

DECEMBER 11, 2012

**WSCF Laboratory**

PO Box 650 S3-30  
Richland, WA 99352



December 11, 2012

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

Dear Scot Fitzgerald,

**FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121468**

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 WSCF121468

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

Very truly yours,

A handwritten signature in black ink, appearing to read "Joseph Hale", is positioned above the typed name.

Electronically signed by Joseph Hale

For Lab Manager, Dan T. Smith

WSCF Analytical Lab

(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

**COVER SHEET**

Consisting of 2 pages  
Including cover page

WSCF SAF Number Cross Reference

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Group # WSCF121468

Data Deliverable Date 12/17/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
S13-012	B2MYX8	121468001	WATER	11/15/12	11/15/12
S13-012	B2MYX9	121468002	WATER	11/15/12	11/15/12
S13-012	B2N003	121468003	WATER	11/15/12	11/15/12
S13-012	B2N008	121468004	WATER	11/15/12	11/15/12
S13-012	B2N002	121468005	WATER	11/15/12	11/15/12
S13-012	B2N007	121468006	WATER	11/15/12	11/15/12
S13-012	B2MYX6	121468007	WATER	11/15/12	11/15/12
S13-012	B2MYX7	121468008	WATER	11/15/12	11/15/12
S13-012	B2MYY0	121468009	WATER	11/15/12	11/15/12
S13-012	B2MYY1	121468010	WATER	11/15/12	11/15/12
S13-012	B2N009	121468011	WATER	11/15/12	11/15/12
S13-012	B2MYX4	121468012	WATER	11/15/12	11/15/12
S13-012	B2MYX5	121468013	WATER	11/15/12	11/15/12
S13-012	B2N006	121468014	WATER	11/15/12	11/15/12

ATTACHMENT 2

**NARRATIVE**

Consisting of 4 pages  
Including cover page

### Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Master Contract 39818, Revision 3, "Laboratory Analytical Services to CHPRC Soil and Groundwater Remediation Project."*

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

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

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

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

### Analytical Methodology for Requested Analyses

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

### Inorganic Comments

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

- Batch QC 210367
  - Nitrite – Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were “N” flagged.
- Batch QC 210368
  - 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):

- Sodium was detected in the Blank and evaluated.
- Calcium – 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.

**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):

- 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):

Attachment 2  
**Narrative**  
WSCF121468

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

**Gamma Energy Analysis:**

- All applicable QC controls are within the established limits.

**Gross Alpha / Gross Beta:**

- All applicable QC controls are within the established limits.

**Strontium-89/90:**

- All applicable QC controls are within the established limits.

**Tritium:**

- All applicable QC controls are within the established limits.

**Technetium-99:**

- All applicable QC controls are within the established limits.

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

ATTACHMENT 3

**ANALYTICAL RESULTS**

Consisting of 56 pages  
Including cover page

DECEMBER 11, 2012

**WSCF ANALYTICAL RESULTS REPORT**

For

CH2M Hill Plateau Remediation

PO Box 1600  
Richland, WA 99352

Attention: Scot Fitzgerald

**Contract #** MOA-FH-CHPRC-2008  
**Group #** WSCF121468  
**Report Date** December 11, 2012

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Marisol Avila

*Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no 'Percent Solid' test is reported then the results are reported on an "as received" basis.*

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7005. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210367	210367	2	BLANK	85176	BLANK		Anions by Ion Chromatography (Water)
210367	210367	3	LCS	85177	LCS		Anions by Ion Chromatography (Water)
210367	210367	4	DUP	85178	B2MYX0(121464009DUP)	121464009	Anions by Ion Chromatography (Water)
210367	210367	5	MS	85179	B2MYX0(121464009MS)	121464009	Anions by Ion Chromatography (Water)
210367	210367	6	MSD	85180	B2MYX0(121464009MSD)	121464009	Anions by Ion Chromatography (Water)
210367	210367	16	SAMPLE	121468005	B2N002		Anions by Ion Chromatography (Water)
210367	210367	17	SAMPLE	121468006	B2N007		Anions by Ion Chromatography (Water)
210368	210368	2	BLANK	85183	BLANK		Anions by Ion Chromatography (Water)
210368	210368	3	LCS	85184	LCS		Anions by Ion Chromatography (Water)
210368	210368	4	DUP	85185	B2MLF7(121466002DUP)	121466002	Anions by Ion Chromatography (Water)
210368	210368	5	MS	85186	B2MLF7(121466002MS)	121466002	Anions by Ion Chromatography (Water)
210368	210368	6	MSD	85187	B2MLF7(121466002MSD)	121466002	Anions by Ion Chromatography (Water)
210368	210368	9	SAMPLE	121468007	B2MYX6		Anions by Ion Chromatography (Water)
210368	210368	10	SAMPLE	121468008	B2MYX7		Anions by Ion Chromatography (Water)
210371	210371	17	LCS	85207	LCS		Hexavalent chromium Discrete Analyzer
210371	210371	18	BLANK	85208	BLANK		Hexavalent chromium Discrete Analyzer
210371	210371	19	DUP	85209	B2ML32(121465025DUP)	121465025	Hexavalent chromium Discrete Analyzer
210371	210371	20	MS	85210	B2ML32(121465025MS)	121465025	Hexavalent chromium Discrete Analyzer
210371	210371	24	SAMPLE	121468001	B2MYX8		Hexavalent chromium Discrete Analyzer
210371	210371	25	SAMPLE	121468002	B2MYX9		Hexavalent chromium Discrete Analyzer
210371	210371	26	SAMPLE	121468003	B2N003		Hexavalent chromium Discrete Analyzer
210371	210371	27	SAMPLE	121468004	B2N008		Hexavalent chromium Discrete Analyzer
211117	211128	5	BLANK	85822	BLANK		ICP-6010 - All possible metals

Batch QC List

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
211117	211128	7	LCS	85824	LCS		ICP-6010 - All possible metals
211117	211128	8	SAMPLE	121468009	B2MYY0		ICP-6010 - All possible metals
211117	211128	9	MS	85825	B2MYY0(121468009MS)	121468009	ICP-6010 - All possible metals
211117	211128	10	MSD	85826	B2MYY0(121468009MSD)	121468009	ICP-6010 - All possible metals
211117	211128	11	SAMPLE	121468010	B2MYY1		ICP-6010 - All possible metals
211117	211128	12	SAMPLE	121468011	B2N009		ICP-6010 - All possible metals
211117	211128	13	SAMPLE	121468012	B2MYX4		ICP-6010 - All possible metals
211117	211128	14	SAMPLE	121468013	B2MYX5		ICP-6010 - All possible metals
211117	211128	15	SAMPLE	121468014	B2N006		ICP-6010 - All possible metals
211267	211274	4	BLANK	86053	BLANK		ICP-2008 MS All possible metal
211267	211274	5	LCS	86054	LCS		ICP-2008 MS All possible metal
211267	211274	7	MS	86055	B2MP07(121456006MS)	121456006	ICP-2008 MS All possible metal
211267	211274	8	MSD	86056	B2MP07(121456006MSD)	121456006	ICP-2008 MS All possible metal
211267	211274	20	SAMPLE	121468012	B2MYX4		ICP-2008 MS All possible metal
211267	211274	21	SAMPLE	121468013	B2MYX5		ICP-2008 MS All possible metal
211267	211274	22	SAMPLE	121468014	B2N006		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210364	211028	1	BLANK	85162	BLANK		GAB Discrete analysis Alpha only
210364	211028	2	LCS	85163	LCS		GAB Discrete analysis Alpha only
210364	211028	4	DUP	85164	B2N0C2(121467013DUP) 121467013		GAB Discrete analysis Alpha only
210364	211028	7	SAMPLE	121468012	B2MYX4		GAB Discrete analysis Alpha only
210364	211028	8	SAMPLE	121468013	B2MYX5		GAB Discrete analysis Alpha only
210364	211028	9	SAMPLE	121468014	B2N006		GAB Discrete analysis Alpha only
210364	211029	1	BLANK	85162	BLANK		GAB Discrete analysis Beta only
210364	211029	2	LCS	85163	LCS		GAB Discrete analysis Beta only
210364	211029	4	DUP	85164	B2N0C2(121467013DUP) 121467013		GAB Discrete analysis Beta only
210364	211029	7	SAMPLE	121468012	B2MYX4		GAB Discrete analysis Beta only
210364	211029	8	SAMPLE	121468013	B2MYX5		GAB Discrete analysis Beta only
210364	211029	9	SAMPLE	121468014	B2N006		GAB Discrete analysis Beta only
210365	210369	1	IBLANK	85165	IBLANK		Gamma Energy Analysis-general
210365	210369	2	LCS	85166	LCS		Gamma Energy Analysis-general
210365	210369	3	DUP	85167	B2MMR7(121464012DUP) 121464012		Gamma Energy Analysis-general
210365	210369	5	SAMPLE	121468012	B2MYX4		Gamma Energy Analysis-general
210365	210369	6	SAMPLE	121468013	B2MYX5		Gamma Energy Analysis-general
210414	210626	1	BLANK	85217	BLANK		TC99 by Liquid Scintillation
210414	210626	2	LCS	85218	LCS		TC99 by Liquid Scintillation
210414	210626	4	DUP	85219	B2MPH3(121454005DUP) 121454005		TC99 by Liquid Scintillation
210414	210626	5	MS	85220	B2MPH3(121454005MS) 121454005		TC99 by Liquid Scintillation
210414	210626	10	SAMPLE	121468012	B2MYX4		TC99 by Liquid Scintillation
210414	210626	11	SAMPLE	121468013	B2MYX5		TC99 by Liquid Scintillation

