

DECEMBER 10, 2012

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



December 10, 2012

Scot Fitzgerald
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121500

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) MSC-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Program Plan

This letter contains the following information for sample delivery group WSCF121500

- * Cover Sheet (Attachment 1)
- * Narrative (Attachment 2)
- * Analytical Results (Attachment 3)
- * Sample Receipt Information (Attachment 4)

Very truly yours,

A handwritten signature in black ink, appearing to read "Joseph Hale", is positioned above the typed name.

Electronically signed by Joseph Hale

For Lab Manager, Dan T. Smith

WSCF Analytical Lab

(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF121500

Data Deliverable Date 12/27/12

| SAF # | Sample ID | Sample # | Matrix | Sampled | Received |
|---------|-----------|-----------|--------|----------|----------|
| S13-012 | B2MYP2 | 121500001 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYN4 | 121500002 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYN8 | 121500003 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYP8 | 121500004 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYP9 | 121500005 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYV3 | 121500006 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYR7 | 121500007 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYM2 | 121500008 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYT1 | 121500009 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYL8 | 121500010 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2N038 | 121500011 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYR3 | 121500012 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2N042 | 121500013 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYM6 | 121500014 | WATER | 11/26/12 | 11/26/12 |
| S13-012 | B2MYN0 | 121500015 | WATER | 11/26/12 | 11/26/12 |
| S13-011 | B2MM12 | 121500016 | WATER | 11/26/12 | 11/26/12 |
| S13-011 | B2MM07 | 121500017 | WATER | 11/26/12 | 11/26/12 |

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Master Contract 39818, Revision 3, "Laboratory Analytical Services to CHPRC Soil and Groundwater Remediation Project."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, C, D, J and U) may be applicable to this report, as appropriate.

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **C** – Analyte was detected in the blank and was evaluated. Affected sample results in the batch were C flagged (applies to inorganic and wet chemical analyses).
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **B (organic analyses)** – Analyte was detected in the blank and was evaluated. Affected sample results in the batch were B flagged.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Attachment 2
Narrative
WSCF121500

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 24 pages
Including cover page

DECEMBER 10, 2012

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF121500
Report Date December 10, 2012

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Marisol Avila

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no 'Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7005. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

| QC Batch | Analytical Batch | S# | Type | Sample # | Client Sample# | Original | Test |
|----------|------------------|----|--------|-----------|----------------------|-----------|---------------------------------------|
| 210821 | 210821 | 1 | BLANK | 85575 | BLANK | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 3 | LCS | 85577 | LCS | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 4 | DUP | 85578 | B2MYP2(121500001DUP) | 121500001 | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 5 | MS | 85579 | B2MYP2(121500001MS) | 121500001 | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 6 | SAMPLE | 121500001 | B2MYP2 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 7 | SAMPLE | 121500002 | B2MYN4 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 8 | SAMPLE | 121500003 | B2MYN8 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 9 | SAMPLE | 121500004 | B2MYP8 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 10 | SAMPLE | 121500005 | B2MYP9 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 11 | SAMPLE | 121500006 | B2MYV3 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 12 | SAMPLE | 121500007 | B2MYR7 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 13 | SAMPLE | 121500008 | B2MYM2 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 14 | SAMPLE | 121500009 | B2MYT1 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 15 | SAMPLE | 121500010 | B2MYL8 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 17 | LCS | 85581 | LCS | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 18 | BLANK | 85582 | BLANK | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 19 | DUP | 85583 | B2N038(121500011DUP) | 121500011 | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 20 | MS | 85584 | B2N038(121500011MS) | 121500011 | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 21 | SAMPLE | 121500011 | B2N038 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 22 | SAMPLE | 121500012 | B2MYR3 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 23 | SAMPLE | 121500013 | B2N042 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 24 | SAMPLE | 121500014 | B2MYM6 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 25 | SAMPLE | 121500015 | B2MYN0 | | Hexavalent chromium Discrete Analyzer |

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121500

| QC Batch | Analytical Batch | S# | Type | Sample # | Client Sample# | Original | Test |
|----------|------------------|----|--------|-----------|----------------|----------|---------------------------------------|
| 210821 | 210821 | 26 | SAMPLE | 121500016 | B2MM12 | | Hexavalent chromium Discrete Analyzer |
| 210821 | 210821 | 27 | SAMPLE | 121500017 | B2MM07 | | Hexavalent chromium Discrete Analyzer |

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121500

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

| | | | |
|------------|------------------------------|----------|---------------------|
| LA-265-403 | Hexavalent Chromium Analysis | | |
| | EPA SW-846 | 7196A | Hexavalent Chromium |
| | HEIS | 7196_CR6 | Hexavalent Chromium |

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at <http://www7.rl.gov/rapidweb/AS-DOL/index.cfm>

