 | 49.64 | 99 | 87 - 110 | |
| Potassium | 5000 | 4991 | 100 | 89 - 110 | |
| Selenium | 200 | 197.9 | 99 | 83 - 110 | |
| Silicon | 1000 | 214.0 | 21 | 10 - 70 | |
| Silver | 5.00 | 5.57 | 111 | 87 - 114 | |
| Sodium | 5000 | 5127 | 103 | 90 - 112 | |
| Vanadium | 50.0 | 51.20 | 102 | 88 - 110 | |
| Zinc | 50.0 | 49.79 | 100 | 76 - 114 | |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Matrix Spike - Batch: 280-106332**

**Method: 6010B**
**Preparation: 3050B**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-1 | Analysis Batch: | 280-107127 | Instrument ID: | MT_026 |
| Client Matrix: | Solid | Prep Batch: | 280-106332 | Lab File ID: | 26B020912.asc |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 1.04 g |
| Analysis Date: | 02/09/2012 2246 | Units: | mg/Kg | Final Weight/Volume: | 100 mL |
| Prep Date: | 02/09/2012 1400 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Sample Result/Qual | | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|---|---|
| Aluminum | 7150 | | 202 | 9194 | 1013 | 50 - 200 | 4 |
| Antimony | 0.38 | U | 50.5 | 30.32 | 60 | 20 - 200 | |
| Arsenic | 2.0 | | 101 | 97.23 | 94 | 76 - 111 | |
| Barium | 54.5 | | 202 | 251.5 | 97 | 52 - 159 | |
| Beryllium | 0.13 | B | 5.05 | 4.73 | 91 | 72 - 105 | |
| Boron | 0.97 | U | 101 | 93.59 | 93 | 75 - 107 | |
| Cadmium | 0.14 | B | 10.1 | 10.04 | 98 | 40 - 130 | |
| Calcium | 4320 | | 5050 | 10220 | 117 | 43 - 165 | |
| Chromium | 10.6 | | 20.2 | 32.47 | 108 | 70 - 200 | |
| Cobalt | 6.5 | | 50.5 | 52.16 | 90 | 72 - 106 | |
| Copper | 24.6 | | 25.3 | 50.89 | 104 | 37 - 187 | |
| Iron | 15700 | | 101 | 17540 | 1827 | 70 - 200 | 4 |
| Lead | 3.3 | | 50.5 | 50.25 | 93 | 70 - 200 | |
| Magnesium | 3870 | | 5050 | 9132 | 104 | 64 - 145 | |
| Manganese | 221 | | 50.5 | 292.8 | 142 | 40 - 200 | 4 |
| Molybdenum | 0.26 | U | 101 | 92.25 | 91 | 75 - 103 | |
| Nickel | 11.4 | | 50.5 | 57.36 | 91 | 61 - 126 | |
| Potassium | 1100 | | 5050 | 6120 | 99 | 56 - 172 | |
| Selenium | 0.85 | U | 202 | 187.7 | 93 | 76 - 104 | |
| Silicon | 347 | | 1010 | 704.2 | 35 | 20 - 200 | |
| Silver | 0.16 | U | 5.05 | 5.34 | 106 | 75 - 141 | |
| Sodium | 218 | | 5050 | 5378 | 102 | 78 - 111 | |
| Vanadium | 38.8 | | 50.5 | 94.38 | 110 | 50 - 169 | |
| Zinc | 39.8 | | 50.5 | 90.33 | 100 | 70 - 200 | |

## Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Duplicate - Batch: 280-106332**

