

DECEMBER 06, 2012

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



December 6, 2012

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121447

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 WSCF121447

- * 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 # WSCF121447

Data Deliverable Date 12/10/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
W13-011	B2MNN2	121447001	WATER	11/08/12	11/08/12
W13-011	B2MNM5	121447002	WATER	11/08/12	11/08/12
W13-011	B2MNN6	121447003	WATER	11/08/12	11/08/12
W13-011	B2MNL3	121447004	WATER	11/08/12	11/08/12
W13-011	B2MNL7	121447005	WATER	11/08/12	11/08/12
W13-011	B2MNN1	121447006	WATER	11/08/12	11/08/12
W13-011	B2MNM1	121447007	WATER	11/08/12	11/08/12
W13-011	B2MNN0	121447008	WATER	11/08/12	11/08/12
W13-011	B2MNN5	121447009	WATER	11/08/12	11/08/12
W13-011	B2MNM4	121447010	WATER	11/08/12	11/08/12
W13-011	B2MNM9	121447011	WATER	11/08/12	11/08/12
W13-011	B2MNL2	121447012	WATER	11/08/12	11/08/12
W13-011	B2MNL6	121447013	WATER	11/08/12	11/08/12
W13-011	B2MNM0	121447014	WATER	11/08/12	11/08/12
W13-011	B2MNM3	121447015	WATER	11/08/12	11/08/12
W13-011	B2MNN4	121447016	WATER	11/08/12	11/08/12
W13-011	B2MNL1	121447017	WATER	11/08/12	11/08/12
W13-011	B2MNL5	121447018	WATER	11/08/12	11/08/12
W13-011	B2MNM8	121447019	WATER	11/08/12	11/08/12
W13-011	B2MNM7	121447020	WATER	11/08/12	11/08/12
W13-011	B2MNL9	121447021	WATER	11/08/12	11/08/12

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
WSCF121447

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):

- Chloride and Sulfate – 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.

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):

- Calcium and Sodium were detected in the Blank and evaluated.
- All other applicable QC controls are within the established limits.

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

- All applicable QC controls are within the established limits.

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

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 53 pages
Including cover page

DECEMBER 06, 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 # WSCF121447
Report Date December 6, 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 # WSCF121447

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210015	210015	2	BLANK	84767	BLANK		Anions by Ion Chromatography (Water)
210015	210015	3	LCS	84768	LCS		Anions by Ion Chromatography (Water)
210015	210015	4	DUP	84769	B2MK83(121444005DUP)	121444005	Anions by Ion Chromatography (Water)
210015	210015	5	MS	84770	B2MK83(121444005MS)	121444005	Anions by Ion Chromatography (Water)
210015	210015	6	MSD	84771	B2MK83(121444005MSD)	121444005	Anions by Ion Chromatography (Water)
210015	210015	11	SAMPLE	121447008	B2MNN0		Anions by Ion Chromatography (Water)
210015	210015	12	SAMPLE	121447008	B2MNN0		Anions by Ion Chromatography (Water)
210015	210015	13	SAMPLE	121447009	B2MNN5		Anions by Ion Chromatography (Water)
210015	210015	14	SAMPLE	121447010	B2MNM4		Anions by Ion Chromatography (Water)
210015	210015	15	SAMPLE	121447011	B2MNM9		Anions by Ion Chromatography (Water)
210015	210015	16	SAMPLE	121447012	B2MNL2		Anions by Ion Chromatography (Water)
210015	210015	17	SAMPLE	121447013	B2MNL6		Anions by Ion Chromatography (Water)
210015	210015	18	SAMPLE	121447014	B2MNM0		Anions by Ion Chromatography (Water)
210331	210331	1	BLANK	85062	BLANK		Hexavalent chromium Discrete Analyzer
210331	210331	3	LCS	85064	LCS		Hexavalent chromium Discrete Analyzer
210331	210331	4	DUP	85065	B2MNN2(121447001DUP)	121447001	Hexavalent chromium Discrete Analyzer
210331	210331	5	MS	85066	B2MNN2(121447001MS)	121447001	Hexavalent chromium Discrete Analyzer
210331	210331	6	SAMPLE	121447001	B2MNN2		Hexavalent chromium Discrete Analyzer
210331	210331	7	SAMPLE	121447002	B2MNM5		Hexavalent chromium Discrete Analyzer
210331	210331	8	SAMPLE	121447003	B2MNN6		Hexavalent chromium Discrete Analyzer
210331	210331	9	SAMPLE	121447004	B2MNL3		Hexavalent chromium Discrete Analyzer
210331	210331	10	SAMPLE	121447005	B2MNL7		Hexavalent chromium Discrete Analyzer
210331	210331	11	SAMPLE	121447006	B2MNN1		Hexavalent chromium Discrete Analyzer

Batch QC List

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210331	210331	12	SAMPLE	121447007	B2MNM1		Hexavalent chromium Discrete Analyzer
210746	210922	5	BLANK	85447	BLANK		ICP-6010 - All possible metals
210746	210922	7	LCS	85449	LCS		ICP-6010 - All possible metals
210746	210922	9	MS	85450	B2MMW5(121446004MS)	121446004	ICP-6010 - All possible metals
210746	210922	10	MSD	85451	B2MMW5(121446004MS)	121446004	ICP-6010 - All possible metals
210746	210922	12	SAMPLE	121447015	B2MNM3		ICP-6010 - All possible metals
210746	210922	13	SAMPLE	121447016	B2MNN4		ICP-6010 - All possible metals
210746	210922	14	SAMPLE	121447017	B2MNL1		ICP-6010 - All possible metals
210746	210922	15	SAMPLE	121447018	B2MNL5		ICP-6010 - All possible metals
210746	210922	16	SAMPLE	121447019	B2MNM8		ICP-6010 - All possible metals
210746	210922	17	SAMPLE	121447020	B2MNM7		ICP-6010 - All possible metals
210746	210922	18	SAMPLE	121447021	B2MNL9		ICP-6010 - All possible metals

Batch QC List

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210122	210122	1	LCS	84826	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	5	DUP	84827	B2LLT4(121422001DUP)	121422001	Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	13	LCS	84828	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	18	SAMPLE	121447015	B2MNM3		Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	19	LCS	84829	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	1	LCS	85361	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	2	SAMPLE	121447016	B2MNN4		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	3	SAMPLE	121447017	B2MNL1		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	4	SAMPLE	121447018	B2MNL5		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	5	SAMPLE	121447019	B2MNM8		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	6	SAMPLE	121447020	B2MNM7		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	7	SAMPLE	121447021	B2MNL9		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	9	DUP	85362	B2MN75(121448008DUP)	121448008	Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	13	LCS	85363	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210653	210653	19	LCS	85364	LCS		Total Alkalinity as mg/L CaCO3 (Water)