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500001
 SAF# S13-012
 Sample ID B2MYP2

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0462 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500002
 SAF# S13-012
 Sample ID B2MYN4

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|---------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | U | <0.0020 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500003
 SAF# S13-012
 Sample ID B2MYN8

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0118 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500004
 SAF# S13-012
 Sample ID B2MYP8

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|---------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | U | <0.0020 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500005
 SAF# S13-012
 Sample ID B2MYP9

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|---------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.00750 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500006
 SAF# S13-012
 Sample ID B2MYV3

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0224 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500007
 SAF# S13-012
 Sample ID B2MYR7

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0266 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500008
 SAF# S13-012
 Sample ID B2MYM2

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0442 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500009
 SAF# S13-012
 Sample ID B2MYT1

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0255 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500010
 SAF# S13-012
 Sample ID B2MYL8

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0402 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500011
 SAF# S13-012
 Sample ID B2N038

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0526 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500012
 SAF# S13-012
 Sample ID B2MYR3

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0437 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500013
 SAF# S13-012
 Sample ID B2N042

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0654 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500014
 SAF# S13-012
 Sample ID B2MYM6

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0166 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500015
 SAF# S13-012
 Sample ID B2MYN0

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0224 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500016
 SAF# S13-011
 Sample ID B2MM12

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0164 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Sample # 121500017
 SAF# S13-011
 Sample ID B2MM07

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

| Test Performed | CAS # | Method | RQ | Result | TP Err | Units | DF | MDL | PQL | Analyzed |
|--|------------|------------|----|--------|--------|-------|----|--------|--------|----------|
| | | | | | | | | | | 11/26/12 |
| Hexavalent chromium Discrete Analyzer | | | | | | | | | | |
| Hexavalent chromium | 18540-29-9 | LA-265-403 | | 0.0238 | | mg/L | 1 | 0.0020 | 0.0050 | 11/26/12 |

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
 DF = Dilution Factor
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 E - Analyte is an estimate, see comment section.
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.
 o - LCS recovery outside established laboratory acceptance limits.

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

Analytical Batch 210821 (QC Batch: 210821) **Test** Hexavalent chromium Discrete Analyzer
Associated Samples 121500001, 121500002, 121500003, 121500004, 121500005, 121500006, 121500007, 121500008, 121500009,
 121500010, 121500011, 121500012, 121500013, 121500014, 121500015, 121500016, 121500017

| Analyte | CAS # | Original Found | QC Found | Units | % Recov | Limits | RPD | RPD Limit | RQ | Analyzed |
|-------------------------------------|------------|----------------|---------------------------|-------|---------|----------|------|-----------|----|----------|
| BLANK | | | QC Sample #85575 | | | | | | | |
| Hexavalent chromium LCS | 18540-29-9 | | <0.0020 | mg/L | | | | | U | 11/26/12 |
| | | | QC Sample #85577 | | | | | | | |
| Hexavalent chromium DUP | 18540-29-9 | | 0.0515 | mg/L | 103 | 90 - 110 | | | | 11/26/12 |
| | | | QC Sample #85578 | | | | | | | |
| | | | Original 121500001 | | | | | | | |
| Hexavalent chromium MS | 18540-29-9 | 0.0462 | 0.0453 | mg/L | | | 2.00 | 20 | | 11/26/12 |
| | | | QC Sample #85579 | | | | | | | |
| | | | Original 121500001 | | | | | | | |
| Hexavalent chromium LCS | 18540-29-9 | 0.0462 | 0.0421 | mg/L | 105.2 | 85 - 115 | | | | 11/26/12 |
| | | | QC Sample #85581 | | | | | | | |
| Hexavalent chromium BLANK | 18540-29-9 | | 0.0516 | mg/L | 103.2 | 90 - 110 | | | | 11/26/12 |
| | | | QC Sample #85582 | | | | | | | |
| Hexavalent chromium DUP | 18540-29-9 | | <0.0020 | mg/L | | | | | U | 11/26/12 |
| | | | QC Sample #85583 | | | | | | | |
| | | | Original 121500011 | | | | | | | |

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121500

| Analyte | CAS # | Original Found | QC Found | Units | % Recov | Limits | RPD | RPD Limit | RQ | Analyzed |
|----------------------------------|------------|----------------|---------------------------|-------|---------|----------|------|-----------|----|----------|
| Hexavalent chromium MS | 18540-29-9 | 0.0526 | 0.0519 | mg/L | | | 1.30 | 20 | | 11/26/12 |
| | | | QC Sample #85584 | | | | | | | |
| | | | Original 121500011 | | | | | | | |
| Hexavalent chromium | 18540-29-9 | 0.0526 | 0.0416 | mg/L | 104 | 85 - 115 | | | | 11/26/12 |