Batch QC List

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210414	210626	12	SAMPLE	121468014	B2N006		TC99 by Liquid Scintillation
210616	210748	1	BLANK	85287	BLANK		Tritium by LSC
210616	210748	2	LCS	85288	LCS		Tritium by LSC
210616	210748	3	SAMPLE	121468012	B2MYX4		Tritium by LSC
210616	210748	4	DUP	85289	B2MYX4(121468012DUP)	121468012	Tritium by LSC
210616	210748	5	MS	85290	B2MYX4(121468012MS)	121468012	Tritium by LSC
210616	210748	6	SAMPLE	121468013	B2MYX5		Tritium by LSC
210616	210748	7	SAMPLE	121468014	B2N006		Tritium by LSC
210634	211034	1	BLANK	85324	BLANK		Strontium 89/90 (GPC/GEA)
210634	211034	2	LCS	85325	LCS		Strontium 89/90 (GPC/GEA)
210634	211034	3	DUP	85326	B2MXJ3(121423008DUP)	121423008	Strontium 89/90 (GPC/GEA)
210634	211034	9	SAMPLE	121468012	B2MYX4		Strontium 89/90 (GPC/GEA)
210634	211034	10	SAMPLE	121468013	B2MYX5		Strontium 89/90 (GPC/GEA)
210927	211238	1	BLANK	85714	BLANK		Strontium 89/90 (GPC/GEA)
210927	211238	2	LCS	85715	LCS		Strontium 89/90 (GPC/GEA)
210927	211238	3	DUP	85716	B2N006(121468014DUP)	121468014	Strontium 89/90 (GPC/GEA)
210927	211238	4	SAMPLE	121468014	B2N006		Strontium 89/90 (GPC/GEA)

Method Reference

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

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.

<b>LA-265-403</b>	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium
<b>LA-505-411</b>	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emmission Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmission Spectrometry
<b>LA-505-412</b>	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.
<b>LA-533-410</b>	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 Radiochemistry

Group # WSCF121468

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.

<b>LA-220-406</b>	Strontium-89 and 90 in Aqueous Samples by SR-SPEC Separation
HEIS	SRTOT_SEP_PRECIP_GPC Strontium 89/90, by Sr-Spec Sep.
<b>LA-508-481</b>	Gamma Energy Analysis using the Canberra Genie Ssystem
HEIS	GAMMA_GS Gamma Energy Analysis
<b>LA-508-421</b>	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
<b>LA-508-415</b>	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples
HEIS	ALPHA_GPC Gross Alpha by GPC
HEIS	BETA_GPC Gross Beta by GPC
HEIS	SRTOT_SEP_PRECIP_GPC Strontium beta isotopic, GPC

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468001  
 SAF# S13-012  
 Sample ID B2MYX8

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403		0.00520		mg/L	1	0.0020	0.0050	11/15/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468002  
 SAF# S13-012  
 Sample ID B2MYX9

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00490		mg/L	1	0.0020	0.0050	11/15/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468003  
 SAF# S13-012  
 Sample ID B2N003

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403		0.0148		mg/L	1	0.0020	0.0050	11/15/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468004  
 SAF# S13-012  
 Sample ID B2N008

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403		0.0125		mg/L	1	0.0020	0.0050	11/15/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468005  
 SAF# S13-012  
 Sample ID B2N002

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>11/16/12</b>										
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.127		ug/mL	2	0.046	0.14	11/16/12
Chloride	16887-00-6	LA-533-410	D	8.53		ug/mL	2	0.12	0.81	11/16/12
Nitrite-N	NO2-N	LA-533-410	BD	0.114		ug/mL	2	0.038	0.20	11/16/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/16/12
Nitrate-N	NO3-N	LA-533-410	D	3.95		ug/mL	2	0.038	0.20	11/16/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/16/12
Sulfate	14808-79-8	LA-533-410	D	127		ug/mL	2	0.22	2.1	11/16/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468006  
 SAF# S13-012  
 Sample ID B2N007

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										<b>11/16/12</b>
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.106		ug/mL	2	0.046	0.14	11/16/12
Chloride	16887-00-6	LA-533-410	D	12.9		ug/mL	2	0.12	0.81	11/16/12
Nitrite-N	NO2-N	LA-533-410	BD	0.143		ug/mL	2	0.038	0.20	11/16/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/16/12
Nitrate-N	NO3-N	LA-533-410	D	4.37		ug/mL	2	0.038	0.20	11/16/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/16/12
Sulfate	14808-79-8	LA-533-410	D	86.0		ug/mL	2	0.22	2.1	11/16/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468007  
 SAF# S13-012  
 Sample ID B2MYX6

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>11/16/12</b>										
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	UD	<0.046		ug/mL	2	0.046	0.14	11/16/12
Chloride	16887-00-6	LA-533-410	DN	8.90		ug/mL	2	0.12	0.81	11/16/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/16/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/16/12
Nitrate-N	NO3-N	LA-533-410	D	3.42		ug/mL	2	0.038	0.20	11/16/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/16/12
Sulfate	14808-79-8	LA-533-410	D	131		ug/mL	2	0.22	2.1	11/16/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468008  
 SAF# S13-012  
 Sample ID B2MYX7

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>11/16/12</b>										
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.0739		ug/mL	2	0.046	0.14	11/16/12
Chloride	16887-00-6	LA-533-410	DN	8.93		ug/mL	2	0.12	0.81	11/16/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0390		ug/mL	2	0.038	0.20	11/16/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/16/12
Nitrate-N	NO3-N	LA-533-410	D	3.40		ug/mL	2	0.038	0.20	11/16/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/16/12
Sulfate	14808-79-8	LA-533-410	D	130		ug/mL	2	0.22	2.1	11/16/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468009  
 SAF# S13-012  
 Sample ID B2MYY0

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>ICPAES Prep (W)</b>										<b>12/03/12</b>
<b>ICP-6010 - All possible metals</b>										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	12/05/12
Magnesium	7439-95-4	LA-505-411		13400		ug/L	1	4.0	20	12/05/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Nickel	7440-02-0	LA-505-411	B	8.60		ug/L	1	4.0	20	12/05/12
Potassium	7440-09-7	LA-505-411		3450		ug/L	1	76	380	12/05/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Sodium	7440-23-5	LA-505-411		12900		ug/L	1	10	50	12/05/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/05/12
Barium	7440-39-3	LA-505-411		44.2		ug/L	1	4.0	20	12/05/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Chromium	7440-47-3	LA-505-411	B	7.50		ug/L	1	5.0	25	12/05/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Vanadium	7440-62-2	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Calcium	7440-70-2	LA-505-411		83400		ug/L	1	49	240	12/05/12
Strontium	7440-24-6	LA-505-411		335		ug/L	1	9.0	45	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468009  
 SAF# S13-012  
 Sample ID B2MYY0

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468010  
 SAF# S13-012  
 Sample ID B2MYY1

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>ICPAES Prep (W)</b>										<b>12/03/12</b>
<b>ICP-6010 - All possible metals</b>										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	12/05/12
Magnesium	7439-95-4	LA-505-411		13700		ug/L	1	4.0	20	12/05/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Potassium	7440-09-7	LA-505-411		3560		ug/L	1	76	380	12/05/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Sodium	7440-23-5	LA-505-411		13300		ug/L	1	10	50	12/05/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/05/12
Barium	7440-39-3	LA-505-411		43.9		ug/L	1	4.0	20	12/05/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Chromium	7440-47-3	LA-505-411	B	7.50		ug/L	1	5.0	25	12/05/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Vanadium	7440-62-2	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Calcium	7440-70-2	LA-505-411		83000		ug/L	1	49	240	12/05/12
Strontium	7440-24-6	LA-505-411		336		ug/L	1	9.0	45	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468010  
 SAF# S13-012  
 Sample ID B2MYY1

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468011  
 SAF# S13-012  
 Sample ID B2N009

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>ICPAES Prep (W)</b>										<b>12/03/12</b>
<b>ICP-6010 - All possible metals</b>										
Iron	7439-89-6	LA-505-411	B	20.7		ug/L	1	19	95	12/05/12
Magnesium	7439-95-4	LA-505-411		13300		ug/L	1	4.0	20	12/05/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Nickel	7440-02-0	LA-505-411	B	4.00		ug/L	1	4.0	20	12/05/12
Potassium	7440-09-7	LA-505-411		5890		ug/L	1	76	380	12/05/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Sodium	7440-23-5	LA-505-411		12900		ug/L	1	10	50	12/05/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/05/12
Barium	7440-39-3	LA-505-411		66.2		ug/L	1	4.0	20	12/05/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Chromium	7440-47-3	LA-505-411	B	18.1		ug/L	1	5.0	25	12/05/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Vanadium	7440-62-2	LA-505-411	B	5.80		ug/L	1	5.0	25	12/05/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Calcium	7440-70-2	LA-505-411		73300		ug/L	1	49	240	12/05/12
Strontium	7440-24-6	LA-505-411		313		ug/L	1	9.0	45	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468011  
 SAF# S13-012  
 Sample ID B2N009

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468012  
 SAF# S13-012  
 Sample ID B2MYX4

