

DECEMBER 20, 2012

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



December 20, 2012

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121501

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 WSCF121501

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

Very truly yours,

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

Electronically signed by Joseph Hale

For Lab Manager, Dan T. Smith

WSCF Analytical Lab

(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF121501

Data Deliverable Date 12/27/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
S13-012	B2MYP0	121501001	WATER	11/26/12	11/26/12
S13-012	B2MYN2	121501002	WATER	11/26/12	11/26/12
S13-012	B2MYN6	121501003	WATER	11/26/12	11/26/12
S13-012	B2MYP4	121501004	WATER	11/26/12	11/26/12
S13-012	B2MYP5	121501005	WATER	11/26/12	11/26/12
S13-012	B2MYV1	121501006	WATER	11/26/12	11/26/12
S13-012	B2MYR5	121501007	WATER	11/26/12	11/26/12
S13-012	B2MYM0	121501008	WATER	11/26/12	11/26/12
S13-012	B2MYR9	121501009	WATER	11/26/12	11/26/12
S13-012	B2MYL6	121501010	WATER	11/26/12	11/26/12
S13-012	B2N036	121501011	WATER	11/26/12	11/26/12
S13-012	B2MYR1	121501012	WATER	11/26/12	11/26/12
S13-012	B2N040	121501013	WATER	11/26/12	11/26/12
S13-012	B2MYM4	121501014	WATER	11/26/12	11/26/12
S13-012	B2MYM8	121501015	WATER	11/26/12	11/26/12
S13-011	B2MM10	121501016	WATER	11/26/12	11/26/12
S13-011	B2MM08	121501017	WATER	11/26/12	11/26/12
S13-011	B2MM05	121501018	WATER	11/26/12	11/26/12

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

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

- All applicable QC controls are within the established limits.

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

- All applicable QC controls are within the established limits.

Radiochemistry Comments

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

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

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:

- Batch QC 210929
- The Blank is less than two times the RDL. "B" Flag not required.
- All other applicable QC controls are within the established limits.

Tritium:

- All applicable QC controls are within the established limits.

Technetium-99:

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF121501

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 70 pages
Including cover page

DECEMBER 20, 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 # WSCF121501
Report Date December 20, 2012

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Heather Medley

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

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

Batch QC List

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
211262	211317	5	BLANK	86048	BLANK		ICP-6010 - All possible metals
211262	211317	7	LCS	86050	LCS		ICP-6010 - All possible metals
211262	211317	8	SAMPLE	121501017	B2MM08		ICP-6010 - All possible metals
211262	211317	9	MS	86051	B2MM08(121501017MS)	121501017	ICP-6010 - All possible metals
211262	211317	10	MSD	86052	B2MM08(121501017MSD)	121501017	ICP-6010 - All possible metals
211262	211317	11	SAMPLE	121501018	B2MM05		ICP-6010 - All possible metals
211626	211765	4	BLANK	86457	BLANK		ICP-2008 MS All possible metal
211626	211765	5	LCS	86458	LCS		ICP-2008 MS All possible metal
211626	211765	7	MS	86459	B2N032(121498019MS)	121498019	ICP-2008 MS All possible metal
211626	211765	8	MSD	86460	B2N032(121498019MSD)	121498019	ICP-2008 MS All possible metal
211626	211765	11	SAMPLE	121501001	B2MYP0		ICP-2008 MS All possible metal
211626	211765	12	SAMPLE	121501002	B2MYN2		ICP-2008 MS All possible metal
211626	211765	13	SAMPLE	121501003	B2MYN6		ICP-2008 MS All possible metal
211626	211765	14	SAMPLE	121501004	B2MYP4		ICP-2008 MS All possible metal
211626	211765	15	SAMPLE	121501005	B2MYP5		ICP-2008 MS All possible metal
211626	211765	16	SAMPLE	121501006	B2MYV1		ICP-2008 MS All possible metal
211626	211765	17	SAMPLE	121501007	B2MYR5		ICP-2008 MS All possible metal
211626	211765	20	SAMPLE	121501008	B2MYM0		ICP-2008 MS All possible metal
211626	211765	21	SAMPLE	121501009	B2MYR9		ICP-2008 MS All possible metal
211626	211765	22	SAMPLE	121501010	B2MYL6		ICP-2008 MS All possible metal
211626	211765	23	SAMPLE	121501011	B2N036		ICP-2008 MS All possible metal
211626	211765	24	SAMPLE	121501012	B2MYR1		ICP-2008 MS All possible metal
211626	211765	25	SAMPLE	121501013	B2N040		ICP-2008 MS All possible metal

Batch QC List

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Department Inorganic

Group # WSCF121501

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
211626	211765	26	SAMPLE	121501014	B2MYM4		ICP-2008 MS All possible metal
211626	211765	27	SAMPLE	121501015	B2MYM8		ICP-2008 MS All possible metal
211626	211765	28	SAMPLE	121501016	B2MM10		ICP-2008 MS All possible metal
211626	211765	29	SAMPLE	121501018	B2MM05		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210741	211118	1	BLANK	85431	BLANK		Tritium by LSC
210741	211118	2	LCS	85432	LCS		Tritium by LSC
210741	211118	4	DUP	85433	B2MLB9(121496021DUP)	121496021	Tritium by LSC
210741	211118	5	MS	85434	B2MLB9(121496021MS)	121496021	Tritium by LSC
210741	211118	15	SAMPLE	121501001	B2MYP0		Tritium by LSC
210741	211118	16	SAMPLE	121501002	B2MYN2		Tritium by LSC
210741	211118	17	SAMPLE	121501003	B2MYN6		Tritium by LSC
210741	211118	18	SAMPLE	121501004	B2MYP4		Tritium by LSC
210742	211119	1	BLANK	85435	BLANK		Tritium by LSC
210742	211119	2	LCS	85436	LCS		Tritium by LSC
210742	211119	3	SAMPLE	121501005	B2MYP5		Tritium by LSC
210742	211119	4	DUP	85437	B2MYP5(121501005DUP)	121501005	Tritium by LSC
210742	211119	5	MS	85438	B2MYP5(121501005MS)	121501005	Tritium by LSC
210742	211119	6	SAMPLE	121501006	B2MYV1		Tritium by LSC
210742	211119	7	SAMPLE	121501007	B2MYR5		Tritium by LSC
210742	211119	8	SAMPLE	121501008	B2MYM0		Tritium by LSC
210742	211119	9	SAMPLE	121501009	B2MYR9		Tritium by LSC
210742	211119	10	SAMPLE	121501010	B2MYL6		Tritium by LSC
210742	211119	11	SAMPLE	121501011	B2N036		Tritium by LSC
210742	211119	12	SAMPLE	121501012	B2MYR1		Tritium by LSC
210742	211119	13	SAMPLE	121501013	B2N040		Tritium by LSC
210742	211119	14	SAMPLE	121501014	B2MYM4		Tritium by LSC
210742	211119	15	SAMPLE	121501015	B2MYM8		Tritium by LSC

