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

May 14, 2014

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF140713

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 WSCF140713

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

Very truly yours,

Electronically signed by Joseph Hale
For Lab Manager, Dan T. Smith
WSCF Analytical Lab
(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF140713
Data Deliverable Date 05/19/14

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
I14-022	B2W730	140713001	WATER	04/18/14	04/18/14
I14-022	B2W713	140713002	WATER	04/18/14	04/18/14
I14-022	B2W712	140713003	WATER	04/18/14	04/18/14
I14-022	B2W711	140713004	WATER	04/18/14	04/18/14
I14-022	B2W729	140713005	WATER	04/18/14	04/18/14
I14-022	B2W710	140713006	WATER	04/18/14	04/18/14
I14-022	B2W714	140713007	WATER	04/18/14	04/18/14
I14-022	B2W715	140713008	WATER	04/18/14	04/18/14
I14-022	B2W708	140713009	WATER	04/18/14	04/18/14
I14-022	B2W709	140713010	WATER	04/18/14	04/18/14
I14-022	B2W731	140713011	WATER	04/18/14	04/18/14
I14-022	B2W728	140713012	WATER	04/18/14	04/18/14
X14-003	B2WJC8	140713013	WATER	04/18/14	04/18/14

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Attachment 2
Narrative
WSCF140713

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), to Contract 39818, Revision 4, "WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

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

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

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

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

Analytical Methodology for Requested Analyses

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

Inorganic Comments

Attachment 2
Narrative
WSCF140713

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

- Fluoride and Chloride – Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- 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 – Matrix Spike recovery was outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- All other applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Boron – Matrix Spike and Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Chromium – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
- All other applicable QC controls are within the established limits.

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.

Organic Comments

Attachment 2
Narrative
WSCF140713

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

- All applicable QC controls are within the established limits.

Radiochemistry Comments

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

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

Strontium-89/90:

- All applicable QC controls are within the established limits.

Tritium:

- All applicable QC controls are within the established limits.

Technetium-99:

- The Matrix Spike recovery exceeded laboratory acceptance limits due to insufficient spike activity compared to the sample activity.
- All other applicable QC controls are within the established limits.

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

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 61 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract #	MOA-FH-CHPRC-2008
Group #	WSCF140713
Report Date	May 14, 2014

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 # WSCF140713

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
232041	232975	5	BLANK	109170	BLANK		ICP-6010 - All possible metals
232041	232975	7	LCS	109172	LCS		ICP-6010 - All possible metals
232041	232975	9	MS	109173	B2W748(140701001MS)	140701001	ICP-6010 - All possible metals
232041	232975	10	MSD	109174	B2W748(140701001MSD	140701001	ICP-6010 - All possible metals
232041	232975	28	SAMPLE	140713007	B2W714		ICP-6010 - All possible metals
232041	232975	29	SAMPLE	140713008	B2W715		ICP-6010 - All possible metals
232041	232975	30	SAMPLE	140713009	B2W708		ICP-6010 - All possible metals
232041	232975	31	SAMPLE	140713010	B2W709		ICP-6010 - All possible metals
232057	232057	2	BLANK	109189	BLANK		Anions by Ion Chromatography (Water)
232057	232057	3	LCS	109190	LCS		Anions by Ion Chromatography (Water)
232057	232057	4	MS	109191	B2W6D8(140711001MS)	140711001	Anions by Ion Chromatography (Water)
232057	232057	5	MSD	109192	B2W6D8(140711001MSD	140711001	Anions by Ion Chromatography (Water)
232057	232057	11	SAMPLE	140713004	B2W711		Anions by Ion Chromatography (Water)
232057	232057	12	SAMPLE	140713005	B2W729		Anions by Ion Chromatography (Water)
232057	232057	13	SAMPLE	140713006	B2W710		Anions by Ion Chromatography (Water)
232059	232059	17	LCS	109206	LCS		Hexavalent chromium Discrete Analyzer
232059	232059	18	BLANK	109207	BLANK		Hexavalent chromium Discrete Analyzer
232059	232059	19	DUP	109208	B2W712(140713003DUP)	140713003	Hexavalent chromium Discrete Analyzer
232059	232059	20	MS	109209	B2W712(140713003MS)	140713003	Hexavalent chromium Discrete Analyzer
232059	232059	21	SAMPLE	140713003	B2W712		Hexavalent chromium Discrete Analyzer
232059	232059	25	SAMPLE	140713001	B2W730		Hexavalent chromium Discrete Analyzer
232059	232059	26	SAMPLE	140713002	B2W713		Hexavalent chromium Discrete Analyzer
233080	233274	4	BLANK	110017	BLANK		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
233080	233274	5	LCS	110018	LCS		ICP-2008 MS All possible metal
233080	233274	7	MS	110019	B2W7D9(140710007MS)	140710007	ICP-2008 MS All possible metal
233080	233274	8	MSD	110020	B2W7D9(140710007MSD	140710007	ICP-2008 MS All possible metal
233080	233274	16	SAMPLE	140713011	B2W731		ICP-2008 MS All possible metal
233080	233274	17	SAMPLE	140713012	B2W728		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
232251	232252	1	BLANK	109420	BLANK		SW-846 8260B Volatiles
232251	232252	2	LCS	109421	LCS		SW-846 8260B Volatiles
232251	232252	3	MS	109422	B2W833(140706004MS)	140706004	SW-846 8260B Volatiles
232251	232252	4	MSD	109423	B2W833(140706004MSD	140706004	SW-846 8260B Volatiles
232251	232252	11	SAMPLE	140713012	B2W728		SW-846 8260B Volatiles
232251	232252	12	SAMPLE	140713013	B2WJC8		SW-846 8260B Volatiles

Batch QC List

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140713

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
231934	232442	1	BLANK	108985	BLANK		TC99 by Liquid Scintillation
231934	232442	2	LCS	108986	LCS		TC99 by Liquid Scintillation
231934	232442	4	DUP	108987	B2VYL3(140691003DUP)	140691003	TC99 by Liquid Scintillation
231934	232442	5	MS	108988	B2VYL3(140691003MS)	140691003	TC99 by Liquid Scintillation
231934	232442	13	SAMPLE	140713012	B2W728		TC99 by Liquid Scintillation
232056	232379	1	BLANK	109185	BLANK		Strontium 89/90 (GPC/GEA)
232056	232379	2	LCS	109186	LCS		Strontium 89/90 (GPC/GEA)
232056	232379	3	DUP	109187	B2W8F9(140679006DUP)	140679006	Strontium 89/90 (GPC/GEA)
232056	232379	10	SAMPLE	140713012	B2W728		Strontium 89/90 (GPC/GEA)
232060	232256	1	BLANK	109212	BLANK		Tritium by LSC
232060	232256	2	LCS	109213	LCS		Tritium by LSC
232060	232256	4	DUP	109214	B2W887(140697008DUP)	140697008	Tritium by LSC
232060	232256	5	MSPK	109215	B2W887(140697008MSP		Tritium by LSC
232060	232256	16	SAMPLE	140713012	B2W728		Tritium by LSC

Batch QC List

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140713

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
232067	232067	1	LCS	109239	LCS		Total Alkalinity as mg/L CaCO3 (Water)
232067	232067	2	DUP	109240	B2W833(140706004DUP)	140706004	Total Alkalinity as mg/L CaCO3 (Water)
232067	232067	10	SAMPLE	140713009	B2W708		Total Alkalinity as mg/L CaCO3 (Water)
232067	232067	11	SAMPLE	140713010	B2W709		Total Alkalinity as mg/L CaCO3 (Water)
232067	232067	12	LCS	109241	LCS		Total Alkalinity as mg/L CaCO3 (Water)
232067	232067	14	LCS	109365	LCS		Total Alkalinity as mg/L CaCO3 (Water)

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

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

LA-265-403	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium
LA-505-411	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emmision Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	Determination of Trace Elements in Waters & Wastes by ICP Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
	HEIS	200.8_METALS_ICPMS	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma, Mass Spec.
LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