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>ICPAES Prep (W)</b>										<b>12/03/12</b>
<b>ICP-6010 - All possible metals</b>										
Iron	7439-89-6	LA-505-411	B	34.3		ug/L	1	19	95	12/05/12
Magnesium	7439-95-4	LA-505-411		13800		ug/L	1	4.0	20	12/05/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Nickel	7440-02-0	LA-505-411	B	8.10		ug/L	1	4.0	20	12/05/12
Potassium	7440-09-7	LA-505-411		3560		ug/L	1	76	380	12/05/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Sodium	7440-23-5	LA-505-411		13300		ug/L	1	10	50	12/05/12
Antimony	7440-36-0	LA-505-411	B	41.5		ug/L	1	36	180	12/05/12
Barium	7440-39-3	LA-505-411		44.7		ug/L	1	4.0	20	12/05/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Chromium	7440-47-3	LA-505-411	B	9.30		ug/L	1	5.0	25	12/05/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Vanadium	7440-62-2	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Calcium	7440-70-2	LA-505-411		83600		ug/L	1	49	240	12/05/12
Strontium	7440-24-6	LA-505-411		336		ug/L	1	9.0	45	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468012  
 SAF# S13-012  
 Sample ID B2MYX4

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
<b>ICPMS Prep (W)</b>										<b>12/06/12</b>
<b>ICP-2008 MS All possible metal</b>										
Uranium	7440-61-1	LA-505-412	D	3.90		ug/L	2	0.10	0.50	12/06/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468013  
 SAF# S13-012  
 Sample ID B2MYX5

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>ICPAES Prep (W)</b>										<b>12/03/12</b>
<b>ICP-6010 - All possible metals</b>										
Iron	7439-89-6	LA-505-411	B	25.1		ug/L	1	19	95	12/05/12
Magnesium	7439-95-4	LA-505-411		13700		ug/L	1	4.0	20	12/05/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Potassium	7440-09-7	LA-505-411		3520		ug/L	1	76	380	12/05/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Sodium	7440-23-5	LA-505-411		13200		ug/L	1	10	50	12/05/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/05/12
Barium	7440-39-3	LA-505-411		44.5		ug/L	1	4.0	20	12/05/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Chromium	7440-47-3	LA-505-411	B	9.20		ug/L	1	5.0	25	12/05/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Vanadium	7440-62-2	LA-505-411	B	7.40		ug/L	1	5.0	25	12/05/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Calcium	7440-70-2	LA-505-411		83700		ug/L	1	49	240	12/05/12
Strontium	7440-24-6	LA-505-411		342		ug/L	1	9.0	45	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468013  
 SAF# S13-012  
 Sample ID B2MYX5

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
<b>ICPMS Prep (W)</b>										<b>12/06/12</b>
<b>ICP-2008 MS All possible metal</b>										
Uranium	7440-61-1	LA-505-412	D	3.54		ug/L	2	0.10	0.50	12/06/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468014  
 SAF# S13-012  
 Sample ID B2N006

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>ICPAES Prep (W)</b>										<b>12/03/12</b>
<b>ICP-6010 - All possible metals</b>										
Iron	7439-89-6	LA-505-411		208		ug/L	1	19	95	12/05/12
Magnesium	7439-95-4	LA-505-411		13000		ug/L	1	4.0	20	12/05/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Nickel	7440-02-0	LA-505-411	B	5.40		ug/L	1	4.0	20	12/05/12
Potassium	7440-09-7	LA-505-411		5850		ug/L	1	76	380	12/05/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Sodium	7440-23-5	LA-505-411		12900		ug/L	1	10	50	12/05/12
Antimony	7440-36-0	LA-505-411	B	49.3		ug/L	1	36	180	12/05/12
Barium	7440-39-3	LA-505-411		66.2		ug/L	1	4.0	20	12/05/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Chromium	7440-47-3	LA-505-411	B	23.6		ug/L	1	5.0	25	12/05/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
Vanadium	7440-62-2	LA-505-411	B	6.20		ug/L	1	5.0	25	12/05/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/05/12
Calcium	7440-70-2	LA-505-411		72300		ug/L	1	49	240	12/05/12
Strontium	7440-24-6	LA-505-411		316		ug/L	1	9.0	45	12/05/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Sample # 121468014  
 SAF# S13-012  
 Sample ID B2N006

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/05/12
<b>ICPMS Prep (W)</b>										<b>12/06/12</b>
<b>ICP-2008 MS All possible metal</b>										
Uranium	7440-61-1	LA-505-412	D	1.81		ug/L	2	0.10	0.50	12/06/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Sample # 121468012  
 SAF# S13-012  
 Sample ID B2MYX4

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>GAB Prep for Discrete Analysis (W)</b>										<b>11/30/12</b>
<b>GAB Discrete analysis Alpha only</b>										
Gross Alpha	12587-46-1	LA-508-415	U	0.84	1.3	pCi/L	1	2.2		12/05/12
<b>GAB Discrete analysis Beta only</b>										
Gross Beta	12587-47-2	LA-508-415		72	8.8	pCi/L	1	4.2		12/05/12
<b>Preparation for GEA (W)</b>										<b>11/16/12</b>
<b>Gamma Energy Analysis-general</b>										
Antimony-125	14234-35-6	LA-508-481	U	-11	24	pCi/L	1	40		11/16/12
Cesium-134	13967-70-9	LA-508-481	U	20	53	pCi/L	1	92		11/16/12
Cesium-137	10045-97-3	LA-508-481	U	0.21	9.3	pCi/L	1	17		11/16/12
Cobalt-60	10198-40-0	LA-508-481	U	-1.2	9.3	pCi/L	1	16		11/16/12
Europium-152	14683-23-9	LA-508-481	U	0.087	26	pCi/L	1	46		11/16/12
Europium-154	15585-10-1	LA-508-481	U	-0.31	24	pCi/L	1	43		11/16/12
Europium-155	14391-16-3	LA-508-481	U	-1.9	29	pCi/L	1	48		11/16/12
Potassium-40	13966-00-2	LA-508-481	U	-67	120	pCi/L	1	240		11/16/12
Ruthenium-106	13967-48-1	LA-508-481	U	47	81	pCi/L	1	150		11/16/12
Beryllium-7	13966-02-4	LA-508-481	U	-28	72	pCi/L	1	120		11/16/12
<b>Strontium 89/90 WATER/LIQUID PREP</b>										<b>11/29/12</b>
<b>Strontium 89/90 (GPC/GEA)</b>										

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

B - Analyte was detected in both the BLANK and SAMPLE  
 U - Analyzed for but not detected above limiting criteria.  
 N - Spike Recovery is Outside Control Limits.  
 X, Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Sample # 121468012  
 SAF# S13-012  
 Sample ID B2MYX4

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium-89_90	SR-RAD	LA-220-406		30	6.3	pCi/L	1	0.88		12/04/12
<b>TC99 by Liquid Scin. WATER/LIQUID PREP</b>										<b>11/19/12</b>
<b>TC99 by Liquid Scintillation</b>										
Technetium-99	14133-76-7	LA-508-421	U	-8.3	4	pCi/L	1	6.4		11/19/12
<b>Tritium by LSC EICHROM WA/LIQ PREP</b>										<b>11/20/12</b>
<b>Tritium by LSC</b>										
Tritium	10028-17-8	LA-508-421		1000	300	pCi/L	1	300		11/26/12

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

B - Analyte was detected in both the BLANK and SAMPLE  
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 N - Spike Recovery is Outside Control Limits.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Sample # 121468013  
 SAF# S13-012  
 Sample ID B2MYX5

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>GAB Prep for Discrete Analysis (W)</b>										<b>11/30/12</b>
<b>GAB Discrete analysis Alpha only</b>										
Gross Alpha	12587-46-1	LA-508-415		4.8	2	pCi/L	1	2.2		12/05/12
<b>GAB Discrete analysis Beta only</b>										
Gross Beta	12587-47-2	LA-508-415		66	8.3	pCi/L	1	4.2		12/05/12
<b>Preparation for GEA (W)</b>										<b>11/16/12</b>
<b>Gamma Energy Analysis-general</b>										
Antimony-125	14234-35-6	LA-508-481	U	8.3	22	pCi/L	1	38		11/16/12
Cesium-134	13967-70-9	LA-508-481	U	-4.3	46	pCi/L	1	80		11/16/12
Cesium-137	10045-97-3	LA-508-481	U	-8.3	8.7	pCi/L	1	14		11/16/12
Cobalt-60	10198-40-0	LA-508-481	U	0.19	8.8	pCi/L	1	16		11/16/12
Europium-152	14683-23-9	LA-508-481	U	-12	25	pCi/L	1	43		11/16/12
Europium-154	15585-10-1	LA-508-481	U	6.4	26	pCi/L	1	42		11/16/12
Europium-155	14391-16-3	LA-508-481	U	-20	27	pCi/L	1	44		11/16/12
Potassium-40	13966-00-2	LA-508-481	U	39	120	pCi/L	1	240		11/16/12
Ruthenium-106	13967-48-1	LA-508-481	U	11	67	pCi/L	1	120		11/16/12
Beryllium-7	13966-02-4	LA-508-481	U	26	64	pCi/L	1	110		11/16/12
<b>Strontium 89/90 WATER/LIQUID PREP</b>										<b>11/29/12</b>
<b>Strontium 89/90 (GPC/GEA)</b>										