**Method: 6010B**
**Preparation: 3050B**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-1 | Analysis Batch: | 280-107127 | Instrument ID: | MT_026 |
| Client Matrix: | Solid | Prep Batch: | 280-106332 | Lab File ID: | 26B020912.asc |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 1.08 g |
| Analysis Date: | 02/09/2012 2243 | Units: | mg/Kg | Final Weight/Volume: | 100 mL |
| Prep Date: | 02/09/2012 1400 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Sample Result/Qual | | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|---|
| Aluminum | 7150 | | 7186 | 0.5 | 40 | |
| Antimony | 0.38 | U | 0.37 | NC | 40 | U |
| Arsenic | 2.0 | | 2.37 | 15 | 30 | |
| Barium | 54.5 | | 56.58 | 4 | 30 | |
| Beryllium | 0.13 | B | 0.126 | 0.3 | 30 | B |
| Boron | 0.97 | U | 0.95 | NC | 30 | U |
| Cadmium | 0.14 | B | 0.139 | 3 | 30 | B |
| Calcium | 4320 | | 4257 | 1 | 30 | |
| Chromium | 10.6 | | 10.69 | 0.9 | 40 | |
| Cobalt | 6.5 | | 6.27 | 3 | 30 | |
| Copper | 24.6 | | 25.38 | 3 | 30 | |
| Iron | 15700 | | 16600 | 6 | 40 | |
| Lead | 3.3 | | 3.37 | 3 | 40 | |
| Magnesium | 3870 | | 4002 | 3 | 30 | |
| Manganese | 221 | | 226.8 | 3 | 40 | |
| Molybdenum | 0.26 | U | 0.25 | NC | 30 | U |
| Nickel | 11.4 | | 11.63 | 2 | 30 | |
| Potassium | 1100 | | 1144 | 4 | 40 | |
| Selenium | 0.85 | U | 0.84 | NC | 30 | U |
| Silicon | 347 | | 356.1 | 2 | 40 | |
| Silver | 0.16 | U | 0.16 | NC | 30 | U |
| Sodium | 218 | | 208.4 | 4 | 30 | |
| Vanadium | 38.8 | | 41.30 | 6 | 30 | |
| Zinc | 39.8 | | 41.09 | 3 | 40 | |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**TCLP SPLPE Leachate Blank - Batch: 280-106643**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LB 280-106234/1-C | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106643 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1758 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Arsenic | 0.022 | U | 0.022 | 0.50 |
| Barium | 0.00940 | B | 0.0020 | 1.0 |
| Cadmium | 0.0020 | U | 0.0020 | 0.10 |
| Chromium | 0.0030 | U | 0.0030 | 0.50 |
| Lead | 0.013 | U | 0.013 | 0.50 |
| Selenium | 0.0259 | B | 0.024 | 0.10 |
| Silver | 0.0040 | U | 0.0040 | 0.50 |

**Lab Control Sample - Batch: 280-106643**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 280-106234/2-C | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106643 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1801 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Arsenic | 4.00 | 3.88 | 97 | 80 - 120 | |
| Barium | 12.0 | 10.80 | 90 | 80 - 120 | |
| Cadmium | 1.10 | 1.05 | 96 | 80 - 120 | |
| Chromium | 5.20 | 4.79 | 92 | 80 - 120 | |
| Lead | 5.50 | 5.11 | 93 | 80 - 120 | |
| Selenium | 3.00 | 2.87 | 96 | 80 - 120 | |
| Silver | 1.05 | 0.976 | 93 | 80 - 120 | |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Matrix Spike - Batch: 280-106643**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-3 | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106643 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1812 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|---|---|
| Arsenic | 0.022 | U | 4.00 | 4.11 | 103 | 80 - 120 | |
| Barium | 0.26 | B | 12.0 | 11.52 | 94 | 80 - 120 | |
| Cadmium | 0.0020 | U | 1.10 | 1.11 | 101 | 80 - 120 | |
| Chromium | 0.0039 | B | 5.20 | 5.01 | 96 | 80 - 120 | |
| Lead | 0.013 | U | 5.50 | 5.33 | 97 | 80 - 120 | |
| Selenium | 0.024 | U | 3.00 | 3.01 | 100 | 80 - 120 | |
| Silver | 0.0040 | U | 1.05 | 1.02 | 97 | 80 - 120 | |

