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

December 27, 2012

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121507

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 WSCF121507

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

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager, Dan T. Smith

WSCF Analytical Lab

(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages

Including cover page

WSCF SAF Number Cross Reference

Group # WSCF121507
Data Deliverable Date 12/28/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
S13-012	B2MYJ2	121507001	WATER	11/27/12	11/27/12
S13-012	B2MYK3	121507002	WATER	11/27/12	11/27/12
S13-012	B2MYH9	121507003	WATER	11/27/12	11/27/12
S13-012	B2MYK0	121507004	WATER	11/27/12	11/27/12
X13-002	B2N2P9	121507005	WATER	11/27/12	11/27/12

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Attachment 2
Narrative
WSCF121507

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.

Attachment 2
Narrative
WSCF121507

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.

Organic Comments

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

- 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:

- All applicable QC controls are within the established limits.

Tritium:

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF121507

Technetium-99:

- All applicable QC controls are within the established limits.

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

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 43 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF121507
Report Date December 27, 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.

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121507

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	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	15	SAMPLE	121507001	B2MYJ2		ICP-6010 - All possible metals
211262	211317	16	SAMPLE	121507002	B2MYK3		ICP-6010 - All possible metals
211262	211317	17	SAMPLE	121507003	B2MYH9		ICP-6010 - All possible metals
211262	211317	18	SAMPLE	121507004	B2MYK0		ICP-6010 - All possible metals
211627	211764	4	BLANK	86461	BLANK		ICP-2008 MS All possible metal
211627	211764	5	LCS	86462	LCS		ICP-2008 MS All possible metal
211627	211764	6	SAMPLE	121507004	B2MYK0		ICP-2008 MS All possible metal
211627	211764	7	MS	86463	B2MYK0(121507004MS)	121507004	ICP-2008 MS All possible metal
211627	211764	8	MSD	86464	B2MYK0(121507004MSD	121507004	ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210935	210936	1	BLANK	85738	BLANK		SW-846 8260B Volatiles
210935	210936	2	LCS	85739	LCS		SW-846 8260B Volatiles
210935	210936	3	MS	85740	B2MYH9(121507003MS)	121507003	SW-846 8260B Volatiles
210935	210936	4	MSD	85741	B2MYH9(121507003MSD	121507003	SW-846 8260B Volatiles
210935	210936	5	SAMPLE	121507003	B2MYH9		SW-846 8260B Volatiles
210935	210936	6	SAMPLE	121507005	B2N2P9		SW-846 8260B Volatiles

Batch QC List

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
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	5	SAMPLE	121507004	B2MYK0		Gamma Energy Analysis-general
210931	211518	1	BLANK	85726	BLANK		Strontium 89/90 (GPC/GEA)
210931	211518	2	LCS	85727	LCS		Strontium 89/90 (GPC/GEA)
210931	211518	3	DUP	85728	B2ML73(121503006DUP)	121503006	Strontium 89/90 (GPC/GEA)
210931	211518	9	SAMPLE	121507004	B2MYK0		Strontium 89/90 (GPC/GEA)
211015	211256	1	BLANK	85780	BLANK		Tritium by LSC
211015	211256	2	LCS	85781	LCS		Tritium by LSC
211015	211256	3	SAMPLE	121507003	B2MYH9		Tritium by LSC
211015	211256	4	DUP	85782	B2MYH9(121507003DUP	121507003	Tritium by LSC
211015	211256	5	MS	85783	B2MYH9(121507003MS)	121507003	Tritium by LSC
211015	211256	6	SAMPLE	121507004	B2MYK0		Tritium by LSC
211020	211120	1	BLANK	85788	BLANK		TC99 by Liquid Scintillation
211020	211120	2	LCS	85789	LCS		TC99 by Liquid Scintillation
211020	211120	3	SAMPLE	121507004	B2MYK0		TC99 by Liquid Scintillation
211020	211120	4	DUP	85790	B2MYK0(121507004DUP	121507004	TC99 by Liquid Scintillation
211020	211120	5	MS	85791	B2MYK0(121507004MS)	121507004	TC99 by Liquid Scintillation
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	7	SAMPLE	121507003	B2MYH9		GAB Discrete analysis Alpha only

Batch QC List

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
211133	211621	8	SAMPLE	121507004	B2MYK0		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	7	SAMPLE	121507003	B2MYH9		GAB Discrete analysis Beta only
211133	211622	8	SAMPLE	121507004	B2MYK0		GAB Discrete analysis Beta only

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121507

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 Emmision Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	Determination of Trace Elements in Waters & Wastes by ICP Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
	HEIS	200.8_METALS_ICPMS	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma, Mass Spec.