Method Reference

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

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 Emmission Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmission Spectrometry
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 Wet Chemistry

Group # WSCF121447

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-531-411	Alkalinity		
	SM	2320	Alkalinity
	HEIS	2320_ALKALINITY	Alkalinity

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 # WSCF121447

Sample # 121447001
 SAF# W13-011
 Sample ID B2MNN2

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00360		mg/L	1	0.0020	0.0050	11/08/12

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 # WSCF121447

Sample # 121447002
 SAF# W13-011
 Sample ID B2MNM5

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00360		mg/L	1	0.0020	0.0050	11/08/12

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 # WSCF121447

Sample # 121447003
 SAF# W13-011
 Sample ID B2MNN6

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00570		mg/L	1	0.0020	0.0050	11/08/12

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 # WSCF121447

Sample # 121447004
 SAF# W13-011
 Sample ID B2MNL3

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00760		mg/L	1	0.0020	0.0050	11/08/12

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 # WSCF121447

Sample # 121447005
 SAF# W13-011
 Sample ID B2MNL7

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0524		mg/L	1	0.0020	0.0050	11/08/12

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 # WSCF121447

Sample # 121447006
 SAF# W13-011
 Sample ID B2MNN1

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/08/12

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 # WSCF121447

Sample # 121447007
 SAF# W13-011
 Sample ID B2MNM1

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00390		mg/L	1	0.0020	0.0050	11/08/12

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 # WSCF121447

Sample # 121447008
 SAF# W13-011
 Sample ID B2MNN0

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/08/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.146		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	D	44.2		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Bromide	24959-67-9	LA-533-410	BD	0.476		ug/mL	2	0.22	0.96	11/08/12
Nitrate-N	NO3-N	LA-533-410	D	35.7		ug/mL	10	0.19	0.99	11/08/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/08/12
Sulfate	14808-79-8	LA-533-410	D	63.3		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121447

Sample # 121447009
 SAF# W13-011
 Sample ID B2MNN5

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/08/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.871		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	D	33.0		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/08/12
Nitrate-N	NO3-N	LA-533-410	D	26.0		ug/mL	2	0.038	0.20	11/08/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/08/12
Sulfate	14808-79-8	LA-533-410	D	44.5		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121447

Sample # 121447010
 SAF# W13-011
 Sample ID B2MNM4

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.269		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	D	43.2		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/08/12
Nitrate-N	NO3-N	LA-533-410	D	35.5		ug/mL	2	0.038	0.20	11/08/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/08/12
Sulfate	14808-79-8	LA-533-410	D	36.2		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121447

Sample # 121447011
 SAF# W13-011
 Sample ID B2MNM9

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/08/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	UD	<0.046		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	UD	<0.12		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/08/12
Nitrate-N	NO3-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/08/12
Sulfate	14808-79-8	LA-533-410	UD	<0.22		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121447

Sample # 121447012
 SAF# W13-011
 Sample ID B2MNL2

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.771		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	D	24.7		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/08/12
Nitrate-N	NO3-N	LA-533-410	D	20.3		ug/mL	2	0.038	0.20	11/08/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/08/12
Sulfate	14808-79-8	LA-533-410	D	49.7		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121447

Sample # 121447013
 SAF# W13-011
 Sample ID B2MNL6

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/08/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.976		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	D	40.1		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/08/12
Nitrate-N	NO3-N	LA-533-410	D	29.6		ug/mL	2	0.038	0.20	11/08/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/08/12
Sulfate	14808-79-8	LA-533-410	D	57.4		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121447

Sample # 121447014
 SAF# W13-011
 Sample ID B2MNM0

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/08/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.277		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	D	62.2		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/08/12
Nitrate-N	NO3-N	LA-533-410	D	17.7		ug/mL	2	0.038	0.20	11/08/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/08/12
Sulfate	14808-79-8	LA-533-410	D	36.1		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121447

Sample # 121447015
 SAF# W13-011
 Sample ID B2MNM3

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										11/28/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	87.1		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		22600		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	B	7.80		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		5670		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		22900		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		66.0		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	B	15.0		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	B	15.8		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		66600		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		256		ug/L	1	9.0	45	11/29/12

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 # WSCF121447

Sample # 121447015
 SAF# W13-011
 Sample ID B2MNM3

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12

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 # WSCF121447

Sample # 121447016
 SAF# W13-011
 Sample ID B2MNN4

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										11/28/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	86.9		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		17500		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	B	8.80		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		5480		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		34300		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		59.9		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	B	18.1		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	B	20.8		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		53500		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		207		ug/L	1	9.0	45	11/29/12

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 # WSCF121447

Sample # 121447016
 SAF# W13-011
 Sample ID B2MNN4

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12

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 # WSCF121447

Sample # 121447017
 SAF# W13-011
 Sample ID B2MNL1

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										11/28/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	54.1		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		17600		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	B	7.50		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		5400		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		31300		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		57.1		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	B	15.5		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	B	22.2		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	B	7.00		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		54800		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		212		ug/L	1	9.0	45	11/29/12

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 # WSCF121447

Sample # 121447017
 SAF# W13-011
 Sample ID B2MNL1

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12

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 # WSCF121447

Sample # 121447018
 SAF# W13-011
 Sample ID B2MNL5

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										11/28/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	58.8		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		20300		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		5930		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		42800		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		65.6		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411		63.5		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	B	17.4		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	B	12.6		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		61300		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		241		ug/L	1	9.0	45	11/29/12

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 # WSCF121447

Sample # 121447018
 SAF# W13-011
 Sample ID B2MNL5

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12

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 # WSCF121447

Sample # 121447019
 SAF# W13-011
 Sample ID B2MNM8

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										11/28/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411		422		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		28500		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		6420		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		24000		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		88.1		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	B	5.50		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	B	13.1		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	B	10.0		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		79000		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		317		ug/L	1	9.0	45	11/29/12

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 # WSCF121447

Sample # 121447019
 SAF# W13-011
 Sample ID B2MNM8

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12

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 # WSCF121447

Sample # 121447020
 SAF# W13-011
 Sample ID B2MNM7

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										11/28/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411	U	<76		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411	U	<10		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411	U	<49		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411	U	<9.0		ug/L	1	9.0	45	11/29/12

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 # WSCF121447

Sample # 121447020
 SAF# W13-011
 Sample ID B2MNM7

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12

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 # WSCF121447

Sample # 121447021
 SAF# W13-011
 Sample ID B2MNL9

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										11/28/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	62.9		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		20800		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411		43.7		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		5740		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		25200		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		68.5		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	B	12.8		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	B	17.1		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		61000		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		238		ug/L	1	9.0	45	11/29/12

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 # WSCF121447

Sample # 121447021
 SAF# W13-011
 Sample ID B2MNL9

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12

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 Wet Chemistry

Group # WSCF121447

Sample # 121447015
 SAF# W13-011
 Sample ID B2MNM3

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/12/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		98		mg/L	1	1	10	11/12/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/12/12
Bicarbonate	71-52-3	LA-531-411		98		mg/L	1	1		11/12/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/12/12

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

B - Analyte < the RDL but >= the IDL/MDL.
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 N - MS and/or MSD sample recovery outside control limits.
 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.