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

Method Reference

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

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

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

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

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

Method Reference

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140713

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

LA-218-413	Tritium By Ion Removal Using Eichrom Resin Columns (Prep)		
	N/A	PREP METHOD	
LA-220-406	Strontium-89 and 90 in Aqueous Samples by SR-SPEC Separation		
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium 89/90, by Sr-Spec Sep.
LA-438-402	Determination of Technetium-99 by RAD Disk Filtration & Liquid Scintillation Counting		
	N/A	PREP METHOD	
LA-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer		
	HEIS	ALPHA_LSC	A/B Liquid Scintillation
	HEIS	BETA_LSC	A/B Liquid Scintillation
	HEIS	TC99_3MDSK_LSC	TC99 by Liquid Scintillation
	HEIS	TRITIUM_EIE_LSC	Tritium, by Eichrome ion exchange, LSC

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 # WSCF140713

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

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713001
SAF# I14-022
Sample ID B2W730

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/18/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00330		mg/L	1	0.0020	0.0050	04/18/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713002
SAF# I14-022
Sample ID B2W713

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/18/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0123		mg/L	1	0.0020	0.0050	04/18/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713003
SAF# I14-022
Sample ID B2W712

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/18/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0113		mg/L	1	0.0020	0.0050	04/18/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713004
SAF# I14-022
Sample ID B2W711

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/18/14
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BDN	0.137		ug/mL	2	0.050	1.0	04/18/14
Chloride	16887-00-6	LA-533-410	DN	11.5		ug/mL	2	0.12	0.80	04/18/14
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	04/18/14
Nitrate-N	NO3-N	LA-533-410	D	1.27		ug/mL	2	0.040	0.20	04/18/14
Sulfate	14808-79-8	LA-533-410	D	68.2		ug/mL	2	0.22	1.1	04/18/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713005
SAF# I14-022
Sample ID B2W729

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/18/14
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BDN	0.286		ug/mL	2	0.050	1.0	04/18/14
Chloride	16887-00-6	LA-533-410	DN	14.7		ug/mL	2	0.12	0.80	04/18/14
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	04/18/14
Nitrate-N	NO3-N	LA-533-410	D	2.95		ug/mL	2	0.040	0.20	04/18/14
Sulfate	14808-79-8	LA-533-410	D	64.3		ug/mL	2	0.22	1.1	04/18/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713006
SAF# I14-022
Sample ID B2W710

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/18/14
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BDN	0.140		ug/mL	2	0.050	1.0	04/18/14
Chloride	16887-00-6	LA-533-410	DN	11.3		ug/mL	2	0.12	0.80	04/18/14
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	04/18/14
Nitrate-N	NO3-N	LA-533-410	D	1.30		ug/mL	2	0.040	0.20	04/18/14
Sulfate	14808-79-8	LA-533-410	D	68.8		ug/mL	2	0.22	1.1	04/18/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713007
SAF# I14-022
Sample ID B2W714

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										**05/07/14**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<40		ug/L	1	40	50	05/07/14
Magnesium	7439-95-4	LA-505-411		12200		ug/L	1	60	750	05/07/14
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Nickel	7440-02-0	LA-505-411	U	<10		ug/L	1	10	40	05/07/14
Potassium	7440-09-7	LA-505-411		4460		ug/L	1	250	4000	05/07/14
Silver	7440-22-4	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Sodium	7440-23-5	LA-505-411		10500		ug/L	1	100	500	05/07/14
Antimony	7440-36-0	LA-505-411	U	<20		ug/L	1	20	60	05/07/14
Barium	7440-39-3	LA-505-411		35.3		ug/L	1	4.0	20	05/07/14
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Chromium	7440-47-3	LA-505-411		12.1		ug/L	1	5.0	10	05/07/14
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	05/07/14
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	8.0	05/07/14
Vanadium	7440-62-2	LA-505-411	B	13.9		ug/L	1	5.0	25	05/07/14
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Calcium	7440-70-2	LA-505-411	N	48500		ug/L	1	50	1000	05/07/14
Strontium	7440-24-6	LA-505-411		298		ug/L	1	8.0	10	05/07/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713007
SAF# I14-022
Sample ID B2W714

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Arsenic	7440-38-2	LA-505-411	U	<25		ug/L	1	25	30	05/07/14
Beryllium	7440-41-7	LA-505-411	U	<2.0		ug/L	1	2.0	4.0	05/07/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713008
SAF# I14-022
Sample ID B2W715

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										**05/07/14**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<40		ug/L	1	40	50	05/07/14
Magnesium	7439-95-4	LA-505-411		12000		ug/L	1	60	750	05/07/14
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Nickel	7440-02-0	LA-505-411	U	<10		ug/L	1	10	40	05/07/14
Potassium	7440-09-7	LA-505-411		4370		ug/L	1	250	4000	05/07/14
Silver	7440-22-4	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Sodium	7440-23-5	LA-505-411		10200		ug/L	1	100	500	05/07/14
Antimony	7440-36-0	LA-505-411	U	<20		ug/L	1	20	60	05/07/14
Barium	7440-39-3	LA-505-411		34.4		ug/L	1	4.0	20	05/07/14
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Chromium	7440-47-3	LA-505-411		11.4		ug/L	1	5.0	10	05/07/14
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	05/07/14
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	8.0	05/07/14
Vanadium	7440-62-2	LA-505-411	B	13.4		ug/L	1	5.0	25	05/07/14
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Calcium	7440-70-2	LA-505-411	N	47300		ug/L	1	50	1000	05/07/14
Strontium	7440-24-6	LA-505-411		291		ug/L	1	8.0	10	05/07/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713008
SAF# I14-022
Sample ID B2W715

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Arsenic	7440-38-2	LA-505-411	U	<25		ug/L	1	25	30	05/07/14
Beryllium	7440-41-7	LA-505-411	U	<2.0		ug/L	1	2.0	4.0	05/07/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713009
SAF# I14-022
Sample ID B2W708

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										**05/07/14**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<40		ug/L	1	40	50	05/07/14
Magnesium	7439-95-4	LA-505-411		12100		ug/L	1	60	750	05/07/14
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Nickel	7440-02-0	LA-505-411	U	<10		ug/L	1	10	40	05/07/14
Potassium	7440-09-7	LA-505-411		4460		ug/L	1	250	4000	05/07/14
Silver	7440-22-4	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Sodium	7440-23-5	LA-505-411		10500		ug/L	1	100	500	05/07/14
Antimony	7440-36-0	LA-505-411	U	<20		ug/L	1	20	60	05/07/14
Barium	7440-39-3	LA-505-411		34.7		ug/L	1	4.0	20	05/07/14
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Chromium	7440-47-3	LA-505-411		12.0		ug/L	1	5.0	10	05/07/14
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	05/07/14
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	8.0	05/07/14
Vanadium	7440-62-2	LA-505-411	B	13.3		ug/L	1	5.0	25	05/07/14
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Calcium	7440-70-2	LA-505-411	N	48500		ug/L	1	50	1000	05/07/14
Strontium	7440-24-6	LA-505-411		299		ug/L	1	8.0	10	05/07/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713009
SAF# I14-022
Sample ID B2W708

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Arsenic	7440-38-2	LA-505-411	U	<25		ug/L	1	25	30	05/07/14
Beryllium	7440-41-7	LA-505-411	U	<2.0		ug/L	1	2.0	4.0	05/07/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713010
SAF# I14-022
Sample ID B2W709

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										**05/07/14**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<40		ug/L	1	40	50	05/07/14
Magnesium	7439-95-4	LA-505-411		11900		ug/L	1	60	750	05/07/14
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Nickel	7440-02-0	LA-505-411	U	<10		ug/L	1	10	40	05/07/14
Potassium	7440-09-7	LA-505-411		4350		ug/L	1	250	4000	05/07/14
Silver	7440-22-4	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Sodium	7440-23-5	LA-505-411		10200		ug/L	1	100	500	05/07/14
Antimony	7440-36-0	LA-505-411	U	<20		ug/L	1	20	60	05/07/14
Barium	7440-39-3	LA-505-411		33.9		ug/L	1	4.0	20	05/07/14
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	5.0	05/07/14
Chromium	7440-47-3	LA-505-411		12.3		ug/L	1	5.0	10	05/07/14
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	05/07/14
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	8.0	05/07/14
Vanadium	7440-62-2	LA-505-411	B	13.1		ug/L	1	5.0	25	05/07/14
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	10	05/07/14
Calcium	7440-70-2	LA-505-411	N	47400		ug/L	1	50	1000	05/07/14
Strontium	7440-24-6	LA-505-411		290		ug/L	1	8.0	10	05/07/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713010
SAF# I14-022
Sample ID B2W709