* - QC result out of range

n/a - Not Applicable

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 20 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED**WSCF Laboratory**

PO Box 650 S3-30
 Richland, WA 99352

ATTN: Scot Fitzgerald

Customer Code: CHPRC

PO #: 401647

Work Order #: 121500

Profile #: S13-012-325

Proj. Mgr.:

Phone:

The following samples were received from you on 11/26/2012 3:07:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

| Sample # | Sample ID | Matrix | Collected | Received |
|-----------|-----------|------------------------|------------------|------------------|
| | | Tests scheduled | | |
| 121500001 | B2MYP2 | WATER | 11/26/2012 11:15 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500002 | B2MYN4 | WATER | 11/26/2012 10:33 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500003 | B2MYN8 | WATER | 11/26/2012 10:18 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500004 | B2MYP8 | WATER | 11/26/2012 08:25 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500005 | B2MYP9 | WATER | 11/26/2012 09:58 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500006 | B2MYV3 | WATER | 11/26/2012 14:23 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500007 | B2MYR7 | WATER | 11/26/2012 11:30 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500008 | B2MYM2 | WATER | 11/26/2012 12:15 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500009 | B2MYT1 | WATER | 11/26/2012 11:46 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500010 | B2MYL8 | WATER | 11/26/2012 12:34 | 11/26/2012 15:07 |
| | | CR6DA-W | | |
| 121500011 | B2N038 | WATER | 11/26/2012 12:50 | 11/26/2012 15:07 |

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

| CR6DA-W | | | | |
|-----------|--------|-------|------------------|------------------|
| 121500012 | B2MYR3 | WATER | 11/26/2012 13:06 | 11/26/2012 15:07 |
| CR6DA-W | | | | |
| 121500013 | B2N042 | WATER | 11/26/2012 13:24 | 11/26/2012 15:07 |
| CR6DA-W | | | | |
| 121500014 | B2MYM6 | WATER | 11/26/2012 13:37 | 11/26/2012 15:07 |
| CR6DA-W | | | | |
| 121500015 | B2MYN0 | WATER | 11/26/2012 13:53 | 11/26/2012 15:07 |
| CR6DA-W | | | | |
| 121500016 | B2MM12 | WATER | 11/26/2012 14:09 | 11/26/2012 15:07 |
| CR6DA-W | | | | |
| 121500017 | B2MM07 | WATER | 11/26/2012 10:51 | 11/26/2012 15:07 |
| CR6DA-W | | | | |

Test Acronym Description

| Test Acronym | Description |
|--------------|---------------------------|
| CR6DA-W | Cr6 (W Discrete analyzer) |

CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-325**
 Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|------------------------|-----------------------------|------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ES20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 <i>WV SA</i> | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CA/CN for all analytical work at WSCF is 401647.

| | | | | | | | | | | | | | |
|------------|---------------|--------|-----------------|------|--------------|--------------------|-------------|-----------------|-----------------------------------|--------------|----------|--------------|---------|
| Sample No. | <i>12150U</i> | Date | <i>11-26-12</i> | Time | <i>11:15</i> | No./Type Container | 1x500 mL dG | Sample Analysis | 7196_CR6_ Hexavalent Chromium (1) | Holding Time | 24 Hours | Preservative | Cool-4C |
| BZMYP2 | N | Filter | W | | | | | | | | | | |

| | | | | | | | | | | | | | |
|-----------------|-------------|-------|------|-----------|-------------------------|-------------|--------------------------|-------|------|-----------|-------------------------|----------|--|
| Relinquished By | Robert Crow | Print | Sign | Date/Time | <i>NOV 26 2012 1501</i> | Received By | <i>Cynthia R Johnson</i> | Print | Sign | Date/Time | <i>NOV 26 2012 1501</i> | Matrix * | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other |
| Relinquished By | | | | Date/Time | | Received By | | | | Date/Time | | | |
| Relinquished By | | | | Date/Time | | Received By | | | | Date/Time | | | |
| Relinquished By | | | | Date/Time | | Received By | | | | Date/Time | | | |

FINAL SAMPLE DISPOSITION Disposal Method (e.g. Return to customer, per lab procedure, used in process) Disposed By Date/Time

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-319**
 Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|---------------------|-----------------------------|-------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 4H/82 | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DCE Order 5400 5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time: Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647

| Sample No. | Filter | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|----------|------|--------------------|----------------------------------|--------------|--------------|
| B2MVN4 | N | 12/10/12 | 1033 | 1x500 mL 3G | 7196_CR6 Hexavalent Chromium (1) | 24 Hours | Cool-4C |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
|-----------------|-------------|--------------------|------------------|-------------|---------------------|--------------------|------------------|--|
| Relinquished By | Robert Crow | <i>[Signature]</i> | NOV 26 2012 1501 | Received By | Cynthia R. Robinson | <i>[Signature]</i> | NOV 26 2012 1501 | S = Soil SE = Sediment SD = Solid SL = Sludge W = Water O = Oil A = Air |
| Relinquished By | | | | Received By | | | | DS = Drum Solids DL = Drum Liquids T = Tissue WT = Waste L = Liquid V = Vegetation X = Other |
| Relinquished By | | | | Received By | | | | |

