

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 WSCF121497

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 WSCF121497

- * 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 # WSCF121497
 Data Deliverable Date 12/27/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
S13-012	B2MYC4	121497001	WATER	11/26/12	11/26/12
S13-012	B2MYW4	121497002	WATER	11/26/12	11/26/12
S13-012	B2N013	121497003	WATER	11/26/12	11/26/12
S13-012	B2MYW3	121497004	WATER	11/26/12	11/26/12
S13-012	B2N017	121497005	WATER	11/26/12	11/26/12
S13-012	B2N034	121497006	WATER	11/26/12	11/26/12
S13-012	B2N030	121497007	WATER	11/26/12	11/26/12
S13-012	B2N021	121497008	WATER	11/26/12	11/26/12
S13-012	B2MYY9	121497009	WATER	11/26/12	11/26/12
S13-012	B2MYT5	121497010	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
WSCF121497

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):

- Hexavalent Chromium – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
- All other 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 16 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 # WSCF121497
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 # WSCF121497

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210819	210819	1	BLANK	85557	BLANK		Hexavalent chromium Discrete Analyzer
210819	210819	3	LCS	85559	LCS		Hexavalent chromium Discrete Analyzer
210819	210819	4	DUP	85560	B2MYC4(121497001DUP	121497001	Hexavalent chromium Discrete Analyzer
210819	210819	5	MS	85561	B2MYC4(121497001MS)	121497001	Hexavalent chromium Discrete Analyzer
210819	210819	6	SAMPLE	121497001	B2MYC4		Hexavalent chromium Discrete Analyzer
210819	210819	7	SAMPLE	121497002	B2MYW4		Hexavalent chromium Discrete Analyzer
210819	210819	8	SAMPLE	121497003	B2N013		Hexavalent chromium Discrete Analyzer
210819	210819	9	SAMPLE	121497004	B2MYW3		Hexavalent chromium Discrete Analyzer
210819	210819	10	SAMPLE	121497005	B2N017		Hexavalent chromium Discrete Analyzer
210819	210819	11	SAMPLE	121497006	B2N034		Hexavalent chromium Discrete Analyzer
210819	210819	12	SAMPLE	121497007	B2N030		Hexavalent chromium Discrete Analyzer
210819	210819	13	SAMPLE	121497008	B2N021		Hexavalent chromium Discrete Analyzer
210819	210819	14	SAMPLE	121497009	B2MYY9		Hexavalent chromium Discrete Analyzer
210819	210819	15	SAMPLE	121497010	B2MYT5		Hexavalent chromium Discrete Analyzer

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121497

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 # WSCF121497

Sample # 121497001
 SAF# S13-012
 Sample ID B2MYC4

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		0.589		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 # WSCF121497

Sample # 121497002
 SAF# S13-012
 Sample ID B2MYW4

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		0.0634		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 # WSCF121497

Sample # 121497003
 SAF# S13-012
 Sample ID B2N013

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		0.0106		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 # WSCF121497

Sample # 121497004
 SAF# S13-012
 Sample ID B2MYW3

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		0.0640		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 # WSCF121497

Sample # 121497005
 SAF# S13-012
 Sample ID B2N017

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		0.0137		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 # WSCF121497

Sample # 121497006
 SAF# S13-012
 Sample ID B2N034

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		0.0541		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 # WSCF121497

Sample # 121497007
 SAF# S13-012
 Sample ID B2N030

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 # WSCF121497

Sample # 121497008
 SAF# S13-012
 Sample ID B2N021

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		0.00620		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 # WSCF121497

Sample # 121497009
 SAF# S13-012
 Sample ID B2MYY9

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	B	0.00290		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 # WSCF121497

Sample # 121497010
 SAF# S13-012
 Sample ID B2MYT5

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		0.00790		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 # WSCF121497

Analytical Batch 210819 (QC Batch: 210819) **Test** Hexavalent chromium Discrete Analyzer
Associated Samples 121497001, 121497002, 121497003, 121497004, 121497005, 121497006, 121497007, 121497008, 121497009, 121497010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85557							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/26/12
LCS			QC Sample #85559							
Hexavalent chromium	18540-29-9		0.0505	mg/L	101	90 - 110				11/26/12
DUP			QC Sample #85560							
			Original 121497001							
Hexavalent chromium	18540-29-9	0.589	0.578	mg/L			2.00	20		11/26/12
MS			QC Sample #85561							
			Original 121497001							
Hexavalent chromium	18540-29-9	0.589	0.0305	mg/L	76.2	85 - 115			X	11/26/12