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

Method Reference

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

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

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

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

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

Method Reference

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

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 # WSCF121507

Sample # 121507001
SAF# S13-012
Sample ID B2MYJ2

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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		6700		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	B	9.80		ug/L	1	4.0	20	12/11/12
Potassium	7440-09-7	LA-505-411		3240		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		5320		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		38.5		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	B	22.9		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	12.3		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		25200		ug/L	1	49	240	12/11/12
Strontium	7440-24-6	LA-505-411		153		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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121507

Sample # 121507001
SAF# S13-012
Sample ID B2MYJ2

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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 # WSCF121507

Sample # 121507002
SAF# S13-012
Sample ID B2MYK3

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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	B	27.0		ug/L	1	19	95	12/11/12
Magnesium	7439-95-4	LA-505-411		14000		ug/L	1	4.0	20	12/11/12
Manganese	7439-96-5	LA-505-411	B	19.9		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		6040		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		14800		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		94.3		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		29.0		ug/L	1	5.0	25	12/11/12
Cobalt	7440-48-4	LA-505-411	B	7.20		ug/L	1	4.0	20	12/11/12
Copper	7440-50-8	LA-505-411	B	8.20		ug/L	1	4.0	20	12/11/12
Vanadium	7440-62-2	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/11/12
Zinc	7440-66-6	LA-505-411	B	5.00		ug/L	1	5.0	25	12/11/12
Calcium	7440-70-2	LA-505-411		88300		ug/L	1	49	240	12/11/12
Strontium	7440-24-6	LA-505-411		405		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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121507

Sample # 121507002
SAF# S13-012
Sample ID B2MYK3

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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 # WSCF121507

Sample # 121507003
SAF# S13-012
Sample ID B2MYH9

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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	B	31.3		ug/L	1	19	95	12/11/12
Magnesium	7439-95-4	LA-505-411		6690		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	B	14.2		ug/L	1	4.0	20	12/11/12
Potassium	7440-09-7	LA-505-411		3300		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		5260		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		38.6		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		26.8		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	12.3		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		25000		ug/L	1	49	240	12/11/12
Strontium	7440-24-6	LA-505-411		161		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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121507

Sample # 121507003
SAF# S13-012
Sample ID B2MYH9

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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 # WSCF121507

Sample # 121507004
SAF# S13-012
Sample ID B2MYK0

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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		13600		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	B	5.40		ug/L	1	4.0	20	12/11/12
Potassium	7440-09-7	LA-505-411		5890		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		14400		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		91.4		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		30.4		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	U	<5.0		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		86800		ug/L	1	49	240	12/11/12
Strontium	7440-24-6	LA-505-411		398		ug/L	1	9.0	45	12/11/12

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C - Analyte was found in the Associated Blank. (Inorganic)
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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 # WSCF121507

Sample # 121507004
SAF# S13-012
Sample ID B2MYK0

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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		3.30		ug/L	1	0.050	0.25	12/18/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
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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.
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X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Sample # 121507003
SAF# S13-012
Sample ID B2MYH9

Matrix WATER
Sampled 11/27/12
Received 11/27/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**11/29/12**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Acetone	67-64-1	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	11/29/12

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

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

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

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Sample # 121507003
SAF# S13-012
Sample ID B2MYH9

Matrix WATER
Sampled 11/27/12
Received 11/27/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1-Butanol	71-36-3	LA-523-455	U	<100		ug/L	1	100	500	11/29/12
Tetrahydrofuran	109-99-9	LA-523-455	U	<2		ug/L	1	2	10	11/29/12
trans-1,2-Dichloroethene	156-60-5	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
cis-1,2-Dichloroethene	156-59-2	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Propionitrile	107-12-0	LA-523-455	U	<2		ug/L	1	2	10	11/29/12
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	<1		ug/L	1	1	5	11/29/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
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B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
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J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - GC/MS or N - Non GC/MS - MS/MSD recovery outside control limits
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PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Sample # 121507005
SAF# X13-002
Sample ID B2N2P9