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

Sample # 121447016
 SAF# W13-011
 Sample ID B2MNN4

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/14/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		100		mg/L	1	1	10	11/14/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/14/12
Bicarbonate	71-52-3	LA-531-411		100		mg/L	1	1		11/14/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/14/12

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

B - Analyte < the RDL but >= the IDL/MDL.
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 N - MS and/or MSD sample recovery outside control limits.
 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.

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

Sample # 121447017
 SAF# W13-011
 Sample ID B2MNL1

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/14/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		110		mg/L	1	1	10	11/14/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/14/12
Bicarbonate	71-52-3	LA-531-411		110		mg/L	1	1		11/14/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/14/12

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

B - Analyte < the RDL but >= the IDL/MDL.
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 N - MS and/or MSD sample recovery outside control limits.
 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.

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

Sample # 121447018
 SAF# W13-011
 Sample ID B2MNL5

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/14/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		110		mg/L	1	1	10	11/14/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/14/12
Bicarbonate	71-52-3	LA-531-411		110		mg/L	1	1		11/14/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/14/12

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

B - Analyte < the RDL but >= the IDL/MDL.
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 N - MS and/or MSD sample recovery outside control limits.
 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.

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

Sample # 121447019
 SAF# W13-011
 Sample ID B2MNM8

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/14/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		120		mg/L	1	1	10	11/14/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/14/12
Bicarbonate	71-52-3	LA-531-411		120		mg/L	1	1		11/14/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/14/12

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

B - Analyte < the RDL but >= the IDL/MDL.
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 N - MS and/or MSD sample recovery outside control limits.
 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.

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

Sample # 121447020
 SAF# W13-011
 Sample ID B2MNM7

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/14/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411	U	<1		mg/L	1	1	10	11/14/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/14/12
Bicarbonate	71-52-3	LA-531-411	U	<1		mg/L	1	1		11/14/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/14/12

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

B - Analyte < the RDL but >= the IDL/MDL.
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 N - MS and/or MSD sample recovery outside control limits.
 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.

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

Sample # 121447021
 SAF# W13-011
 Sample ID B2MNL9

Matrix WATER
 Sampled 11/08/12
 Received 11/08/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/14/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		110		mg/L	1	1	10	11/14/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/14/12
Bicarbonate	71-52-3	LA-531-411		110		mg/L	1	1		11/14/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/14/12

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

B - Analyte < the RDL but >= the IDL/MDL.
 C - Analyte was found in the Associated Blank. (Inorganic)
 D - Analyte was reported at a secondary dilution factor.
 N - MS and/or MSD sample recovery outside control limits.
 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 # WSCF121447

Analytical Batch 210015 (QC Batch: 210015) **Test** Anions by Ion Chromatography (Water)
Associated Samples 121447008, 121447009, 121447010, 121447011, 121447012, 121447013, 121447014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #84767								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/08/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/08/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/08/12
Bromide	24959-67-9	<0.11		ug/mL					U	11/08/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/08/12
Phosphate-P	PO4-P	<0.042		ug/mL					U	11/08/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/08/12
LCS		QC Sample #84768								
Fluoride	16984-48-8	0.968		ug/mL	97.7	90 - 110				11/08/12
Chloride	16887-00-6	1.98		ug/mL	100.1	90 - 110				11/08/12
Nitrite-N	NO2-N	1.06		ug/mL	108.5	90 - 110				11/08/12
Bromide	24959-67-9	4.24		ug/mL	108.2	90 - 110				11/08/12
Nitrate-N	NO3-N	0.947		ug/mL	107	90 - 110				11/08/12
Phosphate-P	PO4-P	1.99		ug/mL	103.9	90 - 110				11/08/12
Sulfate	14808-79-8	4.12		ug/mL	105	90 - 110				11/08/12
DUP		QC Sample #84769								
		Original 121444005								

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8		0.100	ug/mL			4.90	20	BD	11/08/12
Chloride	16887-00-6		21.9	ug/mL			4.40	20	D	11/08/12
Nitrite-N	NO2-N		<0.038	ug/mL			0.00	20	UD	11/08/12
Bromide	24959-67-9		<0.22	ug/mL			200.00	20	* UD	11/08/12
Nitrate-N	NO3-N		6.59	ug/mL			4.40	20	D	11/08/12
Phosphate-P	PO4-P		<0.084	ug/mL			0.00	20	UD	11/08/12
Sulfate	14808-79-8		52.8	ug/mL			4.70	20	D	11/08/12
MS		QC Sample #84770								
		Original 121444005								
Fluoride	16984-48-8		0.962	ug/mL	96.2	80 - 120			D	11/08/12
Chloride	16887-00-6		2.54	ug/mL	127.1	80 - 120			DX	11/08/12
Nitrite-N	NO2-N		0.950	ug/mL	96.1	80 - 120			D	11/08/12
Bromide	24959-67-9		4.09	ug/mL	103.2	80 - 120			D	11/08/12
Nitrate-N	NO3-N		0.982	ug/mL	109.8	80 - 120			D	11/08/12
Phosphate-P	PO4-P		1.98	ug/mL	102.4	80 - 120			D	11/08/12
Sulfate	14808-79-8		4.51	ug/mL	114	80 - 120			DX	11/08/12
MSD		QC Sample #84771								
		Original 121444005								
		Paired 84770								
Fluoride	16984-48-8		0.948	ug/mL	94.8	80 - 120	1.30	20	D	11/08/12
Chloride	16887-00-6		2.26	ug/mL	113.2	80 - 120	1.20	20	DX	11/08/12
Nitrite-N	NO2-N		0.930	ug/mL	94.1	80 - 120	2.10	20	D	11/08/12
Bromide	24959-67-9		4.02	ug/mL	101.5	80 - 120	1.80	20	D	11/08/12
Nitrate-N	NO3-N		0.842	ug/mL	94.1	80 - 120	1.90	20	D	11/08/12
Phosphate-P	PO4-P		1.95	ug/mL	101.1	80 - 120	1.30	20	D	11/08/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		3.44	ug/mL	86.8	80 - 120	2.00	20	DX	11/08/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121447

