

RECEIVED JANUARY 15, 2009

**WSCF Laboratory**

PO Box 1000 S3-30  
Richland, WA 99352  
(509) 373-7005  
(509) 372-0456

**Memorandum**

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To: Michael Neely  
CH2M-HILL PRC  
PO Box 1600  
Richland, WA 99352

Date: January 14, 2009

From: WSCF Laboratory  
WSCF Analytical Chemistry

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF80107

Reference: (1) MOA-FH-CHPRC-2008  
(2) HNF-SD-CD-QAPP-017, Rev 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF80107

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

Electronically signed by Scot Fitzgerald  
For Lab Manager

Attachments 4

**RECEIVED**  
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**ATTACHMENT 1**

**COVER SHEET**

**Consisting of 2 pages  
Including cover page**

**WSCF SAF Number Cross Reference**

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Group # WSCF80107  
Data Deliverable Date 12/25/08

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X08-048	B1W552	80107001	WATER	10/09/08	11/10/08
X08-048	B1W5J4	80107002	WATER	11/09/08	11/10/08
X08-048	B1W553	80107003	WATER	10/09/08	11/10/08
X08-048	B1W5J5	80107004	WATER	11/09/08	11/10/08

**ATTACHMENT 2**

**NARRATIVE**

Consisting of 3 pages  
Including cover page

### Introduction

Four (4) groundwater samples were received at the WSCF Laboratory on November 10, 2008. Samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Memorandum of Agreement (MOA-FH-CHPRC-2008, Rev.0)*, referenced in the cover letter.

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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

### Analytical Methodology for Requested Analyses

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

### Inorganic Comments

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

All QC controls are within the established limits.

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

- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.
- Calcium, Magnesium and Sodium – Sample concentrations exceeded spiking levels by a factor of 4. Spike recoveries are not valid. High/check standard was analyzed to ensure linearity, because the sample concentrations were greater than the calibration standard.

All other 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 QC controls are within the established limits.

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

All QC controls are within the established limits.

**Radiochemistry Comments**

**Rad Chem** – There are no hold times associated with WSCF's radiochemical methods. A Duplicate, Matrix Spike (*Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium*), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gross Alpha (Gross Alpha & Beta Analysis, B1XM26) – Duplicate RPD exceeded established laboratory limits due to low sample activity. No flags issued.
- Gross Beta (Gross Alpha & Beta Analysis, B1XM26) – Duplicate RPD exceeded established laboratory limits due to low sample activity. No flags issued.
- Strontium 89/90 (B1XKC4) – Duplicate RPD was below the established laboratory limit due to low sample activity. No flags issued.

All QC controls are within the established limits.

I certify that this data package is in compliance with the MOA, 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 Laboratory Analytical Manager and Client Services.

**ATTACHMENT 3**

**ANALYTICAL RESULTS**

Consisting of 42 pages  
Including cover page

## WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600  
Richland, WA 99352

Attention: Michael Neely

**Contract #** MOA-FH-CHPRC-2008  
**Group #** WSCF80107  
**Report Date** January 14, 2009

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by Andrew Kopriva

*All radiochemistry 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) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

**Batch QC List**

**Attention** Michael Neely  
**Department** Inorganic

**Group #** WSCF80107  
**Project Number** X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
6384	6384	1	BLANK	2382	BLANK		Anions by Ion Chromatography (Water)
6384	6384	3	LCS	2384	LCS		Anions by Ion Chromatography (Water)
6384	6384	4	SAMPLE	80107003	B1W553		Anions by Ion Chromatography (Water)
6384	6384	5	DUP	2385	B1W553(80107003DUP)	80107003	Anions by Ion Chromatography (Water)
6384	6384	6	MS	2386	B1W553(80107003MS)	80107003	Anions by Ion Chromatography (Water)
6384	6384	7	MSD	2387	B1W553(80107003MSD)	80107003	Anions by Ion Chromatography (Water)
6484	6484	1	BLANK	2389	BLANK		Anions by Ion Chromatography (Water)
6484	6484	3	LCS	2391	LCS		Anions by Ion Chromatography (Water)
6484	6484	4	SAMPLE	80107004	B1W5J5		Anions by Ion Chromatography (Water)
6484	6484	5	DUP	2392	B1W5J5(80107004DUP)	80107004	Anions by Ion Chromatography (Water)
6484	6484	6	MS	2393	B1W5J5(80107004MS)	80107004	Anions by Ion Chromatography (Water)
6484	6484	7	MSD	2394	B1W5J5(80107004MSD)	80107004	Anions by Ion Chromatography (Water)
9984	10184	2	BLANK	2515	BLANK		ICP-6010 - All possible metals
9984	10184	4	LCS	2516	LCS		ICP-6010 - All possible metals
9984	10184	5	MS	2517	B1XK54(80106006MS)	80106006	ICP-6010 - All possible metals
9984	10184	6	MSD	2518	B1XK54(80106006MSD)	80106006	ICP-6010 - All possible metals
9984	10184	19	SAMPLE	80107001	B1W552		ICP-6010 - All possible metals
9984	10184	20	SAMPLE	80107002	B1W5J4		ICP-6010 - All possible metals
9984	10184	21	SAMPLE	80107003	B1W553		ICP-6010 - All possible metals
9984	10184	22	SAMPLE	80107004	B1W5J5		ICP-6010 - All possible metals
12887	13287	6	BLANK	2774	BLANK		ICP-2008 MS All possible metal
12887	13287	9	LCS	2777	LCS		ICP-2008 MS All possible metal
12887	13287	11	SAMPLE	80107001	B1W552		ICP-2008 MS All possible metal