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Arsenic	7440-38-2	LA-505-411	U	<25		ug/L	1	25	30	05/07/14
Beryllium	7440-41-7	LA-505-411	U	<2.0		ug/L	1	2.0	4.0	05/07/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713011
SAF# I14-022
Sample ID B2W731

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										**05/13/14**
ICP-2008 MS All possible metal										
Aluminum	7429-90-5	LA-505-412	UD	<20		ug/L	2	20	100	05/13/14
Manganese	7439-96-5	LA-505-412	BD	1.88		ug/L	2	0.20	2.0	05/13/14
Nickel	7440-02-0	LA-505-412	BD	0.376		ug/L	2	0.20	2.0	05/13/14
Silver	7440-22-4	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	05/13/14
Barium	7440-39-3	LA-505-412	D	29.2		ug/L	2	0.40	4.0	05/13/14
Beryllium	7440-41-7	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	05/13/14
Cadmium	7440-43-9	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Chromium	7440-47-3	LA-505-412	D	3.42		ug/L	2	0.20	2.0	05/13/14
Cobalt	7440-48-4	LA-505-412	D	0.816		ug/L	2	0.10	0.50	05/13/14
Copper	7440-50-8	LA-505-412	BD	0.318		ug/L	2	0.20	2.0	05/13/14
Zinc	7440-66-6	LA-505-412	UD	<4.0		ug/L	2	4.0	20	05/13/14
Lead	7439-92-1	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Molybdenum	7439-98-7	LA-505-412	D	7.33		ug/L	2	0.10	1.0	05/13/14
Strontium	7440-24-6	LA-505-412	D	241		ug/L	2	0.40	2.0	05/13/14
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Tin	7440-31-5	LA-505-412	BD	0.180		ug/L	2	0.10	1.0	05/13/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713011
SAF# I14-022
Sample ID B2W731

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Uranium	7440-61-1	LA-505-412	D	2.58		ug/L	2	0.10	0.50	05/13/14
Arsenic	7440-38-2	LA-505-412	D	4.57		ug/L	2	0.40	4.0	05/13/14
Selenium	7782-49-2	LA-505-412	UD	<2.0		ug/L	2	2.0	20	05/13/14
Thorium	7440-29-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	05/13/14
Boron	7440-42-8	LA-505-412	BDN	8.54		ug/L	2	4.0	10	05/13/14

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.

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713012
SAF# I14-022
Sample ID B2W728

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										**05/13/14**
ICP-2008 MS All possible metal										
Aluminum	7429-90-5	LA-505-412	UD	<20		ug/L	2	20	100	05/13/14
Manganese	7439-96-5	LA-505-412	BD	0.886		ug/L	2	0.20	2.0	05/13/14
Nickel	7440-02-0	LA-505-412	BD	0.356		ug/L	2	0.20	2.0	05/13/14
Silver	7440-22-4	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	05/13/14
Barium	7440-39-3	LA-505-412	D	30.9		ug/L	2	0.40	4.0	05/13/14
Beryllium	7440-41-7	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	05/13/14
Cadmium	7440-43-9	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Chromium	7440-47-3	LA-505-412	D	3.58		ug/L	2	0.20	2.0	05/13/14
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	05/13/14
Copper	7440-50-8	LA-505-412	BD	0.332		ug/L	2	0.20	2.0	05/13/14
Zinc	7440-66-6	LA-505-412	UD	<4.0		ug/L	2	4.0	20	05/13/14
Lead	7439-92-1	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Molybdenum	7439-98-7	LA-505-412	D	7.41		ug/L	2	0.10	1.0	05/13/14
Strontium	7440-24-6	LA-505-412	D	246		ug/L	2	0.40	2.0	05/13/14
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Tin	7440-31-5	LA-505-412	BD	0.264		ug/L	2	0.10	1.0	05/13/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Sample # 140713012
SAF# I14-022
Sample ID B2W728

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Uranium	7440-61-1	LA-505-412	D	2.70		ug/L	2	0.10	0.50	05/13/14
Arsenic	7440-38-2	LA-505-412	D	4.81		ug/L	2	0.40	4.0	05/13/14
Selenium	7782-49-2	LA-505-412	UD	<2.0		ug/L	2	2.0	20	05/13/14
Thorium	7440-29-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	05/13/14
Boron	7440-42-8	LA-505-412	BDN	8.78		ug/L	2	4.0	10	05/13/14

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.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Sample # 140713012
SAF# I14-022
Sample ID B2W728

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**04/23/14**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Trichloroethene	79-01-6	LA-523-455	U	<0.5		ug/L	1	0.5	1	04/23/14
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	4	04/23/14
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	3	04/23/14
Acetone	67-64-1	LA-523-455	U	<5		ug/L	1	5	20	04/23/14
Chloroform	67-66-3	LA-523-455	J	2.2		ug/L	1	1	5	04/23/14
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	04/23/14

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

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

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

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Sample # 140713012
SAF# I14-022
Sample ID B2W728

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
1-Butanol	71-36-3	LA-523-455	U	<50		ug/L	1	50	100	04/23/14
Tetrahydrofuran	109-99-9	LA-523-455	U	<2		ug/L	1	2	10	04/23/14
trans-1,2-Dichloroethene	156-60-5	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
cis-1,2-Dichloroethene	156-59-2	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Propionitrile	107-12-0	LA-523-455	U	<2		ug/L	1	2	10	04/23/14

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

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

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

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Sample # 140713013
SAF# X14-003
Sample ID B2WJC8

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**04/23/14**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Trichloroethene	79-01-6	LA-523-455	U	<0.5		ug/L	1	0.5	1	04/23/14
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	4	04/23/14
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	3	04/23/14
Acetone	67-64-1	LA-523-455	U	<5		ug/L	1	5	20	04/23/14
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Methylene chloride	75-09-2	LA-523-455	J	3.9		ug/L	1	1	5	04/23/14

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

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

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

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Sample # 140713013
SAF# X14-003
Sample ID B2WJC8

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	04/23/14
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	04/23/14

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

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

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

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140713

Sample # 140713012
SAF# I14-022
Sample ID B2W728

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										**04/23/14**
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	-0.27	.56	pCi/L	1	1.0		04/29/14
TC99 by Liquid Scin. WATER/LIQUID PREP										**04/22/14**
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-1.3	4.1	pCi/L	1	6.8		04/24/14
Tritium by LSC EICHROM WA/LIQ PREP										**04/22/14**
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1500	380	pCi/L	1	280		04/29/14

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

B - The associated QC sample Blank has a result > or = the MDA
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140713

Sample # 140713009
SAF# I14-022
Sample ID B2W708

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/21/14
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		100		mg/L	1	1	10	04/21/14
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		04/21/14
Bicarbonate	71-52-3	LA-531-411		100		mg/L	1	1		04/21/14
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		04/21/14

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.
Ignitability: <20C listed in the result field indicates sample ignited at room temperature. Maximum temperature tested for ignitability is at 100C

WSCF Analytical Results Report

May 14, 2014

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140713

Sample # 140713010
SAF# I14-022
Sample ID B2W709

Matrix WATER
Sampled 04/18/14
Received 04/18/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/21/14
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		100		mg/L	1	1	10	04/21/14
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		04/21/14
Bicarbonate	71-52-3	LA-531-411		100		mg/L	1	1		04/21/14
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		04/21/14

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.
Ignitability: <20C listed in the result field indicates sample ignited at room temperature. Maximum temperature tested for ignitability is at 100C