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

B - Analyte was detected in both the BLANK and SAMPLE  
 U - Analyzed for but not detected above limiting criteria.  
 N - Spike Recovery is Outside Control Limits.  
 X, Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Sample # 121468013  
 SAF# S13-012  
 Sample ID B2MYX5

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium-89_90	SR-RAD	LA-220-406		29	6	pCi/L	1	0.88		12/04/12
<b>TC99 by Liquid Scin. WATER/LIQUID PREP</b>										<b>11/19/12</b>
<b>TC99 by Liquid Scintillation</b>										
Technetium-99	14133-76-7	LA-508-421	U	-5.1	3.8	pCi/L	1	6.4		11/19/12
<b>Tritium by LSC EICHROM WA/LIQ PREP</b>										<b>11/20/12</b>
<b>Tritium by LSC</b>										
Tritium	10028-17-8	LA-508-421		1000	300	pCi/L	1	300		11/26/12

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

B - Analyte was detected in both the BLANK and SAMPLE  
 U - Analyzed for but not detected above limiting criteria.  
 N - Spike Recovery is Outside Control Limits.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Sample # 121468014  
 SAF# S13-012  
 Sample ID B2N006

Matrix WATER  
 Sampled 11/15/12  
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>GAB Prep for Discrete Analysis (W)</b>										<b>11/30/12</b>
<b>GAB Discrete analysis Alpha only</b>										
Gross Alpha	12587-46-1	LA-508-415		2.4	1.6	pCi/L	1	2.2		12/05/12
<b>GAB Discrete analysis Beta only</b>										
Gross Beta	12587-47-2	LA-508-415		8.0	2.9	pCi/L	1	4.2		12/05/12
<b>Strontium 89/90 WATER/LIQUID PREP</b>										<b>12/04/12</b>
<b>Strontium 89/90 (GPC/GEA)</b>										
Strontium-89_90	SR-RAD	LA-220-406	U	0.98	.96	pCi/L	1	1.5		12/05/12
<b>TC99 by Liquid Scin. WATER/LIQUID PREP</b>										<b>11/19/12</b>
<b>TC99 by Liquid Scintillation</b>										
Technetium-99	14133-76-7	LA-508-421	U	-2.0	3.8	pCi/L	1	6.4		11/19/12
<b>Tritium by LSC EICHROM WA/LIQ PREP</b>										<b>11/20/12</b>
<b>Tritium by LSC</b>										
Tritium	10028-17-8	LA-508-421		1400	370	pCi/L	1	300		11/26/12

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

B - Analyte was detected in both the BLANK and SAMPLE  
 U - Analyzed for but not detected above limiting criteria.  
 N - Spike Recovery is Outside Control Limits.  
 X, Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF121468

**Analytical Batch** 210367 (QC Batch: 210367)  
**Associated Samples** 121468005, 121468006

**Test** Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #85176</b>								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/15/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/15/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/15/12
Bromide	24959-67-9	<0.11		ug/mL					U	11/15/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/15/12
Phosphate-P	PO4-P	<0.042		ug/mL					U	11/15/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/15/12
<b>LCS</b>		<b>QC Sample #85177</b>								
Fluoride	16984-48-8	0.936		ug/mL	94.5	90 - 110				11/15/12
Chloride	16887-00-6	1.85		ug/mL	93.5	90 - 110				11/15/12
Nitrite-N	NO2-N	1.03		ug/mL	105	90 - 110				11/15/12
Bromide	24959-67-9	4.04		ug/mL	103.1	90 - 110				11/15/12
Nitrate-N	NO3-N	0.901		ug/mL	101.8	90 - 110				11/15/12
Phosphate-P	PO4-P	1.92		ug/mL	100.3	90 - 110				11/15/12
Sulfate	14808-79-8	3.98		ug/mL	101.4	90 - 110				11/15/12
<b>DUP</b>		<b>QC Sample #85178</b>								
		<b>Original 121464009</b>								

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8		0.134	ug/mL			4.70	20	BD	11/15/12
Chloride	16887-00-6		3.64	ug/mL			0.90	20	D	11/15/12
Nitrite-N	NO2-N		<0.038	ug/mL			85.50	20	* UXD	11/15/12
Bromide	24959-67-9		<0.22	ug/mL			0.00	20	UD	11/15/12
Nitrate-N	NO3-N		1.24	ug/mL			3.10	20	D	11/15/12
Phosphate-P	PO4-P		<0.084	ug/mL			0.00	20	UD	11/15/12
Sulfate	14808-79-8		22.6	ug/mL			1.70	20	D	11/15/12
<b>MS</b>		<b>QC Sample #85179</b>								
		<b>Original 121464009</b>								
Fluoride	16984-48-8		0.979	ug/mL	97.9	80 - 120			D	11/15/12
Chloride	16887-00-6		1.90	ug/mL	94.8	80 - 120			D	11/15/12
Nitrite-N	NO2-N		0.915	ug/mL	92.6	80 - 120			D	11/15/12
Bromide	24959-67-9		4.05	ug/mL	102.4	80 - 120			D	11/15/12
Nitrate-N	NO3-N		0.949	ug/mL	106.1	80 - 120			D	11/15/12
Phosphate-P	PO4-P		1.94	ug/mL	100.5	80 - 120			D	11/15/12
Sulfate	14808-79-8		4.36	ug/mL	110.1	80 - 120			D	11/15/12
<b>MSD</b>		<b>QC Sample #85180</b>								
		<b>Original 121464009</b>								
		<b>Paired 85179</b>								
Fluoride	16984-48-8		0.963	ug/mL	96.3	80 - 120	1.40	20	D	11/15/12
Chloride	16887-00-6		1.88	ug/mL	94.1	80 - 120	0.30	20	D	11/15/12
Nitrite-N	NO2-N		0.893	ug/mL	90.4	80 - 120	2.30	20	D	11/15/12
Bromide	24959-67-9		3.99	ug/mL	100.7	80 - 120	1.70	20	D	11/15/12
Nitrate-N	NO3-N		0.935	ug/mL	104.6	80 - 120	0.70	20	D	11/15/12
Phosphate-P	PO4-P		1.98	ug/mL	102.5	80 - 120	2.00	20	D	11/15/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		4.26	ug/mL	107.5	80 - 120	0.40	20	D	11/15/12

\* - QC result out of range

n/a - Not Applicable

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF121468

**Analytical Batch** 210368 (QC Batch: 210368)  
**Associated Samples** 121468007, 121468008

**Test** Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #85183</b>								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/16/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/16/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/16/12
Bromide	24959-67-9	<0.11		ug/mL					U	11/16/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/16/12
Phosphate-P	PO4-P	<0.042		ug/mL					U	11/16/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/16/12
<b>LCS</b>		<b>QC Sample #85184</b>								
Fluoride	16984-48-8	0.966		ug/mL	97.6	90 - 110				11/16/12
Chloride	16887-00-6	1.87		ug/mL	94.5	90 - 110				11/16/12
Nitrite-N	NO2-N	1.01		ug/mL	103.6	90 - 110				11/16/12
Bromide	24959-67-9	3.96		ug/mL	101	90 - 110				11/16/12
Nitrate-N	NO3-N	0.894		ug/mL	101	90 - 110				11/16/12
Phosphate-P	PO4-P	1.93		ug/mL	100.9	90 - 110				11/16/12
Sulfate	14808-79-8	4.01		ug/mL	102.3	90 - 110				11/16/12
<b>DUP</b>		<b>QC Sample #85185</b>								
		<b>Original 121466002</b>								

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8		0.183	ug/mL			2.50	20	D	11/16/12
Chloride	16887-00-6		4.94	ug/mL			3.30	20	D	11/16/12
Nitrite-N	NO2-N		<0.038	ug/mL			3.90	20	UD	11/16/12
Bromide	24959-67-9		<0.22	ug/mL			0.00	20	UD	11/16/12
Nitrate-N	NO3-N		2.06	ug/mL			1.80	20	D	11/16/12
Phosphate-P	PO4-P		<0.084	ug/mL			0.00	20	UD	11/16/12
Sulfate	14808-79-8		26.0	ug/mL			2.10	20	D	11/16/12
<b>MS</b>										
<b>QC Sample #85186</b>										
<b>Original 121466002</b>										
Fluoride	16984-48-8		0.968	ug/mL	96.8	80 - 120			D	11/16/12
Chloride	16887-00-6		1.57	ug/mL	78.3	80 - 120			DN	11/16/12
Nitrite-N	NO2-N		0.950	ug/mL	96.1	80 - 120			D	11/16/12
Bromide	24959-67-9		3.92	ug/mL	98.9	80 - 120			D	11/16/12
Nitrate-N	NO3-N		0.786	ug/mL	87.9	80 - 120			D	11/16/12
Phosphate-P	PO4-P		1.91	ug/mL	98.9	80 - 120			D	11/16/12
Sulfate	14808-79-8		2.80	ug/mL	70.6	80 - 120			DX	11/16/12
<b>MSD</b>										
<b>QC Sample #85187</b>										
<b>Original 121466002</b>										
<b>Paired 85186</b>										
Fluoride	16984-48-8		0.979	ug/mL	97.9	80 - 120	0.90	20	D	11/16/12
Chloride	16887-00-6		1.73	ug/mL	86.3	80 - 120	2.40	20	D	11/16/12
Nitrite-N	NO2-N		0.937	ug/mL	94.8	80 - 120	1.40	20	D	11/16/12
Bromide	24959-67-9		3.72	ug/mL	93.8	80 - 120	5.30	20	D	11/16/12
Nitrate-N	NO3-N		0.884	ug/mL	98.9	80 - 120	3.40	20	D	11/16/12
Phosphate-P	PO4-P		1.95	ug/mL	101.2	80 - 120	2.40	20	D	11/16/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
Department Inorganic