Matrix WATER
Sampled 11/27/12
Received 11/27/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**11/29/12**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Acetone	67-64-1	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Methylene chloride	75-09-2	LA-523-455	J	3.8		ug/L	1	1	5	11/29/12

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

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

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

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Sample # 121507005
SAF# X13-002
Sample ID B2N2P9

Matrix WATER
Sampled 11/27/12
Received 11/27/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
1-Butanol	71-36-3	LA-523-455	U	<100		ug/L	1	100	500	11/29/12
Tetrahydrofuran	109-99-9	LA-523-455	U	<2		ug/L	1	2	10	11/29/12
trans-1,2-Dichloroethene	156-60-5	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
cis-1,2-Dichloroethene	156-59-2	LA-523-455	U	<1		ug/L	1	1	5	11/29/12
Propionitrile	107-12-0	LA-523-455	U	<2		ug/L	1	2	10	11/29/12
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	<1		ug/L	1	1	5	11/29/12

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

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

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

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

Sample # 121507003
SAF# S13-012
Sample ID B2MYH9

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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	-0.52	.7	pCi/L	1	1.7		12/19/12
GAB Discrete analysis Beta only										
Gross Beta	12587-47-2	LA-508-415	U	1.2	2	pCi/L	1	3.4		12/19/12
Tritium by LSC EICHROM WA/LIQ PREP										**11/30/12**
Tritium by LSC										
Tritium	10028-17-8	LA-508-421	U	170	180	pCi/L	1	310		12/04/12

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

B - Analyte 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 # WSCF121507

Sample # 121507004
SAF# S13-012
Sample ID B2MYK0

Matrix WATER
Sampled 11/27/12
Received 11/27/12

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	1.3	1.7	pCi/L	1	2.9		12/19/12
GAB Discrete analysis Beta only										
Gross Beta	12587-47-2	LA-508-415		10	3.8	pCi/L	1	5.4		12/19/12
Preparation for GEA (W)										**11/29/12**
Gamma Energy Analysis-general										
Antimony-125	14234-35-6	LA-508-481	U	9.6	20	pCi/L	1	36		11/29/12
Cesium-134	13967-70-9	LA-508-481	U	-15	44	pCi/L	1	73		11/29/12
Cesium-137	10045-97-3	LA-508-481	U	-4.2	7.4	pCi/L	1	12		11/29/12
Cobalt-60	10198-40-0	LA-508-481	U	-1.4	6.7	pCi/L	1	11		11/29/12
Europium-152	14683-23-9	LA-508-481	U	8.4	24	pCi/L	1	42		11/29/12
Europium-154	15585-10-1	LA-508-481	U	13	19	pCi/L	1	38		11/29/12
Europium-155	14391-16-3	LA-508-481	U	12	27	pCi/L	1	49		11/29/12
Potassium-40	13966-00-2	LA-508-481	U	-110	97	pCi/L	1	190		11/29/12
Ruthenium-106	13967-48-1	LA-508-481	U	27	63	pCi/L	1	110		11/29/12
Beryllium-7	13966-02-4	LA-508-481	U	-30	65	pCi/L	1	110		11/29/12
Strontium 89/90 WATER/LIQUID PREP										**12/11/12**
Strontium 89/90 (GPC/GEA)										

MDL = Minimum Detection Limit
RQ = Result Qualifier
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N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

Sample # 121507004
SAF# S13-012
Sample ID B2MYK0

Matrix WATER
Sampled 11/27/12
Received 11/27/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium-89_90	SR-RAD	LA-220-406		2.4	.9	pCi/L	1	1.1		12/12/12
TC99 by Liquid Scin. WATER/LIQUID PREP										**11/30/12**
TC99 by Liquid Scintillation										
Technetium-99	14133-76-7	LA-508-421	U	-0.90	3.6	pCi/L	1	6.0		12/01/12
Tritium by LSC EICHROM WA/LIQ PREP										**11/30/12**
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		2900	650	pCi/L	1	310		12/04/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
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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 Organic, Volatiles