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analytical Batch 232057 (QC Batch: 232057)
Associated Samples 140713004, 140713005, 140713006

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109189**							
Fluoride	16984-48-8		<0.025	ug/mL					U	04/18/14
Chloride	16887-00-6		<0.060	ug/mL					U	04/18/14
Nitrite-N	NO2-N		<0.020	ug/mL					U	04/18/14
Nitrate-N	NO3-N		<0.020	ug/mL					U	04/18/14
Sulfate	14808-79-8		<0.11	ug/mL					U	04/18/14
LCS			**QC Sample #109190**							
Fluoride	16984-48-8		0.982	ug/mL	99.2	90 - 110				04/18/14
Chloride	16887-00-6		1.87	ug/mL	94.5	90 - 110				04/18/14
Nitrite-N	NO2-N		1.05	ug/mL	107.8	90 - 110				04/18/14
Nitrate-N	NO3-N		0.881	ug/mL	99.6	90 - 110				04/18/14
Sulfate	14808-79-8		3.99	ug/mL	101.8	90 - 110				04/18/14
MS			**QC Sample #109191**							
			Original 140711001							
Fluoride	16984-48-8		1.22	ug/mL	122	80 - 120			DN	04/18/14
Chloride	16887-00-6		2.08	ug/mL	103.8	80 - 120			D	04/18/14
Nitrite-N	NO2-N		1.04	ug/mL	104.9	80 - 120			D	04/18/14
Nitrate-N	NO3-N		0.934	ug/mL	104.5	80 - 120			D	04/18/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		5.04	ug/mL	127.3	80 - 120			DX	04/18/14
MSD			**QC Sample #109192**							
			Original	**140711001**				**Paired**	**109191**	
Fluoride	16984-48-8		0.988	ug/mL	98.8	80 - 120	18.50	20	D	04/18/14
Chloride	16887-00-6		2.68	ug/mL	134	80 - 120	6.30	20	DN	04/18/14
Nitrite-N	NO2-N		1.02	ug/mL	103.2	80 - 120	1.70	20	D	04/18/14
Nitrate-N	NO3-N		0.918	ug/mL	102.7	80 - 120	0.70	20	D	04/18/14
Sulfate	14808-79-8		4.41	ug/mL	111.4	80 - 120	1.50	20	DX	04/18/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analytical Batch 232059 (QC Batch: 232059)
Associated Samples 140713001, 140713002, 140713003

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #109206**							
Hexavalent chromium	18540-29-9		0.0531	mg/L	106.2	90 - 110				04/18/14
BLANK			**QC Sample #109207**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	04/18/14
DUP			**QC Sample #109208**							
			Original 140713003							
Hexavalent chromium	18540-29-9	0.0113	0.0116	mg/L			2.60	20		04/18/14
MS			**QC Sample #109209**							
			Original 140713003							
Hexavalent chromium	18540-29-9	0.0113	0.0424	mg/L	106	85 - 115				04/18/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140713

Analytical Batch 232067 (QC Batch: 232067)
Associated Samples 140713009, 140713010

Test Total Alkalinity as mg/L CaCO3 (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #109239**							
Total Alkalinity as CaCO3	ALKALINITY		94	mg/L	93.7	80 - 120				04/21/14
DUP			**QC Sample #109240**							
			Original 140706004							
Total Alkalinity as CaCO3	ALKALINITY		100	mg/L			1.90	20		04/21/14
LCS			**QC Sample #109241**							
Total Alkalinity as CaCO3	ALKALINITY		97	mg/L	97.4	80 - 120				04/21/14
LCS			**QC Sample #109365**							
Total Alkalinity as CaCO3	ALKALINITY		97	mg/L	97.4	80 - 120				04/21/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Analytical Batch 232252 (QC Batch: 232251)
Associated Samples 140713012, 140713013

Test SW-846 8260B Volatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109420**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	04/23/14
Trichloroethene	79-01-6		<0.5	ug/L					U	04/23/14
Benzene	71-43-2		<1	ug/L					U	04/23/14
Toluene	108-88-3		<1	ug/L					U	04/23/14
Chlorobenzene	108-90-7		<1	ug/L					U	04/23/14
1,1-Dichloroethane	75-34-3		<1	ug/L					U	04/23/14
Ethylbenzene	100-41-4		<1	ug/L					U	04/23/14
1,2-Dichloroethane	107-06-2		<1	ug/L					U	04/23/14
Methyl isobutyl ketone	108-10-1		<1	ug/L					U	04/23/14
Tetrachloroethene	127-18-4		<1	ug/L					U	04/23/14
Total Xylenes	1330-20-7		<1	ug/L					U	04/23/14
Carbon tetrachloride	56-23-5		<1	ug/L					U	04/23/14
Acetone	67-64-1		<5	ug/L					U	04/23/14
Chloroform	67-66-3		<1	ug/L					U	04/23/14
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	04/23/14
Vinyl chloride	75-01-4		<1	ug/L					U	04/23/14
Methylene chloride	75-09-2		<1	ug/L					U	04/23/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Carbon disulfide	75-15-0		<1	ug/L					U	04/23/14
Methyl ethyl ketone	78-93-3		<1	ug/L					U	04/23/14
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	04/23/14
1-Butanol	71-36-3		<50	ug/L					U	04/23/14
Tetrahydrofuran	109-99-9		<2	ug/L					U	04/23/14
trans-1,2-Dichloroethene	156-60-5		<1	ug/L					U	04/23/14
cis-1,2-Dichloroethene	156-59-2		<1	ug/L					U	04/23/14
Propionitrile	107-12-0		<2	ug/L					U	04/23/14
LCS			**QC Sample #109421**							
1,1-Dichloroethene	75-35-4		20	ug/L	80.1	75 - 125				04/23/14
Trichloroethene	79-01-6		24	ug/L	95.4	75 - 125				04/23/14
Benzene	71-43-2		25	ug/L	100.2	75 - 125				04/23/14
Toluene	108-88-3		26	ug/L	104.8	75 - 125				04/23/14
Chlorobenzene	108-90-7		25	ug/L	100.2	75 - 125				04/23/14
1,1-Dichloroethane	75-34-3		24	ug/L	95.7	75 - 125				04/23/14
Ethylbenzene	100-41-4		26	ug/L	104.6	75 - 125				04/23/14
1,2-Dichloroethane	107-06-2		24	ug/L	94.5	75 - 125				04/23/14
1,1,1-Trichloroethane	71-55-6		24	ug/L	94.1	75 - 125				04/23/14
Carbon disulfide	75-15-0		21	ug/L	82.8	75 - 125				04/23/14
1,1,2-Trichloroethane	79-00-5		26	ug/L	103.3	75 - 125				04/23/14
trans-1,2-Dichloroethene	156-60-5		22	ug/L	86	75 - 125				04/23/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
cis-1,2-Dichloroethene	156-59-2		24	ug/L	94.2	75 - 125				04/23/14
MS			**QC Sample #109422**							
			Original 140706004							
1,1-Dichloroethene	75-35-4		20	ug/L	81.8	75 - 125				04/23/14
Trichloroethene	79-01-6		25	ug/L	98.3	75 - 125				04/23/14
Benzene	71-43-2		26	ug/L	102.2	75 - 125				04/23/14
Toluene	108-88-3		26	ug/L	103.6	75 - 125				04/23/14
Chlorobenzene	108-90-7		25	ug/L	99	75 - 125				04/23/14
1,1-Dichloroethane	75-34-3		24	ug/L	97.6	75 - 125				04/23/14
Ethylbenzene	100-41-4		26	ug/L	102.4	75 - 125				04/23/14
1,2-Dichloroethane	107-06-2		24	ug/L	97.6	75 - 125				04/23/14
1,1,1-Trichloroethane	71-55-6		24	ug/L	95.2	75 - 125				04/23/14
Carbon disulfide	75-15-0		21	ug/L	82.6	75 - 125				04/23/14
1,1,2-Trichloroethane	79-00-5		27	ug/L	107.2	75 - 125				04/23/14
trans-1,2-Dichloroethene	156-60-5		22	ug/L	86.4	75 - 125				04/23/14
cis-1,2-Dichloroethene	156-59-2		24	ug/L	94.4	75 - 125				04/23/14
MSD			**QC Sample #109423**							
			Original 140706004						**Paired 109422**	
1,1-Dichloroethene	75-35-4		20	ug/L	81.2	75 - 125	0.70	20		04/23/14
Trichloroethene	79-01-6		24	ug/L	95	75 - 125	2.80	20		04/23/14
Benzene	71-43-2		25	ug/L	99.8	75 - 125	2.40	20		04/23/14
Toluene	108-88-3		25	ug/L	100.2	75 - 125	3.40	20		04/23/14
Chlorobenzene	108-90-7		24	ug/L	95.8	75 - 125	3.30	20		04/23/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
1,1-Dichloroethane	75-34-3		24	ug/L	95	75 - 125	2.60	20		04/23/14
Ethylbenzene	100-41-4		25	ug/L	100.2	75 - 125	2.20	20		04/23/14
1,2-Dichloroethane	107-06-2		24	ug/L	94.4	75 - 125	3.30	20		04/23/14
1,1,1-Trichloroethane	71-55-6		23	ug/L	92.4	75 - 125	3.00	20		04/23/14
Carbon disulfide	75-15-0		21	ug/L	82.6	75 - 125	0.00	20		04/23/14
1,1,2-Trichloroethane	79-00-5		26	ug/L	103.8	75 - 125	3.30	20		04/23/14
trans-1,2-Dichloroethene	156-60-5		21	ug/L	85	75 - 125	1.70	20		04/23/14
cis-1,2-Dichloroethene	156-59-2		23	ug/L	92.9	75 - 125	1.60	20		04/23/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140713

