WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

December 19, 2012

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121542

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 WSCF121542

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

Very truly yours,

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 # WSCF121542
Data Deliverable Date 12/19/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F13-002	B2N853	121542001	WATER	12/04/12	12/04/12
F13-002	B2N854	121542002	WATER	12/04/12	12/04/12

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Attachment 2
Narrative
WSCF121542

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
WSCF121542

Anions – Hold time requirements for this analysis were met. A Duplicate, 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.

ICP-AES Metals – The 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.

ICP-MS Metals – The 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. Technetium-99 is analyzed without prep therefore there is no Matrix Spike or Matrix Spike Duplicate with analysis. Analytical Note(s):

- Vanadium was detected in the Blank and evaluated.
- All other applicable QC controls are within the established limits.

Organic Comments

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

- Sample B2N854 (121542002) did not meet the acceptance limits for surrogate 1,2-dichloroethane-d4. Sample results were not flagged. The quality control report was flagged for surrogate recovery failure.
- All other 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):

Tritium:

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF121542

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 30 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF121542
Report Date December 19, 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.

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
211248	211248	2	BLANK	86022	BLANK		Anions by Ion Chromatography (Water)
211248	211248	3	LCS	86023	LCS		Anions by Ion Chromatography (Water)
211248	211248	4	DUP	86024	B2MVJ5(121539010DUP)	121539010	Anions by Ion Chromatography (Water)
211248	211248	5	MS	86025	B2MVJ5(121539010MS)	121539010	Anions by Ion Chromatography (Water)
211248	211248	6	MSD	86026	B2MVJ5(121539010MSD)	121539010	Anions by Ion Chromatography (Water)
211248	211248	9	SAMPLE	121542002	B2N854		Anions by Ion Chromatography (Water)
211262	211317	5	BLANK	86048	BLANK		ICP-6010 - All possible metals
211262	211317	7	LCS	86050	LCS		ICP-6010 - All possible metals
211262	211317	9	MS	86051	B2MM08(121501017MS)	121501017	ICP-6010 - All possible metals
211262	211317	10	MSD	86052	B2MM08(121501017MSD	121501017	ICP-6010 - All possible metals
211262	211317	29	SAMPLE	121542002	B2N854		ICP-6010 - All possible metals
211293	211293	1	BLANK	86150	BLANK		Hexavalent chromium Discrete Analyzer
211293	211293	3	LCS	86152	LCS		Hexavalent chromium Discrete Analyzer
211293	211293	4	DUP	86153	B2N874(121541002DUP)	121541002	Hexavalent chromium Discrete Analyzer
211293	211293	5	MS	86154	B2N874(121541002MS)	121541002	Hexavalent chromium Discrete Analyzer
211293	211293	14	SAMPLE	121542001	B2N853		Hexavalent chromium Discrete Analyzer
211762	211763	4	BLANK	86659	BLANK		ICP-2008 MS All possible metal
211762	211763	5	LCS	86660	LCS		ICP-2008 MS All possible metal
211762	211763	6	SAMPLE	121542002	B2N854		ICP-2008 MS All possible metal
211762	211763	7	MS	86661	B2N854(121542002MS)	121542002	ICP-2008 MS All possible metal
211762	211763	8	MSD	86662	B2N854(121542002MSD)	121542002	ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121542

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
211275	211276	1	BLANK	86086	BLANK		SW-846 8260B Volatiles
211275	211276	2	LCS	86087	LCS		SW-846 8260B Volatiles
211275	211276	3	MS	86088	B2N861(121541009MS)	121541009	SW-846 8260B Volatiles
211275	211276	4	MSD	86089	B2N861(121541009MSD)	121541009	SW-846 8260B Volatiles
211275	211276	21	SAMPLE	121542002	B2N854		SW-846 8260B Volatiles
211275	211276	22	SAMPLE	121542002	B2N854		SW-846 8260B Volatiles