* - QC result out of range n/a - Not Applicable

Attention: Scot Fitzgerald

Group #

WSCF121497

Quality Control Comments

Department Inorganic

85561

B2MYC4(121497001MS)

Analyte Hexavalent chromium - Hexavalent chromium Discrete Analyzer

[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 13 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 #: 121497

Profile #: S13-012-266

Proj. Mgr.:

Phone:

The following samples were received from you on 11/26/2012 1:50:00 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		
121497001	B2MYC4	WATER	11/26/2012 12:16	11/26/2012 13:50
		CR6DA-W		
121497002	B2MYW4	WATER	11/26/2012 11:10	11/26/2012 13:50
		CR6DA-W		
121497003	B2N013	WATER	11/26/2012 10:40	11/26/2012 13:50
		CR6DA-W		
121497004	B2MYW3	WATER	11/26/2012 11:10	11/26/2012 13:50
		CR6DA-W		
121497005	B2N017	WATER	11/26/2012 10:52	11/26/2012 13:50
		CR6DA-W		
121497006	B2N034	WATER	11/26/2012 10:24	11/26/2012 13:50
		CR6DA-W		
121497007	B2N030	WATER	11/26/2012 10:16	11/26/2012 13:50
		CR6DA-W		
121497008	B2N021	WATER	11/26/2012 10:03	11/26/2012 13:50
		CR6DA-W		
121497009	B2MYY9	WATER	11/26/2012 13:02	11/26/2012 13:50
		CR6DA-W		
121497010	B2MYT5	WATER	11/26/2012 09:46	11/26/2012 13:50
		CR6DA-W		

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

Test Acronym Description

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

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S13-012-266
Page 1 of 1

Collector	F. M. Hill	Contract/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.	INF-N-506 57 / 55-	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 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time
 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.	121497	Date	11-26-12	Time	1216	No/Type Container	1x500-mL AG	7195_CRF6 Hexavalent Chromium (1)	Sample Analysis	Holding Time	24 Hours	Preservative	Cool-4G
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Relinquished By	F. M. Hill	Print	Signature	Date/Time	NOV 26 2012 12:50	Received By	M. Hudson	Print	Signature	Date/Time	NOV 26 2012 12:50	Matrix *	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dism Solids DL = Dism Liquids T = Tissue WI = Waste L = Liquid V = Vegetation X = Other
Relinquished By		Date/Time		Received By		Date/Time		Date/Time					
Relinquished By		Date/Time		Received By		Date/Time		Date/Time					
Relinquished By		Date/Time		Received By		Date/Time		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

CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-358**
 Page 1 of 1

Collector	F. M. Hill	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>51155</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 5400.5 (1991/993)

SPECIAL INSTRUCTIONS Hold Time
 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.	B2WVW4	Filter	N	Date	11-26-12	Time	1110	Net/Type Container	1x500 mL AG	Sample Analysis	7196_CRE Hexavalent Chromium (1)	Holding Time	24 Hours	Preservative	Cool-AC
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Relinquished By	F. M. Hill	Print	Sign	Date/Time	NOV 26 2012 12:07	Received By	NA Hill	Print	Sign	Date/Time	NOV 26 2012 12:07
Relinquished By		Print	Sign	Date/Time		Received By		Print	Sign	Date/Time	
Relinquished By		Print	Sign	Date/Time		Received By		Print	Sign	Date/Time	
Relinquished By		Print	Sign	Date/Time		Received By		Print	Sign	Date/Time	
Relinquished By		Print	Sign	Date/Time		Received By		Print	Sign	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	=	Wipe
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Other

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A-5004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S13-012-381
Page 1 of 1

Collector	F. M. Hill	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 57153	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Product	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.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2ND13	N	11-26-12	1040	1X500 mL aG	7196_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C

Retransmitted By	F. M. Hill	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Retransmitted By				NOV 26 2012 12:50	MA Hudson			NOV 26 2012	\$ = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dism Solids DL = Dism Liquids T = Tissue W1 = Wipe L = Liquid V = Volatilization X = Other
Retransmitted By					Received By				
Retransmitted By					Received By				

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

Dispersed By: _____ Date/Time: _____

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A-5004-542 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-355**
 Page 1 of 1

Collector	F.M. Hill	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAP No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	30007IES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 <u>57155</u>	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 (1990/1993)

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 64401647.