Analytical Batch 210122 (QC Batch: 210122) Test Total Alkalinity as mg/L CaCO3 (Water)
 Associated Samples 121447015

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			QC Sample #84826							
Total Alkalinity as CaCO3	ALKALINITY	97		mg/L	97.4	80 - 120				11/12/12
DUP			QC Sample #84827							
			Original 121422001							
Total Alkalinity as CaCO3	ALKALINITY	200		mg/L			0.00	20		11/12/12
LCS			QC Sample #84828							
Total Alkalinity as CaCO3	ALKALINITY	97		mg/L	97.3	80 - 120				11/12/12
LCS			QC Sample #84829							
Total Alkalinity as CaCO3	ALKALINITY	97		mg/L	97.2	80 - 120				11/12/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

Analytical Batch 210331 (QC Batch: 210331) Test Hexavalent chromium Discrete Analyzer
 Associated Samples 121447001, 121447002, 121447003, 121447004, 121447005, 121447006, 121447007

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85062							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/08/12
LCS			QC Sample #85064							
Hexavalent chromium	18540-29-9		0.0503	mg/L	100.6	90 - 110				11/08/12
DUP			QC Sample #85065							
			Original 121447001							
Hexavalent chromium	18540-29-9	0.00360	0.00360	mg/L			0.00	20	B	11/08/12
MS			QC Sample #85066							
			Original 121447001							
Hexavalent chromium	18540-29-9	0.00360	0.0420	mg/L	105	85 - 115				11/08/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121447

Analytical Batch 210653 (QC Batch: 210653) **Test** Total Alkalinity as mg/L CaCO3 (Water)
Associated Samples 121447016, 121447017, 121447018, 121447019, 121447020, 121447021

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			QC Sample #85361							
Total Alkalinity as CaCO3	ALKALINITY	98		mg/L	97.6	80 - 120				11/14/12
DUP			QC Sample #85362							
			Original 121448008							
Total Alkalinity as CaCO3	ALKALINITY	95		mg/L			0.00	20		11/14/12
LCS			QC Sample #85363							
Total Alkalinity as CaCO3	ALKALINITY	97		mg/L	97.5	80 - 120				11/14/12
LCS			QC Sample #85364							
Total Alkalinity as CaCO3	ALKALINITY	98		mg/L	97.7	80 - 120				11/14/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121447

Analytical Batch 210922 (QC Batch: 210746) **Test** ICP-6010 - All possible metals
Associated Samples 121447015, 121447016, 121447017, 121447018, 121447019, 121447020, 121447021

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85447								
Iron	7439-89-6	<19		ug/L					U	11/29/12
Magnesium	7439-95-4	<4.0		ug/L					U	11/29/12
Manganese	7439-96-5	<4.0		ug/L					U	11/29/12
Nickel	7440-02-0	<4.0		ug/L					U	11/29/12
Potassium	7440-09-7	<76		ug/L					U	11/29/12
Silver	7440-22-4	<4.0		ug/L					U	11/29/12
Sodium	7440-23-5	13.0		ug/L					B	11/29/12
Antimony	7440-36-0	<36		ug/L					U	11/29/12
Barium	7440-39-3	<4.0		ug/L					U	11/29/12
Cadmium	7440-43-9	<4.0		ug/L					U	11/29/12
Chromium	7440-47-3	<5.0		ug/L					U	11/29/12
Cobalt	7440-48-4	<4.0		ug/L					U	11/29/12
Copper	7440-50-8	<4.0		ug/L					U	11/29/12
Vanadium	7440-62-2	<5.0		ug/L					U	11/29/12
Zinc	7440-66-6	<5.0		ug/L					U	11/29/12
Calcium	7440-70-2	89.5		ug/L					B	11/29/12
Strontium	7440-24-6	<9.0		ug/L					U	11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		<4.0	ug/L					U	11/29/12
LCS			QC Sample #85449							
Iron	7439-89-6		1030	ug/L	103.2	80 - 120				11/29/12
Magnesium	7439-95-4		10500	ug/L	105.2	80 - 120				11/29/12
Manganese	7439-96-5		1040	ug/L	104.2	80 - 120				11/29/12
Nickel	7440-02-0		1020	ug/L	101.5	80 - 120				11/29/12
Potassium	7440-09-7		11000	ug/L	109.8	80 - 120				11/29/12
Silver	7440-22-4		1040	ug/L	104	80 - 120				11/29/12
Sodium	7440-23-5		10700	ug/L	107	80 - 120				11/29/12
Antimony	7440-36-0		1050	ug/L	105.2	80 - 120				11/29/12
Barium	7440-39-3		1060	ug/L	106.3	80 - 120				11/29/12
Cadmium	7440-43-9		1030	ug/L	102.9	80 - 120				11/29/12
Chromium	7440-47-3		1040	ug/L	103.7	80 - 120				11/29/12
Cobalt	7440-48-4		1010	ug/L	101.3	80 - 120				11/29/12
Copper	7440-50-8		1050	ug/L	105.1	80 - 120				11/29/12
Vanadium	7440-62-2		1020	ug/L	102.5	80 - 120				11/29/12
Zinc	7440-66-6		1050	ug/L	105.1	80 - 120				11/29/12
Calcium	7440-70-2		20900	ug/L	104.4	80 - 120				11/29/12
Strontium	7440-24-6		1010	ug/L	100.9	80 - 120				11/29/12
Beryllium	7440-41-7		1040	ug/L	104.2	80 - 120				11/29/12
MS			QC Sample #85450							
			Original 121446004							
Iron	7439-89-6		1020	ug/L	102	75 - 125				11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		9890	ug/L	98.9	75 - 125				11/29/12
Manganese	7439-96-5		1020	ug/L	101.8	75 - 125				11/29/12
Nickel	7440-02-0		982	ug/L	98.2	75 - 125				11/29/12
Potassium	7440-09-7		10700	ug/L	106.6	75 - 125				11/29/12
Silver	7440-22-4		1020	ug/L	102.1	75 - 125				11/29/12
Sodium	7440-23-5		10200	ug/L	102.5	75 - 125				11/29/12
Antimony	7440-36-0		1040	ug/L	103.7	75 - 125				11/29/12
Barium	7440-39-3		1040	ug/L	103.6	75 - 125				11/29/12
Cadmium	7440-43-9		1010	ug/L	100.6	75 - 125				11/29/12
Chromium	7440-47-3		1010	ug/L	100.8	75 - 125				11/29/12
Cobalt	7440-48-4		978	ug/L	97.8	75 - 125				11/29/12
Copper	7440-50-8		1030	ug/L	103.3	75 - 125				11/29/12
Vanadium	7440-62-2		1010	ug/L	100.9	75 - 125				11/29/12
Zinc	7440-66-6		1030	ug/L	103.4	75 - 125				11/29/12
Calcium	7440-70-2		19400	ug/L	97.2	75 - 125				11/29/12
Strontium	7440-24-6		971	ug/L	97.1	75 - 125				11/29/12
Beryllium	7440-41-7		1020	ug/L	102.3	75 - 125				11/29/12
MSD			QC Sample #85451							
			Original	121446004				Paired	85450	
Iron	7439-89-6		1010	ug/L	101.2	75 - 125	0.80	20		11/29/12
Magnesium	7439-95-4		9940	ug/L	99.4	75 - 125	0.20	20		11/29/12
Manganese	7439-96-5		1010	ug/L	101.2	75 - 125	0.60	20		11/29/12
Nickel	7440-02-0		978	ug/L	97.8	75 - 125	0.50	20		11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121447