Batch QC List

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121542

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
211432	211761	1	BLANK	86331	BLANK		Tritium by LSC
211432	211761	2	LCS	86332	LCS		Tritium by LSC
211432	211761	4	DUP	86333	B2N0H7(121559024DUP)	121559024	Tritium by LSC
211432	211761	5	MS	86334	B2N0H7(121559024MS)	121559024	Tritium by LSC
211432	211761	17	SAMPLE	121542002	B2N854		Tritium by LSC
211766	211844	1	BLANK	86682	BLANK		Technetium-99 by ICP MS
211766	211844	2	LCS	86683	LCS		Technetium-99 by ICP MS
211766	211844	13	SAMPLE	121542002	B2N854		Technetium-99 by ICP MS

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

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-505-411	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emmision Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	Determination of Trace Elements in Waters & Wastes by ICP Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
	HEIS	200.8_METALS_ICPMS	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma, Mass Spec.
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

Method Reference

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121542

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-523-455 Volatile Sample Analysis by SW-846 Method 8260B

EPA SW-846	8000B	Determinative Chromographic Separations
EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

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

Method Reference

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121542

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-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-505-412	Technicium-99 by ICP-MS		
	HEIS	RADISOTOPES_ICPMS	Tc-99 by ICPMS

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 # WSCF121542

Sample # 121542001
SAF# F13-002
Sample ID B2N853

Matrix WATER
Sampled 12/04/12
Received 12/04/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/04/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00930		mg/L	1	0.0020	0.0050	12/04/12

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 # WSCF121542

Sample # 121542002
SAF# F13-002
Sample ID B2N854

Matrix WATER
Sampled 12/04/12
Received 12/04/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/05/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.240		ug/mL	2	0.046	0.14	12/05/12
Chloride	16887-00-6	LA-533-410	D	66.8		ug/mL	2	0.12	0.81	12/05/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	12/05/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	12/05/12
Nitrate-N	NO3-N	LA-533-410	D	16.7		ug/mL	2	0.038	0.20	12/05/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	12/05/12
Sulfate	14808-79-8	LA-533-410	D	39.8		ug/mL	2	0.22	2.1	12/05/12
ICPAES Prep (W)										**12/10/12**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	12/11/12
Calcium	7440-70-2	LA-505-411		71900		ug/L	1	49	240	12/11/12
ICPMS Prep (W)										**12/18/12**
ICP-2008 MS All possible metal										
Aluminum	7429-90-5	LA-505-412	U	<5.0		ug/L	1	5.0	50	12/18/12
Manganese	7439-96-5	LA-505-412	U	<0.10		ug/L	1	0.10	1.0	12/18/12
Nickel	7440-02-0	LA-505-412	B	0.345		ug/L	1	0.10	1.0	12/18/12
Barium	7440-39-3	LA-505-412		72.2		ug/L	1	0.20	2.0	12/18/12

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 # WSCF121542

Sample # 121542002
SAF# F13-002
Sample ID B2N854

Matrix WATER
Sampled 12/04/12
Received 12/04/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.050		ug/L	1	0.050	0.50	12/18/12
Chromium	7440-47-3	LA-505-412		9.46		ug/L	1	0.10	1.0	12/18/12
Cobalt	7440-48-4	LA-505-412	U	<0.050		ug/L	1	0.050	0.25	12/18/12
Copper	7440-50-8	LA-505-412	U	<0.10		ug/L	1	0.10	1.0	12/18/12
Vanadium	7440-62-2	LA-505-412		26.8		ug/L	1	0.20	2.0	12/18/12
Zinc	7440-66-6	LA-505-412	U	<1.0		ug/L	1	1.0	10	12/18/12
Lead	7439-92-1	LA-505-412	U	<0.050		ug/L	1	0.050	0.50	12/18/12
Molybdenum	7439-98-7	LA-505-412		2.56		ug/L	1	0.050	0.50	12/18/12
Strontium	7440-24-6	LA-505-412		331		ug/L	1	0.10	1.0	12/18/12
Uranium	7440-61-1	LA-505-412		1.37		ug/L	1	0.050	0.25	12/18/12
Arsenic	7440-38-2	LA-505-412		2.16		ug/L	1	0.20	2.0	12/18/12
Selenium	7782-49-2	LA-505-412	B	1.76		ug/L	1	1.0	10	12/18/12
Boron	7440-42-8	LA-505-412		12.9		ug/L	1	0.50	5.0	12/18/12