Batch QC List

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210742	211119	16	SAMPLE	121501016	B2MM10		Tritium by LSC
210742	211119	17	SAMPLE	121501018	B2MM05		Tritium by LSC
210744	210831	1	BLANK	85439	BLANK		TC99 by Liquid Scintillation
210744	210831	2	LCS	85440	LCS		TC99 by Liquid Scintillation
210744	210831	4	DUP	85441	B2MYW0(121498014DUP 121498014		TC99 by Liquid Scintillation
210744	210831	5	MS	85442	B2MYW0(121498014MS) 121498014		TC99 by Liquid Scintillation
210744	210831	13	SAMPLE	121501001	B2MYP0		TC99 by Liquid Scintillation
210744	210831	14	SAMPLE	121501002	B2MYN2		TC99 by Liquid Scintillation
210744	210831	15	SAMPLE	121501003	B2MYN6		TC99 by Liquid Scintillation
210744	210831	16	SAMPLE	121501004	B2MYP4		TC99 by Liquid Scintillation
210744	210831	17	SAMPLE	121501005	B2MYP5		TC99 by Liquid Scintillation
210745	210946	1	BLANK	85443	BLANK		TC99 by Liquid Scintillation
210745	210946	2	LCS	85444	LCS		TC99 by Liquid Scintillation
210745	210946	3	SAMPLE	121501006	B2MYV1		TC99 by Liquid Scintillation
210745	210946	4	DUP	85445	B2MYV1(121501006DUP 121501006		TC99 by Liquid Scintillation
210745	210946	5	MS	85446	B2MYV1(121501006MS) 121501006		TC99 by Liquid Scintillation
210745	210946	6	SAMPLE	121501007	B2MYR5		TC99 by Liquid Scintillation
210745	210946	7	SAMPLE	121501008	B2MYM0		TC99 by Liquid Scintillation
210745	210946	8	SAMPLE	121501009	B2MYR9		TC99 by Liquid Scintillation
210745	210946	9	SAMPLE	121501010	B2MYL6		TC99 by Liquid Scintillation
210745	210946	10	SAMPLE	121501011	B2N036		TC99 by Liquid Scintillation
210745	210946	11	SAMPLE	121501012	B2MYR1		TC99 by Liquid Scintillation
210745	210946	12	SAMPLE	121501013	B2N040		TC99 by Liquid Scintillation

Batch QC List

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 Department Radiochemistry

Group # WSCF121501

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210745	210946	13	SAMPLE	121501014	B2MYM4		TC99 by Liquid Scintillation
210745	210946	14	SAMPLE	121501015	B2MYM8		TC99 by Liquid Scintillation
210745	210946	15	SAMPLE	121501016	B2MM10		TC99 by Liquid Scintillation
210745	210946	16	SAMPLE	121501018	B2MM05		TC99 by Liquid Scintillation
210926	210940	1	IBLANK	85711	IBLANK		Gamma Energy Analysis-general
210926	210940	2	LCS	85712	LCS		Gamma Energy Analysis-general
210926	210940	3	DUP	85713	B2MM05(121501018DUP	121501018	Gamma Energy Analysis-general
210926	210940	4	SAMPLE	121501018	B2MM05		Gamma Energy Analysis-general
210928	211516	1	BLANK	85717	BLANK		Strontium 89/90 (GPC/GEA)
210928	211516	2	LCS	85718	LCS		Strontium 89/90 (GPC/GEA)
210928	211516	3	DUP	85719	B2N028(121498018DUP)	121498018	Strontium 89/90 (GPC/GEA)
210928	211516	8	SAMPLE	121501001	B2MYP0		Strontium 89/90 (GPC/GEA)
210928	211516	9	SAMPLE	121501002	B2MYN2		Strontium 89/90 (GPC/GEA)
210928	211516	10	SAMPLE	121501003	B2MYN6		Strontium 89/90 (GPC/GEA)
210929	211278	1	BLANK	85720	BLANK		Strontium 89/90 (GPC/GEA)
210929	211278	2	LCS	85721	LCS		Strontium 89/90 (GPC/GEA)
210929	211278	3	DUP	85722	B2MYP4(121501004DUP	121501004	Strontium 89/90 (GPC/GEA)
210929	211278	4	SAMPLE	121501004	B2MYP4		Strontium 89/90 (GPC/GEA)
210929	211278	5	SAMPLE	121501005	B2MYP5		Strontium 89/90 (GPC/GEA)
210929	211278	6	SAMPLE	121501006	B2MYV1		Strontium 89/90 (GPC/GEA)
210929	211278	7	SAMPLE	121501007	B2MYR5		Strontium 89/90 (GPC/GEA)
210929	211278	8	SAMPLE	121501008	B2MYM0		Strontium 89/90 (GPC/GEA)
210929	211278	9	SAMPLE	121501009	B2MYR9		Strontium 89/90 (GPC/GEA)

Batch QC List

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210929	211278	10	SAMPLE	121501010	B2MYL6		Strontium 89/90 (GPC/GEA)
210930	211517	1	BLANK	85723	BLANK		Strontium 89/90 (GPC/GEA)
210930	211517	2	LCS	85724	LCS		Strontium 89/90 (GPC/GEA)
210930	211517	3	DUP	85725	B2N036(121501011DUP)	121501011	Strontium 89/90 (GPC/GEA)
210930	211517	4	SAMPLE	121501011	B2N036		Strontium 89/90 (GPC/GEA)
210930	211517	5	SAMPLE	121501012	B2MYR1		Strontium 89/90 (GPC/GEA)
210930	211517	6	SAMPLE	121501013	B2N040		Strontium 89/90 (GPC/GEA)
210930	211517	7	SAMPLE	121501014	B2MYM4		Strontium 89/90 (GPC/GEA)
210930	211517	8	SAMPLE	121501015	B2MYM8		Strontium 89/90 (GPC/GEA)
210930	211517	9	SAMPLE	121501016	B2MM10		Strontium 89/90 (GPC/GEA)
210930	211517	10	SAMPLE	121501018	B2MM05		Strontium 89/90 (GPC/GEA)
211133	211621	1	BLANK	85877	BLANK		GAB Discrete analysis Alpha only
211133	211621	2	LCS	85878	LCS		GAB Discrete analysis Alpha only
211133	211621	4	DUP	85879	B2MYW0(121498014DUP)	121498014	GAB Discrete analysis Alpha only
211133	211621	6	SAMPLE	121501018	B2MM05		GAB Discrete analysis Alpha only
211133	211622	1	BLANK	85877	BLANK		GAB Discrete analysis Beta only
211133	211622	2	LCS	85878	LCS		GAB Discrete analysis Beta only
211133	211622	4	DUP	85879	B2MYW0(121498014DUP)	121498014	GAB Discrete analysis Beta only
211133	211622	6	SAMPLE	121501018	B2MM05		GAB Discrete analysis Beta only

Method Reference

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

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

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

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 # WSCF121501

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

LA-220-406	Strontium-89 and 90 in Aqueous Samples by SR-SPEC Separation
HEIS	SRTOT_SEP_PRECIP_GPC Strontium 89/90, by Sr-Spec Sep.
LA-508-481	Gamma Energy Analysis using the Canberra Genie Ssystem
HEIS	GAMMA_GS Gamma Energy Analysis
LA-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer
HEIS	ALPHA_LSC A/B Liquid Scintillation
HEIS	BETA_LSC A/B Liquid Scintillation
HEIS	TC99_3MDSK_LSC TC99 by Liquid Scintillation
HEIS	TRITIUM_EIE_LSC Tritium, by Eichrome ion exchange, LSC
LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples
HEIS	ALPHA_GPC Gross Alpha by GPC
HEIS	BETA_GPC Gross Beta by GPC
HEIS	SRTOT_SEP_PRECIP_GPC Strontium beta isotopic, GPC