**Batch QC List**

**Attention** Michael Neely  
**Department** Inorganic

**Group #** WSCF80107  
**Project Number** X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
12887	13287	12	MS	2780	B1W552(80107001MS)	80107001	ICP-2008 MS All possible metal
12887	13287	13	MSD	2781	B1W552(80107001MSD)	80107001	ICP-2008 MS All possible metal
12887	13287	15	SAMPLE	80107003	B1W553		ICP-2008 MS All possible metal
12887	13287	18	MSD	2779	B1W553(80107003MSD)	80107003	ICP-2008 MS All possible metal
12887	13287	19	MS	2778	B1W553(80107003MS)	80107003	ICP-2008 MS All possible metal
12887	13287	24	MS	2782	B1XC27(80032005MS)	80032005	ICP-2008 MS All possible metal
12887	13287	25	MSD	2783	B1XC27(80032005MSD)	80032005	ICP-2008 MS All possible metal
14887	14988	6	BLANK	2857	BLANK		ICP-2008 MS All possible metal
14887	14988	9	LCS	2860	LCS		ICP-2008 MS All possible metal
14887	14988	37	SAMPLE	80107002	B1W5J4		ICP-2008 MS All possible metal
14887	14988	38	MS	2863	B1W5J4(80107002MS)	80107002	ICP-2008 MS All possible metal
14887	14988	39	MSD	2864	B1W5J4(80107002MSD)	80107002	ICP-2008 MS All possible metal
14887	14988	42	SAMPLE	80107004	B1W5J5		ICP-2008 MS All possible metal
14887	14988	43	MS	2865	B1W5J5(80107004MS)	80107004	ICP-2008 MS All possible metal
14887	14988	44	MSD	2866	B1W5J5(80107004MSD)	80107004	ICP-2008 MS All possible metal

**Batch QC List**

**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
7184	13987	1	BLANK	2421	BLANK		Strontium 89/90 (GPC/GEA)
7184	13987	2	LCS	2422	LCS		Strontium 89/90 (GPC/GEA)
7184	13987	3	DUP	2423	B1XKC4(80106005DUP)	80106005	Strontium 89/90 (GPC/GEA)
7184	13987	7	SAMPLE	80107003	B1W553		Strontium 89/90 (GPC/GEA)
7184	13987	8	SAMPLE	80107004	B1W5J5		Strontium 89/90 (GPC/GEA)
7784	10789	1	BLANK	2430	BLANK		Tritium by LSC
7784	10789	2	LCS	2431	LCS		Tritium by LSC
7784	10789	3	DUP	2432	B1XKJ4(80106001DUP)	80106001	Tritium by LSC
7784	10789	4	MS	2433	B1XKJ4(80106001MS)	80106001	Tritium by LSC
7784	10789	13	SAMPLE	80107003	B1W553		Tritium by LSC
7784	10789	14	SAMPLE	80107004	B1W5J5		Tritium by LSC
10284	11204	1	BLANK	2526	BLANK		TC99 by Liquid Scintillation
10284	11204	2	LCS	2527	LCS		TC99 by Liquid Scintillation
10284	11204	3	DUP	2528	B1XKC4(80106005DUP)	80106005	TC99 by Liquid Scintillation
10284	11204	4	MS	2529	B1XKC4(80106005MS)	80106005	TC99 by Liquid Scintillation
10284	11204	7	SAMPLE	80107003	B1W553		TC99 by Liquid Scintillation
10284	11204	8	SAMPLE	80107004	B1W5J5		TC99 by Liquid Scintillation
14288	15388	1	BLANK	2838	BLANK		Gross Alpha/Gross Beta
14288	15388	2	LCS	2839	LCS		Gross Alpha/Gross Beta
14288	15388	3	DUP	2840	B1XM26(80106002DUP)	80106002	Gross Alpha/Gross Beta
14288	15388	14	SAMPLE	80107003	B1W553		Gross Alpha/Gross Beta
14288	15388	15	SAMPLE	80107003	B1W553		Gross Alpha/Gross Beta
14288	15388	16	SAMPLE	80107004	B1W5J5		Gross Alpha/Gross Beta

**Batch QC List**

**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

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QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
14288	15388	17	SAMPLE	80107004	B1W5J5		Gross Alpha/Gross Beta

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**Batch QC List**

Attention Michael Neely  
Department Wet Chemistry

Group # WSCF80107  
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
8784		1	LCS	2459	LCS		Total Alkalinity as mg/L CaCO3 (Water)
8784		2	SAMPLE	80107003	B1W553		Total Alkalinity as mg/L CaCO3 (Water)
8784		4	DUP	2460	B1X722(80099013DUP)	80099013	Total Alkalinity as mg/L CaCO3 (Water)
8784		14	LCS	2461	LCS		Total Alkalinity as mg/L CaCO3 (Water)
8784		19	SAMPLE	80107004	B1W5J5		Total Alkalinity as mg/L CaCO3 (Water)
8784		24	LCS	2462	LCS		Total Alkalinity as mg/L CaCO3 (Water)

## Method Reference

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Attention Michael Neely  
Department Inorganic

Group # WSCF80107  
Project Number X08-048

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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.

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<b>LA-505-411</b>	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP-AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emission Spectrometry
<b>LA-505-412</b>	Determination of Trace Elements in Waters & Wastes by ICP-Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
<b>LA-533-410</b>	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography

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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

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**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

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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.

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

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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

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**Attention** Michael Neely  
**Department** Wet Chemistry

**Group #** WSCF80107  
**Project Number** X08-048

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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.

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<b>LA-531-411</b>	Alkalinity		
	EPA-600/4-79-020	310.1	Alkalinity
	HEIS	2320_ALKALINITY	Alkalinity

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

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107001  
 SAF# X08-048  
 Sample ID B1W552

Matrix WATER  
 Sampled 10/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>ICP Prep</b>										<b>11/11/08</b>
<b>ICP-AES</b>										
Antimony	7440-36-0	LA-505-411	U	<60		ug/L	1	60	280	11/19/08
Barium	7440-39-3	LA-505-411		59.5		ug/L	1	4	20	11/19/08
Beryllium	7440-41-7	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Cadmium	7440-43-9	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Calcium	7440-70-2	LA-505-411		31500		ug/L	1	70	360	11/19/08
Chromium	7440-47-3	LA-505-411	U	<10		ug/L	1	10	20	11/19/08
Cobalt	7440-48-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Copper	7440-50-8	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Iron	7439-89-6	LA-505-411	B	21.8		ug/L	1	20	120	11/19/08
Magnesium	7439-95-4	LA-505-411		6660		ug/L	1	50	250	11/19/08
Manganese	7439-96-5	LA-505-411		50.5		ug/L	1	4	20	11/19/08
Nickel	7440-02-0	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Potassium	7440-09-7	LA-505-411		7060		ug/L	1	200	850	11/19/08
Silver	7440-22-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Sodium	7440-23-5	LA-505-411		40200		ug/L	1	50	260	11/19/08
Strontium	7440-24-6	LA-505-411		272		ug/L	1	4	20	11/19/08
Vanadium	7440-62-2	LA-505-411	U	<10		ug/L	1	10	60	11/19/08

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

B - Analyte < the RDL 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 sample recovery outside control limits.

