

June 06, 2014

Rev. 1

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



June 6, 2014

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

Dear Scot Fitzgerald,

REVISED [Report ID: 131533]

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 WSCF131533

- * 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

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

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WSCF SAF Number Cross Reference

Group # WSCF131533
Data Deliverable Date 01/16/14

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X14-012	B2T6T6	131533001	WATER	12/16/13	12/16/13
X14-012	B2T6T7	131533002	WATER	12/16/13	12/16/13
X14-012	B2T6T9	131533003	WATER	12/16/13	12/16/13

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ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

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Attachment 2
Narrative Rev1
WSCF131533

Revision 1: This case narrative replaces the prior in its entirety. This revision is correcting the Gross Alpha and Gross Beta Total Propagated Error.

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)*, to Contract 39818, Revision 4, "WSCF ANALYTICAL SERVICES FOR GROUNDWATER."

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.
- **o** – LCS recovery outside established laboratory acceptance limits.

Analytical Methodology for Requested Analyses

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Attachment 2
Narrative Rev1
WSCF131533

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

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

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.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Tritium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Gross Alpha / Gross Beta:

- Gross Alpha and Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
- All other applicable QC controls are within the established limits.

Tritium:

- All applicable QC controls are within the established limits.

Technetium-99:

- 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.

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 16 pages
Including cover page

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WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF131533
Report Date June 6, 2014

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Heather Medley

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.

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Attention Scot Fitzgerald
Department Inorganic

Group # WSCF131533

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
225119	225119	2	BLANK	102716	BLANK		Anions by Ion Chromatography (Water)
225119	225119	3	LCS	102717	LCS		Anions by Ion Chromatography (Water)
225119	225119	4	MS	102718	B2T6T7(131533002MS)	131533002	Anions by Ion Chromatography (Water)
225119	225119	5	MSD	102719	B2T6T7(131533002MSD)	131533002	Anions by Ion Chromatography (Water)
225119	225119	7	SAMPLE	131533002	B2T6T7		Anions by Ion Chromatography (Water)
225200	225200	1	BLANK	102758	BLANK		Hexavalent chromium Discrete Analyzer
225200	225200	3	LCS	102760	LCS		Hexavalent chromium Discrete Analyzer
225200	225200	4	DUP	102761	B2RVP0(131539002DUP)	131539002	Hexavalent chromium Discrete Analyzer
225200	225200	5	MS	102762	B2RVP0(131539002MS)	131539002	Hexavalent chromium Discrete Analyzer
225200	225200	7	SAMPLE	131533003	B2T6T9		Hexavalent chromium Discrete Analyzer

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Batch QC List

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF131533

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
224899	225420	1	BLANK	102584	BLANK		Tritium by LSC
224899	225420	2	LCS	102585	LCS		Tritium by LSC
224899	225420	4	DUP	102586	B2THP3(131525005DUP)	131525005	Tritium by LSC
224899	225420	5	MSPK	102587	B2R4M1(131512001MSP)		Tritium by LSC
224899	225420	16	SAMPLE	131533001	B2T6T6		Tritium by LSC
225609	226027	1	BLANK	103303	BLANK		GAB Discrete analysis Alpha only
225609	226027	2	LCS	103304	LCS		GAB Discrete analysis Alpha only
225609	226027	3	SAMPLE	131533001	B2T6T6		GAB Discrete analysis Alpha only
225609	226027	4	DUP	103305	B2T6T6(131533001DUP)	131533001	GAB Discrete analysis Alpha only
225609	226028	1	BLANK	103303	BLANK		GAB Discrete analysis Beta only
225609	226028	2	LCS	103304	LCS		GAB Discrete analysis Beta only
225609	226028	3	SAMPLE	131533001	B2T6T6		GAB Discrete analysis Beta only
225609	226028	4	DUP	103305	B2T6T6(131533001DUP)	131533001	GAB Discrete analysis Beta only

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Method Reference

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF131533

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
LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