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501001
 SAF# S13-012
 Sample ID B2MYP0

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.48		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501002
 SAF# S13-012
 Sample ID B2MYN2

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	3.38		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501003
 SAF# S13-012
 Sample ID B2MYN6

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	1.41		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501004
 SAF# S13-012
 Sample ID B2MYP4

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501005
 SAF# S13-012
 Sample ID B2MYP5

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.04		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501006
 SAF# S13-012
 Sample ID B2MYV1

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	1.86		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501007
 SAF# S13-012
 Sample ID B2MYR5

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.25		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501008
 SAF# S13-012
 Sample ID B2MYM0

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	3.11		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501009
 SAF# S13-012
 Sample ID B2MYR9

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.25		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501010
 SAF# S13-012
 Sample ID B2MYL6

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.39		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501011
 SAF# S13-012
 Sample ID B2N036

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.99		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501012
 SAF# S13-012
 Sample ID B2MYR1

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.73		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501013
 SAF# S13-012
 Sample ID B2N040

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	3.03		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501014
 SAF# S13-012
 Sample ID B2MYM4

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	1.10		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501015
 SAF# S13-012
 Sample ID B2MYM8

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	1.31		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501016
 SAF# S13-011
 Sample ID B2MM10

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	1.89		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Sample # 121501017
 SAF# S13-011
 Sample ID B2MM08

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										12/10/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	12/11/12
Magnesium	7439-95-4	LA-505-411		12200		ug/L	1	4.0	20	12/11/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Potassium	7440-09-7	LA-505-411		5190		ug/L	1	76	380	12/11/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Sodium	7440-23-5	LA-505-411		12800		ug/L	1	10	50	12/11/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/11/12
Barium	7440-39-3	LA-505-411		37.7		ug/L	1	4.0	20	12/11/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Chromium	7440-47-3	LA-505-411		27.6		ug/L	1	5.0	25	12/11/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Vanadium	7440-62-2	LA-505-411	B	10.0		ug/L	1	5.0	25	12/11/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/11/12
Calcium	7440-70-2	LA-505-411		53800		ug/L	1	49	240	12/11/12
Strontium	7440-24-6	LA-505-411		240		ug/L	1	9.0	45	12/11/12

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 # WSCF121501

Sample # 121501017
 SAF# S13-011
 Sample ID B2MM08

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

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	12/11/12

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 # WSCF121501

Sample # 121501018
 SAF# S13-011
 Sample ID B2MM05

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										12/10/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	12/11/12
Magnesium	7439-95-4	LA-505-411		11900		ug/L	1	4.0	20	12/11/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Potassium	7440-09-7	LA-505-411		4930		ug/L	1	76	380	12/11/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Sodium	7440-23-5	LA-505-411		12400		ug/L	1	10	50	12/11/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/11/12
Barium	7440-39-3	LA-505-411		36.7		ug/L	1	4.0	20	12/11/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Chromium	7440-47-3	LA-505-411		28.8		ug/L	1	5.0	25	12/11/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/11/12
Vanadium	7440-62-2	LA-505-411	B	10.4		ug/L	1	5.0	25	12/11/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/11/12
Calcium	7440-70-2	LA-505-411		52900		ug/L	1	49	240	12/11/12
Strontium	7440-24-6	LA-505-411		235		ug/L	1	9.0	45	12/11/12

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 # WSCF121501

Sample # 121501018
 SAF# S13-011
 Sample ID B2MM05

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

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	12/11/12
ICPMS Prep (W)										12/18/12
ICP-2008 MS All possible metal										
Uranium	7440-61-1	LA-505-412	D	2.96		ug/L	2	0.10	0.50	12/18/12

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

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

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

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Sample # 121501001
 SAF# S13-012
 Sample ID B2MYP0

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.19	.67	pCi/L	1	1.1		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/27/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-1.2	4	pCi/L	1	6.8		11/27/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1700	420	pCi/L	1	310		12/02/12

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 # WSCF121501

Sample # 121501002
 SAF# S13-012
 Sample ID B2MYN2

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	-0.38	.6	pCi/L	1	1.1		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/27/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	2.5	4.1	pCi/L	1	6.8		11/27/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1600	410	pCi/L	1	310		12/02/12

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 # WSCF121501

Sample # 121501003
 SAF# S13-012
 Sample ID B2MYN6

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.0	0	pCi/L	1	1.1		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/27/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-1.0	4	pCi/L	1	6.8		11/27/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		410	220	pCi/L	1	310		12/02/12

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 # WSCF121501

Sample # 121501004
 SAF# S13-012
 Sample ID B2MYP4

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.26	.66	pCi/L	1	1.1		12/08/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/27/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	1.0	4.1	pCi/L	1	6.8		11/27/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421	U	-140	170	pCi/L	1	310		12/02/12

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 # WSCF121501

Sample # 121501005
 SAF# S13-012
 Sample ID B2MYP5

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.29	.61	pCi/L	1	1.0		12/08/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/27/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-1.4	4	pCi/L	1	6.8		11/27/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		950	290	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501006
 SAF# S13-012
 Sample ID B2MYV1

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.29	.63	pCi/L	1	1.1		12/08/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-0.60	3.9	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1000	300	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501007
 SAF# S13-012
 Sample ID B2MYR5

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.19	.6	pCi/L	1	1.0		12/08/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-3.6	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1500	380	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501008
 SAF# S13-012
 Sample ID B2MYM0

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.091	.57	pCi/L	1	0.98		12/08/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	0.10	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1300	340	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501009
 SAF# S13-012
 Sample ID B2MYR9

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	-0.024	.6	pCi/L	1	1.0		12/08/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	0.60	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1600	410	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501010
 SAF# S13-012
 Sample ID B2MYL6

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.12	.61	pCi/L	1	1.0		12/08/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-0.20	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1500	380	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501011
 SAF# S13-012
 Sample ID B2N036

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.64	.68	pCi/L	1	1.1		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-1.0	3.9	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		3200	710	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501012
 SAF# S13-012
 Sample ID B2MYR1

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.64	.64	pCi/L	1	1.0		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	1.2	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		2000	470	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501013
 SAF# S13-012
 Sample ID B2N040

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406		1.4	.78	pCi/L	1	1.1		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	0.60	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		3600	790	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501014
 SAF# S13-012
 Sample ID B2MYM4

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.72	.68	pCi/L	1	1.1		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-1.2	3.9	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1000	300	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501015
 SAF# S13-012
 Sample ID B2MYM8

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406		1.5	.77	pCi/L	1	1.0		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	2.2	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		840	270	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501016
 SAF# S13-011
 Sample ID B2MM10

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.54	.65	pCi/L	1	1.0		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	4.2	4.1	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		540	230	pCi/L	1	300		12/02/12