Group # WSCF121507

Analytical Batch 210936 (QC Batch: 210935)
Associated Samples 121507003, 121507005

Test SW-846 8260B Volatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #85738**						
1,1-Dichloroethene	75-35-4		<1	ug/L				U	11/29/12
Trichloroethene	79-01-6		<1	ug/L				U	11/29/12
Benzene	71-43-2		<1	ug/L				U	11/29/12
Toluene	108-88-3		<1	ug/L				U	11/29/12
Chlorobenzene	108-90-7		<1	ug/L				U	11/29/12
1,1-Dichloroethane	75-34-3		<1	ug/L				U	11/29/12
Ethylbenzene	100-41-4		<1	ug/L				U	11/29/12
1,2-Dichloroethane	107-06-2		<1	ug/L				U	11/29/12
Methyl isobutyl ketone	108-10-1		<1	ug/L				U	11/29/12
Tetrachloroethene	127-18-4		<1	ug/L				U	11/29/12
Total Xylenes	1330-20-7		<1	ug/L				U	11/29/12
Carbon tetrachloride	56-23-5		<1	ug/L				U	11/29/12
Acetone	67-64-1		<1	ug/L				U	11/29/12
Chloroform	67-66-3		<1	ug/L				U	11/29/12
1,1,1-Trichloroethane	71-55-6		<1	ug/L				U	11/29/12
Vinyl chloride	75-01-4		<1	ug/L				U	11/29/12
Methylene chloride	75-09-2		<1	ug/L				U	11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Carbon disulfide	75-15-0		<1	ug/L					U	11/29/12
Methyl ethyl ketone	78-93-3		<1	ug/L					U	11/29/12
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	11/29/12
1-Butanol	71-36-3		<100	ug/L					U	11/29/12
Tetrahydrofuran	109-99-9		<2	ug/L					U	11/29/12
trans-1,2-Dichloroethene	156-60-5		<1	ug/L					U	11/29/12
cis-1,2-Dichloroethene	156-59-2		<1	ug/L					U	11/29/12
Propionitrile	107-12-0		<2	ug/L					U	11/29/12
1,4-Dichlorobenzene	106-46-7		<1	ug/L					U	11/29/12
LCS			**QC Sample #85739**							
1,1-Dichloroethene	75-35-4		19	ug/L	75.4	75 - 125				11/29/12
Trichloroethene	79-01-6		25	ug/L	98.5	75 - 125				11/29/12
Benzene	71-43-2		25	ug/L	100.4	75 - 125				11/29/12
Toluene	108-88-3		26	ug/L	102.1	75 - 125				11/29/12
Chlorobenzene	108-90-7		25	ug/L	99.1	75 - 125				11/29/12
1,1-Dichloroethane	75-34-3		23	ug/L	90.5	75 - 125				11/29/12
Ethylbenzene	100-41-4		27	ug/L	107.5	75 - 125				11/29/12
1,2-Dichloroethane	107-06-2		25	ug/L	101.8	75 - 125				11/29/12
1,1,1-Trichloroethane	71-55-6		26	ug/L	103.9	75 - 125				11/29/12
Carbon disulfide	75-15-0		19	ug/L	76.6	75 - 125				11/29/12
1,1,2-Trichloroethane	79-00-5		23	ug/L	93	75 - 125				11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
trans-1,2-Dichloroethene	156-60-5		23	ug/L	90.9	75 - 125				11/29/12
cis-1,2-Dichloroethene	156-59-2		24	ug/L	94.4	75 - 125				11/29/12
MS			**QC Sample #85740**							
			Original 121507003							
1,1-Dichloroethene	75-35-4	<1	19	ug/L	76.4	75 - 125				11/29/12
Trichloroethene	79-01-6	<1	25	ug/L	100.7	75 - 125				11/29/12
Benzene	71-43-2	<1	26	ug/L	103.3	75 - 125				11/29/12
Toluene	108-88-3	<1	26	ug/L	102.9	75 - 125				11/29/12
Chlorobenzene	108-90-7	<1	25	ug/L	101.9	75 - 125				11/29/12
1,1-Dichloroethane	75-34-3	<1	23	ug/L	91.6	75 - 125				11/29/12
Ethylbenzene	100-41-4	<1	27	ug/L	109	75 - 125				11/29/12
1,2-Dichloroethane	107-06-2	<1	26	ug/L	104.8	75 - 125				11/29/12
1,1,1-Trichloroethane	71-55-6	<1	26	ug/L	104.8	75 - 125				11/29/12
Carbon disulfide	75-15-0	<1	20	ug/L	78	75 - 125				11/29/12
1,1,2-Trichloroethane	79-00-5	<1	24	ug/L	97.6	75 - 125				11/29/12
trans-1,2-Dichloroethene	156-60-5	<1	23	ug/L	90.8	75 - 125				11/29/12
cis-1,2-Dichloroethene	156-59-2	<1	24	ug/L	96.6	75 - 125				11/29/12
MSD			**QC Sample #85741**							
			Original 121507003					**Paired**	**85740**	
1,1-Dichloroethene	75-35-4	<1	20	ug/L	80.7	75 - 125	5.50	20		11/29/12
Trichloroethene	79-01-6	<1	26	ug/L	102	75 - 125	1.30	20		11/29/12
Benzene	71-43-2	<1	26	ug/L	104.8	75 - 125	1.50	20		11/29/12
Toluene	108-88-3	<1	26	ug/L	104.9	75 - 125	1.90	20		11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Chlorobenzene	108-90-7	<1	26	ug/L	103	75 - 125	1.10	20		11/29/12
1,1-Dichloroethane	75-34-3	<1	24	ug/L	95.7	75 - 125	4.40	20		11/29/12
Ethylbenzene	100-41-4	<1	28	ug/L	110.6	75 - 125	1.40	20		11/29/12
1,2-Dichloroethane	107-06-2	<1	26	ug/L	105	75 - 125	0.20	20		11/29/12
1,1,1-Trichloroethane	71-55-6	<1	26	ug/L	106	75 - 125	1.10	20		11/29/12
Carbon disulfide	75-15-0	<1	19	ug/L	77.9	75 - 125	0.10	20		11/29/12
1,1,2-Trichloroethane	79-00-5	<1	25	ug/L	98.6	75 - 125	1.00	20		11/29/12
trans-1,2-Dichloroethene	156-60-5	<1	24	ug/L	97.5	75 - 125	7.10	20		11/29/12
cis-1,2-Dichloroethene	156-59-2	<1	25	ug/L	100	75 - 125	3.50	20		11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