**Duplicate - Batch: 280-106643**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-3 | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106643 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1810 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|---|
| Arsenic | 0.022 | U | 0.022 | NC | 20 | U |
| Barium | 0.26 | B | 0.259 | 0.7 | 20 | B |
| Cadmium | 0.0020 | U | 0.0020 | NC | 20 | U |
| Chromium | 0.0039 | B | 0.00535 | 33 | 20 | B M |
| Lead | 0.013 | U | 0.013 | NC | 20 | U |
| Selenium | 0.024 | U | 0.024 | NC | 20 | U |
| Silver | 0.0040 | U | 0.0040 | NC | 20 | U |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**TCLP SPLPW Leachate Blank - Batch: 280-106644**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LB2 280-106235/1-C | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106644 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1824 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Arsenic | 0.022 | U | 0.022 | 0.50 |
| Barium | 0.0101 | B | 0.0020 | 1.0 |
| Cadmium | 0.0020 | U | 0.0020 | 0.10 |
| Chromium | 0.0030 | U | 0.0030 | 0.50 |
| Lead | 0.013 | U | 0.013 | 0.50 |
| Selenium | 0.0417 | B | 0.024 | 0.10 |
| Silver | 0.0040 | U | 0.0040 | 0.50 |

**Lab Control Sample - Batch: 280-106644**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 280-106235/2-C | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106644 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1826 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Arsenic | 4.00 | 3.97 | 99 | 80 - 120 | |
| Barium | 12.0 | 11.34 | 95 | 80 - 120 | |
| Cadmium | 1.10 | 1.09 | 99 | 80 - 120 | |
| Chromium | 5.20 | 5.06 | 97 | 80 - 120 | |
| Lead | 5.50 | 5.54 | 101 | 80 - 120 | |
| Selenium | 3.00 | 2.91 | 97 | 80 - 120 | |
| Silver | 1.05 | 1.00 | 95 | 80 - 120 | |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Matrix Spike - Batch: 280-106644**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-2 | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106644 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1836 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|---|---|
| Arsenic | 0.031 | B | 4.00 | 4.06 | 101 | 80 - 120 | |
| Barium | 0.60 | B | 12.0 | 11.96 | 95 | 80 - 120 | |
| Cadmium | 0.065 | B | 1.10 | 1.17 | 100 | 80 - 120 | |
| Chromium | 0.0036 | B | 5.20 | 5.01 | 96 | 80 - 120 | |
| Lead | 0.013 | U | 5.50 | 5.44 | 99 | 80 - 120 | |
| Selenium | 0.029 | B | 3.00 | 2.97 | 98 | 80 - 120 | |
| Silver | 0.0040 | U | 1.05 | 1.01 | 96 | 80 - 120 | |

**Duplicate - Batch: 280-106644**

**Method: 6010B**
**Preparation: 3010A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-2 | Analysis Batch: | 280-107044 | Instrument ID: | MT_025 |
| Client Matrix: | Solid | Prep Batch: | 280-106644 | Lab File ID: | 25A3020912.asc |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 10 mL |
| Analysis Date: | 02/09/2012 1833 | Units: | mg/L | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 0730 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|---|
| Arsenic | 0.031 | B | 0.0256 | 20 | 20 | B |
| Barium | 0.60 | B | 0.582 | 3 | 20 | B |
| Cadmium | 0.065 | B | 0.0617 | 5 | 20 | B |
| Chromium | 0.0036 | B | 0.00405 | 12 | 20 | B |
| Lead | 0.013 | U | 0.0224 | NC | 20 | B |
| Selenium | 0.029 | B | 0.0493 | 51 | 20 | B M |
| Silver | 0.0040 | U | 0.0040 | NC | 20 | U |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**TCLP SPLPE Leachate Blank - Batch: 280-106585**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LB 280-106234/1-B | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106585 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 1957 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.000030 | 0.0020 |

**Lab Control Sample - Batch: 280-106585**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 280-106234/2-B | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106585 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 1959 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Mercury | 0.00500 | 0.00577 | 115 | 90 - 116 | |

**Matrix Spike - Batch: 280-106585**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-3 | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106585 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2013 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.00500 | 0.00463 | 93 | 90 - 116 | |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Duplicate - Batch: 280-106585**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-3 | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106585 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106234 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2011 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.000030 | NC | 20 | U |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**TCLP SPLPW Leachate Blank - Batch: 280-106586**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LB2 280-106235/1-B | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106586 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2015 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.000030 | 0.0020 |

**Lab Control Sample - Batch: 280-106586**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 280-106235/2-B | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106586 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2018 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Mercury | 0.00500 | 0.00568 | 114 | 90 - 116 | |