M - Duplicate precision criteria not met.  
 U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107001  
 SAF# X08-048  
 Sample ID B1W552

Matrix WATER  
 Sampled 10/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Zinc	7440-66-6	LA-505-411		167		ug/L	1	9	45	11/19/08
<b>ICPMS Prep</b>										<b>11/18/08</b>
<b>ICP-MS</b>										
Arsenic	7440-38-2	LA-505-412	U	<0.4		ug/L	1	0.4	4.0	11/18/08
Lead	7439-92-1	LA-505-412		1.92		ug/L	1	0.1	1.0	11/18/08
Thallium	7440-28-0	LA-505-412	B	0.0935		ug/L	1	0.05	0.50	11/18/08

MDL = Minimum Detection  
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 TP Err = Total Propagated  
 DF = Dilution Factor  
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B - Analyte < the RDL but >= the IDL/MDL. (Inorganic)  
 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 sample recovery outside control limits.

M - Duplicate precision criteria not met.  
 U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107002  
 SAF# X08-048  
 Sample ID B1W5J4

Matrix WATER  
 Sampled 11/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										11/11/08
ICP-AES										
Antimony	7440-36-0	LA-505-411	U	<60		ug/L	1	60	280	11/19/08
Barium	7440-39-3	LA-505-411		34.8		ug/L	1	4	20	11/19/08
Beryllium	7440-41-7	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Cadmium	7440-43-9	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Calcium	7440-70-2	LA-505-411		23000		ug/L	1	70	360	11/19/08
Chromium	7440-47-3	LA-505-411	U	<10		ug/L	1	10	20	11/19/08
Cobalt	7440-48-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Copper	7440-50-8	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Iron	7439-89-6	LA-505-411	B	109		ug/L	1	20	120	11/19/08
Magnesium	7439-95-4	LA-505-411		6380		ug/L	1	50	250	11/19/08
Manganese	7439-96-5	LA-505-411		36.5		ug/L	1	4	20	11/19/08
Nickel	7440-02-0	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Potassium	7440-09-7	LA-505-411		7000		ug/L	1	200	850	11/19/08
Silver	7440-22-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Sodium	7440-23-5	LA-505-411		34000		ug/L	1	50	260	11/19/08
Strontium	7440-24-6	LA-505-411		160		ug/L	1	4	20	11/19/08
Vanadium	7440-62-2	LA-505-411	U	<10		ug/L	1	10	60	11/19/08

MDL = Minimum Detection  
 RQ = Result Qualifier  
 TP Err = Total Propagated  
 DF = Dilution Factor  
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B - Analyte < the RDL but >= the IDL/MDL. (Inorganic)  
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 X, Y or Z - See comment detail and/or narrative.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107002  
 SAF# X08-048  
 Sample ID B1W5J4

Matrix WATER  
 Sampled 11/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Zinc	7440-66-6	LA-505-411	U	<9		ug/L	1	9	45	11/19/08
ICPMS Prep										11/25/08
ICP-MS										
Arsenic	7440-38-2	LA-505-412	B	2.20		ug/L	1	0.4	4.0	11/25/08
Lead	7439-92-1	LA-505-412	U	<0.1		ug/L	1	0.1	1.0	11/25/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	11/25/08

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

B - Analyte < the RDL 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 sample recovery outside control limits.

M - Duplicate precision criteria not met.  
 U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107003  
 SAF# X08-048  
 Sample ID B1W553

Matrix WATER  
 Sampled 10/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										11/10/08
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	D	3.42		ug/mL	2	0.09	0.80	11/10/08
Fluoride	16984-48-8	LA-533-410	D	0.486		ug/mL	2	0.05	0.40	11/10/08
Nitrate-N	NO3-N	LA-533-410	BD	0.0266		ug/mL	2	0.02	0.20	11/10/08
Nitrite-N	NO2-N	LA-533-410	UD	<0.03		ug/mL	2	0.03	0.20	11/10/08
Sulfate	14808-79-8	LA-533-410	D	3.70		ug/mL	2	0.3	2.0	11/10/08
<b>ICP Prep</b>										11/11/08
<b>ICP-AES</b>										
Antimony	7440-36-0	LA-505-411	U	<60		ug/L	1	60	280	11/19/08
Barium	7440-39-3	LA-505-411		68.3		ug/L	1	4	20	11/19/08
Beryllium	7440-41-7	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Cadmium	7440-43-9	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Calcium	7440-70-2	LA-505-411		34000		ug/L	1	70	360	11/19/08
Chromium	7440-47-3	LA-505-411	U	<10		ug/L	1	10	20	11/19/08
Cobalt	7440-48-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Copper	7440-50-8	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Iron	7439-89-6	LA-505-411		1000		ug/L	1	20	120	11/19/08
Magnesium	7439-95-4	LA-505-411		7050		ug/L	1	50	250	11/19/08

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

B - Analyte < the RDL 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 sample recovery outside control limits.

M - Duplicate precision criteria not met.  
 U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107003  
 SAF# X08-048  
 Sample ID B1W553

Matrix WATER  
 Sampled 10/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Manganese	7439-96-5	LA-505-411		54.5		ug/L	1	4	20	11/19/08
Nickel	7440-02-0	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Potassium	7440-09-7	LA-505-411		6830		ug/L	1	200	850	11/19/08
Silver	7440-22-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Sodium	7440-23-5	LA-505-411		38000		ug/L	1	50	260	11/19/08
Strontium	7440-24-6	LA-505-411		287		ug/L	1	4	20	11/19/08
Vanadium	7440-62-2	LA-505-411	U	<10		ug/L	1	10	60	11/19/08
Zinc	7440-66-6	LA-505-411		2340		ug/L	1	9	45	11/19/08
<b>ICPMS Prep</b>										<b>11/18/08</b>
<b>ICP-MS</b>										
Arsenic	7440-38-2	LA-505-412	U	<0.4		ug/L	1	0.4	4.0	11/18/08
Lead	7439-92-1	LA-505-412		17.5		ug/L	1	0.1	1.0	11/18/08
Thallium	7440-28-0	LA-505-412	B	0.0821		ug/L	1	0.05	0.50	11/18/08
Uranium	7440-61-1	LA-505-412	B	0.125		ug/L	1	0.05	0.20	11/18/08

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

B - Analyte < the RDL 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 sample recovery outside control limits.