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>

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Method Reference

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF131533

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-218-413	Tritium By Ion Removal Using Eichrom Resin Columns (Prep)		
	N/A	PREP METHOD	
LA-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer		
	HEIS	ALPHA_LSC	A/B Liquid Scintillation
	HEIS	BETA_LSC	A/B Liquid Scintillation
	HEIS	TC99_3MDSK_LSC	TC99 by Liquid Scintillation
	HEIS	TRITIUM_EIE_LSC	Tritium, by Eichrome ion exchange, LSC
LA-548-401	Alpha and Beta in Liquid and Solid Samples - WSCF		
	N/A	PREP METHOD	
LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC

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>

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Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF131533

Sample # 131533002
 SAF# X14-012
 Sample ID B2T6T7

Matrix WATER
 Sampled 12/16/13
 Received 12/16/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/16/13
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.130		ug/mL	2	0.050	1.0	12/16/13
Chloride	16887-00-6	LA-533-410	D	5.43		ug/mL	2	0.12	0.80	12/16/13
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	12/16/13
Nitrate-N	NO3-N	LA-533-410	D	1.42		ug/mL	2	0.040	0.20	12/16/13
Sulfate	14808-79-8	LA-533-410	D	22.9		ug/mL	2	0.22	1.1	12/16/13

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.

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Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF131533

Sample # 131533003
 SAF# X14-012
 Sample ID B2T6T9

Matrix WATER
 Sampled 12/16/13
 Received 12/16/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/16/13
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	12/16/13

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.

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Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF131533

Sample # 131533001
 SAF# X14-012
 Sample ID B2T6T6

Matrix WATER
 Sampled 12/16/13
 Received 12/16/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
GAB Prep for Discrete Analysis (W)										01/07/14
GAB Discrete analysis Alpha only										
Gross Alpha	12587-46-1	LA-508-415	U	1.4	1.3	pCi/L	1	1.6		01/13/14
GAB Discrete analysis Beta only										
Gross Beta	12587-47-2	LA-508-415		11	3.4	pCi/L	1	3.5		01/09/14
Tritium by LSC EICHROM WA/LIQ PREP										12/19/13
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1700	420	pCi/L	1	300		12/24/13

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

B - The associated QC sample Blank has a result > or = the MDA
 U - Analyzed for but not detected above limiting criteria.
 N - Spike Recovery is Outside Control Limits.
 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.

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Quality Control Report

June 06, 2014

Rev. 1

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF131533

Analytical Batch 225119 (QC Batch: 225119) Test Anions by Ion Chromatography (Water)
 Associated Samples 131533002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #102716								
Fluoride	16984-48-8	<0.025		ug/mL					U	12/16/13
Chloride	16887-00-6	<0.060		ug/mL					U	12/16/13
Nitrite-N	NO2-N	<0.020		ug/mL					U	12/16/13
Nitrate-N	NO3-N	<0.020		ug/mL					U	12/16/13
Sulfate	14808-79-8	<0.11		ug/mL					U	12/16/13
LCS		QC Sample #102717								
Fluoride	16984-48-8	0.952		ug/mL	96.1	90 - 110				12/16/13
Chloride	16887-00-6	1.83		ug/mL	92.5	90 - 110				12/16/13
Nitrite-N	NO2-N	0.992		ug/mL	101.4	90 - 110				12/16/13
Nitrate-N	NO3-N	0.852		ug/mL	96.2	90 - 110				12/16/13
Sulfate	14808-79-8	3.94		ug/mL	100.5	90 - 110				12/16/13
MS		QC Sample #102718								
		Original 131533002								
Fluoride	16984-48-8	0.130	0.862	ug/mL	86.2	80 - 120			BD	12/16/13
Chloride	16887-00-6	5.43	1.74	ug/mL	87	80 - 120			D	12/16/13
Nitrite-N	NO2-N	<0.040	0.916	ug/mL	92.7	80 - 120			D	12/16/13
Nitrate-N	NO3-N	1.42	0.852	ug/mL	95.3	80 - 120			D	12/16/13