Analytical Batch 232256 (QC Batch: 232060)
Associated Samples 140713012

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #109212**								
Tritium	10028-17-8		-32	pCi/L						U	04/29/14
LCS			**QC Sample #109213**								
Tritium	10028-17-8		3700	pCi/L	95.6	80 - 120					04/29/14
DUP			**QC Sample #109214**								
			Original 140697008								
Tritium	10028-17-8		120	pCi/L			105.60	20	*	U	04/29/14
MSPK			**QC Sample #109215**								
Tritium	10028-17-8		19000	pCi/L	93.4	75 - 125					04/29/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140713

Analytical Batch 232379 (QC Batch: 232056)
Associated Samples 140713012

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #109185**								
Strontium-89_90	SR-RAD		0.19	pCi/L						U	04/29/14
LCS			**QC Sample #109186**								
Strontium-89_90	SR-RAD		35	pCi/L	96	80 - 120					04/29/14
DUP			**QC Sample #109187**								
			Original 140679006								
Strontium-89_90	SR-RAD		-0.19	pCi/L			-42.50	20	*	U	04/29/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140713

Analytical Batch 232442 (QC Batch: 231934)
Associated Samples 140713012

Test TC99 by Liquid Scintillation

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #108985**							
Technetium-99	14133-76-7		-2.5	pCi/L					U	04/24/14
LCS			**QC Sample #108986**							
Technetium-99	14133-76-7		260	pCi/L	101.2	80 - 120				04/24/14
DUP			**QC Sample #108987**							
			Original 140691003							
Technetium-99	14133-76-7		2.1E4	pCi/L			5.50	20		04/24/14
MS			**QC Sample #108988**							
			Original 140691003							
Technetium-99	14133-76-7		-1200	pCi/L	-116.7	75 - 125			X	04/24/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analytical Batch 232975 (QC Batch: 232041)
Associated Samples 140713007, 140713008, 140713009, 140713010

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109170**							
Iron	7439-89-6		<40	ug/L					U	05/07/14
Magnesium	7439-95-4		<60	ug/L					U	05/07/14
Manganese	7439-96-5		<4.0	ug/L					U	05/07/14
Nickel	7440-02-0		<10	ug/L					U	05/07/14
Potassium	7440-09-7		<250	ug/L					U	05/07/14
Silver	7440-22-4		<5.0	ug/L					U	05/07/14
Sodium	7440-23-5		<100	ug/L					U	05/07/14
Antimony	7440-36-0		<20	ug/L					U	05/07/14
Barium	7440-39-3		<4.0	ug/L					U	05/07/14
Cadmium	7440-43-9		<4.0	ug/L					U	05/07/14
Chromium	7440-47-3		<5.0	ug/L					U	05/07/14
Cobalt	7440-48-4		<4.0	ug/L					U	05/07/14
Copper	7440-50-8		<4.0	ug/L					U	05/07/14
Vanadium	7440-62-2		<5.0	ug/L					U	05/07/14
Zinc	7440-66-6		<5.0	ug/L					U	05/07/14
Calcium	7440-70-2		<50	ug/L					U	05/07/14
Strontium	7440-24-6		<8.0	ug/L					U	05/07/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<25	ug/L					U	05/07/14
Beryllium	7440-41-7		<2.0	ug/L					U	05/07/14
LCS			**QC Sample #109172**							
Iron	7439-89-6		1040	ug/L	104.1	80 - 120				05/07/14
Magnesium	7439-95-4		9900	ug/L	99	80 - 120				05/07/14
Manganese	7439-96-5		972	ug/L	97.2	80 - 120				05/07/14
Nickel	7440-02-0		976	ug/L	97.6	80 - 120				05/07/14
Potassium	7440-09-7		9460	ug/L	94.6	80 - 120				05/07/14
Silver	7440-22-4		982	ug/L	98.2	80 - 120				05/07/14
Sodium	7440-23-5		9950	ug/L	99.5	80 - 120				05/07/14
Antimony	7440-36-0		986	ug/L	98.6	80 - 120				05/07/14
Barium	7440-39-3		1020	ug/L	102.5	80 - 120				05/07/14
Cadmium	7440-43-9		969	ug/L	96.9	80 - 120				05/07/14
Chromium	7440-47-3		971	ug/L	97.1	80 - 120				05/07/14
Cobalt	7440-48-4		998	ug/L	99.8	80 - 120				05/07/14
Copper	7440-50-8		980	ug/L	98	80 - 120				05/07/14
Vanadium	7440-62-2		968	ug/L	96.8	80 - 120				05/07/14
Zinc	7440-66-6		963	ug/L	96.3	80 - 120				05/07/14
Calcium	7440-70-2		20000	ug/L	99.9	80 - 120				05/07/14
Strontium	7440-24-6		1020	ug/L	102.5	80 - 120				05/07/14
Arsenic	7440-38-2		994	ug/L	99.4	80 - 120				05/07/14
Beryllium	7440-41-7		951	ug/L	95.1	80 - 120				05/07/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #109173**							
			Original	**140701001**						
Iron	7439-89-6		957	ug/L	95.7	75 - 125				05/07/14
Magnesium	7439-95-4		7710	ug/L	77.1	75 - 125				05/07/14
Manganese	7439-96-5		950	ug/L	95	75 - 125				05/07/14
Nickel	7440-02-0		937	ug/L	93.7	75 - 125				05/07/14
Potassium	7440-09-7		9820	ug/L	98.2	75 - 125				05/07/14
Silver	7440-22-4		980	ug/L	98	75 - 125				05/07/14
Sodium	7440-23-5		7540	ug/L	75.4	75 - 125				05/07/14
Antimony	7440-36-0		990	ug/L	99	75 - 125				05/07/14
Barium	7440-39-3		929	ug/L	92.9	75 - 125				05/07/14
Cadmium	7440-43-9		955	ug/L	95.5	75 - 125				05/07/14
Chromium	7440-47-3		954	ug/L	95.4	75 - 125				05/07/14
Cobalt	7440-48-4		944	ug/L	94.4	75 - 125				05/07/14
Copper	7440-50-8		977	ug/L	97.7	75 - 125				05/07/14
Vanadium	7440-62-2		955	ug/L	95.5	75 - 125				05/07/14
Zinc	7440-66-6		925	ug/L	92.5	75 - 125				05/07/14
Calcium	7440-70-2		12900	ug/L	64.6	75 - 125			N	05/07/14
Strontium	7440-24-6		931	ug/L	93.1	75 - 125				05/07/14
Arsenic	7440-38-2		1010	ug/L	100.7	75 - 125				05/07/14
Beryllium	7440-41-7		945	ug/L	94.5	75 - 125				05/07/14
MSD			**QC Sample #109174**							
			Original	**140701001**				**Paired**	**109173**	
Iron	7439-89-6		975	ug/L	97.5	75 - 125	1.80	20		05/07/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		8600	ug/L	86	75 - 125	4.00	20		05/07/14
Manganese	7439-96-5		971	ug/L	97.1	75 - 125	2.20	20		05/07/14
Nickel	7440-02-0		936	ug/L	93.6	75 - 125	0.10	20		05/07/14
Potassium	7440-09-7		10400	ug/L	103.9	75 - 125	3.70	20		05/07/14
Silver	7440-22-4		982	ug/L	98.2	75 - 125	0.20	20		05/07/14
Sodium	7440-23-5		8570	ug/L	85.7	75 - 125	4.10	20		05/07/14
Antimony	7440-36-0		996	ug/L	99.6	75 - 125	0.60	20		05/07/14
Barium	7440-39-3		960	ug/L	96	75 - 125	3.10	20		05/07/14
Cadmium	7440-43-9		962	ug/L	96.2	75 - 125	0.70	20		05/07/14
Chromium	7440-47-3		953	ug/L	95.3	75 - 125	0.10	20		05/07/14
Cobalt	7440-48-4		957	ug/L	95.7	75 - 125	1.40	20		05/07/14
Copper	7440-50-8		977	ug/L	97.7	75 - 125	0.00	20		05/07/14
Vanadium	7440-62-2		956	ug/L	95.6	75 - 125	0.10	20		05/07/14
Zinc	7440-66-6		924	ug/L	92.4	75 - 125	0.10	20		05/07/14
Calcium	7440-70-2		16000	ug/L	79.8	75 - 125	4.40	20		05/07/14
Strontium	7440-24-6		971	ug/L	97.1	75 - 125	3.30	20		05/07/14
Arsenic	7440-38-2		1010	ug/L	100.6	75 - 125	0.10	20		05/07/14
Beryllium	7440-41-7		972	ug/L	97.2	75 - 125	2.80	20		05/07/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analytical Batch 233274 (QC Batch: 233080)
Associated Samples 140713011, 140713012