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 Organic, Volatiles

Group # WSCF121542

Sample # 121542002
SAF# F13-002
Sample ID B2N854

Matrix WATER
Sampled 12/04/12
Received 12/04/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**12/06/12**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<2		ug/L	1	2	10	12/13/12
Trichloroethene	79-01-6	LA-523-455	J	6.9		ug/L	1	2	10	12/13/12
Benzene	71-43-2	LA-523-455	U	<2		ug/L	1	2	10	12/13/12
Toluene	108-88-3	LA-523-455	U	<2		ug/L	1	2	10	12/13/12
Chlorobenzene	108-90-7	LA-523-455	U	<2		ug/L	1	2	10	12/13/12
Carbon tetrachloride	56-23-5	LA-523-455		1400		ug/L	1	20	100	12/06/12
Chloroform	67-66-3	LA-523-455		10		ug/L	1	2	10	12/13/12
Chloromethane	74-87-3	LA-523-455	U	<2		ug/L	1	2	10	12/13/12
Vinyl chloride	75-01-4	LA-523-455	U	<2		ug/L	1	2	10	12/13/12
Methylene chloride	75-09-2	LA-523-455	U	<2		ug/L	1	2	10	12/13/12
cis-1,2-Dichloroethene	156-59-2	LA-523-455	U	<2		ug/L	1	2	10	12/13/12

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

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - GC/MS or N - Non GC/MS - MS/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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121542

Sample # 121542002
SAF# F13-002
Sample ID B2N854

Matrix WATER
Sampled 12/04/12
Received 12/04/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										**12/18/12**
Technetium-99 by ICP MS										
Technetium-99	14133-76-7	LA-505-412		0.0050		ug/L	1	0.0010		12/18/12
Tritium by LSC EICHROM WA/LIQ PREP										**12/12/12**
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		3700	810	pCi/L	1	330		12/12/12

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

B - Analyte was detected in both the BLANK and SAMPLE
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.

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analytical Batch 211248 (QC Batch: 211248)
Associated Samples 121542002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #86022**							
Fluoride	16984-48-8		<0.023	ug/mL					U	12/04/12
Chloride	16887-00-6		<0.058	ug/mL					U	12/04/12
Nitrite-N	NO2-N		<0.019	ug/mL					U	12/04/12
Bromide	24959-67-9		<0.11	ug/mL					U	12/04/12
Nitrate-N	NO3-N		<0.019	ug/mL					U	12/04/12
Phosphate-P	PO4-P		<0.042	ug/mL					U	12/04/12
Sulfate	14808-79-8		<0.11	ug/mL					U	12/04/12
LCS			**QC Sample #86023**							
Fluoride	16984-48-8		0.970	ug/mL	98	90 - 110				12/04/12
Chloride	16887-00-6		1.89	ug/mL	95.3	90 - 110				12/04/12
Nitrite-N	NO2-N		0.995	ug/mL	101.7	90 - 110				12/04/12
Bromide	24959-67-9		3.92	ug/mL	100.1	90 - 110				12/04/12
Nitrate-N	NO3-N		0.891	ug/mL	100.6	90 - 110				12/04/12
Phosphate-P	PO4-P		1.97	ug/mL	103.2	90 - 110				12/04/12
Sulfate	14808-79-8		3.95	ug/mL	100.6	90 - 110				12/04/12
DUP			**QC Sample #86024**							
			Original 121539010							