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 # WSCF121501

Sample # 121501018
 SAF# S13-011
 Sample ID B2MM05

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
GAB Prep for Discrete Analysis (W)										12/13/12
GAB Discrete analysis Alpha only										
Gross Alpha	12587-46-1	LA-508-415	U	1.4	1.4	pCi/L	1	2.2		12/19/12
GAB Discrete analysis Beta only										
Gross Beta	12587-47-2	LA-508-415	U	2.6	2.6	pCi/L	1	4.1		12/19/12
Preparation for GEA (W)										11/29/12
Gamma Energy Analysis-general										
Antimony-125	14234-35-6	LA-508-481	U	-6.4	16	pCi/L	1	28		11/29/12
Cesium-134	13967-70-9	LA-508-481	U	12	31	pCi/L	1	58		11/29/12
Cesium-137	10045-97-3	LA-508-481	U	0.78	6.2	pCi/L	1	9.8		11/29/12
Cobalt-60	10198-40-0	LA-508-481	U	0.14	5.4	pCi/L	1	9.8		11/29/12
Europium-152	14683-23-9	LA-508-481	U	2.8	18	pCi/L	1	32		11/29/12
Europium-154	15585-10-1	LA-508-481	U	18	14	pCi/L	1	29		11/29/12
Europium-155	14391-16-3	LA-508-481	U	4.3	19	pCi/L	1	33		11/29/12
Potassium-40	13966-00-2	LA-508-481	U	-78	77	pCi/L	1	160		11/29/12
Ruthenium-106	13967-48-1	LA-508-481	U	37	49	pCi/L	1	90		11/29/12
Beryllium-7	13966-02-4	LA-508-481	U	-0.29	48	pCi/L	1	84		11/29/12
Strontium 89/90 WATER/LIQUID PREP										12/10/12
Strontium 89/90 (GPC/GEA)										

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 # WSCF121501

Sample # 121501018
 SAF# S13-011
 Sample ID B2MM05

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium-89_90	SR-RAD	LA-220-406	U	0.55	.64	pCi/L	1	1.0		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										11/28/12
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-0.049	4	pCi/L	1	6.6		11/28/12
Tritium by LSC EICHROM WA/LIQ PREP										11/27/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		710	250	pCi/L	1	300		12/02/12

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 Radiochemistry

Group # WSCF121501

Analytical Batch 210831 (QC Batch: 210744) Test TC99 by Liquid Scintillation
 Associated Samples 121501001, 121501002, 121501003, 121501004, 121501005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Technetium-99	14133-76-7		-2.2	pCi/L					U	11/27/12
LCS										
Technetium-99	14133-76-7		230	pCi/L	106.9	80 - 120				11/27/12
DUP										
Technetium-99	14133-76-7		-1.0	pCi/L			-35.30	20	* U	11/27/12
MS										
Technetium-99	14133-76-7		940	pCi/L	108.4	75 - 125				11/27/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121501

Analytical Batch 210940 (QC Batch: 210926)
Associated Samples 121501018

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
IBLANK		QC Sample #85711								
Antimony-125	14234-35-6		0.82	pCi/L					U	11/29/12
Cesium-134	13967-70-9		-13	pCi/L					U	11/29/12
Cesium-137	10045-97-3		-9.0	pCi/L					U	11/29/12
Cobalt-60	10198-40-0		-1.8	pCi/L					U	11/29/12
Europium-152	14683-23-9		5.3	pCi/L					U	11/29/12
Europium-154	15585-10-1		-3.9	pCi/L					U	11/29/12
Europium-155	14391-16-3		2.4	pCi/L					U	11/29/12
Potassium-40	13966-00-2		-78	pCi/L					U	11/29/12
Ruthenium-106	13967-48-1		-39	pCi/L					U	11/29/12
Beryllium-7	13966-02-4		59	pCi/L					U	11/29/12
LCS		QC Sample #85712								
Cesium-137	10045-97-3		6500	pCi/sample	107.1	80 - 120				11/29/12
Cobalt-60	10198-40-0		10000	pCi/sample	104.9	80 - 120				11/29/12
DUP		QC Sample #85713								
		Original 121501018								
Antimony-125	14234-35-6	-6.4	-6.0	pCi/L			-6.40	20	U	11/29/12
Cesium-134	13967-70-9	12	-17	pCi/L			-1125.30	20	* U	11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analyte	CAS #	Original Found	QC Found	Units	% RecovLimits	RPD	RPD Limit	RQ	Analyzed
Cesium-137	10045-97-3	0.78	-0.98	pCi/L		-1777.90	20	* U	11/29/12
Cobalt-60	10198-40-0	0.14	2.8	pCi/L		181.30	20	* U	11/29/12
Europium-152	14683-23-9	2.8	-8.0	pCi/L		-417.60	20	* U	11/29/12
Europium-154	15585-10-1	18	0.53	pCi/L		188.30	20	* U	11/29/12
Europium-155	14391-16-3	4.3	5.4	pCi/L		23.70	20	* U	11/29/12
Potassium-40	13966-00-2	-78	-31	pCi/L		-87.30	20	* U	11/29/12
Ruthenium-106	13967-48-1	37	29	pCi/L		23.80	20	* U	11/29/12
Beryllium-7	13966-02-4	-0.29	-27	pCi/L		-195.70	20	* U	11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 210946 (QC Batch: 210745) **Test** TC99 by Liquid Scintillation
Associated Samples 121501006, 121501007, 121501008, 121501009, 121501010, 121501011, 121501012, 121501013, 121501014, 121501015, 121501016, 121501018

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85443							
Technetium-99	14133-76-7		-1.1	pCi/L					U	11/28/12
LCS										
			QC Sample #85444							
Technetium-99	14133-76-7		220	pCi/L	103.1	80 - 120				11/28/12
DUP										
			QC Sample #85445							
			Original 121501006							
Technetium-99	14133-76-7	-0.60	-2.7	pCi/L			-127.30	20	* U	11/28/12
MS										
			QC Sample #85446							
			Original 121501006							
Technetium-99	14133-76-7	-0.60	890	pCi/L	102.8	75 - 125				11/28/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211118 (QC Batch: 210741) Test Tritium by LSC
 Associated Samples 121501001, 121501002, 121501003, 121501004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Tritium	10028-17-8		-31	pCi/L					U	12/02/12
LCS										
Tritium	10028-17-8		3300	pCi/L	104.9	80 - 120				12/02/12
DUP										
Tritium	10028-17-8		-17	pCi/L			-17.30	20	U	12/02/12
MS										
Tritium	10028-17-8		21000	pCi/L	102.5	75 - 125				12/02/12

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

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211119 (QC Batch: 210742) **Test** Tritium by LSC
Associated Samples 121501005, 121501006, 121501007, 121501008, 121501009, 121501010, 121501011, 121501012, 121501013, 121501014, 121501015, 121501016, 121501018

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			QC Sample #85435							
Tritium LCS	10028-17-8		-84	pCi/L					U	12/02/12
			QC Sample #85436							
Tritium DUP	10028-17-8		3200	pCi/L	103.4	80 - 120				12/02/12
			QC Sample #85437							
			Original 121501005							
Tritium MS	10028-17-8	950	1100	pCi/L			10.60	20		12/02/12
			QC Sample #85438							
			Original 121501005							
Tritium	10028-17-8	950	21000	pCi/L	102.4	75 - 125				12/02/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211278 (QC Batch: 210929) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121501004, 121501005, 121501006, 121501007, 121501008, 121501009, 121501010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85720								
Strontium-89_90	SR-RAD		1.1	pCi/L					X	12/08/12
LCS		QC Sample #85721								
Strontium-89_90	SR-RAD		82	pCi/L	92.2	80 - 120				12/08/12
DUP		QC Sample #85722								
		Original 121501004								
Strontium-89_90	SR-RAD	0.26	0.22	pCi/L			16.40	20	U	12/08/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121501