M - Duplicate precision criteria not met.  
 U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107004  
 SAF# X08-048  
 Sample ID B1W5J5

Matrix WATER  
 Sampled 11/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										11/10/08
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	D	4.02		ug/mL	2	0.09	0.80	11/10/08
Fluoride	16984-48-8	LA-533-410	BD	0.289		ug/mL	2	0.05	0.40	11/10/08
Nitrate-N	NO3-N	LA-533-410	D	0.292		ug/mL	2	0.02	0.20	11/10/08
Nitrite-N	NO2-N	LA-533-410	UD	<0.03		ug/mL	2	0.03	0.20	11/10/08
Sulfate	14808-79-8	LA-533-410	D	5.49		ug/mL	2	0.3	2.0	11/10/08
<b>ICP Prep</b>										11/11/08
<b>ICP-AES</b>										
Antimony	7440-36-0	LA-505-411	U	<60		ug/L	1	60	280	11/19/08
Barium	7440-39-3	LA-505-411		35.9		ug/L	1	4	20	11/19/08
Beryllium	7440-41-7	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Cadmium	7440-43-9	LA-505-411	U	<4		ug/L	1	4	20	11/19/08
Calcium	7440-70-2	LA-505-411		23200		ug/L	1	70	360	11/19/08
Chromium	7440-47-3	LA-505-411	U	<10		ug/L	1	10	20	11/19/08
Cobalt	7440-48-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Copper	7440-50-8	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Iron	7439-89-6	LA-505-411		335		ug/L	1	20	120	11/19/08
Magnesium	7439-95-4	LA-505-411		6570		ug/L	1	50	250	11/19/08

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

B - Analyte < the RDL 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 sample recovery outside control limits.

M - Duplicate precision criteria not met.  
 U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.

**WSCF Analytical Results Report**

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Sample # 80107004  
 SAF# X08-048  
 Sample ID B1W5J5

Matrix WATER  
 Sampled 11/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Manganese	7439-96-5	LA-505-411		41.2		ug/L	1	4	20	11/19/08
Nickel	7440-02-0	LA-505-411	U	<6		ug/L	1	6	30	11/19/08
Potassium	7440-09-7	LA-505-411		7040		ug/L	1	200	850	11/19/08
Silver	7440-22-4	LA-505-411	U	<5		ug/L	1	5	25	11/19/08
Sodium	7440-23-5	LA-505-411		34700		ug/L	1	50	260	11/19/08
Strontium	7440-24-6	LA-505-411		164		ug/L	1	4	20	11/19/08
Vanadium	7440-62-2	LA-505-411	U	<10		ug/L	1	10	60	11/19/08
Zinc	7440-66-6	LA-505-411	U	<9		ug/L	1	9	45	11/19/08
<b>ICPMS Prep</b>										<b>11/25/08</b>
<b>ICP-MS</b>										
Arsenic	7440-38-2	LA-505-412	B	2.70		ug/L	1	0.4	4.0	11/25/08
Lead	7439-92-1	LA-505-412	B	0.201		ug/L	1	0.1	1.0	11/25/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	11/25/08
Uranium	7440-61-1	LA-505-412		0.319		ug/L	1	0.05	0.20	11/25/08

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

B - Analyte < the RDL 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 sample recovery outside control limits.

M - Duplicate precision criteria not met.  
 U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.

**WSCF Analytical Results Report**

**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

**Sample #** 80107003  
**SAF#** X08-048  
**Sample ID** B1W553

**Matrix** WATER  
**Sampled** 10/09/08  
**Received** 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Alpha/Beta Prep</b>										<b>12/01/08</b>
<b>Gross Alpha/Beta</b>										
Gross Alpha	12587-46-1	LA-508-415	U	1.48	1.56	pCi/L	1	2.5		12/06/08
Gross Beta	12587-47-2	LA-508-415		10.1	2.75	pCi/L	1	3.6		12/06/08
<b>H3 EICHROM</b>										<b>11/11/08</b>
<b>TRI-CARB LSC</b>										
Tritium	10028-17-8	LA-508-421	U	21.0	67	pCi/L	1	210		11/14/08
<b>SR-89/90</b>										<b>11/11/08</b>
<b>SR-89/90</b>										
Strontium-89/90	SR-RAD	LA-220-406	U	-0.215	1.38	pCi/L	1	1.3		12/05/08
<b>Tc-99</b>										<b>11/12/08</b>
<b>TRI-CARB LSC</b>										
Technetium-99	14133-76-7	LA-508-421	U	-2.80	3.6	pCi/L	1	6.1		11/14/08

MDL = Minimum Detection  
 RQ = Result Qualifier  
 TP Err = Total Propagated  
 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.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Radiochemistry

Group # WSCF80107  
 Project Number X08-048

Sample # 80107004  
 SAF# X08-048  
 Sample ID B1W5J5

Matrix WATER  
 Sampled 11/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Alpha/Beta Prep</b>										12/01/08
<b>Gross Alpha/Beta</b>										
Gross Alpha	12587-46-1	LA-508-415	U	0.00400	0	pCi/L	1	1.6		12/06/08
Gross Beta	12587-47-2	LA-508-415		4.31	2.16	pCi/L	1	3.3		12/06/08
<b>H3 EICHROM</b>										11/11/08
<b>TRI-CARB LSC</b>										
Tritium	10028-17-8	LA-508-421		980	250	pCi/L	1	210		11/14/08
<b>SR-89/90</b>										11/11/08
<b>SR-89/90</b>										
Strontium-89/90	SR-RAD	LA-220-406	U	-1.32	1.36	pCi/L	1	1.3		12/05/08
<b>Tc-99</b>										11/12/08
<b>TRI-CARB LSC</b>										
Technetium-99	14133-76-7	LA-508-421	U	-0.600	3.6	pCi/L	1	6.1		11/14/08

MDL = Minimum Detection  
 RQ = Result Qualifier  
 TP Err = Total Propagated  
 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.