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) _____ Date/Time _____

PRINTED 0 10/24/2011 A-6004-842 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-012-322**
Page 1 of 1

| | | | | | |
|-------------------------|-----------------------------------|---------------------------|---------------------|------------------------------------|------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ES20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-50049 / 82 | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990) (993)

SPECIAL INSTRUCTIONS Held Time: Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SPD. Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

| Sample No. | Filter | * | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|---|----------|-------|--------------------|-----------------------------------|--------------|--------------|
| B2MVN8 | N | W | 11-26-12 | 10:18 | 1x500-mL AG | 7198_CRE: Hexavalent Chromium (1) | 24 Hours | Cool-4C |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
|--|-------|--------|------------------|-------------------|-------|------|------------------|--|
| Robert Crow | | R Crow | NOV 26 2012 (50) | Gynthia R Johnson | | | NOV 26 2012 (50) | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air |
| Relinquished By | | | Date/Time | Received By | | | Date/Time | DS = Drum Solids DL = Drum Linings T = Tissue WI = Waste L = Liquid V = Vegetation X = Other |
| Relinquished By | | | Date/Time | Received By | | | Date/Time | |
| FINAL SAMPLE DISPOSITION | | | | | | | | |
| Disposal Method (e.g., Return to customer, per lab procedure, used in process) | | | | | | | | Disposed By |

PRINTED 0 10/24/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-012-328**
Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|------------------------|-----------------------------|------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 30007IES20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 <u>49/82</u> | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Priority | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

| Sample No. | Filter | * | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|---|----------|------|--------------------|------------------------------------|--------------|--------------|
| B2WVP8 | 4 | N | 11/20/12 | 0835 | 1x500 mL SG | 7196_CRE6: Hexavalent Chromium (1) | 24 Hours | Cool-4C |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
|-----------------|-------------|---------------|-------------------------|-------------|-------------------|------------------|-------------------------|--|
| Relinquished By | Robert Crow | <i>R Crow</i> | NOV 26 2012 <i>1501</i> | Received By | Cynthia R Johnson | <i>C Johnson</i> | NOV 26 2012 <i>1501</i> | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wine L = Liquid V = Vegetation X = Other |
| Relinquished By | | | | Received By | | | | |
| Relinquished By | | | | Received By | | | | |

Final Sample Disposition: Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By: _____ Date/Time: _____

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-331**
 Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|---------------------|-----------------------------|------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ES20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 49/82 | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

| Sample No. | Filter | * | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|---|----------|------|--------------------|-----------------------------------|--------------|--------------|
| E2MVP9 | N | W | 11-26-12 | 0858 | 1x500 mL nG | 7195_CRE: Hexavalent Chromium (1) | 24 Hours | Cool-4C |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
|-----------------|-------------|--------------------|------------------|-------------|-------------------|--------------------------|------------------|--|
| Relinquished By | Robert Crow | <i>Robert Crow</i> | NOV 26 2012 1501 | Received By | Cynthia R Johnson | <i>Cynthia R Johnson</i> | NOV 26 2012 1501 | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air |
| Relinquished By | | | | Received By | | | | DS = Drum Solids DL = Drum Liquids T = Tissue WI = Waste L = Liquid V = Vegetation X = Other |
| Relinquished By | | | | Received By | | | | |

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By: _____ Date/Time: _____

PRINTED 0 10/24/2012

A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

| | | | | |
|--|--|---|--|--------------------------------|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | C.O.C. # S13-012-349 |
| | | | | Page 1 of 1 |

| | | | | | |
|------------------|-----------------------------------|--------------------|--------------------------|-----------------------------|------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 30007IES20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 49 / 83 | Ice Check No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990) 1995

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes No

| Sample No. | Filter | + | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|---|------------|-------|--------------------|-----------------------------------|--------------|--------------|
| B2WVY3 | N | W | 11-26-2012 | 14:23 | 1x500-mL AG | 7198_CRE: Hexavalent Chromium (1) | 24 Hours | Cool-AC |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
|-----------------|-------------|--------------------|-------------|-------------|-------------------|--------------------|-------------|--|
| Relinquished By | Robert Crow | <i>[Signature]</i> | NOV 26 2012 | Received By | Cynthia R Johnson | <i>[Signature]</i> | NOV 26 2012 | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other |
| Relinquished By | | | | Received By | | | | |
| Relinquished By | | | | Received By | | | | |

| | | | |
|---------------------------------|--|-------------|-----------|
| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---------------------------------|--|-------------|-----------|