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Fluoride	16984-48-8		0.0760	ug/mL			2.70	20		BD	12/04/12
Chloride	16887-00-6		1.39	ug/mL			2.40	20		D	12/04/12
Nitrite-N	NO2-N		<0.038	ug/mL			200.00	20	*	UD	12/04/12
Bromide	24959-67-9		<0.22	ug/mL			0.00	20		UD	12/04/12
Nitrate-N	NO3-N		0.390	ug/mL			6.10	20		D	12/04/12
Phosphate-P	PO4-P		<0.084	ug/mL			0.00	20		UD	12/04/12
Sulfate	14808-79-8		11.9	ug/mL			1.30	20		D	12/04/12
MS			**QC Sample #86025**								
			Original 121539010								
Fluoride	16984-48-8		0.923	ug/mL	92.3	80 - 120				D	12/04/12
Chloride	16887-00-6		1.85	ug/mL	92.6	80 - 120				D	12/04/12
Nitrite-N	NO2-N		0.963	ug/mL	97.5	80 - 120				D	12/04/12
Bromide	24959-67-9		3.97	ug/mL	100.2	80 - 120				D	12/04/12
Nitrate-N	NO3-N		0.887	ug/mL	99.2	80 - 120				D	12/04/12
Phosphate-P	PO4-P		1.93	ug/mL	100.2	80 - 120				D	12/04/12
Sulfate	14808-79-8		4.00	ug/mL	101.1	80 - 120				D	12/04/12
MSD			**QC Sample #86026**								
			Original 121539010						**Paired**	**86025**	
Fluoride	16984-48-8		0.938	ug/mL	93.8	80 - 120	1.50	20		D	12/04/12
Chloride	16887-00-6		1.97	ug/mL	98.7	80 - 120	3.70	20		D	12/04/12
Nitrite-N	NO2-N		1.00	ug/mL	101.7	80 - 120	4.20	20		D	12/04/12
Bromide	24959-67-9		3.94	ug/mL	99.6	80 - 120	0.60	20		D	12/04/12
Nitrate-N	NO3-N		0.867	ug/mL	97	80 - 120	1.50	20		D	12/04/12
Phosphate-P	PO4-P		1.87	ug/mL	96.9	80 - 120	3.40	20		D	12/04/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		4.00	ug/mL	100.9	80 - 120	0.00	20	D	12/04/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121542

Analytical Batch 211276 (QC Batch: 211275) **Test** SW-846 8260B Volatiles
Associated Samples 121542002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #86086**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	12/12/12
Trichloroethene	79-01-6		<1	ug/L					U	12/12/12
Benzene	71-43-2		<1	ug/L					U	12/12/12
Toluene	108-88-3		<1	ug/L					U	12/12/12
Chlorobenzene	108-90-7		<1	ug/L					U	12/12/12
Carbon tetrachloride	56-23-5		<1	ug/L					U	12/12/12
Chloroform	67-66-3		<1	ug/L					U	12/12/12
Chloromethane	74-87-3		<1	ug/L					U	12/12/12
Vinyl chloride	75-01-4		<1	ug/L					U	12/12/12
Methylene chloride	75-09-2		<1	ug/L					U	12/12/12
cis-1,2-Dichloroethene	156-59-2		<1	ug/L					U	12/12/12
LCS			**QC Sample #86087**							
1,1-Dichloroethene	75-35-4		21	ug/L	82.2	75 - 125				12/12/12
Trichloroethene	79-01-6		21	ug/L	83	75 - 125				12/12/12
Benzene	71-43-2		22	ug/L	87.5	75 - 125				12/12/12
Toluene	108-88-3		22	ug/L	86.6	75 - 125				12/12/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121542