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Wet Chemistry

Group # WSCF80107  
 Project Number X08-048

Sample # 80107003  
 SAF# X08-048  
 Sample ID B1W553

Matrix WATER  
 Sampled 10/09/08  
 Received 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Alkalinity</b>										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		190		mg/L	1	1.0	10	11/11/08

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

B - Analyte < the RDL but >= the IDL/MDL.  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 N - MS and/or MSD sample recovery outside control limits.  
 U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.  
 X, Y or Z - See comment detail and/or narrative.

**WSCF Analytical Results Report**

**Attention** Michael Neely  
**Department** Wet Chemistry

**Group #** WSCF80107  
**Project Number** X08-048

**Sample #** 80107004  
**SAF#** X08-048  
**Sample ID** B1W5J5

**Matrix** WATER  
**Sampled** 11/09/08  
**Received** 11/10/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Alkalinity</b>										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		160		mg/L	1	1.0	10	11/11/08

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

B - Analyte < the RDL but >= the IDL/MDL.  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 N - MS and/or MSD sample recovery outside control limits.  
 U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.  
 X,Y or Z - See comment detail and/or narrative.

**Quality Control Report**

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

QC Batch 6384  
 Associated Samples 80107003

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #2382</b>								
Fluoride	16984-48-8		<0.023	ug/mL					U	11/10/08
Chloride	16887-00-6		<0.047	ug/mL					U	11/10/08
Nitrite-N	NO2-N		<0.013	ug/mL					U	11/10/08
Nitrate-N	NO3-N		<0.012	ug/mL					U	11/10/08
Sulfate	14808-79-8		<0.13	ug/mL					U	11/10/08
<b>LCS</b>		<b>QC Sample #2384</b>								
Fluoride	16984-48-8		1.05	ug/mL	103	90 - 110				11/10/08
Chloride	16887-00-6		1.87	ug/mL	94.1	90 - 110				11/10/08
Nitrite-N	NO2-N		0.951	ug/mL	95.2	90 - 110				11/10/08
Nitrate-N	NO3-N		0.854	ug/mL	94.9	90 - 110				11/10/08
Sulfate	14808-79-8		3.68	ug/mL	92.1	90 - 110				11/10/08
<b>DUP</b>		<b>QC Sample #2385</b>								
		<b>Original 80107003</b>								
Fluoride	16984-48-8	.486	0.492	ug/mL			1.23	20	D	11/10/08
Chloride	16887-00-6	3.42	3.52	ug/mL			2.88	20	D	11/10/08
Nitrite-N	NO2-N	0	<0.026	ug/mL			0.00	20	UD	11/10/08
Nitrate-N	NO3-N	.0266	<0.024	ug/mL			15.40	20	UD	11/10/08
Sulfate	14808-79-8	3.7	3.68	ug/mL			0.54	20	D	11/10/08
<b>MS</b>		<b>QC Sample #2386</b>								
		<b>Original 80107003</b>								

**Quality Control Report**

**Attention** Michael Neely  
**Department** Inorganic

**Group #** WSCF80107  
**Project Number** X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8	.486	1.49	ug/mL	98.7	80 - 120			D	11/10/08
Chloride	16887-00-6	3.42	5.12	ug/mL	85.6	80 - 120			D	11/10/08
Nitrite-N	NO2-N	0	0.955	ug/mL	95.6	80 - 120			D	11/10/08
Nitrate-N	NO3-N	.0266	0.880	ug/mL	95	80 - 120			D	11/10/08
Sulfate	14808-79-8	3.7	7.40	ug/mL	92.6	80 - 120			D	11/10/08
<b>MSD</b>										
<b>QC Sample #2387</b>										
<b>Original 80107003</b>										
<b>Paired 2386</b>										
Fluoride	16984-48-8	.486	1.51	ug/mL	101	80 - 120	2.30	20	D	11/10/08
Chloride	16887-00-6	3.42	5.12	ug/mL	85.6	80 - 120	0.00	20	D	11/10/08
Nitrite-N	NO2-N	0	0.970	ug/mL	97.1	80 - 120	1.56	20	D	11/10/08
Nitrate-N	NO3-N	.0266	0.874	ug/mL	94.2	80 - 120	0.85	20	D	11/10/08
Sulfate	14808-79-8	3.7	7.29	ug/mL	89.9	80 - 120	2.96	20	D	11/10/08

**Quality Control Report**

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

QC Batch 6484  
 Associated Samples 80107004

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #2389</b>								
Fluoride	16984-48-8		<0.023	ug/mL					U	11/10/08
Chloride	16887-00-6		<0.047	ug/mL					U	11/10/08
Nitrite-N	NO2-N		<0.013	ug/mL					U	11/10/08
Nitrate-N	NO3-N		<0.012	ug/mL					U	11/10/08
Sulfate	14808-79-8		<0.13	ug/mL					U	11/10/08
<b>LCS</b>		<b>QC Sample #2391</b>								
Fluoride	16984-48-8		1.04	ug/mL	102	90 - 110				11/10/08
Chloride	16887-00-6		1.88	ug/mL	94.4	90 - 110				11/10/08
Nitrite-N	NO2-N		0.961	ug/mL	96.2	90 - 110				11/10/08
Nitrate-N	NO3-N		0.870	ug/mL	96.8	90 - 110				11/10/08
Sulfate	14808-79-8		3.64	ug/mL	91.1	90 - 110				11/10/08
<b>DUP</b>		<b>QC Sample #2392</b>								
		<b>Original 80107004</b>								
Fluoride	16984-48-8	.289	0.297	ug/mL			2.73	20	BD	11/10/08
Chloride	16887-00-6	4.02	4.04	ug/mL			0.50	20	D	11/10/08
Nitrite-N	NO2-N	0	<0.026	ug/mL			0.00	20	UD	11/10/08
Nitrate-N	NO3-N	.292	0.286	ug/mL			2.08	20	D	11/10/08
Sulfate	14808-79-8	5.49	5.45	ug/mL			0.73	20	D	11/10/08
<b>MS</b>		<b>QC Sample #2393</b>								
		<b>Original 80107004</b>								