Analytical Batch 211317 (QC Batch: 211262)
Associated Samples 121501017, 121501018

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #86048								
Iron	7439-89-6	<19		ug/L					U	12/11/12
Magnesium	7439-95-4	<4.0		ug/L					U	12/11/12
Manganese	7439-96-5	<4.0		ug/L					U	12/11/12
Nickel	7440-02-0	<4.0		ug/L					U	12/11/12
Potassium	7440-09-7	<76		ug/L					U	12/11/12
Silver	7440-22-4	<4.0		ug/L					U	12/11/12
Sodium	7440-23-5	<10		ug/L					U	12/11/12
Antimony	7440-36-0	<36		ug/L					U	12/11/12
Barium	7440-39-3	<4.0		ug/L					U	12/11/12
Cadmium	7440-43-9	<4.0		ug/L					U	12/11/12
Chromium	7440-47-3	<5.0		ug/L					U	12/11/12
Cobalt	7440-48-4	<4.0		ug/L					U	12/11/12
Copper	7440-50-8	<4.0		ug/L					U	12/11/12
Vanadium	7440-62-2	<5.0		ug/L					U	12/11/12
Zinc	7440-66-6	<5.0		ug/L					U	12/11/12
Calcium	7440-70-2	<49		ug/L					U	12/11/12
Strontium	7440-24-6	<9.0		ug/L					U	12/11/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		<4.0	ug/L					U	12/11/12
LCS			QC Sample #86050							
Iron	7439-89-6		1040	ug/L	103.5	80 - 120				12/11/12
Magnesium	7439-95-4		10600	ug/L	105.8	80 - 120				12/11/12
Manganese	7439-96-5		1040	ug/L	104.4	80 - 120				12/11/12
Nickel	7440-02-0		1010	ug/L	100.6	80 - 120				12/11/12
Potassium	7440-09-7		11200	ug/L	111.9	80 - 120				12/11/12
Silver	7440-22-4		1030	ug/L	103.4	80 - 120				12/11/12
Sodium	7440-23-5		10600	ug/L	105.8	80 - 120				12/11/12
Antimony	7440-36-0		1050	ug/L	104.7	80 - 120				12/11/12
Barium	7440-39-3		1060	ug/L	105.7	80 - 120				12/11/12
Cadmium	7440-43-9		1020	ug/L	102.3	80 - 120				12/11/12
Chromium	7440-47-3		1040	ug/L	104	80 - 120				12/11/12
Cobalt	7440-48-4		1020	ug/L	101.6	80 - 120				12/11/12
Copper	7440-50-8		1050	ug/L	104.9	80 - 120				12/11/12
Vanadium	7440-62-2		1030	ug/L	102.8	80 - 120				12/11/12
Zinc	7440-66-6		1050	ug/L	105.2	80 - 120				12/11/12
Calcium	7440-70-2		21000	ug/L	105	80 - 120				12/11/12
Strontium	7440-24-6		1010	ug/L	100.7	80 - 120				12/11/12
Beryllium	7440-41-7		1040	ug/L	103.8	80 - 120				12/11/12
MS			QC Sample #86051							
			Original 121501017							
Iron	7439-89-6	<19	1040	ug/L	103.5	75 - 125				12/11/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121501

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7	5190	11400	ug/L	114.5	75 - 125	1.70	20		12/11/12
Silver	7440-22-4	<4.0	1020	ug/L	102	75 - 125	0.00	20		12/11/12
Sodium	7440-23-5	12800	11200	ug/L	111.8	75 - 125	2.00	20		12/11/12
Antimony	7440-36-0	<36	1050	ug/L	104.7	75 - 125	0.30	20		12/11/12
Barium	7440-39-3	37.7	1050	ug/L	105.4	75 - 125	1.00	20		12/11/12
Cadmium	7440-43-9	<4.0	1010	ug/L	100.7	75 - 125	0.60	20		12/11/12
Chromium	7440-47-3	27.6	1000	ug/L	100.3	75 - 125	1.10	20		12/11/12
Cobalt	7440-48-4	<4.0	972	ug/L	97.2	75 - 125	1.30	20		12/11/12
Copper	7440-50-8	<4.0	1040	ug/L	103.8	75 - 125	0.60	20		12/11/12
Vanadium	7440-62-2	10.0	1010	ug/L	101.2	75 - 125	0.10	20		12/11/12
Zinc	7440-66-6	<5.0	1040	ug/L	103.6	75 - 125	0.50	20		12/11/12
Calcium	7440-70-2	53800	21700	ug/L	108.3	75 - 125	0.20	20		12/11/12
Strontium	7440-24-6	240	990	ug/L	99	75 - 125	0.70	20		12/11/12
Beryllium	7440-41-7	<4.0	1020	ug/L	102.1	75 - 125	0.70	20		12/11/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211516 (QC Batch: 210928) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121501001, 121501002, 121501003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85717								
Strontium-89_90	SR-RAD		-0.24	pCi/L					U	12/12/12
LCS		QC Sample #85718								
Strontium-89_90	SR-RAD		91	pCi/L	102.8	80 - 120				12/12/12
DUP		QC Sample #85719								
		Original 121498018								
Strontium-89_90	SR-RAD		6.5	pCi/L			18.80	20		12/12/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211517 (QC Batch: 210930) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121501011, 121501012, 121501013, 121501014, 121501015, 121501016, 121501018

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85723								
Strontium-89_90	SR-RAD		-0.14	pCi/L					U	12/12/12
LCS		QC Sample #85724								
Strontium-89_90	SR-RAD		95	pCi/L	107.4	80 - 120				12/12/12
DUP		QC Sample #85725								
		Original 121501011								
Strontium-89_90	SR-RAD	0.64	0.69	pCi/L			8.30	20	U	12/12/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211621 (QC Batch: 211133) Test GAB Discrete analysis Alpha only
 Associated Samples 121501018

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85877								
Gross Alpha	12587-46-1		-0.27	pCi/L					U	12/19/12
LCS		QC Sample #85878								
Gross Alpha	12587-46-1		57	pCi/L	95.7	80 - 120				12/19/12
DUP		QC Sample #85879								
		Original 121498014								
Gross Alpha	12587-46-1		0.13	pCi/L			99.40	20	* U	12/19/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121501

Analytical Batch 211622 (QC Batch: 211133)
Associated Samples 121501018

Test GAB Discrete analysis Beta only

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			QC Sample #85877							
Gross Beta	12587-47-2		-1.8	pCi/L					U	12/19/12
LCS			QC Sample #85878							
Gross Beta	12587-47-2		230	pCi/L	91	80 - 120				12/19/12
DUP			QC Sample #85879							
			Original 121498014							
Gross Beta	12587-47-2		4.2	pCi/L			15.80	20		12/19/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121501