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Chlorobenzene	108-90-7		21	ug/L	85.8	75 - 125				12/12/12
cis-1,2-Dichloroethene	156-59-2		22	ug/L	87	75 - 125				12/12/12
MS			**QC Sample #86088**							
			Original 121541009							
1,1-Dichloroethene	75-35-4		43	ug/L	85.4	75 - 125				12/12/12
Trichloroethene	79-01-6		43	ug/L	86.1	75 - 125				12/12/12
Benzene	71-43-2		47	ug/L	93.2	75 - 125				12/12/12
Toluene	108-88-3		44	ug/L	88.2	75 - 125				12/12/12
Chlorobenzene	108-90-7		44	ug/L	88.6	75 - 125				12/12/12
cis-1,2-Dichloroethene	156-59-2		47	ug/L	94.3	75 - 125				12/12/12
MSD			**QC Sample #86089**							
			Original 121541009					**Paired**	**86088**	
1,1-Dichloroethene	75-35-4		44	ug/L	88.3	75 - 125	3.40	20		12/12/12
Trichloroethene	79-01-6		44	ug/L	88.2	75 - 125	2.40	20		12/12/12
Benzene	71-43-2		48	ug/L	95.8	75 - 125	2.80	20		12/12/12
Toluene	108-88-3		45	ug/L	90.2	75 - 125	2.20	20		12/12/12
Chlorobenzene	108-90-7		45	ug/L	90.5	75 - 125	2.10	20		12/12/12
cis-1,2-Dichloroethene	156-59-2		48	ug/L	96.2	75 - 125	1.90	20		12/12/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analytical Batch 211293 (QC Batch: 211293) **Test** Hexavalent chromium Discrete Analyzer
Associated Samples 121542001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #86150**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	12/04/12
LCS			**QC Sample #86152**							
Hexavalent chromium	18540-29-9		0.0530	mg/L	106	90 - 110				12/04/12
DUP			**QC Sample #86153**							
			Original 121541002							
Hexavalent chromium	18540-29-9		0.0565	mg/L			0.40	20		12/04/12
MS			**QC Sample #86154**							
			Original 121541002							
Hexavalent chromium	18540-29-9		0.0413	mg/L	103.2	85 - 115				12/04/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analytical Batch 211317 (QC Batch: 211262) **Test** ICP-6010 - All possible metals
Associated Samples 121542002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #86048**							
Iron	7439-89-6		<19	ug/L					U	12/11/12
Calcium	7440-70-2		<49	ug/L					U	12/11/12
LCS			**QC Sample #86050**							
Iron	7439-89-6		1040	ug/L	103.5	80 - 120				12/11/12
Calcium	7440-70-2		21000	ug/L	105	80 - 120				12/11/12
MS			**QC Sample #86051**							
			Original 121501017							
Iron	7439-89-6		1040	ug/L	103.5	75 - 125				12/11/12
Calcium	7440-70-2		21800	ug/L	109	75 - 125				12/11/12
MSD			**QC Sample #86052**							
			Original 121501017					**Paired 86051**		
Iron	7439-89-6		1010	ug/L	100.6	75 - 125	2.80	20		12/11/12
Calcium	7440-70-2		21700	ug/L	108.3	75 - 125	0.20	20		12/11/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121542

Analytical Batch 211761 (QC Batch: 211432) **Test** Tritium by LSC
Associated Samples 121542002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #86331**								
Tritium	10028-17-8		45	pCi/L						U	12/12/12
LCS			**QC Sample #86332**								
Tritium	10028-17-8		3100	pCi/L	98.4	80 - 120					12/12/12
DUP			**QC Sample #86333**								
			Original 121559024								
Tritium	10028-17-8		-2.7	pCi/L			275.00	20	*	U	12/12/12
MS			**QC Sample #86334**								
			Original 121559024								
Tritium	10028-17-8		20000	pCi/L	95.9	75 - 125					12/12/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analytical Batch 211763 (QC Batch: 211762)
Associated Samples 121542002