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #110017**						
Aluminum	7429-90-5		<10	ug/L				U	05/13/14
Manganese	7439-96-5		<0.10	ug/L				U	05/13/14
Nickel	7440-02-0		<0.10	ug/L				U	05/13/14
Silver	7440-22-4		<0.050	ug/L				U	05/13/14
Antimony	7440-36-0		<0.30	ug/L				U	05/13/14
Barium	7440-39-3		<0.20	ug/L				U	05/13/14
Beryllium	7440-41-7		<0.10	ug/L				U	05/13/14
Cadmium	7440-43-9		<0.050	ug/L				U	05/13/14
Chromium	7440-47-3		<0.10	ug/L				U	05/13/14
Cobalt	7440-48-4		<0.050	ug/L				U	05/13/14
Copper	7440-50-8		<0.10	ug/L				U	05/13/14
Zinc	7440-66-6		<2.0	ug/L				U	05/13/14
Lead	7439-92-1		<0.050	ug/L				U	05/13/14
Molybdenum	7439-98-7		<0.050	ug/L				U	05/13/14
Strontium	7440-24-6		<0.20	ug/L				U	05/13/14
Thallium	7440-28-0		<0.050	ug/L				U	05/13/14
Tin	7440-31-5		<0.050	ug/L				U	05/13/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Uranium	7440-61-1		<0.050	ug/L					U	05/13/14
Arsenic	7440-38-2		<0.20	ug/L					U	05/13/14
Selenium	7782-49-2		<1.0	ug/L					U	05/13/14
Thorium	7440-29-1		<0.10	ug/L					U	05/13/14
Boron	7440-42-8		<2.0	ug/L					U	05/13/14
LCS			**QC Sample #110018**							
Aluminum	7429-90-5		416	ug/L	104.1	85 - 115				05/13/14
Manganese	7439-96-5		40.9	ug/L	102.2	85 - 115				05/13/14
Nickel	7440-02-0		39.6	ug/L	99.1	85 - 115				05/13/14
Silver	7440-22-4		37.2	ug/L	92.9	85 - 115				05/13/14
Antimony	7440-36-0		39.6	ug/L	98.9	85 - 115				05/13/14
Barium	7440-39-3		38.5	ug/L	96.2	85 - 115				05/13/14
Beryllium	7440-41-7		39.6	ug/L	98.9	85 - 115				05/13/14
Cadmium	7440-43-9		38.3	ug/L	95.9	85 - 115				05/13/14
Chromium	7440-47-3		40.5	ug/L	101.3	85 - 115				05/13/14
Cobalt	7440-48-4		40.5	ug/L	101.3	85 - 115				05/13/14
Copper	7440-50-8		40.1	ug/L	100.3	85 - 115				05/13/14
Zinc	7440-66-6		41.4	ug/L	103.4	85 - 115				05/13/14
Lead	7439-92-1		36.9	ug/L	92.3	85 - 115				05/13/14
Molybdenum	7439-98-7		37.1	ug/L	92.7	85 - 115				05/13/14
Strontium	7440-24-6		394	ug/L	98.5	85 - 115				05/13/14
Thallium	7440-28-0		36.2	ug/L	90.6	85 - 115				05/13/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Tin	7440-31-5		36.7	ug/L	91.9	85 - 115				05/13/14
Uranium	7440-61-1		39.7	ug/L	99.3	85 - 115				05/13/14
Arsenic	7440-38-2		37.0	ug/L	92.5	85 - 115				05/13/14
Selenium	7782-49-2		37.3	ug/L	93.2	85 - 115				05/13/14
Thorium	7440-29-1		35.8	ug/L	89.5	85 - 115				05/13/14
Boron	7440-42-8		37.2	ug/L	92.9	85 - 115				05/13/14
MS			**QC Sample #110019**							
			Original 140710007							
Aluminum	7429-90-5		327	ug/L	81.7	70 - 130				05/13/14
Manganese	7439-96-5		34.1	ug/L	85.3	70 - 130				05/13/14
Nickel	7440-02-0		32.9	ug/L	82.3	70 - 130				05/13/14
Silver	7440-22-4		35.0	ug/L	87.5	70 - 130				05/13/14
Antimony	7440-36-0		36.9	ug/L	92.2	70 - 130				05/13/14
Barium	7440-39-3		29.0	ug/L	72.6	70 - 130				05/13/14
Beryllium	7440-41-7		34.7	ug/L	86.6	70 - 130				05/13/14
Cadmium	7440-43-9		34.9	ug/L	87.3	70 - 130				05/13/14
Chromium	7440-47-3		-96.6	ug/L	-241.5	70 - 130			X	05/13/14
Cobalt	7440-48-4		34.1	ug/L	85.2	70 - 130				05/13/14
Copper	7440-50-8		32.8	ug/L	82.1	70 - 130				05/13/14
Zinc	7440-66-6		32.9	ug/L	82.1	70 - 130				05/13/14
Lead	7439-92-1		33.8	ug/L	84.5	70 - 130				05/13/14
Molybdenum	7439-98-7		37.4	ug/L	93.5	70 - 130				05/13/14
Strontium	7440-24-6		296	ug/L	73.9	70 - 130				05/13/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Thallium	7440-28-0		33.4	ug/L	83.6	70 - 130				05/13/14
Tin	7440-31-5		37.5	ug/L	93.8	70 - 130				05/13/14
Uranium	7440-61-1		38.1	ug/L	95.3	70 - 130				05/13/14
Arsenic	7440-38-2		34.6	ug/L	86.5	70 - 130				05/13/14
Selenium	7782-49-2		34.0	ug/L	84.9	70 - 130				05/13/14
Thorium	7440-29-1		37.8	ug/L	94.4	70 - 130				05/13/14
Boron	7440-42-8		26.3	ug/L	65.7	70 - 130			N	05/13/14
MSD			**QC Sample #110020**							
			Original 140710007					**Paired**	**110019**	
Aluminum	7429-90-5		342	ug/L	85.6	70 - 130	4.60	20		05/13/14
Manganese	7439-96-5		35.1	ug/L	87.8	70 - 130	2.90	20		05/13/14
Nickel	7440-02-0		33.9	ug/L	84.6	70 - 130	2.60	20		05/13/14
Silver	7440-22-4		34.7	ug/L	86.7	70 - 130	0.90	20		05/13/14
Antimony	7440-36-0		36.4	ug/L	91.1	70 - 130	1.20	20		05/13/14
Barium	7440-39-3		28.4	ug/L	71.1	70 - 130	0.80	20		05/13/14
Beryllium	7440-41-7		35.2	ug/L	88	70 - 130	1.50	20		05/13/14
Cadmium	7440-43-9		34.5	ug/L	86.2	70 - 130	1.20	20		05/13/14
Chromium	7440-47-3		-78.5	ug/L	-196.2	70 - 130	2.20	20	X	05/13/14
Cobalt	7440-48-4		35.0	ug/L	87.4	70 - 130	2.60	20		05/13/14
Copper	7440-50-8		34.2	ug/L	85.6	70 - 130	4.20	20		05/13/14
Zinc	7440-66-6		34.2	ug/L	85.5	70 - 130	4.00	20		05/13/14
Lead	7439-92-1		33.6	ug/L	84.1	70 - 130	0.50	20		05/13/14
Molybdenum	7439-98-7		36.5	ug/L	91.3	70 - 130	2.30	20		05/13/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Strontium	7440-24-6		286	ug/L	71.6	70 - 130	1.30	20		05/13/14
Thallium	7440-28-0		33.2	ug/L	83.1	70 - 130	0.60	20		05/13/14
Tin	7440-31-5		36.6	ug/L	91.5	70 - 130	2.40	20		05/13/14
Uranium	7440-61-1		38.2	ug/L	95.4	70 - 130	0.10	20		05/13/14
Arsenic	7440-38-2		34.7	ug/L	86.7	70 - 130	0.30	20		05/13/14
Selenium	7782-49-2		36.1	ug/L	90.3	70 - 130	5.90	20		05/13/14
Thorium	7440-29-1		38.2	ug/L	95.6	70 - 130	1.20	20		05/13/14
Boron	7440-42-8		26.4	ug/L	65.9	70 - 130	0.10	20	N	05/13/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Analytical Batch 232252 (QC Batch: 232251)
Associated Samples 140713012, 140713013