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7		10700	ug/L	106.7	75 - 125	0.10	20		11/29/12
Silver	7440-22-4		1020	ug/L	101.6	75 - 125	0.50	20		11/29/12
Sodium	7440-23-5		10200	ug/L	102.5	75 - 125	0.00	20		11/29/12
Antimony	7440-36-0		1030	ug/L	102.9	75 - 125	0.80	20		11/29/12
Barium	7440-39-3		1030	ug/L	103	75 - 125	0.50	20		11/29/12
Cadmium	7440-43-9		1000	ug/L	100.3	75 - 125	0.30	20		11/29/12
Chromium	7440-47-3		1000	ug/L	100.2	75 - 125	0.60	20		11/29/12
Cobalt	7440-48-4		976	ug/L	97.6	75 - 125	0.20	20		11/29/12
Copper	7440-50-8		1020	ug/L	102.3	75 - 125	1.00	20		11/29/12
Vanadium	7440-62-2		1000	ug/L	100.2	75 - 125	0.70	20		11/29/12
Zinc	7440-66-6		1020	ug/L	102.5	75 - 125	0.90	20		11/29/12
Calcium	7440-70-2		19800	ug/L	99.2	75 - 125	0.70	20		11/29/12
Strontium	7440-24-6		963	ug/L	96.3	75 - 125	0.70	20		11/29/12
Beryllium	7440-41-7		1020	ug/L	101.8	75 - 125	0.50	20		11/29/12

* - QC result out of range

n/a - Not Applicable

Attention: Scot Fitzgerald

Group #

WSCF121447

Quality Control Comments

Department Inorganic

84770 B2MK83(121444005MS)

Analyte Chloride - Anions by Ion Chromatography (Water)

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

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

84771 B2MK83(121444005MSD)

Analyte Chloride - Anions by Ion Chromatography (Water)

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

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 24 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 #: 121447

Profile #: W13-011-185

Proj. Mgr.:

Phone:

The following samples were received from you on 11/8/2012 2:45:00 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		
121447001	B2MNN2	WATER	11/8/2012 09:31	11/8/2012 14:45
		CR6DA-W		
121447002	B2MNM5	WATER	11/8/2012 14:19	11/8/2012 14:45
		CR6DA-W		
121447003	B2MNN6	WATER	11/8/2012 10:40	11/8/2012 14:45
		CR6DA-W		
121447004	B2MNL3	WATER	11/8/2012 11:27	11/8/2012 14:45
		CR6DA-W		
121447005	B2MNL7	WATER	11/8/2012 12:22	11/8/2012 14:45
		CR6DA-W		
121447006	B2MNN1	WATER	11/8/2012 07:40	11/8/2012 14:45
		CR6DA-W		
121447007	B2MNM1	WATER	11/8/2012 13:20	11/8/2012 14:45
		CR6DA-W		
121447008	B2MNN0	WATER	11/8/2012 09:31	11/8/2012 14:45
		IC-W		
121447009	B2MNN5	WATER	11/8/2012 10:40	11/8/2012 14:45
		IC-W		
121447010	B2MNM4	WATER	11/8/2012 14:19	11/8/2012 14:45
		IC-W		
121447011	B2MNM9	WATER	11/8/2012 07:40	11/8/2012 14:45

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

IC-W				
121447012	B2MNL2	WATER	11/8/2012 11:27	11/8/2012 14:45
IC-W				
121447013	B2MNL6	WATER	11/8/2012 12:22	11/8/2012 14:45
IC-W				
121447014	B2MNM0	WATER	11/8/2012 13:20	11/8/2012 14:45
IC-W				
121447015	B2MNM3	WATER	11/8/2012 14:19	11/8/2012 14:45
6010-W; ALK-W				
121447016	B2MNN4	WATER	11/8/2012 10:40	11/8/2012 14:45
6010-W; ALK-W				
121447017	B2MNL1	WATER	11/8/2012 11:27	11/8/2012 14:45
6010-W; ALK-W				
121447018	B2MNL5	WATER	11/8/2012 12:22	11/8/2012 14:45
6010-W; ALK-W				
121447019	B2MNM8	WATER	11/8/2012 09:31	11/8/2012 14:45
6010-W; ALK-W				
121447020	B2MNM7	WATER	11/8/2012 07:40	11/8/2012 14:45
6010-W; ALK-W				
121447021	B2MNL9	WATER	11/8/2012 13:20	11/8/2012 14:45
6010-W; ALK-W				

Test Acronym Description

Test Acronym	Description
6010-W	ICP-AES (W)
ALK-W	Total Alkalinity (W)
CR6DA-W	Cr6 (W Discrete analyzer)
IC-W	Anions by IC (W)

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
W13-011-185

Page 1 of 1

Collector	D.J. Weehle CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Tanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 <i>36/37</i>	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	RCRA	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: Yes No
 FY12 and FY13 samples cannot be in the same SDG.
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	Date	Time	No./Type Container	Received By	Signature	Date/Time	Sample Analysis	Holding Time	Preservative
B2MNM2	N	11-8-12	08:09:31	1x500-mL aG	7196 CR6, Hexavalent Chromium (1)				24 Hours	CoO-4C

121447
11-8-12

Relinquished By	D.J. Weehle CHPRC	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time
Relinquished By				NOV 08 2012 1445	J.A. FRAZIER			NOV 08 2012 1445
Relinquished By								
Relinquished By								

Matrix *	DS - Drum Solids	
	DL - Drum Liquids	
	T - Tissue	
	W1 - Waste	
	L - Liquid	
	V - Volatile	
	X - Other	
	S - Soil	
	SE - Sediment	
	SO - Solid	
	SL - Sludge	
	W - Water	
	O - Oil	
	A - Air	

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

Disposed By: _____ Date/Time: _____

PRINTED 10/10/2012

A-6004-942 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W13-011-179
Page 1 of 1

Collector	D.J. Woortke CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071E:520
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 36 / 37	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	RCRA	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.