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		3.79	ug/mL	95.8	80 - 120	3.30	20	DX	11/16/12

\* - QC result out of range

n/a - Not Applicable

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Radiochemistry

**Group #** WSCF121468

**Analytical Batch** 210369 (QC Batch: 210365)      **Test** Gamma Energy Analysis-general  
**Associated Samples** 121468012, 121468013

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>IBLANK</b>		<b>QC Sample #85165</b>								
Antimony-125	14234-35-6		2.1	pCi/L					U	11/16/12
Cesium-134	13967-70-9		22	pCi/L					U	11/16/12
Cesium-137	10045-97-3		-0.95	pCi/L					U	11/16/12
Cobalt-60	10198-40-0		-7.1	pCi/L					U	11/16/12
Europium-152	14683-23-9		6.2	pCi/L					U	11/16/12
Europium-154	15585-10-1		7.7	pCi/L					U	11/16/12
Europium-155	14391-16-3		13	pCi/L					U	11/16/12
Potassium-40	13966-00-2		-83	pCi/L					U	11/16/12
Ruthenium-106	13967-48-1		-2.4	pCi/L					U	11/16/12
Beryllium-7	13966-02-4		19	pCi/L					U	11/16/12
<b>LCS</b>		<b>QC Sample #85166</b>								
Cesium-137	10045-97-3		6500	pCi/sample	108.3	80 - 120				11/16/12
Cobalt-60	10198-40-0		11000	pCi/sample	107.7	80 - 120				11/16/12
<b>DUP</b>		<b>QC Sample #85167</b>								
		<b>Original 121464012</b>								
Antimony-125	14234-35-6		8.1	pCi/L			19.10	20	U	11/16/12
Cesium-134	13967-70-9		8.6	pCi/L			-585.70	20	* U	11/16/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% RecovLimits	RPD	RPD Limit	RQ	Analyzed
Cesium-137	10045-97-3		-5.8	pCi/L		-319.80	20	* U	11/16/12
Cobalt-60	10198-40-0		-1.6	pCi/L		1394.60	20	* U	11/16/12
Europium-152	14683-23-9		13	pCi/L		67.60	20	* U	11/16/12
Europium-154	15585-10-1		2.1	pCi/L		-2260.00	20	* U	11/16/12
Europium-155	14391-16-3		-9.4	pCi/L		5347.70	20	* U	11/16/12
Potassium-40	13966-00-2		-15	pCi/L		-83.50	20	* U	11/16/12
Ruthenium-106	13967-48-1		1.4	pCi/L		-337.70	20	* U	11/16/12
Beryllium-7	13966-02-4		0.20	pCi/L		-204.60	20	* U	11/16/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analytical Batch 210371 (QC Batch: 210371) Test Hexavalent chromium Discrete Analyzer  
 Associated Samples 121468001, 121468002, 121468003, 121468004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>LCS</b>		<b>QC Sample #85207</b>								
Hexavalent chromium	18540-29-9		0.0520	mg/L	104	90 - 110				11/15/12
<b>BLANK</b>		<b>QC Sample #85208</b>								
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/15/12
<b>DUP</b>		<b>QC Sample #85209</b>								
		<b>Original 121465025</b>								
Hexavalent chromium	18540-29-9		0.00490	mg/L			2.00	20	B	11/15/12
<b>MS</b>		<b>QC Sample #85210</b>								
		<b>Original 121465025</b>								
Hexavalent chromium	18540-29-9		0.0401	mg/L	100.2	85 - 115				11/15/12

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

Quality Control Report

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Analytical Batch 210626 (QC Batch: 210414) Test TC99 by Liquid Scintillation  
 Associated Samples 121468012, 121468013, 121468014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
			<b>QC Sample #85217</b>							
Technetium-99	14133-76-7		-6.5	pCi/L					U	11/19/12
<b>LCS</b>			<b>QC Sample #85218</b>							
Technetium-99	14133-76-7		210	pCi/L	98.4	80 - 120				11/19/12
<b>DUP</b>			<b>QC Sample #85219</b>							
			<b>Original 121454005</b>							
Technetium-99	14133-76-7		44	pCi/L			4.40	20		11/19/12
<b>MS</b>			<b>QC Sample #85220</b>							
			<b>Original 121454005</b>							
Technetium-99	14133-76-7		850	pCi/L	98.4	75 - 125				11/19/12

\* - QC result out of range

n/a - Not Applicable

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Radiochemistry

**Group #** WSCF121468

**Analytical Batch** 210748 (QC Batch: 210616)  
**Associated Samples** 121468012, 121468013, 121468014

**Test** Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
			<b>QC Sample #85287</b>							
Tritium <b>LCS</b>	10028-17-8		19	pCi/L					U	11/26/12
			<b>QC Sample #85288</b>							
Tritium <b>DUP</b>	10028-17-8		3300	pCi/L	106.6	80 - 120				11/26/12
			<b>QC Sample #85289</b>							
			<b>Original 121468012</b>							
Tritium <b>MS</b>	10028-17-8	1000	1100	pCi/L			9.70	20		11/26/12
			<b>QC Sample #85290</b>							
			<b>Original 121468012</b>							
Tritium	10028-17-8	1000	20000	pCi/L	96.6	75 - 125				11/26/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Analytical Batch 211028 (QC Batch: 210364) Test GAB Discrete analysis Alpha only  
 Associated Samples 121468012, 121468013, 121468014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #85162</b>								
Gross Alpha	12587-46-1		-0.41	pCi/L					U	12/05/12
<b>LCS</b>		<b>QC Sample #85163</b>								
Gross Alpha	12587-46-1		68	pCi/L	96.6	80 - 120				12/05/12
<b>DUP</b>		<b>QC Sample #85164</b>								
		<b>Original 121467013</b>								
Gross Alpha	12587-46-1		21	pCi/L			2.80	20		12/05/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Analytical Batch 211029 (QC Batch: 210364) Test GAB Discrete analysis Beta only  
 Associated Samples 121468012, 121468013, 121468014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>			<b>QC Sample #85162</b>							
Gross Beta	12587-47-2		1.1	pCi/L					U	12/05/12
<b>LCS</b>			<b>QC Sample #85163</b>							
Gross Beta	12587-47-2		290	pCi/L	96.5	80 - 120				12/05/12
<b>DUP</b>			<b>QC Sample #85164</b>							
			<b>Original 121467013</b>							
Gross Beta	12587-47-2		23	pCi/L			17.30	20		12/05/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Analytical Batch 211034 (QC Batch: 210634) Test Strontium 89/90 (GPC/GEA)  
 Associated Samples 121468012, 121468013

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #85324</b>								
Strontium-89_90	SR-RAD		0.21	pCi/L					U	12/04/12
<b>LCS</b>		<b>QC Sample #85325</b>								
Strontium-89_90	SR-RAD		97	pCi/L	109	80 - 120				12/04/12
<b>DUP</b>		<b>QC Sample #85326</b>								
		<b>Original 121423008</b>								
Strontium-89_90	SR-RAD		0.44	pCi/L			120.60	20	* U	12/04/12