Test SW-846 8260B Volatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109420**							
1,2-Dichloroethane-d4	17060-07-0				100.8	75 - 125				04/23/14
Toluene-d8	2037-26-5				102.4	75 - 125				04/23/14
4-Bromofluorobenzene	460-00-4				103.1	75 - 125				04/23/14
LCS			**QC Sample #109421**							
1,2-Dichloroethane-d4	17060-07-0				101.9	75 - 125				04/23/14
Toluene-d8	2037-26-5				104.6	75 - 125				04/23/14
4-Bromofluorobenzene	460-00-4				105.3	75 - 125				04/23/14
MS			**QC Sample #109422**							
			Original	**140706004**						
1,2-Dichloroethane-d4	17060-07-0				104.8	75 - 125				04/23/14
Toluene-d8	2037-26-5				101.7	75 - 125				04/23/14
4-Bromofluorobenzene	460-00-4				105.6	75 - 125				04/23/14
MSD			**QC Sample #109423**							
			Original	**140706004**				**Paired**	**109422**	
1,2-Dichloroethane-d4	17060-07-0				104.4	75 - 125	n/a			04/23/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140713

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				100.6	75 - 125	n/a			04/23/14
4-Bromofluorobenzene	460-00-4				104.6	75 - 125	n/a			04/23/14
SAMPLE			**Sample #140713012**							
1,2-Dichloroethane-d4	17060-07-0				104.6	75 - 125				04/23/14
Toluene-d8	2037-26-5				103.6	75 - 125				04/23/14
4-Bromofluorobenzene	460-00-4				106.9	75 - 125				04/23/14
SAMPLE			**Sample #140713013**							
1,2-Dichloroethane-d4	17060-07-0				103.8	75 - 125				04/23/14
Toluene-d8	2037-26-5				102.6	75 - 125				04/23/14
4-Bromofluorobenzene	460-00-4				106.1	75 - 125				04/23/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140713

Analytical Batch 232379 (QC Batch: 232056)
Associated Samples 140713012

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109185**							
Strontium Nitrate	10042-76-9			mg	86	25 - 105				04/29/14
LCS			**QC Sample #109186**							
Strontium Nitrate	10042-76-9			mg	86.8	25 - 105				04/29/14
DUP			**QC Sample #109187**							
			Original 140679006							
Strontium Nitrate	10042-76-9			mg	76.9	25 - 105	n/a			04/29/14
SAMPLE			**Sample #140713012**							
Strontium Nitrate	10042-76-9			mg	81.8	25 - 105				04/29/14

* - QC result out of range

n/a - Not Applicable

Analytical Comment Report

Attention: Scot Fitzgerald

Group # WSCF140713

Quality Control Comments

Department Inorganic

109191 B2W6D8(140711001MS)

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

109192 B2W6D8(140711001MSD)

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

110019 B2W7D9(140710007MS)

Analyte Chromium - ICP-2008 MS All possible metal

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

110020 B2W7D9(140710007MSD)

Analyte Chromium - ICP-2008 MS All possible metal

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

Analytical Comment Report

Attention: Scot Fitzgerald

Group # WSCF140713

Quality Control Comments

Department Radiochemistry

108988 B2VYL3(140691003MS)

Analyte Technetium-99 - TC99 by Liquid Scintillation

[1] Matrix spike control limits do not apply when the added spike is <25% of the activity of the sample.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 13 pages
Including cover page

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

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

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

ATTN: Scot Fitzgerald

Customer Code: CHPRC
CACN: 401647
Work Order #: 140713
Customer Work ID: I14-022-038
Due Date: 05/19/2014 **(R031)**

The following samples were received from you on 4/18/2014 2:00:00 PM. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact WSCF Client Services. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
140713001	B2W730	WATER	4/18/2014 12:03	4/18/2014 14:00
Procedure		**Compound List**		
Hexavalent chromium Discrete Analyzer		Cr6		
Sample #	**Sample ID**	**Matrix**	**Collected**	**Received**
140713002	B2W713	WATER	4/18/2014 13:15	4/18/2014 14:00
Procedure		**Compound List**		
Hexavalent chromium Discrete Analyzer		Cr6		
Sample #	**Sample ID**	**Matrix**	**Collected**	**Received**
140713003	B2W712	WATER	4/18/2014 13:15	4/18/2014 14:00
Procedure		**Compound List**		
Hexavalent chromium Discrete Analyzer		Cr6		
Sample #	**Sample ID**	**Matrix**	**Collected**	**Received**
140713004	B2W711	WATER	4/18/2014 13:15	4/18/2014 14:00
Procedure		**Compound List**		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	**Sample ID**	**Matrix**	**Collected**	**Received**
140713005	B2W729	WATER	4/18/2014 12:03	4/18/2014 14:00
Procedure		**Compound List**		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	**Sample ID**	**Matrix**	**Collected**	**Received**
140713006	B2W710	WATER	4/18/2014 13:15	4/18/2014 14:00
Procedure		**Compound List**		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	**Sample ID**	**Matrix**	**Collected**	**Received**
140713007	B2W714	WATER	4/18/2014 13:15	4/18/2014 14:00
Procedure		**Compound List**		
ICP-6010 - All possible metals		6010 ICP Common + GW03		
Sample #	**Sample ID**	**Matrix**	**Collected**	**Received**
140713008	B2W715	WATER	4/18/2014 13:15	4/18/2014 14:00
Procedure		**Compound List**		
ICP-6010 - All possible metals		6010 ICP Common + GW03		