PRIORITY Total Activity Exemption: Yes No

Sample No	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2ANNM5	N	11-8-12	1419	1x500-mL aG	7196_CR8_ Hexavalent Chromium (1)	24 Hours	CoO--4C

Relinquished By	Signature	Date/Time	Received By	Signature	Date/Time	Matrix *
D.J. Woortke CHPRC	<i>[Signature]</i>	NOV 08 2012 1419	Cynthia R Johnson	<i>[Signature]</i>	NOV 08 2012 1419	S - Soil SF - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Relinquished By		Date/Time	Received By		Date/Time	D3 - Drum Solids DL - Drum Liquids T - Tissue WI - Wine L - Liquid V - Vessel X - Other
Relinquished By		Date/Time	Received By		Date/Time	

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

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A-6004-842 (REV 2)

Chain of Custody

CH2M HILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W13-011-188
Page 1 of 1

Collector D.J. Woeltje CHPRC	Contact/Requester Karen Waters-Illstedt	Telephone No. 376-4650
SAF No. W13-011	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20
Project Title RCRA, NOVEMBER 2012	Logbook No. HNF-N-506 36 / 37	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 RCRA	Priority 31 Days	Offsite Property No. N/A

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

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

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MINN6 3	N	11-8-12	1040	1x500-mL BG	7196_CRE: Hexavalent Chromium (1)	24 Hours	COOL-4C

Requisitioned By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
D.J. Woeltje CHPRC	<i>[Signature]</i>	<i>[Signature]</i>	NOV 08 2012	Cynthia R Johnson	<i>[Signature]</i>	<i>[Signature]</i>	NOV 08 2012	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Requisitioned By			Date/Time	Received By			Date/Time	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Waste L = Liquid V = Vegetation X = Other
Requisitioned By			Date/Time	Received By			Date/Time	

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

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-011-170
Page 1 of 1

Collector	D.J. Woelke CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hamford Site	Purchase Order/Charge Code	300071ESS20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 <u>36137</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	RCRA	Priority:	31 Days 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 (1996/1995)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site Wide Generator Knowledge Information Form applies. The CACCN 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
B2MNL3	N	11-8-12	1127	1x500-mL AG	7196_CR6 Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	D.J. Woelke CHPRC	Print Sign	Date/Time	NOV 08 2012 11:27	Received By	Cynthia R Johnson	Print Sign	Date/Time	NOV 08 2012 11:55
Relinquished By			Date/Time		Received By			Date/Time	
Relinquished By			Date/Time		Received By			Date/Time	
Relinquished By			Date/Time		Received By			Date/Time	

Matrix *

S	Soil	DS	Drum Solids
SE	Sediment	DL	Drum Liquids
SO	Solid	T	Tissue
SL	Sludge	WI	Wine
W	Water	L	Liquid
O	Oil	V	Vegetation
A	Air	X	Other

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-6004-84Z (REV 2)

Chain of Custody

CH2MHill Plateau Remediation
Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-011-173
Page 1 of 1

Collector D.J. Weathie CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 376-4650
SAF No. W13-011	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071FS20
Project Title RCRA, NOVEMBER 2012	Logbook No. HNF-N-506 <i>36/37</i>	Ice Chest No. N/A
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
Protocol RCRA	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 Waste Generator Knowledge Information Form applies. The CALCN for all analytical work at WSCP is 401647.

Total Activity Exemption: Yes No

Sample No. B2MN17	Filter N	Date 11-8-12	Time 1222	No/Type Container 14500-mL AG	Sample Analysis 7199_CRE: Hexavalent Chromium (1)	Holding Time 24 Hours	Preservative Cool-4C
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Relinquished By D.J. Weathie CHPRC	Sign <i>[Signature]</i>	Date/Time NOV 08 2012	Received By Cynthia R Johnson	Sign <i>[Signature]</i>	Date/Time NOV 08 2012	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 WT - Wine L - Liquid V - Vegetation X - Other
Relinquished By		Date/Time	Received By		Date/Time	
FINAL SAMPLE DISPOSITION			Disposal Method (e.g., Return to customer, per lab procedure, used in process)			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. #
W13-011-182
Page 1 of 1

Collector	D.J. Weetle CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 36/37	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	RCRA	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.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNN1	N	11-8-12	0740	1x500-mL AG	7196_CR6 Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	Print D.J. Weetle CHPRC	Sign <i>[Signature]</i>	Date/Time NOV 08 2012 1445	Received By	Print JA ENZELER	Sign <i>[Signature]</i>	Date/Time NOV 08 2012 1445
Relinquished By				Received By			
Relinquished By				Received By			
Relinquished By				Received By			

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

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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A-5004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
W13-011-176
Page 1 of 1

Collector	D.J. Woohle CHPRC	Contract/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	INF-N-506 36 / 37	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Produced	RCRA	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 RESTRICTIONS Hold Time: FY12 and FY13 samples cannot be in the same SDG. Site Wide Generation Knowledge Information Form applies. The CACN for all analytical work at WSCF is 801647.

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNM1	N	11-8-12	1320	1x500-mL AG	7196_Cr6: Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	D.J. Woohle CHPRC	Sign	<i>[Signature]</i>	Date/Time	NOV 08 2012 14:45	Received By	Cynthia R Johnson	Sign	<i>[Signature]</i>	Date/Time	NOV 08 2012 14:45
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			

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

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

Deposited By _____ Date/Time _____

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A-8004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-011-184
Page 1 of 1

Collector	CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 36/37	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Production	RCRA	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 (1970/1993)

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 80167.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNN10	N	11-8-12	0931	1x500-mL P	300.0_ANIONS_IC: List-1 + Brom_Phosp (7)	48 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
D.J. Woeltje			NOV 08 2012 1445	TA			NOV 08 2012 1445	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Cheric				Paul				DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wine L = Liquid V = Vegetation X = Other
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	

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A-6004-842 (REV 2)

Chain of Custody

CH2M/Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
W13-011-187
Page 1 of 1