Analytical Batch 211765 (QC Batch: 211626) **Test** ICP-2008 MS All possible metal
Associated Samples 121501001, 121501002, 121501003, 121501004, 121501005, 121501006, 121501007, 121501008, 121501009,
 121501010, 121501011, 121501012, 121501013, 121501014, 121501015, 121501016, 121501018

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			QC Sample #86457							
Uranium LCS	7440-61-1		<0.050	ug/L					U	12/18/12
			QC Sample #86458							
Uranium MS	7440-61-1		41.2	ug/L	102.9	85 - 115				12/18/12
			QC Sample #86459							
			Original 121498019							
Uranium MSD	7440-61-1		42.6	ug/L	106.4	70 - 130				12/18/12
			QC Sample #86460							
			Original 121498019							
Uranium	7440-61-1		42.7	ug/L	106.8	70 - 130	0.40	20	Paired 86459	12/18/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211278 (QC Batch: 210929) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121501004, 121501005, 121501006, 121501007, 121501008, 121501009, 121501010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE										
Strontium Nitrate	10042-76-9			mg	71.9	25 - 105				12/08/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	76.9	25 - 105				12/08/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	74.4	25 - 105				12/08/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	76.9	25 - 105				12/08/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	79.3	25 - 105				12/08/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	73.6	25 - 105				12/08/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	73.6	25 - 105				12/08/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85720							
Strontium Nitrate	10042-76-9			mg	76	25 - 105				12/08/12
LCS										
			QC Sample #85721							
Strontium Nitrate	10042-76-9			mg	71.1	25 - 105				12/08/12
DUP										
			QC Sample #85722							
			Original 121501004							
Strontium Nitrate	10042-76-9	8.7		mg	76	25 - 105	n/a			12/08/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analytical Batch 211516 (QC Batch: 210928) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121501001, 121501002, 121501003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE										
Strontium Nitrate	10042-76-9			mg	71.1	25 - 105				12/12/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	75.2	25 - 105				12/12/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	72.7	25 - 105				12/12/12
BLANK										
Strontium Nitrate	10042-76-9			mg	76	25 - 105				12/12/12
LCS										
Strontium Nitrate	10042-76-9			mg	71.9	25 - 105				12/12/12
DUP										
Strontium Nitrate	10042-76-9			mg	72.7	25 - 105	n/a			12/12/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121501

Analytical Batch 211517 (QC Batch: 210930) **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 121501011, 121501012, 121501013, 121501014, 121501015, 121501016, 121501018

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE										
				Sample #121501011						
Strontium Nitrate	10042-76-9			mg	69.4	25 - 105				12/12/12
SAMPLE										
				Sample #121501012						
Strontium Nitrate	10042-76-9			mg	74.4	25 - 105				12/12/12
SAMPLE										
				Sample #121501013						
Strontium Nitrate	10042-76-9			mg	67.8	25 - 105				12/12/12
SAMPLE										
				Sample #121501014						
Strontium Nitrate	10042-76-9			mg	69.4	25 - 105				12/12/12
SAMPLE										
				Sample #121501015						
Strontium Nitrate	10042-76-9			mg	71.1	25 - 105				12/12/12
SAMPLE										
				Sample #121501016						
Strontium Nitrate	10042-76-9			mg	71.1	25 - 105				12/12/12
SAMPLE										
				Sample #121501018						
Strontium Nitrate	10042-76-9			mg	71.9	25 - 105				12/12/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121501

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85723							
Strontium Nitrate	10042-76-9			mg	72.7	25 - 105				12/12/12
LCS										
			QC Sample #85724							
Strontium Nitrate	10042-76-9			mg	74.4	25 - 105				12/12/12
DUP										
			QC Sample #85725							
			Original 121501011							
Strontium Nitrate	10042-76-9	8.4		mg	73.6	25 - 105	n/a			12/12/12

* - QC result out of range

n/a - Not Applicable

Attention: Scot Fitzgerald

Group #

WSCF121501

Quality Control Comments

Department Radiochemistry

85720

BLANK for HBN 210929 [RADP/738

Analyte Strontium-89_90 - Strontium 89/90 (GPC/GEA)

[1] The blank is less than 2X the MDC and is acceptable.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 20 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 #: 121501

Profile #: S13-012-323

Proj. Mgr.:

Phone:

The following samples were received from you on 11/26/2012 3:07:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
Tests scheduled				
121501001	B2MYP0	WATER	11/26/2012 11:15	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501002	B2MYN2	WATER	11/26/2012 10:33	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501003	B2MYN6	WATER	11/26/2012 10:18	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501004	B2MYP4	WATER	11/26/2012 08:25	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501005	B2MYP5	WATER	11/26/2012 09:58	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501006	B2MYV1	WATER	11/26/2012 14:23	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501007	B2MYR5	WATER	11/26/2012 11:30	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501008	B2MYM0	WATER	11/26/2012 12:15	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501009	B2MYR9	WATER	11/26/2012 11:46	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501010	B2MYL6	WATER	11/26/2012 12:34	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501011	B2N036	WATER	11/26/2012 12:50	11/26/2012 15:07

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

2008-W; H3-COL-W; SR89/90-W; TC99-W

121501012	B2MYR1	WATER	11/26/2012 13:06	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501013	B2N040	WATER	11/26/2012 13:24	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501014	B2MYM4	WATER	11/26/2012 13:37	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501015	B2MYM8	WATER	11/26/2012 13:53	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501016	B2MM10	WATER	11/26/2012 14:09	11/26/2012 15:07
2008-W; H3-COL-W; SR89/90-W; TC99-W				
121501017	B2MM08	WATER	11/26/2012 10:51	11/26/2012 15:07
6010-W				
121501018	B2MM05	WATER	11/26/2012 10:51	11/26/2012 15:07
2008-W; 6010-W; GAB-AO-W; GAB-BO-W; GEA-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)
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 EICHRUM Column (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. #
S13-012-323
Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURY, DECEMBER 2012	Logbook No.	HNF-N-50649/82	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	SURY	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS

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

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MVP0	N	11/26/12	1115	1x500-mL G/P	2008_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MVP0	N	11/26/12	1115	1x1-L G/P	Strontium-89.90 -- Total Sr	6 Months	HNO3 to pH <2
B2MVP0	N	11/26/12	1115	1x1-L G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MVP0	N	11/26/12	1115	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Retinquished By	Robert Crow	Print	Sign	Date/Time	NOV 26 2012	1507	Received By	Cynthia R Johnson	Print	Sign	Date/Time	NOV 26 2012	1507	
Retinquished By				Date/Time			Received By				Date/Time			
Retinquished By				Date/Time			Received By				Date/Time			
Retinquished By				Date/Time			Received By				Date/Time			
FINAL SAMPLE DISPOSITION												Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

Matrix *

S	=	Soil	DS	=	Dunn Solids
SE	=	Sediment	DL	=	Dunn Liquids
SO	=	Soil	T	=	Tissue
SL	=	Sludge	WL	=	Wine
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Versation
A	=	Air	X	=	Other