\* - QC result out of range

n/a - Not Applicable

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF121468

**Analytical Batch** 211128 (QC Batch: 211117)      **Test** ICP-6010 - All possible metals  
**Associated Samples** 121468009, 121468010, 121468011, 121468012, 121468013, 121468014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #85822</b>								
Iron	7439-89-6	<19		ug/L					U	12/05/12
Magnesium	7439-95-4	<4.0		ug/L					U	12/05/12
Manganese	7439-96-5	<4.0		ug/L					U	12/05/12
Nickel	7440-02-0	<4.0		ug/L					U	12/05/12
Potassium	7440-09-7	<76		ug/L					U	12/05/12
Silver	7440-22-4	<4.0		ug/L					U	12/05/12
Sodium	7440-23-5	10.0		ug/L					B	12/05/12
Antimony	7440-36-0	<36		ug/L					U	12/05/12
Barium	7440-39-3	<4.0		ug/L					U	12/05/12
Cadmium	7440-43-9	<4.0		ug/L					U	12/05/12
Chromium	7440-47-3	<5.0		ug/L					U	12/05/12
Cobalt	7440-48-4	<4.0		ug/L					U	12/05/12
Copper	7440-50-8	<4.0		ug/L					U	12/05/12
Vanadium	7440-62-2	<5.0		ug/L					U	12/05/12
Zinc	7440-66-6	<5.0		ug/L					U	12/05/12
Calcium	7440-70-2	<49		ug/L					U	12/05/12
Strontium	7440-24-6	<9.0		ug/L					U	12/05/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium LCS	7440-41-7		<4.0	ug/L					U	12/05/12
<b>QC Sample #85824</b>										
Iron	7439-89-6		1020	ug/L	102.4	80 - 120				12/05/12
Magnesium	7439-95-4		10800	ug/L	108.4	80 - 120				12/05/12
Manganese	7439-96-5		1040	ug/L	104.5	80 - 120				12/05/12
Nickel	7440-02-0		1000	ug/L	100.4	80 - 120				12/05/12
Potassium	7440-09-7		11900	ug/L	119.4	80 - 120				12/05/12
Silver	7440-22-4		1020	ug/L	101.5	80 - 120				12/05/12
Sodium	7440-23-5		11900	ug/L	119.4	80 - 120				12/05/12
Antimony	7440-36-0		1090	ug/L	108.8	80 - 120				12/05/12
Barium	7440-39-3		1090	ug/L	109.4	80 - 120				12/05/12
Cadmium	7440-43-9		1010	ug/L	100.9	80 - 120				12/05/12
Chromium	7440-47-3		1040	ug/L	104.4	80 - 120				12/05/12
Cobalt	7440-48-4		1010	ug/L	101	80 - 120				12/05/12
Copper	7440-50-8		1040	ug/L	104.4	80 - 120				12/05/12
Vanadium	7440-62-2		1020	ug/L	102	80 - 120				12/05/12
Zinc	7440-66-6		1060	ug/L	106.3	80 - 120				12/05/12
Calcium	7440-70-2		21200	ug/L	105.9	80 - 120				12/05/12
Strontium	7440-24-6		1010	ug/L	100.6	80 - 120				12/05/12
Beryllium MS	7440-41-7		1130	ug/L	113.4	80 - 120				12/05/12
<b>QC Sample #85825</b>										
<b>Original 121468009</b>										
Iron	7439-89-6	<19	996	ug/L	99.6	75 - 125				12/05/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4	13400	10100	ug/L	101.2	75 - 125				12/05/12
Manganese	7439-96-5	<4.0	1010	ug/L	100.9	75 - 125				12/05/12
Nickel	7440-02-0	8.60	968	ug/L	96.8	75 - 125				12/05/12
Potassium	7440-09-7	3450	10900	ug/L	108.9	75 - 125				12/05/12
Silver	7440-22-4	<4.0	995	ug/L	99.5	75 - 125				12/05/12
Sodium	7440-23-5	12900	10400	ug/L	104	75 - 125				12/05/12
Antimony	7440-36-0	<36	1070	ug/L	106.9	75 - 125				12/05/12
Barium	7440-39-3	44.2	1050	ug/L	104.9	75 - 125				12/05/12
Cadmium	7440-43-9	<4.0	1010	ug/L	100.6	75 - 125				12/05/12
Chromium	7440-47-3	7.50	998	ug/L	99.8	75 - 125				12/05/12
Cobalt	7440-48-4	<4.0	972	ug/L	97.2	75 - 125				12/05/12
Copper	7440-50-8	<4.0	1030	ug/L	102.8	75 - 125				12/05/12
Vanadium	7440-62-2	<5.0	991	ug/L	99.1	75 - 125				12/05/12
Zinc	7440-66-6	<5.0	1040	ug/L	103.8	75 - 125				12/05/12
Calcium	7440-70-2	83400	19200	ug/L	95.9	75 - 125			X	12/05/12
Strontium	7440-24-6	335	979	ug/L	97.9	75 - 125				12/05/12
Beryllium	7440-41-7	<4.0	1100	ug/L	109.7	75 - 125				12/05/12
<b>MSD</b>		<b>QC Sample #85826</b>								
		<b>Original 121468009</b>				<b>Paired 85825</b>				
Iron	7439-89-6	<19	1010	ug/L	100.8	75 - 125	1.20	20		12/05/12
Magnesium	7439-95-4	13400	10400	ug/L	104.1	75 - 125	1.20	20		12/05/12
Manganese	7439-96-5	<4.0	1030	ug/L	102.6	75 - 125	1.70	20		12/05/12
Nickel	7440-02-0	8.60	989	ug/L	98.9	75 - 125	2.20	20		12/05/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7	3450	11100	ug/L	111.3	75 - 125	1.70	20		12/05/12
Silver	7440-22-4	<4.0	1000	ug/L	100.5	75 - 125	1.00	20		12/05/12
Sodium	7440-23-5	12900	10500	ug/L	104.8	75 - 125	0.30	20		12/05/12
Antimony	7440-36-0	<36	1090	ug/L	108.6	75 - 125	1.60	20		12/05/12
Barium	7440-39-3	44.2	1070	ug/L	106.8	75 - 125	1.70	20		12/05/12
Cadmium	7440-43-9	<4.0	1020	ug/L	102.4	75 - 125	1.80	20		12/05/12
Chromium	7440-47-3	7.50	1010	ug/L	101	75 - 125	1.20	20		12/05/12
Cobalt	7440-48-4	<4.0	994	ug/L	99.4	75 - 125	2.30	20		12/05/12
Copper	7440-50-8	<4.0	1040	ug/L	104	75 - 125	1.20	20		12/05/12
Vanadium	7440-62-2	<5.0	1010	ug/L	100.8	75 - 125	1.70	20		12/05/12
Zinc	7440-66-6	<5.0	1060	ug/L	105.8	75 - 125	1.90	20		12/05/12
Calcium	7440-70-2	83400	20300	ug/L	101.4	75 - 125	1.10	20	X	12/05/12
Strontium	7440-24-6	335	990	ug/L	99	75 - 125	0.80	20		12/05/12
Beryllium	7440-41-7	<4.0	1120	ug/L	111.6	75 - 125	1.70	20		12/05/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Analytical Batch 211238 (QC Batch: 210927) Test Strontium 89/90 (GPC/GEA)  
 Associated Samples 121468014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #85714</b>								
Strontium-89_90	SR-RAD		0.64	pCi/L					U	12/05/12
<b>LCS</b>		<b>QC Sample #85715</b>								
Strontium-89_90	SR-RAD		91	pCi/L	101.9	80 - 120				12/05/12
<b>DUP</b>		<b>QC Sample #85716</b>								
		<b>Original 121468014</b>								
Strontium-89_90	SR-RAD	0.98	1.1	pCi/L			13.70	20	U	12/05/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF121468

Analytical Batch 211274 (QC Batch: 211267)  
 Associated Samples 121468012, 121468013, 121468014

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
			<b>QC Sample #86053</b>							
Uranium	7440-61-1		<0.050	ug/L					U	12/06/12
<b>LCS</b>										
			<b>QC Sample #86054</b>							
Uranium	7440-61-1		40.8	ug/L	102.1	85 - 115				12/06/12
<b>MS</b>										
			<b>QC Sample #86055</b>							
			<b>Original 121456006</b>							
Uranium	7440-61-1		46.1	ug/L	115.2	70 - 130				12/06/12
<b>MSD</b>										
			<b>QC Sample #86056</b>							
			<b>Original 121456006</b>							
Uranium	7440-61-1		47.0	ug/L	117.4	70 - 130	1.80	20	<b>Paired 86055</b>	12/06/12

\* - QC result out of range

n/a - Not Applicable

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Radiochemistry

**Group #** WSCF121468

**Analytical Batch** 211034 (QC Batch: 210634)  
**Associated Samples** 121468012, 121468013

**Test** Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>SAMPLE</b>		<b>Sample #121468012</b>								
Strontium Nitrate	10042-76-9			mg	79.3	25 - 105				12/04/12
<b>SAMPLE</b>		<b>Sample #121468013</b>								
Strontium Nitrate	10042-76-9			mg	78.5	25 - 105				12/04/12
<b>BLANK</b>		<b>QC Sample #85324</b>								
Strontium Nitrate	10042-76-9			mg	102.5	25 - 105				12/04/12
<b>LCS</b>		<b>QC Sample #85325</b>								
Strontium Nitrate	10042-76-9			mg	74.4	25 - 105				12/04/12
<b>DUP</b>		<b>QC Sample #85326</b>								
		<b>Original 121423008</b>								
Strontium Nitrate	10042-76-9			mg	79.3	25 - 105	n/a			12/04/12

\* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald  
 Department Radiochemistry

Group # WSCF121468

Analytical Batch 211238 (QC Batch: 210927) Test Strontium 89/90 (GPC/GEA)  
 Associated Samples 121468014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>SAMPLE</b>		<b>Sample #121468014</b>								
Strontium Nitrate	10042-76-9			mg	75.2	25 - 105				12/05/12
<b>BLANK</b>		<b>QC Sample #85714</b>								
Strontium Nitrate	10042-76-9			mg	63.6	25 - 105				12/05/12
<b>LCS</b>		<b>QC Sample #85715</b>								
Strontium Nitrate	10042-76-9			mg	73.6	25 - 105				12/05/12
<b>DUP</b>		<b>QC Sample #85716</b>								
		<b>Original 121468014</b>								
Strontium Nitrate	10042-76-9	9.1		mg	72.7	25 - 105	n/a			12/05/12

\* - QC result out of range

n/a - Not Applicable

Attention: Scot Fitzgerald

Group #

WSCF121468

## Quality Control Comments

Department Inorganic

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85178	B2MYX0(121464009DUP)
<b>Analyte</b>	Nitrite-N - Anions by Ion Chromatography (Water)
[1]	Duplicate is flagged for RPD out-of-limits. RPD does not apply to samples concentrations below the calibration range. RPD is calculated on measured values and not applicable for a result below the RDL.
85186	B2MLF7(121466002MS)
<b>Analyte</b>	Sulfate - Anions by Ion Chromatography (Water)
[1]	X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.
85187	B2MLF7(121466002MSD)
<b>Analyte</b>	Sulfate - Anions by Ion Chromatography (Water)
[1]	X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.
85825	B2MYY0(121468009MS)
<b>Analyte</b>	Calcium - ICP-6010 - All possible metals
[1]	X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.
85826	B2MYY0(121468009MSD)
<b>Analyte</b>	Calcium - ICP-6010 - All possible metals
[1]	X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