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #86659**							
Aluminum	7429-90-5		<5.0	ug/L					U	12/18/12
Manganese	7439-96-5		<0.10	ug/L					U	12/18/12
Nickel	7440-02-0		<0.10	ug/L					U	12/18/12
Barium	7440-39-3		<0.20	ug/L					U	12/18/12
Cadmium	7440-43-9		<0.050	ug/L					U	12/18/12
Chromium	7440-47-3		<0.10	ug/L					U	12/18/12
Cobalt	7440-48-4		<0.050	ug/L					U	12/18/12
Copper	7440-50-8		<0.10	ug/L					U	12/18/12
Vanadium	7440-62-2		0.420	ug/L					B	12/18/12
Zinc	7440-66-6		<1.0	ug/L					U	12/18/12
Lead	7439-92-1		<0.050	ug/L					U	12/18/12
Molybdenum	7439-98-7		<0.050	ug/L					U	12/18/12
Strontium	7440-24-6		<0.10	ug/L					U	12/18/12
Uranium	7440-61-1		<0.050	ug/L					U	12/18/12
Arsenic	7440-38-2		<0.20	ug/L					U	12/18/12
Selenium	7782-49-2		<1.0	ug/L					U	12/18/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #86660**							
Aluminum	7429-90-5		418	ug/L	104.5	85 - 115				12/18/12
Manganese	7439-96-5		41.8	ug/L	104.5	85 - 115				12/18/12
Nickel	7440-02-0		41.7	ug/L	104.2	85 - 115				12/18/12
Barium	7440-39-3		41.7	ug/L	104.2	85 - 115				12/18/12
Cadmium	7440-43-9		41.7	ug/L	104.2	85 - 115				12/18/12
Chromium	7440-47-3		42.0	ug/L	105.1	85 - 115				12/18/12
Cobalt	7440-48-4		41.6	ug/L	103.9	85 - 115				12/18/12
Copper	7440-50-8		41.6	ug/L	104	85 - 115				12/18/12
Vanadium	7440-62-2		42.6	ug/L	106.4	85 - 115				12/18/12
Zinc	7440-66-6		40.3	ug/L	100.8	85 - 115				12/18/12
Lead	7439-92-1		43.2	ug/L	107.9	85 - 115				12/18/12
Molybdenum	7439-98-7		41.8	ug/L	104.4	85 - 115				12/18/12
Strontium	7440-24-6		421	ug/L	105.2	85 - 115				12/18/12
Uranium	7440-61-1		43.2	ug/L	108	85 - 115				12/18/12
Arsenic	7440-38-2		41.8	ug/L	104.6	85 - 115				12/18/12
Selenium	7782-49-2		39.8	ug/L	99.6	85 - 115				12/18/12
MS			**QC Sample #86661**							
			Original 121542002							
Aluminum	7429-90-5	<5.0	402	ug/L	100.6	70 - 130				12/18/12
Manganese	7439-96-5	<0.10	39.8	ug/L	99.6	70 - 130				12/18/12
Nickel	7440-02-0	0.345	38.5	ug/L	96.2	70 - 130				12/18/12
Barium	7440-39-3	72.2	40.7	ug/L	101.8	70 - 130				12/18/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Cadmium	7440-43-9	<0.050	41.1	ug/L	102.8	70 - 130				12/18/12
Chromium	7440-47-3	9.46	40.5	ug/L	101.2	70 - 130				12/18/12
Cobalt	7440-48-4	<0.050	39.1	ug/L	97.8	70 - 130				12/18/12
Copper	7440-50-8	<0.10	37.8	ug/L	94.4	70 - 130				12/18/12
Vanadium	7440-62-2	26.8	41.7	ug/L	104.2	70 - 130				12/18/12
Zinc	7440-66-6	<1.0	39.0	ug/L	97.6	70 - 130				12/18/12
Lead	7439-92-1	<0.050	43.1	ug/L	107.8	70 - 130				12/18/12
Molybdenum	7439-98-7	2.56	43.2	ug/L	108	70 - 130				12/18/12
Strontium	7440-24-6	331	411	ug/L	102.8	70 - 130				12/18/12
Uranium	7440-61-1	1.37	45.5	ug/L	113.7	70 - 130				12/18/12
Arsenic	7440-38-2	2.16	42.6	ug/L	106.6	70 - 130				12/18/12
Selenium	7782-49-2	1.76	41.4	ug/L	103.6	70 - 130				12/18/12
MSD			**QC Sample #86662**							
			Original 121542002						**Paired 86661**	
Aluminum	7429-90-5	<5.0	396	ug/L	99	70 - 130	1.70	20		12/18/12
Manganese	7439-96-5	<0.10	39.2	ug/L	97.9	70 - 130	1.70	20		12/18/12
Nickel	7440-02-0	0.345	38.1	ug/L	95.2	70 - 130	1.00	20		12/18/12
Barium	7440-39-3	72.2	37.8	ug/L	94.6	70 - 130	2.60	20		12/18/12
Cadmium	7440-43-9	<0.050	39.8	ug/L	99.4	70 - 130	3.30	20		12/18/12
Chromium	7440-47-3	9.46	39.8	ug/L	99.4	70 - 130	1.50	20		12/18/12
Cobalt	7440-48-4	<0.050	38.4	ug/L	96	70 - 130	1.80	20		12/18/12
Copper	7440-50-8	<0.10	36.9	ug/L	92.2	70 - 130	2.30	20		12/18/12
Vanadium	7440-62-2	26.8	39.5	ug/L	98.6	70 - 130	3.30	20		12/18/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121542