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

Sample #	Sample ID	Matrix	Collected	Received
140713009	B2W708	WATER	4/18/2014 13:15	4/18/2014 14:00

Procedure	Compound List
ICP-6010 - All possible metals	6010 ICP Common + GW03
Total Alkalinity as mg/L CaCO3 (Water)	Alkalinity,Carbonate,Bicarbonate,Hydroxyl Ion

Sample #	Sample ID	Matrix	Collected	Received
140713010	B2W709	WATER	4/18/2014 13:15	4/18/2014 14:00

Procedure	Compound List
ICP-6010 - All possible metals	6010 ICP Common + GW03
Total Alkalinity as mg/L CaCO3 (Water)	Alkalinity,Carbonate,Bicarbonate,Hydroxyl Ion

Sample #	Sample ID	Matrix	Collected	Received
140713011	B2W731	WATER	4/18/2014 12:03	4/18/2014 14:00

Procedure	Compound List
ICP-2008 MS All possible metal	200.8 ICPMS GW01

Sample #	Sample ID	Matrix	Collected	Received
140713012	B2W728	WATER	4/18/2014 12:03	4/18/2014 14:00

Procedure	Compound List
ICP-2008 MS All possible metal	200.8 ICPMS GW01
SW-846 8260B Volatiles	8260 GCMS Common + GW01
Strontium 89/90 (GPC/GEA)	SR89/90
TC99 by Liquid Scintillation	Tc-99
Tritium by LSC	H3

Sample #	Sample ID	Matrix	Collected	Received
140713013	B2WJC8 (X14-003)	WATER	4/18/2014 12:03	4/18/2014 14:00

Procedure	Compound List
SW-846 8260B Volatiles	8260 GCMS Common

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # I14-022-038 Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4550
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64 / 19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority: 31 Days	PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

40713

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

100 Area Generator Knowledge Information Form applies.
The CAUN for analytical work at WSCF is 40.647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W730	N	W	APR 18 2014	1203	1x500-mL aG	7196_CR6: COMMON	24 Hours	Cool~4C

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			APR 18 2014 1400	K FRISBY			APR 18 2014 1400
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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)	Disposed By	Date/Time

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A-6004-642 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # I14-022-029 Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority: 31 Days	PRIORITY	Offsite Property No.	N/A

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

SPECIAL INSTRUCTIONS Hold Time
100 Area Generator Knowledge Information Form applies.
The CACN for analytical work at WSCF is 401647.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W713	N	W	APR 18 2014	1315	1x500-mL aG	7196_CR6: COMMON	24 Hours	Cool~4C

Chain of Custody

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
CHRIS FULTON CHPRC	APR 18 2014 1400	K Grigsby	APR 18 2014 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

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)	Disposed By	Date/Time

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A-6004-642 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I14-022-026**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority: 31 Days	**PRIORITY**	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 19 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

100 Area Generator Knowledge Information Form applies
The CACN for analytical work at WSCF is 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W7T2 3	N	W	APR 18 2014	1315	1x500-mL aG	/196 CR6: COMMON	24 Hours	Cool-4C

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			APR 18 2014 1400	K FRISBY			APR 18 2014 1400
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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)	Disposed By	Date/Time

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I14-022-028**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	31 Days **PRIORITY**	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

100 Area Generator Knowledge Information Form applies.
The CACN for analytical work at WSCF is 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W711 4	N	W	APR 18 2014	1315	1x500-mL P	300.0_ANIONS_IC COMMON	48 Hours	Cool~4C

Chain of Custody

Relinquished By	Date/Time	Received By	Date/Time
CHRIS FULTON CHPRC (Print) Sign	APR 18 2014 1900	(Print) Sign	APR 18 2014 1900
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	= 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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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # I14-022-037 Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority: 31 Days	PRIORITY	Offsite Property No.	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
100 Area Generator Knowledge Information Form applies.
The CACN for analytical work at WSCF is 401647.

Sample No	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W729	N	W	APR 18 2014	1203	1x500-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool-4C

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			APR 18 2014 1400	KFREY			APR 18 2014 1400
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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)	Disposed By	Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I14-022-025

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Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority: 31 Days	PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS Hold Time

100 Area Generator Knowledge Information Form applies.
The CACN for analytical work at WSCF is 401647.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W710 6	N	W	APR 18 2014	1515	1x500-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool~4C

Chain of Custody

Relinquished By CHRIS FULTON CHPRC	Print Sign	Date/Time APR 18 2014 1400	Received By KERGSY	Print Sign	Date/Time APR 18 2014 1400
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time

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-6004-642 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I14-022-024**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	IINF-N-506 641/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	31 Days **PRIORITY**	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS **Hold Time**

100 Area Generator Knowledge Information Form applies.
The CACN for analytical work at WSCF is 401647.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W714	Y	W	APR 18 2014	1315	1x500-mL G/P	6010_METALS_ICP: COMMON; 6010_METALS_ICP: GW 03	6 Months	HNO3 to pH <2
B2W708	N	W			1x500-mL G/P	6010_METALS_ICP: COMMON; 6010_METALS_ICP: GW 03	6 Months	HNO3 to pH <2
B2W708	N	W			1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool~4C

Chain of Custody

Relinquished By	Date/Time	Received By	Date/Time
Print: CHRIS FULTON CHPRC Sign:	APR 18 2014 1400	Print: K FRISBY Sign:	APR 18 2014 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S = Soil	DS = Drum Solids		
SD = 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)	Disposed By	Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I14-022-027

Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64 / 19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	31 Days PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS Hold Time

100 Area Generator Knowledge information Form applies.
The CACN for analytical work at WSCF is 401647.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W709	N	W	APR 18 2014	1315	1x500-ml G/P	6010_METALS_ICP: COMMON; 6010_METALS_ICP: GW 03	6 Months	HNO3 to pH <2
B2W709	N	W			1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool-4C
B2W715	Y	W			1x500-mL G/P	6010_METALS_ICP: COMMON; 6010_METALS_ICP: GW 03	6 Months	HNO3 to pH <2

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			APR 18 2014 1400	KERSBY			APR 18 2014 1400
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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)	Disposed By	Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I14-022-036

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Collector	CHRIS FULTON CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-022	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100KR4, APRIL 2014	Logbook No.	HNF-N-506 64/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	31 Days **PRIORITY**	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

100 Area Generator Knowledge Information Form applies.
The CACN for analytical work is WSCF is 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2W728 12	N	W	APR 18 2014	1203	1x500-mL G/P	200.8_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2W728	N	W			3x40-mL aGs*	8260_VOA_GCMS: COMMON; 8260_VOA_GCMS: GW 01	14 Days	HCl or H2SO4 to pH <2/Cool-4C
B2W728	N	W			1x1-L G/P	SRTOT_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2W728	N	W			1x1-L G/P	TC99_3MDSK_LSC: COMMON	6 Months	HCl to pH <2
B2W728	N	W			1x250-mL G	TRITIUM_EIE_LSC: COMMON	6 Months	None
B2W731 11	Y	W			1x500-mL G/P	200.8_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			APR 18 2014 1400	KFLISBY			APR 18 2014 1400
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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) Disposed By Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X14-003-171**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X14-003	Sampling Origin	HANFORD SITE	Purchase Order/Charge Code	300071ES20
Project Title	GW Sitewide Surv, FY14	Logbook No.	HNF-N-506 64/19	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority: 31 Days	**PRIORITY**	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site Wide Generator Knowledge Information Form applies.
The UACN for analytical work at WSCF is 401647.
FY13 and FY14 samples cannot be in the same SDG
Batch with A, I, S, and W SAFs.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2WJC8	N	W	APR 18 2014	1203	3x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool~4C
B2WJC8	N	W	/	/	1x20-mL P	Activity Scan	6 Months	None

Chain of Custody

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
CHRIS FULTON CHPRC	APR 18 2014 1400	K FRISBY	APR 18 2014 1400

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) Disposed By Date/Time

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