Collector	D.J. Woehle CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 <u>36 / 37</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	RCRA	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)			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.	B2MNN5	Filter	N	Date	11-8-12
		Time			1040
		No/Type Container	1x500-mL P	Sample Analysis	300.0_ANIONS_IC_List-1 + Brom_Phosp (7)
		Holding Time	48 Hours	Preservative	Cool-4C

Relinquished By	D.J. Woehle CHPRC	Print	Sign	Date/Time	NOV 08 2012	Received By	Christie R. Johnson	Date/Time	NOV 08 2012	Matrix *	US - Drum Solids DL - Drum Leachate T - Tissue WT - Wire L - Liquid V - Vegetation X - Other
Relinquished By		Print	Sign	Date/Time		Received By		Date/Time		S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air	US - Drum Solids DL - Drum Leachate T - Tissue WT - Wire L - Liquid V - Vegetation X - Other
Relinquished By		Print	Sign	Date/Time		Received By		Date/Time		S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air	US - Drum Solids DL - Drum Leachate T - Tissue WT - Wire L - Liquid V - Vegetation X - Other
Relinquished By		Print	Sign	Date/Time		Received By		Date/Time		S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air	US - Drum Solids DL - Drum Leachate T - Tissue WT - Wire L - Liquid V - Vegetation X - Other
Disposal Method (e.g., Return to customer, per lab procedure, used in process)											

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A-500+-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation
Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-011-178
Page 1 of 1

Collector D.J. Wooslie CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 376-4650
SAF No. W13-011	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20
Project Title RCRA, NOVEMBER 2012	Logbook No. HNF-N-506 36 / 37	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 RCRA	Priority 31 Days	Offsite Property No. N/A

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

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

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNM4	N	11-8-12	1419	1x500-ml-LP	300.0 ANIONS_IC_Lst-1 + Biom_Phosp (7)	48 Hours	Cool-4C

Relinquished By	Signature	Date/Time	Received By	Signature	Date/Time	Matrix *
D.J. Wooslie CHPRC	<i>[Signature]</i>	NOV 08 2012 1415	Cynthia R Johnson	<i>[Signature]</i>	NOV 08 2012 1411	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Relinquished By		Date/Time	Received By		Date/Time	DS - Dism Solids DL - Dism Liquids T - Tissue WI - Wipe L - Liquid V - Vegetation X - Other
Relinquished By		Date/Time	Received By		Date/Time	

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

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A-6004-842 (REV 2)

Sample Receipt

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-011-181
Page 1 of 1

Collector	D.J. Woeltje CHPPC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site RCRA, NOVEMBER 2012	Purchase Order/Charge Code	300071IES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 376 37	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	RCRA	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1999/1993)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No

PT12 and PT13 samples cannot be in the same SDG
Site Wide Generator Knowledge Information Form applies
The CACN for all analytical work at WSCR is 401647.

Sample No.	Filter	Date	Time	No/Type Container	Received By	Sample Analysis	Holding Time	Preservative
B2MM19	N	11-8-12	0740	1x500-mL P	3000_ANIONS_JC: List-1 + Biom_PheSP (7)		48 Hours	Cool-4C

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
D.J. Woeltje CHPPC	<i>[Signature]</i>	<i>[Signature]</i>	NOV 08 2012 1445	Tina Martinez CH2MHill	<i>[Signature]</i>	<i>[Signature]</i>	NOV 08 2012 1445	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Relinquished By			Date/Time	Received By			Date/Time	DS - Drums Solids DL - Drums Liquids T - Tissue WI - Wipe L - Liquid V - Vegetation X - Other
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By

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Chain of Custody

CH2MHill Plateau Remediation
Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-011-169
Page 1 of 1

Collector D.J. Woeltje CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 376-4650
SAF No. W13-011	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20
Project Title RCRA, NOVEMBER 2012	Logbook No. INF-N-506 36 / 37	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 RCRA	Priority 31 Days	Offsite Property No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5100.5 (1990/1995)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SPD.
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 801647.

Sample No.	Filter	+	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNL2	N		11-8-12	1127	1x500-mL P	300_0_ANIONS_IC: List-1 + Brom_Phosp (7)	48 Hours	Cool-AC

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By D.J. Woeltje CHPRC			NOV 08 2012 11:27	Received By Cynthia R Johnson			NOV 08 2012 11:45	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By			Date/Time	Received By			Date/Time	DS = Drum Solids DL = Drum Linings T = Tissue WT = Waste L = Liquid V = Vegetation X = Other
Relinquished By			Date/Time	Received By			Date/Time	

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

Deposited By: _____ Date/Time: _____

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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. # W13-011-172
Page 1 of 1

Collector D.J. Woehle CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 376-4650
SAF No. W13-011	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20
Project Title RCRA, NOVEMBER 2012	Logbook No. HNF-N-506 36 / 37	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 RCRA	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 Waste Generator Knowledge information form applies. The CACN for all analytical work at WSCP is 801647.		
Sample No. B2MNL6 3	Filter N	Date 11-8-12
Time 1222	No./Type Container 1X500-ml P	Sample Analysis 300.0_ANIONS_IC: List-1 + Brom_Phosp (7)
Preservative Cool-AC	Holding Time 48 Hours	Total Activity Exemption Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Relinquished By D.J. Woehle CHPRC	Print [Signature]	Sign [Signature]	Date/Time NOV 08 2012 14:55	Received By Cynthia R Johnson	Print [Signature]	Sign [Signature]	Date/Time NOV 08 2012 14:55
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time	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
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

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A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W13-011-175
Page 1 of 1

Collector CHPRC	D.J. Woehle W13-011	Contact/Requester Karen Waters-Husted	Telephone No. 376-4650
Project Title RCRA, NOVEMBER 2012	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20	
Shipped To (Lab) Waste Sampling & Characterization	Logbook No. HNF-N-506 36/37	Ice Chest No. N/A	Bill of Lading/Air Bill No. N/A
Protocol RCRA	Method of Shipment GOVERNMENT VEHICLE	Offsite Property No. N/A	
Priority: 31 Days		SPECIAL INSTRUCTIONS Hold Time	
POSSIBLE SAMPLE HAZARDS/REMARKS		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 3400.5 (1990/1993)

TY12 and TY13 samples cannot be in the same SIC. Site Wide Operator 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
B2MMW014	N	11-8-12	1320	1x500-mL P	300.0_ANIONS_IC: List-1 + Brom_Phosp (7)	48 Hours	Cool-4C

Relinquished By	Sign	Date/Time	Received By	Sign	Date/Time	Matrix *
D.J. Woehle CHPRC	<i>[Signature]</i>	NOV 08 2012	Cynthia R Johnson	<i>[Signature]</i>	NOV 08 2012	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 WT - Waste L - Liquid V - Vegetation X - Other
Relinquished By		Date/Time	Received By		Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per the procedure, used in process)		Disposed By		Date/Time