Analytical Batch 210940 (QC Batch: 210926) **Test** Gamma Energy Analysis-general
Associated Samples 121507004

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		-6.0	pCi/L			-6.40	20		U	11/29/12
Cesium-134	13967-70-9		-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 # WSCF121507

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit		RQ	Analyzed
Cesium-137	10045-97-3		-0.98	pCi/L		-1777.90	20	*	U	11/29/12
Cobalt-60	10198-40-0		2.8	pCi/L		181.30	20	*	U	11/29/12
Europium-152	14683-23-9		-8.0	pCi/L		-417.60	20	*	U	11/29/12
Europium-154	15585-10-1		0.53	pCi/L		188.30	20	*	U	11/29/12
Europium-155	14391-16-3		5.4	pCi/L		23.70	20	*	U	11/29/12
Potassium-40	13966-00-2		-31	pCi/L		-87.30	20	*	U	11/29/12
Ruthenium-106	13967-48-1		29	pCi/L		23.80	20	*	U	11/29/12
Beryllium-7	13966-02-4		-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 # WSCF121507

Analytical Batch 211120 (QC Batch: 211020) **Test** TC99 by Liquid Scintillation
Associated Samples 121507004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #85788**								
Technetium-99	14133-76-7		-0.40	pCi/L						U	12/01/12
LCS			**QC Sample #85789**								
Technetium-99	14133-76-7		220	pCi/L	101.8	80 - 120					12/01/12
DUP			**QC Sample #85790**								
			Original 121507004								
Technetium-99	14133-76-7	-0.90	0.20	pCi/L			-314.30	20	*	U	12/01/12
MS			**QC Sample #85791**								
			Original 121507004								
Technetium-99	14133-76-7	-0.90	880	pCi/L	101.6	75 - 125					12/01/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