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-320**
 Page 1 of 1

Collector: Robert Crow
 SAF No.: S13-012
 Project Title: SURV. DECEMBER 2012
 Shipped To (Lab): Waste Sampling & Characterization
 Protocol: SURV
 Contact/Requester: Karen Waters-Husted
 Sampling Origin: Hanford Site
 Logbook No.: HNF-N-506 49/82
 Method of Shipment: GOVERNMENT VEHICLE
 Priority: 31 Days
 Telephone No.: 376-4650
 Purchase Order/Charge Code: 30007IES20
 Ice Chest No.: N/A
 Bill of Lading/Air Bill No.: N/A
 Offsite Property No.: N/A
POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Continue Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1996/1993)
SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647
 Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MYN6 3	N	11-26-12	1018	1x500-mL GP	200.8 METALS_ICPMS- Uranium (1)	6 Months	HNO3 to pH <2
B2MYN6	N			1x1-L GP	Strontium-89.90 -- Total Sr	6 Months	HNO3 to pH <2
B2MYN6	N			1x1-L GP	TC99 3MDSK LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MYN6	N	11-26-12	1018	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	Robert Crow	<i>R Crow</i>	NOV 26 2012 1507	Received By	Cynthia R Johnson	<i>C Johnson</i>	NOV 26 2012 1507	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 WI = Waste 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-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-012-326**
Page 1 of 1

Collector: Robert Crow Contact/Requester: Karen Waters-Husted Telephone No.: 376-4650

SAF No.: S13-012 Sampling Origin: Hanford Site Purchase Order/Charge Code: 30007IES20

Project Title: SURV. DECEMBER 2012 Logbook No.: HNF-N-506 19182 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

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DDE Order 5460 5 (1990/1993) ***

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

Total Activity Exemption: Yes No

Sample No	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MYPA 4	N	11-20-12	0825	1x500 mL GP	200.8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MYPA	N			1x1-L GP	Strontium-89 90 -- Total Sr	6 Months	HNO3 to pH <2
B2MYPA	N			1x1-L GP	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MYPA	N	11-20-12	0835	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By: Robert Crow	Print Sign	Date/Time: NOV 26 2012 1501	Received By: Cynthia R Johnson	Print Sign	Date/Time: NOV 26 2012 1501	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WL = Waste W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By:	Date/Time:	Received By:	Date/Time:			
Relinquished By:	Date/Time:	Received By:	Date/Time:			
Relinquished By:	Date/Time:	Received By:	Date/Time:			
FINAL SAMPLE DISPOSITION			Disposed Method (e.g. Return to customer, per lab procedure, used in process)	Disposed By:	Date/Time:	

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		CAC# #
				S13-012-329
Page 1 of 1				

Collector	Robert Crow	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/H9 / 82	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time	
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1/19/91/993)		EY12 and EY13 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Filter	* #	Date	Time	No./Type Container	Sample Analysis	Hold Time	Preservative
B2MYP6	N	W	11-20-12	0958	1x500-mL GP	200.8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MYP5	N	W	11-20-12	0958	1x1-L-GP	Sr-90-89-90 -- Total Sr	6 Months	HNO3 to pH <2
B2MYP5	N	W	11-20-12	0958	1x1-L-GP	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MYP5	N	W	11-20-12	0958	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By	Robert Crow	Date/Time	NOV 26 2012 1507	Received By	Cynthia R Johnson	Date/Time	NOV 26 2012 1507
Relinquished By		Date/Time		Received By		Date/Time	
Relinquished By		Date/Time		Received By		Date/Time	
Relinquished By		Date/Time		Received By		Date/Time	
Relinquished By		Date/Time		Received By		Date/Time	
FINAL SAMPLE DISPOSITION				Disposition Method (e.g., Return to customer, per lab procedure, used in process)			

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

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A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 CACR # S13-012-335
 Page 1 of 1

Collector: Robert Crow
 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.: INF-N-506 49/82
 Lee Chest No.: N/A
 Shipped To (Lab): Waste Sampling & Characterization
 Method of Shipment: GOVERNMENT VEHICLE
 Bill of Lading/Air Bill No.: N/A
 Protocol: SURV
 Priority: 31 Days
 OFFSITE Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** ** Certain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5100.5 (1990/1993)
SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SIX. Site-Wide Generator Knowledge Information Form applies. The CACR for all analytical work at WSCF is 401617.
 Hold Time: Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MYR5 7	N	11/26	1130	1x500-mL G/P	200.8_METALS_ICPMS; Uranium (1)	6 Months	HNO3 to pH <2
B2MYR5	N			1x1 L G/P	Strontium 89.90 - Total Sr	6 Months	HNO3 to pH <2
B2MYR5	N			1x1-L G/P	TC99_3MDSK_LSC; Tc-99 (1)	6 Months	HCl to pH <2
B2MYR5	N	11/26	1130	1x250-mL G	TRITIUM_EIE_LSC; Tritium (1)	6 Months	None

Relinquished By	Signature	Date/Time	Received By	Signature	Date/Time	Matrix*
Robert Crow	[Signature]	NOV 26 2012 1:50	Cynthia R Johnson	[Signature]	NOV 26 2012 1:50	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 WI - Wipe L - Liquid V - Vegetation X - Other
Relinquished By			Received By			
Relinquished By			Received By			
Relinquished By			Received By			
FINAL SAMPLE DISPOSITION						
Disposal Method (e.g. Return to customer, per lab procedure, used in process)						
Disposed By						

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S13-012-308
Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	30007IES20
Project Title	SURV. DECEMBER 2012	Logbook No.	HNF-N-50649/82	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

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 SIG. 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
B2MVM0 8	N	11-20-12	12:15	1x500-mL GIP	200.8 METALS_ICPMMS - Uranium (1)	6 Months	HNO3 to pH <2
B2MVM0	N			1x1-L GIP	Strontium-89.90 -- Total Sr	6 Months	HNO3 to pH <2
B2MVM0	N			1x1-L GIP	TC99 3MDSK LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MVM0	N	11-20-12	12:15	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Reinquanted By	Robert Crow	Print	Sign	Date/Time	NOV 26 2012 1507	Received By	Cynthia R Johnson	Print	Sign	Date/Time	NOV 26 2012 1507	Matrix *
Reinquanted By				Date/Time		Received By				Date/Time		S = Soil
Reinquanted By				Date/Time		Received By				Date/Time		SE = Sediment
Reinquanted By				Date/Time		Received By				Date/Time		SO = Solid
Reinquanted By				Date/Time		Received By				Date/Time		SL = Sludges
Reinquanted By				Date/Time		Received By				Date/Time		W = Water
Reinquanted By				Date/Time		Received By				Date/Time		OW = Oil
Reinquanted By				Date/Time		Received By				Date/Time		A = Air
Reinquanted By				Date/Time		Received By				Date/Time		DS = Dram Solids
Reinquanted By				Date/Time		Received By				Date/Time		DL = Dram Liquids
Reinquanted By				Date/Time		Received By				Date/Time		T = Tissue
Reinquanted By				Date/Time		Received By				Date/Time		WI = Wine
Reinquanted By				Date/Time		Received By				Date/Time		L = Liquid
Reinquanted By				Date/Time		Received By				Date/Time		V = Vapour
Reinquanted By				Date/Time		Received By				Date/Time		X = Other

PRINTED O 10/24/2012

A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S13-012-338
Page 1 of 1

Collector	Robert Crow	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 49 / 82	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 5600.5 (1990/1993) ***