ATTACHMENT4

**SAMPLE RECEIPT**

Consisting of 14 pages  
Including cover page

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

**ACKNOWLEDGEMENT OF SAMPLES RECEIVED****WSCF Laboratory**

PO Box 650 S3-30  
 Richland, WA 99352

ATTN: Scot Fitzgerald

Customer Code: CHPRC

PO #: 401647

Work Order #: 121468

Profile #: S13-012-364

Proj. Mgr.:

Phone:

The following samples were received from you on 11/15/2012 3:10:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		<b>Tests scheduled</b>		
121468001	B2MYX8	WATER	11/15/2012 14:01	11/15/2012 15:10
		CR6DA-W		
121468002	B2MYX9	WATER	11/15/2012 14:01	11/15/2012 15:10
		CR6DA-W		
121468003	B2N003	WATER	11/15/2012 14:33	11/15/2012 15:10
		CR6DA-W		
121468004	B2N008	WATER	11/15/2012 13:19	11/15/2012 15:10
		CR6DA-W		
121468005	B2N002	WATER	11/15/2012 14:33	11/15/2012 15:10
		IC-W		
121468006	B2N007	WATER	11/15/2012 13:19	11/15/2012 15:10
		IC-W		
121468007	B2MYX6	WATER	11/15/2012 14:01	11/15/2012 15:10
		IC-W		
121468008	B2MYX7	WATER	11/15/2012 14:01	11/15/2012 15:10
		IC-W		
121468009	B2MYY0	WATER	11/15/2012 14:01	11/15/2012 15:10
		6010-W		
121468010	B2MYY1	WATER	11/15/2012 14:01	11/15/2012 15:10
		6010-W		
121468011	B2N009	WATER	11/15/2012 13:19	11/15/2012 15:10

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

6010-W

121468012	B2MYX4	WATER	11/15/2012 14:01	11/15/2012 15:10
2008-W; 6010-W; GAB-AO-W; GAB-BO-W; GEA-W; H3-COL-W; SR89/90-W; TC99-W				
121468013	B2MYX5	WATER	11/15/2012 14:01	11/15/2012 15:10
2008-W; 6010-W; GAB-AO-W; GAB-BO-W; GEA-W; H3-COL-W; SR89/90-W; TC99-W				
121468014	B2N006	WATER	11/15/2012 13:19	11/15/2012 15:10
2008-W; 6010-W; GAB-AO-W; GAB-BO-W; H3-COL-W; SR89/90-W; TC99-W				

**Test Acronym Description**

Test Acronym	Description
2008-W	ICP-MS (W)
6010-W	ICP-AES (W)
CR6DA-W	Cr6 (W Discrete analyzer)
GAB-AO-W	Gross Alpha/Beta (A only)(W)
GAB-BO-W	Gross Alpha/Beta (B only)(W)
GEA-W	Gamma Energy Analysis (W)
H3-COL-W	Tritium by EICHROM Column (W)
IC-W	Anions by IC (W)
SR89/90-W	Strontium 89/90 (GPC) (W)
TC99-W	Technetium-99 (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-012-364**  
Page 1 of 1

Collector	FM Hill CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2012	Logbook No.	INP-N-506 51/49	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A

**POSSIBLE SAMPLE HAZARD/REMARKS**  
 \*\*\* Confine Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993) **12/4/8**

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
BZMYXB	N	11/15/12	1401	1x500-mL AG	7196, CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C

**SPECIAL INSTRUCTIONS** Hold Time:  Yes  No  
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Retransmitted By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Retransmitted By	FM Hill CHPRC	<i>[Signature]</i>	NOV 15 2012 15:10	Received By	DA FROZ	<i>[Signature]</i>	NOV 15 2012 15:10	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drums Solids DL - Drum Liquids T - Tissue WI - Waste L - Liquid V - Vapors X - Other
Retransmitted By	Date/Time	Received By	Date/Time	Retransmitted By	Date/Time	Received By	Date/Time	
Retransmitted By	Date/Time	Received By	Date/Time	Retransmitted By	Date/Time	Received By	Date/Time	

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

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A-9004-842 (REV 2)

Chain of Custody

CH2M HILL Plateau Remediation Company		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				C.O.C. # <b>S13-012-367</b>			
Collector	FM Hall CHPRC	Contact/Requester	Karen Waters-Husted Hanford Site		Telephone No.	376-4650			
SAF No.	S13-012	Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071ESS20			
Project Title	SURV, DECEMBER 2012	Logbook No.	INF-N-506 51/49		Ice Chest No.	N/A			
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE		Bill of Lading/Air Bill No.	N/A			
Protocol	SURV	Priority:	31 Days		Offsite Property No.	N/A			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				<b>SPECIAL INSTRUCTIONS</b> FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACH for all analytical work at WSCF is 401647.					
Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative		
B2MWX9	2	N	W	11/15/12	1401	1x500-mL BG	7196 CR6, Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix #
Relinquished By	FM Hall CHPRC		NOV 15 2012 1510	Received By	TA MAZITA		NOV 15 2012 1510	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By				Received By				DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By				Received By				
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time		

PRINTED ON 10/24/2012

A-5004-942 (REV 2)



Chain of Custody

<b>CH2M HILL Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				C.O.C. # <b>S13-012-378</b>	
Collector: <b>FM Hall</b> CHIPRC		Contact/Requester: <b>Karen Waters-Husted</b> Hanford Site		Telephone No.: <b>376-4650</b>		Page 1 of 1	
SAF No.: <b>S13-012</b>		Sampling Origin: <b>Hanford Site</b>		Purchase Order/Charge Code: <b>300071ESS20</b>			
Project Title: <b>SURV. DECEMBER 2012</b>		Logbook No.: <b>INF-N-506 51/48</b>		Ice Chest No.: <b>N/A</b>			
Shipped To (Lab): <b>Waste Sampling &amp; Characterization</b>		Method of Shipment: <b>GOVERNMENT VEHICLE</b>		Bill of Lading/Air Bill No.: <b>N/A</b>			
Protocol: <b>SIRV</b>		Priority: <b>31 Days</b>		OnSite Property No.: <b>N/A</b>			
POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order S100.5 (1990/1993)				SPECIAL INSTRUCTIONS FY12 and FY13 samples cannot be in the same SIG. Site-Wide Generator Knowledge Information Form applies. The CACV for all analytical work at WSCF is 401647.			
Sample No: <b>B2ND08</b>		Filter: <b>N</b>		Date: <b>11/15/12</b>		Time: <b>13:19</b>	
No/Type Container: <b>1x500-mL AG</b>		Sample Analysis: <b>7196 CR6, Hexavalent Chromium (1)</b>		Holding Time: <b>24 Hours</b>		Preservative: <b>Cool-4C</b>	

Relinquished By: <b>FM Hall</b> CHIPRC	Point Sign: <i>[Signature]</i>	Date/Time: <b>NOV 15 2012 15:10</b>	Received By: <b>TA Frazier</b> <i>[Signature]</i>	Point Sign: <i>[Signature]</i>	Date/Time: <b>NOV 15 2012 15:10</b>	Matrix *
Relinquished By:	Date/Time:	Received By:	Date/Time:	Date/Time:	Date/Time:	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Spills DL = Drum Leakage T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By:	Date/Time:	Received By:	Date/Time:	Date/Time:	Date/Time:	

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

Disposed By:

Date/Time:

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A-6004-942 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # <b>S13-012-374</b>	
Collector: <b>FM Hill</b> CHPRC				Contact/Requester: Karen Waters-Husted		Telephone No.: 376-4650		Page 1 of 1	
SAP No.: S13-012				Sampling Origin: Hanford Site		Purchase Order/Change Code: 30007LES20			
Project Title: SURV. DECEMBER 2012				Logbook No.: INF-N-50651/49		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		Office Property No.: N/A			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5100.5 (1990/1993)									
Sample No.: BN002				Filter: N		Date: 11/5/12		Time: 1433	
No/Type Container: 1x500-mL P				Received By: 3000 ANIONS, IC: List 1 + Brom Phosp (7)		Sample Analysis:		Holding Time: 48 Hours	
								Preservative: Cool-4C	
<b>SPECIAL INSTRUCTIONS</b> FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.									

Relinquished By: <b>FM Hill</b> CHPRC	Print	Sign	Date/Time: NOV 15 2012 15:10	Received By: <i>[Signature]</i>	Print	Sign	Date/Time: NOV 15 2012 15:10	Matrix *
Relinquished By:			Date/Time:	Received By:			Date/Time:	S = Soil
Relinquished By:			Date/Time:	Received By:			Date/Time:	SE = Sediment
Relinquished By:			Date/Time:	Received By:			Date/Time:	SO = Solid
Relinquished By:			Date/Time:	Received By:			Date/Time:	SL = Sludge
Relinquished By:			Date/Time:	Received By:			Date/Time:	W = Water
Relinquished By:			Date/Time:	Received By:			Date/Time:	O = Oil
Relinquished By:			Date/Time:	Received By:			Date/Time:	A = Air
Relinquished By:			Date/Time:	Received By:			Date/Time:	DS = Denum Solids
Relinquished By:			Date/Time:	Received By:			Date/Time:	DL = Denum Liquids
Relinquished By:			Date/Time:	Received By:			Date/Time:	T = Tissue
Relinquished By:			Date/Time:	Received By:			Date/Time:	WT = Wipe
Relinquished By:			Date/Time:	Received By:			Date/Time:	L = Liquid
Relinquished By:			Date/Time:	Received By:			Date/Time:	V = Vegetation
Relinquished By:			Date/Time:	Received By:			Date/Time:	X = Other
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By:		Date/Time:		

PRINTED: 10/24/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company  
**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**  
 C.O.C. # **S13-012-377**  
 Page 1 of 1

Collector	FM Hill CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV. DECEMBER 2012	Logbook No.	HNF-N-506 51/48	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A

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

**SPECIAL INSTRUCTIONS** Hold Time: Total Activity Exemption: Yes  No   
 FY12 and FY13 samples cannot be in the same SDX. Site-Wide Generator Knowledge Information Form applies. The CACM for all analytical work at WSCF is 401647.