Analytical Batch 211256 (QC Batch: 211015) **Test** Tritium by LSC
Associated Samples 121507003, 121507004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #85780**								
Tritium	10028-17-8		11	pCi/L						U	12/04/12
LCS			**QC Sample #85781**								
Tritium	10028-17-8		3100	pCi/L	99.9	80 - 120					12/04/12
DUP			**QC Sample #85782**								
			Original 121507003								
Tritium	10028-17-8	170	84	pCi/L			69.00	20	*	U	12/04/12
MS			**QC Sample #85783**								
			Original 121507003								
Tritium	10028-17-8	170	20000	pCi/L	95.3	75 - 125					12/04/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121507

Analytical Batch 211317 (QC Batch: 211262) **Test** ICP-6010 - All possible metals
Associated Samples 121507001, 121507002, 121507003, 121507004

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 # WSCF121507

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		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 # WSCF121507

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		10800	ug/L	107.6	75 - 125				12/11/12
Manganese	7439-96-5		1020	ug/L	102.1	75 - 125				12/11/12
Nickel	7440-02-0		985	ug/L	98.5	75 - 125				12/11/12
Potassium	7440-09-7		11200	ug/L	111.7	75 - 125				12/11/12
Silver	7440-22-4		1020	ug/L	101.9	75 - 125				12/11/12
Sodium	7440-23-5		10700	ug/L	107.1	75 - 125				12/11/12
Antimony	7440-36-0		1040	ug/L	104.4	75 - 125				12/11/12
Barium	7440-39-3		1040	ug/L	104.3	75 - 125				12/11/12
Cadmium	7440-43-9		1010	ug/L	101.3	75 - 125				12/11/12
Chromium	7440-47-3		1010	ug/L	101.4	75 - 125				12/11/12
Cobalt	7440-48-4		985	ug/L	98.5	75 - 125				12/11/12
Copper	7440-50-8		1030	ug/L	103.2	75 - 125				12/11/12
Vanadium	7440-62-2		1010	ug/L	101.3	75 - 125				12/11/12
Zinc	7440-66-6		1040	ug/L	104.1	75 - 125				12/11/12
Calcium	7440-70-2		21800	ug/L	109	75 - 125				12/11/12
Strontium	7440-24-6		999	ug/L	99.9	75 - 125				12/11/12
Beryllium	7440-41-7		1030	ug/L	102.8	75 - 125				12/11/12
MSD			**QC Sample #86052**							
			Original 121501017						**Paired 86051**	
Iron	7439-89-6		1010	ug/L	100.6	75 - 125	2.80	20		12/11/12
Magnesium	7439-95-4		11000	ug/L	109.7	75 - 125	0.90	20		12/11/12
Manganese	7439-96-5		1010	ug/L	101.3	75 - 125	0.80	20		12/11/12
Nickel	7440-02-0		966	ug/L	96.6	75 - 125	1.90	20		12/11/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121507

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7		11400	ug/L	114.5	75 - 125	1.70	20		12/11/12
Silver	7440-22-4		1020	ug/L	102	75 - 125	0.00	20		12/11/12
Sodium	7440-23-5		11200	ug/L	111.8	75 - 125	2.00	20		12/11/12
Antimony	7440-36-0		1050	ug/L	104.7	75 - 125	0.30	20		12/11/12
Barium	7440-39-3		1050	ug/L	105.4	75 - 125	1.00	20		12/11/12
Cadmium	7440-43-9		1010	ug/L	100.7	75 - 125	0.60	20		12/11/12
Chromium	7440-47-3		1000	ug/L	100.3	75 - 125	1.10	20		12/11/12
Cobalt	7440-48-4		972	ug/L	97.2	75 - 125	1.30	20		12/11/12
Copper	7440-50-8		1040	ug/L	103.8	75 - 125	0.60	20		12/11/12
Vanadium	7440-62-2		1010	ug/L	101.2	75 - 125	0.10	20		12/11/12
Zinc	7440-66-6		1040	ug/L	103.6	75 - 125	0.50	20		12/11/12
Calcium	7440-70-2		21700	ug/L	108.3	75 - 125	0.20	20		12/11/12
Strontium	7440-24-6		990	ug/L	99	75 - 125	0.70	20		12/11/12
Beryllium	7440-41-7		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 # WSCF121507