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Zinc	7440-66-6	<1.0	38.2	ug/L	95.5	70 - 130	2.20	20		12/18/12
Lead	7439-92-1	<0.050	42.4	ug/L	106	70 - 130	1.70	20		12/18/12
Molybdenum	7439-98-7	2.56	42.1	ug/L	105.1	70 - 130	2.50	20		12/18/12
Strontium	7440-24-6	331	404	ug/L	101	70 - 130	1.00	20		12/18/12
Uranium	7440-61-1	1.37	44.6	ug/L	111.4	70 - 130	2.00	20		12/18/12
Arsenic	7440-38-2	2.16	41.9	ug/L	104.8	70 - 130	1.70	20		12/18/12
Selenium	7782-49-2	1.76	39.7	ug/L	99.2	70 - 130	4.10	20		12/18/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121542

Analytical Batch 211844 (QC Batch: 211766) **Test** Technetium-99 by ICP MS
Associated Samples 121542002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #86682**							
Technetium-99	14133-76-7		<0.0010	ug/L					U	12/18/12
LCS			**QC Sample #86683**							
Technetium-99	14133-76-7		0.052	ug/L	97.4	85 - 115				12/18/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121542

Analytical Batch 211276 (QC Batch: 211275) **Test** SW-846 8260B Volatiles
Associated Samples 121542002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #121542002**							
1,2-Dichloroethane-d4	17060-07-0				128.8	75 - 125			X	12/13/12
Toluene-d8	2037-26-5				84.4	75 - 125				12/13/12
4-Bromofluorobenzene	460-00-4				97.8	75 - 125				12/13/12
BLANK			**QC Sample #86086**							
1,2-Dichloroethane-d4	17060-07-0				89.4	75 - 125				12/12/12
Toluene-d8	2037-26-5				91.8	75 - 125				12/12/12
4-Bromofluorobenzene	460-00-4				97	75 - 125				12/12/12
LCS			**QC Sample #86087**							
1,2-Dichloroethane-d4	17060-07-0				93.1	75 - 125				12/12/12
Toluene-d8	2037-26-5				91.3	75 - 125				12/12/12
4-Bromofluorobenzene	460-00-4				95.6	75 - 125				12/12/12
MS			**QC Sample #86088**							
			Original 121541009							
1,2-Dichloroethane-d4	17060-07-0				105.3	75 - 125				12/12/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121542

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				88.7	75 - 125				12/12/12
4-Bromofluorobenzene	460-00-4				94.4	75 - 125				12/12/12
MSD			**QC Sample #86089**							
			Original	**121541009**				**Paired**	**86088**	
1,2-Dichloroethane-d4	17060-07-0				106.9	75 - 125	n/a			12/12/12
Toluene-d8	2037-26-5				89.2	75 - 125	n/a			12/12/12
4-Bromofluorobenzene	460-00-4				96.1	75 - 125	n/a			12/12/12

* - QC result out of range

n/a - Not Applicable

Tentatively Identified Peak Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121542

Peak Name	CAS #	RT	RQ	Result	Units
121542002 B2N854					
Methane, oxybis[dichlo	20524-86-1	14.999		3.1	ug/L

Analytical Comment Report

Attention: Scot Fitzgerald

Group # WSCF121542

121542002	**B2N854**
Department	Organic, Volatiles

Analyte 1,2-Dichloroethane-d4 - SW-846 8260B Volatiles

[1] Surrogate recovery outside of established laboratory control limits.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 5 pages
Including cover page