# Quality Control Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8	.289	1.30	ug/mL	98.9	80 - 120			D	11/10/08
Chloride	16887-00-6	4.02	5.73	ug/mL	86.1	80 - 120			D	11/10/08
Nitrite-N	NO2-N	0	0.954	ug/mL	95.5	80 - 120			D	11/10/08
Nitrate-N	NO3-N	.292	1.14	ug/mL	94.1	80 - 120			D	11/10/08
Sulfate	14808-79-8	5.49	9.19	ug/mL	92.6	80 - 120			D	11/10/08
<b>MSD</b>										
<b>QC Sample #2394</b>										
<b>Original 80107004</b>										
<b>Paired 2393</b>										
Fluoride	16984-48-8	.289	1.24	ug/mL	92.8	80 - 120	6.36	20	D	11/10/08
Chloride	16887-00-6	4.02	5.73	ug/mL	86	80 - 120	0.12	20	D	11/10/08
Nitrite-N	NO2-N	0	0.982	ug/mL	98.3	80 - 120	2.89	20	D	11/10/08
Nitrate-N	NO3-N	.292	1.10	ug/mL	90.2	80 - 120	4.23	20	D	11/10/08
Sulfate	14808-79-8	5.49	9.26	ug/mL	94.3	80 - 120	1.82	20	D	11/10/08

**Quality Control Report**

Attention Michael Neely  
 Department Wet Chemistry

Group # WSCF80107  
 Project Number X08-048

QC Batch 8784 Test Total Alkalinity as mg/L CaCO3 (Water)  
 Associated Samples 80107003, 80107004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>LCS</b>		<b>QC Sample #2459</b>								
Total Alkalinity as <b>DUP</b>	ALKALINITY	32.1		mg/L	107	80 - 120				11/11/08
		<b>QC Sample #2460</b>								
		<b>Original 80099013</b>								
Total Alkalinity as <b>LCS</b>	ALKALINITY	230		mg/L			0.00	20		11/11/08
		<b>QC Sample #2461</b>								
Total Alkalinity as <b>LCS</b>	ALKALINITY	31.7		mg/L	106	80 - 120				11/11/08
		<b>QC Sample #2462</b>								
Total Alkalinity as	ALKALINITY	31.7		mg/L	106	80 - 120				11/11/08

**Quality Control Report**

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

QC Batch 9984 Test ICP-6010 - All possible metals  
 Associated Samples 80107001, 80107002, 80107003, 80107004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #2515</b>								
Iron	7439-89-6	<25		ug/L					U	11/13/08
Magnesium	7439-95-4	<50		ug/L					U	11/13/08
Manganese	7439-96-5	<4.0		ug/L					U	11/13/08
Nickel	7440-02-0	<6.0		ug/L					U	11/13/08
Potassium	7440-09-7	<170		ug/L					U	11/13/08
Silver	7440-22-4	<5.0		ug/L					U	11/13/08
Sodium	7440-23-5	<51		ug/L					U	11/13/08
Antimony	7440-36-0	<56		ug/L					U	11/13/08
Barium	7440-39-3	<4.0		ug/L					U	11/13/08
Cadmium	7440-43-9	<4.0		ug/L					U	11/13/08
Chromium	7440-47-3	<13		ug/L					U	11/13/08
Cobalt	7440-48-4	<5.0		ug/L					U	11/13/08
Copper	7440-50-8	<6.0		ug/L					U	11/13/08
Vanadium	7440-62-2	<12		ug/L					U	11/13/08
Zinc	7440-66-6	<9.0		ug/L					U	11/13/08
Calcium	7440-70-2	<73		ug/L					U	11/13/08
Strontium	7440-24-6	<4.0		ug/L					U	11/13/08
Beryllium	7440-41-7	<4.0		ug/L					U	11/13/08
<b>LCS</b>		<b>QC Sample #2516</b>								
Iron	7439-89-6		984	ug/L	98.4	80 - 120				11/13/08



# Quality Control Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% RecovLimits	RPD	RPD Limit	RQ	Analyzed
Cadmium	7440-43-9		983	ug/L	98.3 75 - 125				11/19/08
Chromium	7440-47-3		996	ug/L	96.6 75 - 125				11/19/08
Cobalt	7440-48-4		981	ug/L	98.1 75 - 125				11/19/08
Copper	7440-50-8		945	ug/L	94.5 75 - 125				11/19/08
Vanadium	7440-62-2		979	ug/L	96.6 75 - 125				11/19/08
Zinc	7440-66-6		989	ug/L	98.9 75 - 125				11/19/08
Calcium	7440-70-2		58800	ug/L	109 75 - 125				11/19/08
Strontium	7440-24-6		920	ug/L	101 75 - 125				11/19/08
Beryllium	7440-41-7		519	ug/L	104 75 - 125				11/19/08
<b>MSD</b>			<b>QC Sample #2518</b>						
			<b>Original</b>	<b>80106006</b>				<b>Paired</b>	<b>2517</b>
Iron	7439-89-6		1000	ug/L	100 75 - 125	1.41	20		11/19/08
Magnesium	7439-95-4		13100	ug/L	60 75 - 125	3.39	20		11/19/08
Manganese	7439-96-5		1020	ug/L	100 75 - 125	1.01	20		11/19/08
Nickel	7440-02-0		995	ug/L	99.5 75 - 125	1.32	20		11/19/08
Potassium	7440-09-7		15300	ug/L	97 75 - 125	0.41	20		11/19/08
Silver	7440-22-4		965	ug/L	96.5 75 - 125	0.73	20		11/19/08
Sodium	7440-23-5		11100	ug/L	22 75 - 125	16.70	20		11/19/08
Antimony	7440-36-0		964	ug/L	96.4 75 - 125	1.04	20		11/19/08
Barium	7440-39-3		507	ug/L	94.1 75 - 125	0.75	20		11/19/08
Cadmium	7440-43-9		997	ug/L	99.7 75 - 125	1.41	20		11/19/08
Chromium	7440-47-3		1000	ug/L	97.5 75 - 125	0.93	20		11/19/08
Cobalt	7440-48-4		989	ug/L	98.9 75 - 125	0.81	20		11/19/08
Copper	7440-50-8		944	ug/L	94.4 75 - 125	0.11	20		11/19/08
Vanadium	7440-62-2		995	ug/L	98.2 75 - 125	1.64	20		11/19/08
Zinc	7440-66-6		1000	ug/L	100 75 - 125	1.11	20		11/19/08
Calcium	7440-70-2		60100	ug/L	237 75 - 125	74.00	20	*	11/19/08
Strontium	7440-24-6		931	ug/L	103 75 - 125	1.96	20		11/19/08