Total Activity Exemption: Yes No

Sample No.	Fiber	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2WVW3	N	11-26-12	1110	1x500 mL BG	7196_CRE: Hexavalent Chromium (1)	24 Hours	Cool-AC

Relinquished By	F.M. Hill	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	<i>[Signature]</i>			NOV 26 2012 12:50	<i>[Signature]</i>			NOV 26 2012 12:50	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 = Wipe 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: _____

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A-6004-842 (REV.2)

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-384**
 Page 1 of 1

Collector	F.M. Hill	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-506 571-55	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

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2N017	5	N	W	11-26-12	1052	1x500-mL SG 7198_CRE6: Hexavalent Chromium (1)	24 Hours	COOL-AC

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

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished by	F.M. Hill	<i>[Signature]</i>	NOV 26 2012	Received by	<i>[Signature]</i>		NOV 26 2012	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 W1 = Wipe 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)
 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. # **S13-012-396**
 Page 1 of 1

Collector	F.M. Hill	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-506 571 55-	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 DDF: 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
B2ND34	N	W	11-26-12	10:24	1x500-mL AG	7196_CRe Hexavalent Chromium (1)	24 Hours	Cool-AG

Relinquished By	F.M. Hill	Print	Sign	Date/Time	Received By	M Hudson	Print	Sign	Date/Time	Matrix *
Relinquished By				NOV 26 2012	Received By					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 - Wire 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: _____

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A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-393**
 Page 1 of 1

Collector: **F.M. Hall** 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-506 571-555** 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** SPECIAL INSTRUCTIONS: **PRIORITY** 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 (1990/1991)
 SPECIAL INSTRUCTIONS: **Hold Time** 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 40/1547
 Total Activity Exemption: Yes No

Sample No	Filter	Date	Time	Vol/Type Container	Received By	Sample Analysis	Hold Time	Preservative
B2N030	N	11-26-12	1016	1x500 mL aIG	7196_CRG6 Hexavalent Chromium (1)		24 Hours	Cool-4C

Reinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Reinquished By	F.M. Hall	<i>[Signature]</i>	NOV 26 2012	Received By	<i>[Signature]</i>	<i>[Signature]</i>	NOV 26 2012	S - Soil SB - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Reinquished By				Received By				DS - Drum Solids DL - Drum Liquids T - Tissue WT - Waste L - Liquid V - Vegetation X - Other
Reinquished By				Received By				

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

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-387**
 Page 1 of 1

Collector	E.M. Hall	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 <u>57155</u>	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 (1990/1993)

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.	Fiber	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2ND21	N	W	11-26-12	1003	1x500 mL DG	7196_CRE: Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	Jrnl	Date/Time	Received By	Sign	Date/Time	Matrix *
	E.M. Hall	NOV 26 2012	<i>[Signature]</i>	NOV 26 2012	1357D	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: _____ 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) _____ Date/Time: _____

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A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

COC # **S13-012-373**
Page 1 of 1

Collector	F.M. Hill	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 <u>57155</u>	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 (1990/1993)

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 401547.

Sample No	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MYY9	N	11-26-12	1302	1x500 mL aIG	7196_CR6 Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	F.M. Hill		NOV 26 2012 1350	Received By			NOV 26 2012 1350	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 WT - Wipe L - Liquid V - Vascularian 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: _____

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Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-343**
 Page 1 of 1

Collector	F.M. Hill	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-506-57 / 55	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 DDF 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 40/147

Total Activity Exemption: Yes No

Sample No	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative		
B2MVT5	C	N	W	11-26-12	0946	1x500 mL aG	7196_CRG6 Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	F.M. Hill	Print	Sign	Date/Time	NOV 26 2012 12:50	Received By	Michelle D. ...	Print	Sign	Date/Time	NOV 26 2012 12:50
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
SO	=	Solid	T	=	Tissue
SL	=	Sludge	WI	=	Wipe
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Other

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