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
CACN:	403315
Work Order #:	121542
Customer Work ID:	F13-002-082
Due Date:	01/18/2013,12/19/2012

The following samples were received from you on 12/4/2012 2:00:00 PM. They have been scheduled for the tests listed below 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
121542001	B2N853	WATER	12/4/2012 09:37	12/4/2012 14:00

Procedure	Compound List
Hexavalent chromium Discrete Analyzer	Cr6

Sample #	Sample ID	Matrix	Collected	Received
121542002	B2N854	WATER	12/4/2012 09:37	12/4/2012 14:00

Procedure	Compound List
Anions by Ion Chromatography (Water)	F,Cl,NO2,Br,NO3,PO4,SO4
ICP-2008 MS All possible metal	Al,Mn,Ni,Ba,Cd,Cr,Co,Cu,V,Zn,Pb,Mo,Sr,U,As,Se,B
ICP-6010 - All possible metals	Fe,Ca
SW-846 8260B Volatiles	more than 50 compounds...
Technetium-99 by ICP MS	Tc-99
Tritium by LSC	H3

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F13-002-082	PAGE 1 OF 1
COLLECTOR F. M. Hall Kauer	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7C	DATA TURNAROUND
SAMPLING LOCATION 289-T, 299-W14-74, Valve V05-YE04	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling		SAF NO. F13-002	AIR QUALITY ☐	15 Days / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N- 585-6/62	ACTUAL SAMPLE DEPTH N/A	COA 303111ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE
121542

PRESERVATION	Cool~4C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	7196_CR6; COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2N853	WATER	12-4-12	0937	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM F. M. Hall [signature]	12-4-12 1400	RECEIVED BY/STORED IN TA Frazier [signature]	12-4-12 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
** The CACN for WSCF Analytical is 403315.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

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LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F13-002-083	PAGE 1 OF 2
COLLECTOR F M Hall Kawe	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7C	DATA TURNAROUND
SAMPLING LOCATION 289-T, 299-W14-74, Valve Y05-YE04	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling		SAF NO. F13-002	AIR QUALITY ☐	15 Days / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N- 585-6/6c	ACTUAL SAMPLE DEPTH N/A	COA 303111ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool4C	HNO3 to pH <2	Cool~4C	None	None
HOLDING TIME	14 Days	6 Months	48 Hours	None	6 Months
TYPE OF CONTAINER	aGs*	G/P	P	G/P	G
NO. OF CONTAINER(S)	3	1	1	1	1
VOLUME	40mL	500mL	500mL	60mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 8260	SEE ITEM (2) IN SPECIAL INSTRUCTIONS 6010, 8,	SEE ITEM (3) IN SPECIAL INSTRUCTIONS TC	Tc-99 by ICPMS;	TRITIUM_EIE_L SC; COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2N854 2	WATER	12-4-12	0937	✓	—	—	—	—

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM F M Hall	12-4-12 1400	RECEIVED BY/STORED IN TA FRAZIER	12-4-12 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST — F13-002-083 — PAGE 2 OF 2

COLLECTOR: F. M. Hall	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: 289-T, 299-W14-74; Valve V05-YE04	PROJECT DESIGNATION: 200W Pump & Treat - Extraction Well Water Sampling		SAF NO.: F13-002
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-285-6 / 62	ACTUAL SAMPLE DEPTH: N/A	COA: 303111ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 7C — AIR QUALITY: [ ] — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — DATA TURNAROUND: 15 Days / 15 Days — ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 403315.□** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) 8260_VOA_GCMS: COMMON {Carbon tetrachloride, Chloroform, Methylene chloride, Trichloroethene, Vinyl chloride}; 8260_VOA_GCMS: CH 01 {Chloromethane}; 8260_VOA_GCMS: COMMON (Add-on) {cis-1,2-Dichloroethylene};
(2) 200.8_METALS_ICPMS: COMMON {Aluminum, Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Selenium}; 200.8_METALS_ICPMS: COMMON (Add-on) {Boron, Manganese, Nickel, Strontium, Uranium, Vanadium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron};
(3) 300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: COMMON (Add-on);

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