PRINTED ON 10/24/2012

A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-337**
 Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|------------------------|-----------------------------|------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ES20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 49/83 | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

| | | | | | | | | | | | | | | | |
|------------|---------|--------|---|------|----------|------|------|--------------------|-------------|-----------------|------------------------------------|--------------|----------|--------------|---------|
| Sample No. | B2WV/R7 | Filter | N | Date | 11-20-12 | Time | 1:30 | No./Type Container | 1x500-mL AG | Sample Analysis | 7195_Cr6 - Hexavalent Chromium (1) | Holding Time | 24 Hours | Preservative | Cool-AG |
|------------|---------|--------|---|------|----------|------|------|--------------------|-------------|-----------------|------------------------------------|--------------|----------|--------------|---------|

| | | | | | | | | | | | | |
|-----------------|-------------|-------|------|-----------|-------------|-------------|--------------------|-----------|-------------|----------|---|--|
| Relinquished By | Robert Crow | Print | Sign | Date/Time | NOV 26 2012 | Received By | Cynthia R. Johnson | Date/Time | NOV 26 2012 | Matrix * | S = Soil SE = Sediment SD = Solid SL = Sludge W = Water O = Oil A = Air | DS = Drum Solids DL = Drum Liquids T = Tissue WT = Waste L = Liquid V = Vegetation X = Other |
| Relinquished By | | | | Date/Time | | Received By | | Date/Time | | | | |
| Relinquished By | | | | Date/Time | | Received By | | Date/Time | | | | |
| Relinquished By | | | | Date/Time | | Received By | | Date/Time | | | | |

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

DATE/TIME

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-310**
 Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|-----------------------|-----------------------------|-------------|
| Collector | Robert Crow | Contract/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 <i>4/82</i> | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1995)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information from applies. The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

| | | | | | | |
|------------|--------|----------|-------------------|-----------------------------------|--------------|--------------|
| Sample No. | Filter | Date | No/Type Container | Sample Analysis | Holding Time | Preservative |
| B2WVW2 | N | 11-26-12 | 1x500-mL AG | 7195_CRF6-Hexavalent Chromium (1) | 24 Hours | Cool-AC |

| | | | | | | | |
|-----------------|----------------------|-----------------------|-------------------------------|-------------|----------------------------|--------------------------|-------------------------------|
| Relinquished By | Print Robert Crow | Sign <i>R Crow</i> | Date/Time NOV 26 2012 1507 | Received By | Print Cynthia R Johnson | Sign <i>C Johnson</i> | Date/Time NOV 26 2012 1507 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

FINAL SAMPLE DISPOSITION
 Disposal Method (e.g., Return to customer, per lab procedure, used in process)
 Disposed By
 Date/Time

Matrix *

| | | | | | |
|----|---|----------|----|---|--------------|
| S | = | Soil | DS | = | Drum Solids |
| SE | = | Sediment | DL | = | Drum Liquids |
| SD | = | Solid | T | = | Tissue |
| SL | = | Sludge | WT | = | Wing |
| W | = | Water | L | = | Liquid |
| O | = | Oil | V | = | Vegetation |
| A | = | Air | X | = | Other |

PRINTED 0 10/24/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-012-340**
Page 1 of 1

| | | | |
|--|-----------------------------------|--|-----------------------------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted |
| SAF No. | S13-012 | Sampling Origin | Hanford Site |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 <i>49/82</i> |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE |
| Protocol | SURV | Priority: | 31 Days |
| POSSIBLE SAMPLE HAZARDS/REMARKS | | SPECIAL INSTRUCTIONS | |
| *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1978/1993) | | FY12 and FY13 samples cannot be in the same SDG. Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647. | |
| Sample No. | B2MWT19 | No./Type Container | 1x500-mL SG |
| Filter | N | Sample Analysis | 7196_Cr6; Hexavalent Chromium (1) |
| Date | 11-26-12 | Holding Time | 24 Hours |
| Time | 11:44 | Preservative | Cool-AC |

| | | | | | | | |
|---------------------------------|---------------|--|-------------------|------------------|-------------|-----------|--|
| Relinquished By | Print Sign | Date/Time | Received By | Print Sign | Date/Time | | |
| Robert Crow | <i>R Crow</i> | NOV 26 2012 | Cynthia R Johnson | <i>C Johnson</i> | NOV 26 2012 | | |
| Relinquished By | | Date/Time | Received By | | Date/Time | | |
| Relinquished By | | Date/Time | Received By | | Date/Time | | |
| Relinquished By | | Date/Time | Received By | | Date/Time | | |
| FINAL SAMPLE DISPOSITION | | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | | Disposed By | | Date/Time | |