**Quality Control Report**

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**Attention** Michael Neely  
**Department** Inorganic

**Group #** WSCF80107  
**Project Number** X08-048

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Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		524	ug/L	105	75 - 125	0.96	20		11/19/08

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**Quality Control Report**

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

QC Batch 12887 Test ICP-2008 MS All possible metal  
 Associated Samples 80107001, 80107003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>			<b>QC Sample #2774</b>							
Lead	7439-92-1		<0.10	ug/L					U	11/18/08
Thallium	7440-28-0		<0.050	ug/L					U	11/18/08
Uranium	7440-61-1		<0.050	ug/L					U	11/18/08
Arsenic	7440-38-2		<0.40	ug/L					U	11/18/08
<b>LCS</b>			<b>QC Sample #2777</b>							
Lead	7439-92-1		41.4	ug/L	104	85 - 115				11/18/08
Thallium	7440-28-0		39.8	ug/L	99.4	85 - 115				11/18/08
Uranium	7440-61-1		40.0	ug/L	100	85 - 115				11/18/08
Arsenic	7440-38-2		40.6	ug/L	102	85 - 115				11/18/08
<b>MS</b>			<b>QC Sample #2778</b>							
			<b>Original 80107003</b>							
Lead	7439-92-1	17.5	58.6	ug/L	103	70 - 130				11/18/08
Thallium	7440-28-0	.0821	39.7	ug/L	99.1	70 - 130				11/18/08
Uranium	7440-61-1	.125	41.1	ug/L	102	70 - 130				11/18/08
Arsenic	7440-38-2	.316	41.1	ug/L	103	70 - 130				11/18/08
<b>MSD</b>			<b>QC Sample #2779</b>							
			<b>Original 80107003</b>							
			<b>Paired 2778</b>							
Lead	7439-92-1	17.5	59.3	ug/L	104	70 - 130	0.97	20		11/18/08
Thallium	7440-28-0	.0821	40.4	ug/L	101	70 - 130	1.90	20		11/18/08
Uranium	7440-61-1	.125	41.7	ug/L	104	70 - 130	1.94	20		11/18/08

**Quality Control Report**

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic MS	7440-38-2	.316	42.0	ug/L	105	70 - 130	1.92	20		11/18/08
			QC Sample #2780							
			Original 80107001							
Lead	7439-92-1	1.92	42.5	ug/L	102	70 - 130				11/18/08
Thallium	7440-28-0	.0935	39.3	ug/L	98	70 - 130				11/18/08
Uranium	7440-61-1		40.6	ug/L	102	70 - 130				11/18/08
Arsenic MSD	7440-38-2	.184	41.4	ug/L	103	70 - 130				11/18/08
			QC Sample #2781							
			Original 80107001						Paired 2780	
Lead	7439-92-1	1.92	43.0	ug/L	103	70 - 130	0.98	20		11/18/08
Thallium	7440-28-0	.0935	39.7	ug/L	99	70 - 130	1.02	20		11/18/08
Uranium	7440-61-1		40.9	ug/L	102	70 - 130	0.00	20		11/18/08
Arsenic MS	7440-38-2	.184	42.0	ug/L	105	70 - 130	1.92	20		11/18/08
			QC Sample #2782							
			Original 80032005							
Lead	7439-92-1		41.2	ug/L	103	70 - 130				11/18/08
Thallium	7440-28-0		40.2	ug/L	100	70 - 130				11/18/08
Uranium	7440-61-1		42.6	ug/L	103	70 - 130				11/18/08
Arsenic MSD	7440-38-2		44.0	ug/L	106	70 - 130				11/18/08
			QC Sample #2783							
			Original 80032005						Paired 2782	
Lead	7439-92-1		41.4	ug/L	103	70 - 130	0.00	20		11/18/08
Thallium	7440-28-0		40.2	ug/L	100	70 - 130	0.00	20		11/18/08
Uranium	7440-61-1		42.4	ug/L	102	70 - 130	0.98	20		11/18/08
Arsenic	7440-38-2		42.7	ug/L	102	70 - 130	3.85	20		11/18/08

**Quality Control Report**

Attention Michael Neely  
 Department Inorganic

Group # WSCF80107  
 Project Number X08-048

QC Batch 14887 Test ICP-2008 MS All possible metal  
 Associated Samples 80107002, 80107004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
<b>QC Sample #2857</b>										
Lead	7439-92-1		<0.10	ug/L					U	11/25/08
Thallium	7440-28-0		<0.050	ug/L					U	11/25/08
Uranium	7440-61-1		<0.050	ug/L					U	11/25/08
Arsenic	7440-38-2		<0.40	ug/L					U	11/25/08
<b>LCS</b>										
<b>QC Sample #2860</b>										
Lead	7439-92-1		40.5	ug/L	101	85 - 115				11/25/08
Thallium	7440-28-0		40.3	ug/L	101	85 - 115				11/25/08
Uranium	7440-61-1		40.1	ug/L	100	85 - 115				11/25/08
Arsenic	7440-38-2		38.3	ug/L	95.7	85 - 115				11/25/08
<b>MS</b>										
<b>QC Sample #2863</b>										
<b>Original 80107002</b>										
Lead	7439-92-1	.0451	40.3	ug/L	101	70 - 130				11/25/08
Thallium	7440-28-0	.0112	40.3	ug/L	101	70 - 130				11/25/08
Uranium	7440-61-1		41.6	ug/L	103	70 - 130				11/25/08
Arsenic	7440-38-2	2.2	40.7	ug/L	96.3	70 - 130				11/25/08
<b>MSD</b>										
<b>QC Sample #2864</b>										
<b>Original 80107002</b>										
<b>Paired 2863</b>										
Lead	7439-92-1	.0451	40.6	ug/L	102	70 - 130	0.99	20		11/25/08
Thallium	7440-28-0	.0112	40.7	ug/L	102	70 - 130	0.99	20		11/25/08
Uranium	7440-61-1		41.7	ug/L	103	70 - 130	0.00	20		11/25/08