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# W13-011-177
Page 1 of 1

Collector CHPRC	D.J. Woenke	Contact/Requester Karen Waters-Husted	Telephone No. 376-4650
SAF No. W13-011		Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20
Project Title RCRA, NOVEMBER 2012		Logbook No. HNF-N-506 26137	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 RCRA		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)
 FY12 and FY13 samples cannot be in the same SDG.
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCP is 401647.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNM3 15	N	11-8-12	1419	1x250-ml GAP	2320_ALKALINITY, List-1 (4)	14 Days	Cool-4C
B2MNM3 16	N	11-8-12	1419	1x500-ml GAP	6010_METALS_ICP, List-3 (18)	6 Months	HNO3 to pH <2

Relinquished By D.J. Woenke	Sign <i>[Signature]</i>	Date/Time NOV 08 2012 1419	Received By Cynthia R. Johnson	Sign <i>[Signature]</i>	Date/Time NOV 08 2012 1419
Relinquished By CHPRC			Received By		
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time

Matrix *

S	Soil	DS	Drum Sedks
SE	Sediment	DL	Drum Liquide
SO	Solid	T	Tissue
SL	Sludge	WI	Wipe
W	Water	L	Liquid
O	Oil	V	Vegetation
A	Air	X	Other

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

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 G.O.C. # **W13-011-186**
 Page 1 of 1

Collector	D.J. Woeltje CHPRC	Contact/Requester	Karen Waters-Flusted Hartford Site	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hartford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 <u>26137</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	RCRA	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)
 ** FY12 and FY13 samples cannot be in the same SIG. 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
B2MNN4	W	11-8-12	1040	1x250-mL GAP	2320_ALKALINITY, List-1 (4)	14 Days	Cool-4C
B2MNN4	W	11-8-12	1040	1x500-mL GAP	6070_METALS, JCP, List-3 (18)	6 Months	HNO3 to pH <2

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
D.J. Woeltje		<i>[Signature]</i>	NOV 08 2012	Cynthia R Johnson		<i>[Signature]</i>	NOV 08 2012	S = Soil DS = Dried Solids SP = Sediment DL = Dried Liquids SO = Solid T = Tissue SL = Sludge WL = Wipe W = Water L = Liquid O = Oil V = Viscation A = Air 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)				

Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# W13-011-168
Page 1 of 1

Collector: **D.J. Woskle** / **CHPRC** Contact/Requester: **Karen Waters-Husted** Telephone No.: **376-4650**

SAF No.: **W13-011** Sampling Origin: **Hanford Site** Purchase Order/Charge Code: **300071ES20**

Project Title: **RCRA, NOVEMBER 2012** Logbook No.: **INF-N-506 26 / 37** Lee Chest No.: **N/A**

Shipped To (Lab): **Waste Sampling & Characterization** Method of Shipment: **GOVERNMENT VEHICLE** Bill of Lading/Air Bill No.: **N/A**

Protocol: **RCRA** Priority: **31 Days** OFFICE PROPERTY No.: **N/A** Total Activity Exemption: Yes No

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: **PRIORITY** Hold Time: **14 Days** Preservative: **Cool-4C**

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
B2MNL 1	N	11-8-12	1127	1x250-ml GAP	2320_ALKALINITY: List 1 (4)	14 Days	Cool-4C
B2MNL 1	N	11-8-12	1127	1x600-ml GAP	6010_METALS: JCP: List 3 (18)	6 Months	HNO3 to pH <2

Relinquished By: D.J. Woskle / CHPRC	Sign: <i>[Signature]</i>	Date/Time: NOV 08 2012 11:27	Received By: Cynthia R Johnson	Sign: <i>[Signature]</i>	Date/Time: NOV 08 2012 11:27	Matrix *
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	S = Soil
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	SE = Sediment
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	SO = Solid
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	SL = Sludge
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	W = Water
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	Q = Oil
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	A = Air
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	DS = Drum Solids
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	DL = Drain Liquids
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	T = Tissue
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	WI = Wipe
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	L = Liquid
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	V = Vegetation
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:	X = Other

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Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W13-011-171
Page 1 of 1

Collector	D.J. Weehle CHPRC W13-011	Contact/Requester	Karen Waters-Husted Hanford Site	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	INF-N-506 26 / 37	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	RCRA	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 sample cannot be in the same SDG. Site Vice Generator Knowledge Information Form applies. The CACN for all analytical work at WSCP is 401647.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
BZMNL5 18	N	11-8-12	1222	1x250-ml GIP	2320_ALKALINITY: List-1 (4)	14 Days	Cool-4C
BZMNL5 N	W	11-8-12	1222	1x500-ml GIP	5010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2

Relinquished By	D.J. Weehle CHPRC	Received By	Cynthia R. Johnson
Date/Time	NOV 08 2012	Date/Time	NOV 08 2012
Relinquished By	<i>[Signature]</i>	Received By	<i>[Signature]</i>
Date/Time		Date/Time	
Relinquished By		Received By	
Date/Time		Date/Time	
Relinquished By		Received By	
Date/Time		Date/Time	

Matrix *
 S = Soil
 SE = Sediment
 SO = Solid
 SL = Sludge
 W = Water
 O = Oil
 A = Air
 DS = Drum Solids
 DL = Drum Liquids
 T = Tissue
 WT = Waste
 L = Liquid
 V = Volatile
 X = Other

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# W13-011-180
Page 1 of 1

Collector	D.J. Woeltje CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Change Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 26/137	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	RCRA	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).
 FY12 and FY13 samples cannot be in the same SDG.
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCRF is 401647.

Sample No.	Filter	Date	Time	Net Type Container	Sample Analysis	Holding Time	Preservative
B2MNM7 8	N	11-8-12	0740	1X250-ML GIP	2320 ALKALINITY, Lst-1 (4)	14 Days	Cool-4C
B2MNM7 9	N	11-8-12	0740	1X500-ML GIP	6010, METALS, ICP, Lst-3 (18)	6 Months	HNO3 to pH <2

SPECIAL INSTRUCTIONS Hold Time: Yes No
 Total Agency Exemption: Yes No

Relinquished By	Signature	Date/Time	Received By	Signature	Date/Time	Matrix *
Relinquished By	D.J. Woeltje	NOV 08 2012 1445	Received By	TAMMIE T. BROWN	NOV 08 2012 1445	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 = Vaporation A = Air X = Other
Relinquished By			Received By			
Relinquished By			Received By			
Relinquished By			Received By			

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

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