Sample No.	Filter *	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
BZND07	6	11/5/12	1319	1x500-mL P	300.0 ANIONS, IC: List-1 + Brom., Phosp (I)	48 Hours	Cool-4C

Relinquished By	Print FM Hill CHPRC	Sign <i>[Signature]</i>	Date/Time NOV 15 2012 1510	Received By	Print TARA ZIEGLER	Sign <i>[Signature]</i>	Date/Time NOV 15 2012 1510
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				Disposition Method (e.g., Return to customer, per lab procedure, used in process)			

PRINTED: O 10/24/2012

Matrix \*

S	= Soil	D/S	= Drum Sable
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	W1	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

Chain of Custody

CH2MHill Plateau Remediation Company  
**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**  
 C.O.C. # **S13-012-363**  
 Page 1 of 1

Collector	<b>FM Hall</b> CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV. DECEMBER 2012	Logbook No.	INF-N-506 51/49	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A

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

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

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MYX6	7	N	W	11/15/12	1x500-mL P	300.0 ANIONS, IC: Lst-1 + Brom_Phosp (?)	48 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	FM Hall	<i>[Signature]</i>	NOV 15 2012 15:10	Received By	TA Frazzini	<i>[Signature]</i>	NOV 15 2012 15:10	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By	CHPRC	<i>[Signature]</i>		Received By				
Relinquished By				Received By				
Relinquished By				Received By				

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

Disposed By

DATE/TIME

PRINTED ON 10/24/2012

A-5004-942 (REV 2)

Chain of Custody

<b>CH2M Hill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				C.O.C. # <b>S13-012-366</b>	
Collector: <b>FM Hall</b> SAF No.: <b>CHPRC</b>		Contact/Requester: <b>Karen Waters-Husted</b>	Telephone No.: <b>376-4650</b>	Page 1 of 1			
Project Title: <b>SURV, DECEMBER 2012</b>		Sampling Origin: <b>Hanford Site</b>	Purchase Order/Charge Code: <b>300071ES20</b>				
Shipped To (Lab): <b>Waste Sampling &amp; Characterization</b>		Logbook No.: <b>INF-N-506 51/49</b>	Ice Chest No.: <b>N/A</b>				
Protocol: <b>SURV</b>		Method of Shipment: <b>GOVERNMENT VEHICLE</b>	Bill of Lading/Air Bill No.: <b>N/A</b>				
Priority: <b>31 Days</b>		SPECIAL INSTRUCTIONS: <b>PRIORITY</b>	Offsite Property No.: <b>N/A</b>				
POSSIBLE SAMPLE HAZARDS/REMARKS: ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		HOLD TIME: <b>FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CCM for all analytical work at WSCF is 401647</b>	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Sample No.: <b>B2MXX7</b>	Filter: <b>N</b>	Date: <b>11/15/12</b>	Time: <b>1401</b>	No/Type Container: <b>1x500-ml P</b>	Sample Analysis: <b>300.0 ANIONS_IC: Lst-1 + Brom_Phosp (7)</b>	Holding Time: <b>48 Hours</b>	Preservative: <b>Cool-4C</b>

Relinquished By: <b>FM Hall</b> Signature: <i>[Signature]</i> Date/Time: <b>NOV 15 2012 1510</b>	Received By: <b>TA Frazee</b> Signature: <i>[Signature]</i> Date/Time: <b>NOV 15 2012 1510</b>	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By: <b>CHPRC</b> Date/Time:	Received By:	Date/Time:
Relinquished By:	Received By:	Date/Time:
Relinquished By:	Received By:	Date/Time:
FINAL SAMPLE DISPOSITION:	Disposed By:	Date/Time:

PRINTED ON 11/24/2012

A-6004-942 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

S13-012-362

Page 1 of 1

Collector	FM Hill CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV. DECEMBER 2012	Logbook No.	HNF-N-506 5149	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocols	SURV	Priority:	31 Days	Office Property No.	N/A

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

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

Hold Time

Total Activity Exemption: Yes  No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MYY0	Y	11/5/12	1401	1x500-mL G/P	6010_METALS_IOP: List-3 (18)	6 Months	HNO3 to pH <2
B2MXX4	N			1x500-mL G/P	200.8_METALS_IOPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MXX4	N			1x500-mL G/P	6010_METALS_IOP: List-3 (18)	6 Months	HNO3 to pH <2
B2MXX4	N			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B2MXX4	N			1x500-mL G/P	GAMMA_GS: List-1 (10)	6 Months	HNO3 to pH <2
B2MXX4	N			1x1 L G/P	Strontium-89-90 - Total Sr	6 Months	HNO3 to pH <2
B2MXX4	N			1x1 L G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MXX4	N			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By	Print FM Hill CHPRC	Sign	Date/Time NOV 15 2012 15:10	Received By	Print TA Fm2	Sign	Date/Time NOV 15 2012 15:10
Relinquished By				Received By			
Relinquished By				Received By			
Relinquished By				Received By			

Matrix *	Sample
S = Soil	DS = Dism Solids
SE = Sediment	DL = Dism Liquids
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

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A-5004-942 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation  
**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**  
 C.O.C. # **S13-012-365**  
 Page 1 of 1

Collector: **FM Hall** / **GHPRC** / **S13-012**  
 Contact/Requester: **Karen Waters-Husted**  
 Telephone No.: **376-4650**  
 Sampling Origin: **Hanford Site**  
 Purchase Order/Charge Code: **300071ESS20**  
 Project Title: **SURV. DECEMBER 2012**  
 Logbook No.: **HNF-N-506 5149**  
 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 HAZARD/REMARKS**  
 \*\* \*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)  
**SPECIAL INSTRUCTIONS** Hold Time: **6 Months**  
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.  
 Total Activity Exemption: Yes  No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MY1	10	11/15/12	1401	1x500-ml GPP	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2MY5	13			1x500-ml GPP	200.8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MY5	✓			1x500-ml GPP	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2MY5	✓			1x500-ml GPP	ALPHA/BETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B2MY5	✓			1x500-ml GPP	GAMMA_GS: List-1 (10)	6 Months	HNO3 to pH <2
B2MY5	✓			1x1-L GIP	Srionium-89,90 - Total Sr	6 Months	HNO3 to pH <2
B2MY5	✓			1x250-ml G	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MY5	✓				TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By: **FM Hall** / **CHPRC** / **1510** / **NOV 15 2012**  
 Received By: **TA Frazer Jones** / **1510** / **NOV 15 2012**  
 Relinquished By: **CHPRC** / **1510** / **NOV 15 2012**  
 Received By: **TA Frazer Jones** / **1510** / **NOV 15 2012**  
 Relinquished By: **CHPRC** / **1510** / **NOV 15 2012**  
 Received By: **TA Frazer Jones** / **1510** / **NOV 15 2012**

Relinquished By: **CHPRC** / **1510** / **NOV 15 2012**  
 Received By: **TA Frazer Jones** / **1510** / **NOV 15 2012**

Relinquished By: **CHPRC** / **1510** / **NOV 15 2012**  
 Received By: **TA Frazer Jones** / **1510** / **NOV 15 2012**

Matrix \*  
 S = Soil  
 DS = Drums Solids  
 SI = Sediment  
 DL = Drum Linings  
 SO = Solid  
 T = Tissue  
 SL = Sludge  
 WI = Wipe  
 W = Water  
 L = Liquid  
 V = Vegetation  
 O = Oil  
 A = Air  
 X = Other

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A-6004-642 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

S13-012-376

Page 1 of 1

Collector	FM Hill CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV. DECEMBER 2012	Logbook No.	HNF-N-506 51/48	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARD/REMARKS  
 \*\*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5600.5 (1990/1993)

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

Hold Time

Total Activity Exemption: Yes  No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2N009	11	11/5/12	1319	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2N006	14			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2N006	N			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2N006	N			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B2N006	N			1x1-L G/P	Strontium-89-90 - Total Sr	6 Months	HNO3 to pH <2
B2N006	N			1x1-L G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2N006	N			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By	Print FM Hill CHPRC	Sign <i>[Signature]</i>	Date/Time NOV 15 2012 1510	Received By	Print Deanna L. Jones	Sign <i>[Signature]</i>	Date/Time NOV 15 2012 1510
Relinquished By				Received By			
Relinquished By				Received By			
Relinquished By				Received By			
FINAL SAMPLE DISPOSITION	Disposed 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
SL = Solid	T = Trisec
SL = Sludge	WT = Wipe
W = Water	L = Liquid
O = Oil	V = Ventilation
A = Air	X = Other

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A-5004-842 (REV 2)