Analytical Batch 211518 (QC Batch: 210931) **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 121507004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #85726**							
Strontium-89_90	SR-RAD		-0.50	pCi/L					U	12/12/12
LCS			**QC Sample #85727**							
Strontium-89_90	SR-RAD		92	pCi/L	104	80 - 120				12/12/12
DUP			**QC Sample #85728**							
			Original 121503006							
Strontium-89_90	SR-RAD		2.3	pCi/L			5.50	20		12/12/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

Analytical Batch 211621 (QC Batch: 211133) **Test** GAB Discrete analysis Alpha only
Associated Samples 121507003, 121507004

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 # WSCF121507

Analytical Batch 211622 (QC Batch: 211133)
Associated Samples 121507003, 121507004

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 # WSCF121507

Analytical Batch 211764 (QC Batch: 211627) **Test** ICP-2008 MS All possible metal
Associated Samples 121507004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #86461**							
Uranium	7440-61-1		<0.050	ug/L					U	12/18/12
LCS			**QC Sample #86462**							
Uranium	7440-61-1		42.7	ug/L	106.6	85 - 115				12/18/12
MS			**QC Sample #86463**							
			Original 121507004							
Uranium	7440-61-1	3.30	44.7	ug/L	111.8	70 - 130				12/18/12
MSD			**QC Sample #86464**							
			Original 121507004						**Paired 86463**	
Uranium	7440-61-1	3.30	44.2	ug/L	110.6	70 - 130	1.00	20		12/18/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Analytical Batch 210936 (QC Batch: 210935) **Test** SW-846 8260B Volatiles
Associated Samples 121507003, 121507005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #121507003**							
1,2-Dichloroethane-d4	17060-07-0				96.6	75 - 125				11/29/12
Toluene-d8	2037-26-5				93.1	75 - 125				11/29/12
4-Bromofluorobenzene	460-00-4				98.7	75 - 125				11/29/12
SAMPLE			**Sample #121507005**							
1,2-Dichloroethane-d4	17060-07-0				100.4	75 - 125				11/29/12
Toluene-d8	2037-26-5				92	75 - 125				11/29/12
4-Bromofluorobenzene	460-00-4				97.8	75 - 125				11/29/12
BLANK			**QC Sample #85738**							
1,2-Dichloroethane-d4	17060-07-0				99	75 - 125				11/29/12
Toluene-d8	2037-26-5				93.2	75 - 125				11/29/12
4-Bromofluorobenzene	460-00-4				97	75 - 125				11/29/12
LCS			**QC Sample #85739**							
1,2-Dichloroethane-d4	17060-07-0				98.6	75 - 125				11/29/12

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121507

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				92.8	75 - 125				11/29/12
4-Bromofluorobenzene	460-00-4				93.8	75 - 125				11/29/12
MS			**QC Sample #85740**							
			Original 121507003							
1,2-Dichloroethane-d4	17060-07-0				99.9	75 - 125				11/29/12
Toluene-d8	2037-26-5				92.5	75 - 125				11/29/12
4-Bromofluorobenzene	460-00-4				93.8	75 - 125				11/29/12
MSD			**QC Sample #85741**							
			Original 121507003					**Paired**	**85740**	
1,2-Dichloroethane-d4	17060-07-0				98.6	75 - 125	n/a			11/29/12
Toluene-d8	2037-26-5				93.1	75 - 125	n/a			11/29/12
4-Bromofluorobenzene	460-00-4				94.7	75 - 125	n/a			11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121507

Analytical Batch 211518 (QC Batch: 210931) **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 121507004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #121507004**							
Strontium Nitrate	10042-76-9			mg	76	25 - 105				12/12/12
BLANK			**QC Sample #85726**							
Strontium Nitrate	10042-76-9			mg	64.5	25 - 105				12/12/12
LCS			**QC Sample #85727**							
Strontium Nitrate	10042-76-9			mg	76	25 - 105				12/12/12
DUP			**QC Sample #85728**							
			Original 121503006							
Strontium Nitrate	10042-76-9			mg	78.5	25 - 105	n/a			12/12/12