**Matrix Spike - Batch: 280-106586**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-2 | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106586 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2025 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.00500 | 0.00443 | 89 | 90 - 116 | N |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Duplicate - Batch: 280-106586**

**Method: 7470A**
**Preparation: 7470A**
**TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-2 | Analysis Batch: | 280-106859 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106586 | Lab File ID: | 120208ac.txt |
| Dilution: | 1.0 | Leach Batch: | 280-106235 | Initial Weight/Volume: | 30 mL |
| Analysis Date: | 02/08/2012 2022 | Units: | mg/L | Final Weight/Volume: | 30 mL |
| Prep Date: | 02/08/2012 1230 | | | | |
| Leach Date: | 02/03/2012 1945 | | | | |

| Analyte | Sample Result/Qual | | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.000030 | NC | 20 | U |

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Method Blank - Batch: 280-106605**

**Method: 7471A**
**Preparation: 7471A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | MB 280-106605/1-A | Analysis Batch: | 280-107061 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106605 | Lab File ID: | 120209aa2.txt |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 0.6 g |
| Analysis Date: | 02/09/2012 2116 | Units: | mg/Kg | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 1330 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Mercury | 0.0055 | U | 0.0055 | 0.017 |

**Lab Control Sample - Batch: 280-106605**

**Method: 7471A**
**Preparation: 7471A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 280-106605/2-A | Analysis Batch: | 280-107061 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106605 | Lab File ID: | 120209aa2.txt |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 0.6 g |
| Analysis Date: | 02/09/2012 2118 | Units: | mg/Kg | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 1330 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Mercury | 0.417 | 0.455 | 109 | 87 - 111 | |

**Matrix Spike - Batch: 280-106605**

**Method: 7471A**
**Preparation: 7471A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-1 | Analysis Batch: | 280-107061 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106605 | Lab File ID: | 120209aa2.txt |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 0.67 g |
| Analysis Date: | 02/09/2012 2125 | Units: | mg/Kg | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 1330 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Sample Result/Qual | | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|---|---|
| Mercury | 0.0058 | U | 0.392 | 0.464 | 118 | 87 - 111 | N |

## Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Duplicate - Batch: 280-106605**

**Method: 7471A**
**Preparation: 7471A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-1 | Analysis Batch: | 280-107061 | Instrument ID: | MT_033 |
| Client Matrix: | Solid | Prep Batch: | 280-106605 | Lab File ID: | 120209aa2.txt |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | 0.61 g |
| Analysis Date: | 02/09/2012 2123 | Units: | mg/Kg | Final Weight/Volume: | 50 mL |
| Prep Date: | 02/09/2012 1330 | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Sample Result/Qual | | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|---|
| Mercury | 0.0058 | U | 0.0057 | NC | 20 | U |

## Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-25308-1
Sdg Number: J01412

**Duplicate - Batch: 280-106410**

**Method: D-2216**
**Preparation: N/A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 280-25308-1 | Analysis Batch: | 280-106410 | Instrument ID: | No Equipment |
| Client Matrix: | Solid | Prep Batch: | N/A | Lab File ID: | N/A |
| Dilution: | 1.0 | Leach Batch: | N/A | Initial Weight/Volume: | |
| Analysis Date: | 02/06/2012 1416 | Units: | % | Final Weight/Volume: | |
| Prep Date: | N/A | | | | |
| Leach Date: | N/A | | | | |

| Analyte | Sample Result/Qual | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|
| Percent Moisture | 4.9 | 4.8 | 2 | 20 | |

4.6 920 PP 2/3/12

| Washington Closure Hanford | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | RC-211-044 | Page 1 of 1 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Collector<br>Moore, BR | Company Contact<br>Joan Kessner | Telephone No.<br>(509) 375-4688 | Project Coordinator<br>KESSNER, JH |
| Price Code 8C | Data Turnaround<br>15 Days | | |
| Project Designation<br>100-IU-2 & 100-IU-6 Miscellaneous Restoration Sites Near 1 | Sampling Location<br>600-299 Area (1)(4)(5)(6) | | SAF No.<br>RC-211 |
| Ice Chest No. ~~NA~~ 2/2/12 WCH-W-067 | Field Logbook No.<br>EL-1651-02 | COA<br>0602998100 | Method of Shipment<br>Hand Deliver |
| Shipped To<br>TestAmerica Incorporated, Richland / Denver | Offsite Property No.<br>~~NA~~ 2/2/12 A110175 | | Bill of Lading/Air Bill No.<br>~~NA~~ 2/2/12 See OSPC |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