Matrix *

| | |
|---------------|-------------------|
| S = Soil | DS = Drum Spills |
| SE = Sediment | DL = Drum Liquids |
| SD = Solid | T = Tissue |
| SL = Sludge | WT = Waste |
| W = Water | L = Liquid |
| Q = Oil | V = Vegetation |
| A = Air | X = Other |

PRINTED ON 10/24/2012

A-5004-842 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-012-307**
Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|---------------------|-----------------------------|-------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 19 / 82 | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Certain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1996/1993)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SIG. Site-Wide Generator Knowledge Information Form applies. The CACM for all analytical work at WSCF is 401547.

| Sample No. | Filter | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|------|------|--------------------|-----------------------------------|--------------|--------------|
| B2MWL0 | C | N | W | 1-86-R 1334 | 7196_CRB6 Hexavalent Chromium (1) | 24 Hours | Cool-4C |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
|-----------------|-------|---------------|------------------|-------------|--------------------------|------|------------------|---|
| Relinquished By | | <i>R Crow</i> | NOV 26 2012 1507 | Received By | <i>Cynthia R Johnson</i> | | NOV 26 2012 1507 | S = Soil SE = Sediment SD = Solid SL = Sludge W = Water O = Oil A = Air |
| Relinquished By | | | | Received By | | | | DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other |
| Relinquished By | | | | Received By | | | | |

PRINTED ON 10/24/2012

A-5004-842 (REV 2)

Sample Receipt

Chain of Custody

| | | | | |
|--|--|---|--|--------------------------------|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | C.O.C. # S13-012-399 |
| | | | | Page 1 of 1 |

| | | | | | |
|------------------|-----------------------------------|--------------------|------------------------|-----------------------------|-------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 <u>41/83</u> | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.51 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time: Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACV for all analytical work at WSCF is 401647

| Sample No. | Filter | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|----------|------|--------------------|------------------------------------|--------------|--------------|
| D2M038 | N | 11-26-12 | 1250 | 1x500-mL BG | 7196_CRF6: Hexavalent Chromium (1) | 24 Hours | Cool-4C |

| | | | | | | | | | | | | | |
|-----------------|-------------|-------|------|-----------|-------------|-------------|--------------------|-----------|-------------|-------------|--|-----------|--|
| Relinquished By | Robert Crow | Print | Sign | Date/Time | NOV 26 2012 | Received By | Cynthia R. Johnson | Date/Time | NOV 26 2012 | Disposed By | | Date/Time | |
| Relinquished By | | | | Date/Time | | Received By | | Date/Time | | Disposed By | | Date/Time | |
| Relinquished By | | | | Date/Time | | Received By | | Date/Time | | Disposed By | | Date/Time | |
| Relinquished By | | | | Date/Time | | Received By | | Date/Time | | Disposed By | | Date/Time | |

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)

PRINTED 0 10/24/2012

A-6004-842 (REV 2)

Matrix *

| | | | | | |
|----|---|----------|----|---|--------------|
| S | = | Soil | DS | = | Drum Solids |
| SE | = | Sediment | DL | = | Drum Liquids |
| SD | = | Solid | T | = | Tissue |
| SL | = | Sludge | WT | = | Wipe |
| W | = | Water | L | = | Liquid |
| O | = | Oil | V | = | Vegetation |
| A | = | Air | X | = | Other |

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-334**
 Page 1 of 1

| | | | | | |
|------------------|-----------------------------------|--------------------|-------------------------|-----------------------------|-------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Illsted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 <i>19/83</i> | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days PRIORITY | Onsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5100.5 (1990/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SIG. Site-Wide Generator Knowledge Information Form applies. The CACR for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

| | | | | | | | |
|------------|--------|----------|------|-------------------|------------------------------------|--------------|--------------|
| Sample No. | Filter | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
| B2WVR3 | N | 11-26-12 | 1304 | 1x500-mL AG | 7196_CRF6: Hexavalent Chromium (1) | 24 Hours | Cool-4C |

| | | | | | | | | |
|-----------------|-------------|-----------|-------------|-------------|-------------------|-----------|-------------|-------------------|
| Relinquished By | Robert Crow | Date/Time | NOV 26 2012 | Received By | Cynthia R Johnson | Date/Time | NOV 26 2012 | Matrix * |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | S = Soil |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | SE = Sediment |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | SO = Solid |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | SL = Sludge |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | W = Water |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | O = Oil |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | A = Air |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | DS = Drum Solids |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | DL = Drum Liquids |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | T = Tissue |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | WI = Wipe |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | L = Liquid |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | V = Vegetation |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | X = Other |