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

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MYR9	N	11-20-12	1144	1x500-mL G/P	200 8 METALS, JCPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MYR9	N			1x1-L G/P	Strontium-89.90 -- Total Sr	6 Months	HNO3 to pH <2
B2MYR9	N			1x1-L G/P	TC99. 3MDSK, LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MYR9	N	11-20-12	1144	1x250-mL G	TRITIUM, EIE, LSC: Tritium (1)	6 Months	None

Relinquished By	Robert Crow	Print	Sign	NOV 26 2012	Date/Time	Received By	Cynthia R Johnson	Print	Sign	NOV 26 2012	Date/Time	Disposed By		Date/Time
Relinquished By						Received By						Disposed By		
Relinquished By						Received By						Disposed By		
Relinquished By						Received By						Disposed By		

Matrix *	S	SE	SO	SL	W	O	Air	DS	DL	T	WI	L	V	Other
Soil														
Sediment														
Solid														
Sludge														
Water														
Oil														
Air														
Drum Solids														
Drum Liquids														
Tissue														
Wipe														
Label														
Vegitation														
Other														

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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. #
S13-012-400
Page 1 of 1

Collector	Robert Crow	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 <i>19 / 83</i>	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** ** Contain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1991/1993)

SPECIAL INSTRUCTIONS
 EY12 and EY13 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	Hold Time	Preservative
B2N040 <i>13</i>	N	11-20-12	1324	1x500 mL G/P	200 8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2N040	N	W	W	1x1-L G/P	Strontium-89/90 -- Total Sr	6 Months	HNO3 to pH <2
B2N040	N	W	W	1x1-L G/P	TC99_3MDSK_1SG: Tc-99 (1)	6 Months	HCl to pH <2
B2N040	N	W	W	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By	Robert Crow	Signature	<i>Robert Crow</i>	Date/Time	NOV 26 2012 1530	Received By	Cynthia R Johnson	Signature	<i>Cynthia R Johnson</i>	Date/Time	NOV 26 2012 1530	Matrix *	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By		Date/Time		Received By		Date/Time		Disposed By		Date/Time		DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other	

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A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-311**
 Page 1 of 1

Collector: Robert Crow
 SAF No.: S13-012
 Project Title: SURV. DECEMBER 2012
 Shipped To (Lab): Waste Sampling & Characterization
 Protocol: SURV

Contract/Requester: Karen Waters-Husted
 Sampling Origin: Hanford Site
 Logbook No.: HNF-N-506 49 / 83
 Method of Shipment: GOVERNMENT VEHICLE
 Priority: 31 Days
 Telephone No.: 376-4650
 Purchase Order/Charge Code: 30007IES20
 Ice Chest No.: N/A
 Bill of Lading/Air Bill No.: N/A
 Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)
SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401667.
 Hold Time: Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MYM4 14	N	11-20-12	1337	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MYM4	N			1x1-L G/P	Strontium-89,90 -- Total Sr	6 Months	HNO3 to pH <2
B2MYM4	N			1x1-L G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MYM4	N	11-20-12	1337	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Redinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Redinquished By: Robert Crow		[Signature]	NOV 26 2012 1550	Received By: Cynthia R Johnson		[Signature]	NOV 26 2012 1807	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dams/Sediment DL = Down Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Redinquished By:			Date/Time	Received By:			Date/Time	
Redinquished By:			Date/Time	Received By:			Date/Time	
Redinquished By:			Date/Time	Received By:			Date/Time	
FINAL SAMPLE DISPOSITION								
Disposal Method (e.g., Return to customer, per lab procedure, used in process)								Disposed By:

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-012-314**
Page 1 of 1

Collector	Robert Crow	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 <u>49 / 83</u>	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	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 500.5 (1990/1993) ***

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

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Hold Time	Preservative
B2MYM8 15	N	11-20-12	1353	1x500 mL G/P	200.8_METALS_JCPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MYM8	N			1x1-L G/P	Strontium-89.90 -- Total Sr	6 Months	HNO3 to pH <2
B2MYM8	N			1x1-L G/P	TC99.3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MYM8	N	11-20-12	1353	1x250-mL G	TRITIUM EIE LSC: Tritium (1)	6 Months	None

Requisitioned By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Requisitioned By	Robert Crow	<i>R Crow</i>	NOV 26 2012 1507	Received By	Cynthia R Johnson	<i>C Johnson</i>	NOV 26 2012 1507	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Requisitioned By				Received By				DS = Dross Solids DL = Dross Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Requisitioned By				Received By				
Requisitioned By				Received By				

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

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S13-011-148
Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV. NOVEMBER 2012	Logbook No.	HNF-N-506 849 83	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	31 Days	Offsite Property No.	N/A

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

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

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MM10	N	11-26-12	1409	1x500-mL GP	200.8 METALS ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MM10	N			1x1-L GP	Sr-90 - Total Sr	6 Months	HNO3 to pH <2
B2MM10	N			1x1-L GP	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MM10	N	11-26-12	1409	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By	Robert Crow	Sign	<i>R Crow</i>	Date/Time	NOV 26 2012 1507	Received By	Cynthia R Johnson	Sign	<i>C Johnson</i>	Date/Time	NOV 26 2012 1507
Relinquished By		Date/Time		Received By		Date/Time		Matrix * S = Soil DS = Down Scale SE = Sediment DL = Down Liquids SO = Solid T = Tissue SI = Sludge WT = Waste W = Water L = Liquid Q = Oil V = Vegetation A = Air X = Other			
Relinquished By		Date/Time		Received By		Date/Time		Disposed By Date/Time			

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-011-145**
 Page 1 of 1

Collector: Robert Crow
 Contract/Requester: Karen Waters-Husted
 Telephone No.: 376-4650
 Project No.: S13-011
 Sampling Origin: Hartford Site
 Purchase Order/Charge Code: 300071ES20
 Project Title: SURV. NOVEMBER 2012
 Logbook No.: HNF-N-506 49/82
 Ice Chest No.: N/A
 Shipped To (Lab): Waste Sampling & Characterization
 Method of Shipment: GOVERNMENT VEHICLE
 Bill of Lading/Air Bill No.: N/A
 Protocol: CERCLA
 Priority: 31 Days
 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 5100.5 (1990/1993)
SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.
 Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MM05 18	N	11-20-12	1051	1x500-mL G/P	2008_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MM05	N			1x500-mL G/P	6010_METALS_ICP- List-3 (18)	6 Months	HNO3 to pH <2
B2MM05	N			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B2MM05	N			1x500-mL G/P	GAMMA_GS: List-1 (10)	6 Months	HNO3 to pH <2
B2MM05	N			1x1-L G/P	Sr-90-89.90 -- Total Sr	6 Months	HNO3 to pH <2
B2MM05	N			1x1-L G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MM05	N			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None
B2MM08 17	Y	11-20-12	1051	1x500-mL G/P	6010_METALS_ICP- List-3 (18)	6 Months	HNO3 to pH <2

Relinquished By: Robert Crow	Sign: <i>Robert Crow</i>	Date/Time: NOV 26 2012 1507	Received By: Cynthia R Johnson	Sign: <i>Cynthia R Johnson</i>	Date/Time: NOV 26 2012 1507
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:
Relinquished By:	Sign:	Date/Time:	Received By:	Sign:	Date/Time:
FINAL SAMPLE DISPOSITION			Disposal Method (e.g., Return to customer, per lab procedure, used in process)		
Disposal Method:			Disposed By:		

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