*None*

**Special Handling and/or Storage**

*Cool 4C*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation | Cool 4C | None | | | | | | | | | |
| Type of Container | G/P | G/P | | | | | | | | | |
| No. of Container(s) | 1 | 1 | | | | | | | | | |
| Volume | 60mL | 120mL | | | | | | | | | |
| SAMPLE ANALYSIS | See item (1) in Special Instructions. | See item (2) in Special Instructions. | | | | | | | | | |

| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J1N3K8 | SOIL | 2-2-12 | 0905 | X | X | | | | | | | | 1 |
| J1N3K9 | SOIL | 2-2-12 | ~~0920~~ 0935 | X | X | | | | | | | | 5 |
| J1N3L0 | SOIL | 2-2-12 | ~~0935~~ 1010 | X | X | | | | | | | | 4 |
| ~~J1N3L1~~ ~~JR 2/2/12~~ | ~~SOIL~~ | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| CHAIN OF POSSESSION | Sign/Print Names | | |
|---|---|---|---|
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Brent Mock | 2-2-12 1040 | Jen Russell | 2-2-12 1040 |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Jen Russell | 2-2-12 1300 | Chase Bingham | 2/2/12 1300 |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Chase Bingham | 2/2/12 1320 | Fed Ex | |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| | | | 2/3/12 1130 |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |

**SPECIAL INSTRUCTIONS**

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

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

SOG
JO1412

REVIEWED BY AJ
DATE 2-2-12

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

Page 3 of 10

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

**Project** 28002142 -6010 -Soil

**Analytical Due:**

**Report Due:** 2/20/11 (Rush 11 2 TAT)

# Sample Check-in List

**Date/Time Received:** 2/3/12 1130 **GM Screen Result** 12 **microR/hr**

**Client:** Washington Closure Hanford **SDG #:** J0H12 NA[ ] **SAF #:** RC-211 NA [ ]

**Job Number:** 25308 **Chain of Custody #** RC-211-0424

**Shipping Container ID:** WCH-11-067 **Air Bill #** 7980 1798 0040

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? NA [ ] Yes [✓] No [ ]
4. Cooler Temperature °C: 4.6 NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [✓] Dry [ ]
6. Number of samples in shipping container: 3
7. Sample holding times exceeded? NA [ ] Yes [ ] No [✓]
8. Samples have:
   - ✓ Tape
   - ✓ Custody Seals
   - ___ Hazard Lables
   - ✓ Appropriate Sample Lables
9. Samples are:
   - ✓ In Good Condition
   - ___ Broken
   - ___ Leaking
   - ___ Have Air Bubbles
   - (Only for samples requiring no head space.)
10. Sample pH taken? NA [✓] pH<2 [ ] pH>2 [ ] pH>9 [ ] **Amount $HNO_3$ Added** ___
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): ___

**Sample Custodian:** [signature] **Date:** 2/3/12

| Client Sample ID | Analysis Requested | Condition | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Client Informed on ___ by ___ Person Contacted ___

[ ] No action necessary; process as is.

Project Manager [signature] Date 2/6/12



LS-023, Rev. 7, 1/08

WCH-11-067



From: (509) 376-7768
1102 SHIPPING DEPT
US DOE
2355 STEVENS DR

RICHLAND, WA 99354

Origin ID: PSCA

FedEx. Express

J12101112190225

Ship Date: 02FEB12
ActWgt: 30.0 LB
CAD: 5851986/INET3250

Delivery Address Bar Code

SHIP TO: (303) 736-0190

BILL THIRD PARTY

**KAE YODER**
**TEST AMERICA**
**4955 YARROW ST # A119175**

**ARVADA, CO 80002**

Ref # 0602998100
Invoice #
PO #
Dept #

FRI - 03 FEB A1
PRIORITY OVERNIGHT

TRK# 7980 1798 0040
0201

**XH WHHA**

80002
CO-US
DEN

512G1/9F59/A278

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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.