* - QC result out of range

n/a - Not Applicable

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Quality Control Report

June 06, 2014

Rev. 1

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF131533

Analytical Batch 225200 (QC Batch: 225200) Test Hexavalent chromium Discrete Analyzer
 Associated Samples 131533003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #102758							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	12/16/13
LCS			QC Sample #102760							
Hexavalent chromium	18540-29-9		0.0515	mg/L	103	90 - 110				12/16/13
DUP			QC Sample #102761							
			Original 131539002							
Hexavalent chromium	18540-29-9		0.0119	mg/L			0.00	20		12/16/13
MS			QC Sample #102762							
			Original 131539002							
Hexavalent chromium	18540-29-9		0.0436	mg/L	109	85 - 115				12/16/13

* - QC result out of range

n/a - Not Applicable

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Quality Control Report

June 06, 2014

Rev. 1

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF131533

Analytical Batch 225420 (QC Batch: 224899) Test Tritium by LSC
 Associated Samples 131533001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Tritium LCS	10028-17-8		-39	pCi/L					U	12/24/13
Tritium DUP	10028-17-8		3200	pCi/L	97	80 - 120				12/24/13
Tritium MSPK	10028-17-8		1100	pCi/L			1.90	20		12/24/13
Tritium	10028-17-8		20000	pCi/L	91.2	75 - 125				12/24/13

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

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Quality Control Report

June 06, 2014

Rev. 1

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF131533

Analytical Batch 226027 (QC Batch: 225609)
 Associated Samples 131533001

Test GAB Discrete analysis Alpha only

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #103303								
Gross Alpha LCS	12587-46-1		0.26	pCi/L					U	01/13/14
		QC Sample #103304								
Gross Alpha DUP	12587-46-1		53	pCi/L	88.2	80 - 120				01/13/14
		QC Sample #103305								
		Original 131533001								
Gross Alpha	12587-46-1	1.4	4.1	pCi/L			95.90	20	* X	01/13/14

* - QC result out of range

n/a - Not Applicable

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Quality Control Report

June 06, 2014

Rev. 1

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF131533

Analytical Batch 226028 (QC Batch: 225609)
 Associated Samples 131533001

Test GAB Discrete analysis Beta only

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #103303								
Gross Beta	12587-47-2		-1.2	pCi/L					U	01/09/14
LCS		QC Sample #103304								
Gross Beta	12587-47-2		240	pCi/L	95.7	80 - 120				01/09/14
DUP		QC Sample #103305								
		Original 131533001								
Gross Beta	12587-47-2	11	9.2	pCi/L			21.40	20	* X	01/09/14

* - QC result out of range

n/a - Not Applicable

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Attention: Scot Fitzgerald

Group #

WSCF131533

Quality Control Comments

Department Radiochemistry

103305

B2T6T6(131533001DUP)

Analyte Gross Alpha - GAB Discrete analysis Alpha only

[1] The duplicate is outside of default RPD limits. RPD limit does not apply to results less than 5X the Minimum Detectable Concentration.

Analyte Gross Beta - GAB Discrete analysis Beta only

[1] The duplicate is outside of default RPD limits. RPD limit does not apply to results less than 5X the Minimum Detectable Concentration.

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ATTACHMENT4

SAMPLE RECEIPT

Consisting of 5 pages
Including cover page

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Waste Sampling and Characterization Facility
P.O. Box 650 S3-30, Richland WA 99352
Phone: (509) 373-7005/FAX: (509) 372-0456

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory

PO Box 650 S3-30
 Richland, WA 99352

ATTN: Scot Fitzgerald

Customer Code: CHPRC
CA CN: 403899
Work Order #: 131533
Customer Work ID: X14-012-103
Due Date: 01/16/2014

The following samples were received from you on 12/16/2013 2:00:00 PM. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact WSCF Client Services. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
131533001	B2T6T6	WATER	12/16/2013 12:04	12/16/2013 14:00
Procedure		Compound List		
GAB Discrete analysis Alpha only		Alpha		
GAB Discrete analysis Beta only		Beta		
Tritium by LSC		H 3		
Sample #	Sample ID	Matrix	Collected	Received
131533002	B2T6T7	WATER	12/16/2013 12:04	12/16/2013 14:00
Procedure		Compound List		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	Sample ID	Matrix	Collected	Received
131533003	B2T6T9	WATER	12/16/2013 12:04	12/16/2013 14:00
Procedure		Compound List		
Hexavalent chromium Discrete Analyzer		Cr6		