Final Disposition: Disposal Method (e.g., Return to customer, per lab procedure, used in process)

PRINTED ON 10/24/2012

A-6004-842 (REV 2)

Chain of Custody

| | | | | |
|---------------------------------------|--|---|--|--------------------------------|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | C.O.C. # S13-012-402 |
| | | | | Page 1 of 1 |

| | | | | | |
|------------------|-----------------------------------|--------------------|-----------------------|-----------------------------|-------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Illstedt | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNF-N-506 41 / 83 | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5100.3 (1999/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes No

| Sample No. | Filter | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|----------|------|--------------------|----------------------------------|--------------|--------------|
| B2ND42 | N | 11/26/12 | 1324 | 1x500-mL AG | 7195_Cr6-Hexavalent Chromium (1) | 24 Hours | Cool-AC |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
|-----------------|--------|------|------------------|-------------------|-------|------|------------------|---|
| Relinquished By | R Crow | | NOV 26 2012 1551 | Cynthia R Johnson | | | NOV 26 2012 1551 | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air |
| Relinquished By | | | | | | | | DS = Dism Solids DL = Drums Liquids T = Tissue WT = Waste L = Liquid V = Vegetation X = Other |

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process) Date/Time

A-6004-842 (REV 2)

Chain of Custody

| | | | |
|--------------------------------------|--|-------------|--|
| CH2MHill Plateau Remediation Company | | C.O.C. # | |
| | | S13-012-313 | |
| | | Page 1 of 1 | |

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

| | | | | | |
|------------------|-----------------------------------|--------------------|---------------------|-----------------------------|------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ES20 |
| Project Title | SURV, DECEMBER 2012 | Logbook No. | HNFN-506 49 / 83 | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1996/1993)

SPECIAL INSTRUCTIONS Hold Time: Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SIG. Site-Wide Generator Knowledge Information Form applies. The CACV for all analytical work at WSCF is 401647.

| | | | | | | | |
|------------|--------|------|------|--------------------|-----------------------------------|--------------|--------------|
| Sample No. | Filter | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
| D2WV66 | 14 | N | W | 1x500-mL AG | 7196_CRF6 Hexavalent Chromium (1) | 24 Hours | COOL-4C |

| | | | | | | | | | | | | | |
|-----------------|-------------|-----------|--------------------|-------------|------------------|-------------|-------------------|------|--------------------------|-----------|------------------|----------|--------------|
| Relinquished By | Robert Crow | Sign | <i>Robert Crow</i> | Date/Time | NOV 26 2012 1:50 | Received By | Cynthia R Johnson | Sign | <i>Cynthia R Johnson</i> | Date/Time | NOV 26 2012 1:50 | Matrix * | |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | S | - | Soil | DS | - | Drum Solids |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | SE | - | Sediment | DL | - | Drum Liquids |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | SD | - | Solid | T | - | Tissue |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | SL | - | Sludge | W1 | - | Wipe |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | W | - | Water | L | - | Liquid |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | O | - | Oil | V | - | Vegetation |
| Relinquished By | | Date/Time | | Received By | | Date/Time | | A | - | Air | X | - | Other |

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By: _____ Date/Time: _____

PRINTED ON 10/24/2012

A-5004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-316**
 Page 1 of 1

| | | | | | |
|--|-----------------------------------|--------------------|---|-----------------------------|----------------------------------|
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | Telephone No. | 376-4650 |
| SAF No. | S13-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV. DECEMBER 2012 | Logbook No. | HNF-N-506 <u>49/83</u> | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | Bill of Lading/Air Bill No. | N/A |
| Protocol | SURV | Priority: | 31 Days | Offsite Property No. | N/A |
| POSSIBLE SAMPLE HAZARDS/REMARKS | | | SPECIAL INSTRUCTIONS | | |
| *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOT Order 5400.5 (1/90/1993) | | | Hold Time FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The C.O.C. for all analytical work at WSCF is 401647. | | |
| Sample No. | Filter * | Date | Time | No./Type Container | Sample Analysis |
| B2MVND | N | 11/26/12 | 1353 | 1x500-mL AG | 7196_CR6_Hexavalent Chromium (1) |
| | | | | | Holding Time |
| | | | | | 24 Hours |
| | | | | | Preservative |
| | | | | | Cool-4C |

| | | | | | | | | | | | |
|--|-------------|-------|------|-----------|------------------|--|-------------------|-------|------|-----------|------------------|
| Relinquished By | Robert Crow | Print | Sign | Date/Time | NOV 26 2012 1507 | Received By | Cynthia R Johnson | Print | Sign | Date/Time | NOV 26 2012 1507 |
| Relinquished By | | | | Date/Time | | Received By | | | | Date/Time | |
| Relinquished By | | | | Date/Time | | Received By | | | | Date/Time | |
| Relinquished By | | | | Date/Time | | Received By | | | | Date/Time | |
| FINAL SAMPLE DISPOSITION | | | | | | Matrix * | | | | | |
| Disposal Method (e.g., Return to customer, per lab procedure, used in process) | | | | | | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wire L = Liquid V = Vegetation X = Other | | | | | |