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

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 6 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 #: 121507
Profile #: S13-012-287
Proj. Mgr.:
Phone:

The following samples were received from you on 11/27/2012 3:10:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
121507001	B2MYJ2	WATER	11/27/2012 12:16	11/27/2012 15:10
		6010-W		
121507002	B2MYK3	WATER	11/27/2012 14:02	11/27/2012 15:10
		6010-W		
121507003	B2MYH9	WATER	11/27/2012 12:16	11/27/2012 15:10
		6010-W; 8260V-W; GAB-AO-W; GAB-BO-W; H3-COL-W		
121507004	B2MYK0	WATER	11/27/2012 14:02	11/27/2012 15:10
		2008-W; 6010-W; GAB-AO-W; GAB-BO-W; GEA-W; H3-COL-W; SR89/90-W; TC99-W		
121507005	B2N2P9	WATER	11/27/2012 12:16	11/27/2012 15:10
		8260V-W		

Test Acronym Description

Test Acronym	Description
2008-W	ICP-MS (W)
6010-W	ICP-AES (W)
8260V-W	Volatiles by 8260B (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 EICHROM Column (W)
SR89/90-W	Strontium 89/90 (GPC) (W)

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

TC99-W	Technetium-99 (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# **S13-012-287**

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 49984	**Ice Chest No.**	N/A
Shipped To (Lab)	Waste Sampling & Characterization	**Method of Shipment**	GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.**	N/A
Protocol	SURV	**Priority:**	31 Days **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

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

Hold Time Total Activity Exemption: Yes ☑ No ☐

121507

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MYJ2	Y	W	11-27-12	1246	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2MYH9	N	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2MYH9	N	W			3x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	14 Days	HCl or H2SO4 to pH <2/Cool-4C
B2MYH9	N	W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B2MYH9	N	W	11-27-12	1246	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Robert Crow	Robert Crow		NOV 27 2012 1510				NOV 27 2012 1510
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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

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

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. # S13-012-294

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	300071E320
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 49 / 84	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days **PRIORITY**	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

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

FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401617.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MYK0 4	N	W	11-27-12	1403	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B2MYK0	N	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2MYK0	N	W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2)	6 Months	HNO3 to pH <2
B2MYK0	N	W			1x500-mL G/P	GAMMA_GS: List-1 (10)	6 Months	HNO3 to pH <2
B2MYK0	N	W			1x1-L G/P	Strontium-89,90 -- Total Sr	6 Months	HNO3 to pH <2
B2MYK0	N	W			1x1-L G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B2MYK0	N	W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None
B2MYK3 2	Y	W	11-27-12	1402	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2

Relinquished By	Robert Crow	Print / Sign	NOV 27 2012	Date/Time	
Relinquished By		Date/Time		Received By	
Relinquished By		Date/Time		Received By	
Relinquished By		Date/Time		Received By	
Relinquished By		Date/Time		Received By	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By	Date/Time

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

PRINTED ON 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. # X13-002-049

Page 1 of 1

Collector	Robert Crow	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X13-002	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	GW Sitewide Surv, FY13	**Logbook No.**	HNF-N-506 49/84	**Ice Chest No.**	N/A
Shipped To (Lab)	Waste Sampling & Characterization	**Method of Shipment**	GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.**	N/A
Protocol	SURV	**Priority:**	31 Days **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

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

Site Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 40 647.
FY12 and FY13 samples cannot be in the same SDG.
These samples can be batched with A, I, S and W13 SAFS

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2N2P9	N	W	11-27-12	1231	1x20-mL P	Activity Scan	6 Months	None
B2N2P9	N	W			3x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	14 Days	HCl or H2SO4 to pH <2/Cool~4C

Relinquished By	Robert Crow	Sign	NOV 27 2012	Date Time	1611	Received By	
Relinquished By				Date Time		Received By	
Relinquished By				Date Time		Received By	
Relinquished By				Date Time		Received By	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer per lab procedure, used in process)					Disposed By	Date Time

Print: Robert Crow

Print: C A Husted

Sign: NOV 27 2012

Date Time: 1611

Matrix *

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

PRINTED ON 11/7/2012

A-6004-842 (REV 2)