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CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X14-012-103
Page 1 of 1

Collector	Scott King	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X14-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ESS20
Project Title	AQUIFER TUBES, DECEMBER 2013	Logbook No.	HNF-N-506 (68 / 58)	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 DOE Order 5400.5 (1990/1993)			Site Wide Generator Knowledge Information Form applies. The CACH for analytical work at W99CF is 403899. FY13 and FY14 samples cannot be in the same SDG.		
131533			Hold Time		
			Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2T6T6	N	12/16/13	1204	1X500-ML G/P	ALPHA_GPC, DISCRETE, COMMON; BETA_GPC, COMMON	6 Months	HNC3 to pH <2
R7T6T6	N	12/16/13	1204	1X250-ML G	TRITILIM_EIE_LISC, COMMON	6 Months	Name

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	Scott King	[Signature]	12-16-13 1400	Received By	Vic W [Signature]	[Signature]	12-16-13 1400	S = Soil SD = Sediment SL = Sludge W = Water O = Oil A = Air DS = Drum Solids T = Tissue WT = Waste 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 10/16/2013

A-6004-942 (REV 2)

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CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X14-012-104
Page 1 of 1

Collector	<i>Scott King</i>	Contact/Requester	Karen Waters-Husted	Telephone No.	509-378-4650
SAF No.	X14-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064BSS20
Project Title	AQUIFER TUBES, DECEMBER 2013	Logbook No.	HNF-N-50422 / 58	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		Hold Time	
*** 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)		Site Middle Generator Knowledge Information Exam applies. The CANM for analytical work at WSCF is 40-3899. FY13 and FY14 samples cannot be in the same SDO.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter *	Date	Time	No/Type Container	Sample Analysis
BZ-617	N	12-16-13	1804	1X500-ML P	300.0 ANIONS_IC:COMMON
					Holding Time
					48 Hours
					Preservative
					Coof-4C

Chain of Custody

Relinquished By	<i>Scott King</i>	Date/Time	12-16-13	1400	Received By	<i>Vinny King</i>	Date/Time	12-16-13	1400
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		

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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A 6004 842 (REV 2)

REVISED

Chain of Custody

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X14-012-105	
Collector <i>Scott King</i>		Contact/Requester Karen Waters-Husted		Telephone No. 509-376-4650		Purchase Order/Charge Code 303064ESS20		Page 1 of 1	
SAF No. X14-012		Sampling Origin Hanford Site		Logbook No. HNF-N-506 <i>12-158</i>		Ice Chest No. N/A		Bill of Lading/Air Bill No. N/A	
Project Title AQUIFER TUBES, DECEMBER 2013		Method of Shipment GOVERNMENT VEHICLE		Priority 31 Days		Office Property No. N/A		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Shipped To (Lab) Waste Sampling & Characterization		Priority 31 Days		SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information from rphlpc. The CACN for analytical work at WSCF is 40399. FY13 and FY14 samples cannot be in the same SDA.		Held Time		Preservative Cool-4C	
Protocol SURV		Nc/Type Container 1x520-mL #G		Sample Analysis		Holding Time 24 Hours		Cool-4C	
Sample No. B218T9 3		Filter N		Date 12-16-13		Time 1204		Date/Time 12/16/13	

Relinquished By <i>Scott King</i>	Print Scott King	Sign <i>[Signature]</i>	Date/Time 12/16/13	Received By <i>Victoria Sims</i>	Print Victoria Sims	Sign <i>[Signature]</i>	Date/Time 12/16/13	Matrix *
Relinquished By			Date/Time	Received By			Date/Time	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 Liquids T = Tissue W1 = Waste L = Liquid V = Vegetation X = Other
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By

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A-6004-842 (REV 2)

REVISED