PRINTED ON 10/24/2012 A-5004-642 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-011-150**
 Page 1 of 1

Collector: Robert Crow
 Contact/Requester: Karen Waters-Husted
 Telephone No.: 376-4650
 SAF No.: S13-011
 Sampling Origin: Hanford Site
 Purchase Order/Charge Code: 300071ES20
 Project Title: SURV. NOVEMBER 2012
 Logbook No.: HNF-N-506 H/83
 Ice Chest No.: N/A
 Shipped To (Lab): Waste Sampling & Characterization
 Method of Shipment: GOVERNMENT VEHICLE
 Bill of Lading/Air Bill No.: N/A
 Protocol: CERCLA
 Priority: 31 Days
 OFFSITE PROPERTY No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1999/1995)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

| Sample No. | Filter | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|----------|------|--------------------|-----------------------------------|--------------|--------------|
| B2MM12 | N | 11-26-12 | 1409 | 1x500-mL 63 | 7195_CRG: Hexavalent Chromium (1) | 24 Hours | Cool-AC |

| Relinquished By | Print | Sig | Date/Time | Received By | Print | Sig | Date/Time | Matrix * |
|------------------------------|-------|-----|------------------|---|-------|-----|------------------|---|
| Relinquished By: Robert Crow | | | NOV 26 2012 1507 | Received By: Cynthia R Johnson | | | NOV 26 2012 1507 | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dams Solids DL = Drums Liquids T = Tissue WI = Wine L = Liquid V = Vegetation X = Other |
| Relinquished By: | | | Date/Time | Received By: | | | Date/Time | |
| Relinquished By: | | | Date/Time | Received By: | | | Date/Time | |
| Relinquished By: | | | Date/Time | Received By: | | | Date/Time | |
| FINAL SAMPLE DISPOSITION | | | | Disposition Method (e.g., Return to customer, per lab procedure, used in process) | | | | Date/Time |

PRINTED 0 10/9/2012

A-5004-842 (REV 2)

Chain of Custody

| | | | | | | |
|--|-----------------------------------|--|---------------------|-------------------|-----------------------------------|--------------------------------|
| CH2MHill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | | C.O.C. # S13-011-147 |
| Collector | Robert Crow | Contact/Requester | Karen Waters-Husted | | Telephone No. | 376-4650 |
| SAF No. | S13-011 | Sampling Origin | Hanford Site | | Purchase Order/Charge Code | 300071ESS20 |
| Project Title | SURV. NOVEMBER 2012 | Logbook No. | HNF-N-506 49/82 | | Ice Chest No. | N/A |
| Shipped To (Lab) | Waste Sampling & Characterization | Method of Shipment | GOVERNMENT VEHICLE | | Bill of Lading/Air Bill No. | N/A |
| Protocol | CERCLA | Priority: | 31 Days | | Offsite Property No. | N/A |
| POSSIBLE SAMPLE HAZARDS/REMARKS | | | | | | |
| ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1996/1993) | | | | | | |
| SPECIAL INSTRUCTIONS | | | | | | |
| EY12 and EY13 samples cannot be in the same SIG. Site-Wide Generator Knowledge Information Form applies. The CACV for all analytical work at WSCF is 491647. | | | | | | |
| Sample No. | Filter | Date | Time | No/Type Container | Sample Analysis | Hold Time |
| B2MM07 | 17 N | 11-26-12 | 1651 | 1x500-mL AG | 7198_OR6: Hexavalent Chromium (1) | 24 Hours |
| | | | | | | Preservative Cool-AC |

| | | | | | | | | | |
|--------------------------|----------------------|-----------------------|-------------------------------|--|-----------------------------|--------------------------|-------------------------------|---|-----------|
| Relinquished By | Print Robert Crow | Sign <i>R Crow</i> | Date/Time NOV 26 2012 1501 | Received By | Print Cynthia B. Johnson | Sign <i>C Johnson</i> | Date/Time NOV 26 2012 1501 | Matrix * S = Soil DS = Drum Solds SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SI = Sludge W1 = Waste W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other | |
| Relinquished By | | | | Received By | | | | | |
| Relinquished By | | | | Received By | | | | | |
| Relinquished By | | | | Received By | | | | | |
| FINAL SAMPLE DISPOSITION | | | | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | | | | Disposed By | Date/Time |

PRINTED ON 10/9/2012

A-6004-842 (REV 2)