**Quality Control Report**

**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

**QC Batch** 7184 **Test** Strontium 89/90 (GPC/GEA)  
**Associated Samples** 80107003, 80107004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
Strontium-89/90 LCS	SR-RAD		-1.66	pCi/L					U	12/05/08
Strontium-89/90 DUP	SR-RAD		127	pCi/L	92.3	80 - 120				12/05/08
Strontium-89/90	SR-RAD		-1.78	pCi/L			-55.20	-20 - 20	* U1	12/05/08

# Quality Control Report

Attention Michael Neely  
 Department Radiochemistry

Group # WSCF80107  
 Project Number X08-048

QC Batch 7784 Test Tritium by LSC  
 Associated Samples 80107003, 80107004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Tritium LCS	10028-17-8		46.0	pCi/L						11/14/08
Tritium DUP	10028-17-8		2720	pCi/L	94.22	80 - 120				11/14/08
Tritium MS	10028-17-8		5750	pCi/L			4.81	-20 - 20		11/14/08
Tritium	10028-17-8		26500	pCi/L	92.62	75 - 125				11/14/08

**Quality Control Report**

**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

**QC Batch** 10284  
**Associated Samples** 80107003, 80107004

**Test** TC99 by Liquid Scintillation

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #2526							
Technetium-99 LCS	14133-76-7	-2.20		pCi/L					U	11/14/08
			QC Sample #2527							
Technetium-99 DUP	14133-76-7	171		pCi/L	107.56	80 - 120				11/14/08
			QC Sample #2528							
			Original 80106005							
Technetium-99 MS	14133-76-7	-2.60		pCi/L			-10.91	-20 - 20	U	11/14/08
			QC Sample #2529							
			Original 80106005							
Technetium-99	14133-76-7	695		pCi/L	109.16	75 - 125				11/14/08

**Quality Control Report**

**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

**QC Batch** 14288 **Test** Gross Alpha/Gross Beta  
**Associated Samples** 80107003, 80107004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #2838</b>								
Gross Alpha	12587-46-1	-0.400		pCi/L					U	12/06/08
Gross Beta	12587-47-2	-1.40		pCi/L					U	12/06/08
<b>LCS</b>		<b>QC Sample #2839</b>								
Gross Alpha	12587-46-1	60.7		pCi/L	86.15	80 - 120				12/06/08
Gross Beta	12587-47-2	211		pCi/L	103.62	80 - 120				12/06/08
<b>DUP</b>		<b>QC Sample #2840</b>								
		<b>Original 80106002</b>								
Gross Alpha	12587-46-1	0.210		pCi/L			623.53	-20 - 20	* 1	12/06/08
Gross Beta	12587-47-2	4.63		pCi/L			23.67	-20 - 20	* 1	12/06/08

**Quality Control Report**

**Attention** Michael Neely  
**Department** Radiochemistry

**Group #** WSCF80107  
**Project Number** X08-048

**QC Batch** 7184 **Test** Strontium 89/90 (GPC/GEA)  
**Associated Samples** 80107003, 80107004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
				<b>QC Sample #2421</b>						
Strontium-85 <b>LCS</b>	13967-73-2				87.2	25 - 102.5				12/05/08
				<b>QC Sample #2422</b>						
Strontium-85 <b>DUP</b>	13967-73-2				97	25 - 102.5				12/05/08
				<b>QC Sample #2423 Original 80106005</b>						
Strontium-85 <b>SAMPLE</b>	13967-73-2				86.3	25 - 102.5	5.41			12/05/08
				<b>Sample #80107003</b>						
Strontium-85 <b>SAMPLE</b>	13967-73-2				74.2	25 - 102.5				12/05/08
				<b>Sample #80107004</b>						
Strontium-85	13967-73-2				72.1	25 - 102.5				12/05/08

## Analytical Comment Report

Attention Michael Neely

Group # WSCF80107

Project Number X08-048

**80107001**

**B1W552**

ICP-AES: High/Check standard used to ensure linearity due to sample results exceeding the calibration standard for the following elements: sodium and calcium.  
ICP-AES: The following elements sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid: magnesium, sodium, and calcium.

**80107002**

**B1W5J4**

ICP-AES: High/Check standard used to ensure linearity due to sample results exceeding the calibration standard for the following elements: sodium and calcium.  
ICP-AES: The following elements sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid: magnesium, sodium, and calcium.

**80107003**

**B1W553**

ICP-AES: High/Check standard used to ensure linearity due to sample results exceeding the calibration standard for the following elements: sodium and calcium.  
ICP-AES: The following elements sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid: magnesium, sodium, and calcium.

**80107004**

**B1W5J5**

ICP-AES: High/Check standard used to ensure linearity due to sample results exceeding the calibration standard for the following elements: sodium and calcium.  
ICP-AES: The following elements sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid: magnesium, sodium, and calcium.

### Quality Control Comments

Department Radiochemistry

# Analytical Comment Report

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Attention Michael Neely

Group # WSCF80107  
Project Number X08-048

2423 B1XKC4(80106005DUP)

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

[1] Duplicate RPD out-of-limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

**Department** Radiochemistry

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2840 B1XM26(80106002DUP)

**Analyte** Gross Alpha - Gross Alpha/Gross Beta

[1] Duplicate RPD out-of-limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

2840 B1XM26(80106002DUP)

**Analyte** Gross Beta - Gross Alpha/Gross Beta

[1] Duplicate RPD out-of-limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

**ATTACHMENT4**

**SAMPLE RECEIPT**

Consisting of 4 pages  
Including cover page

# Sample Receipt

**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 1000 S3-30  
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC  
PO #: 300071  
Work Order #: 80107  
Profile #: X08-048-115  
Proj. Mgr.:  
Phone:

The following samples were received from you on 11/10/2008 8:00:00 AM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

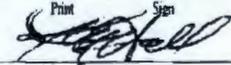
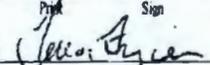
Sample #	Sample ID	Matrix	Collected	Received
		<b>Tests scheduled</b>		
80107001	B1W552	WATER 2008-W; 6010-W	10/9/2008 10:53	11/10/2008 08
80107002	B1W5J4	WATER 2008-W; 6010-W	10/9/2008 12:55	11/10/2008 08
80107003	B1W553	WATER 2008-W; 6010-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; IC-W; SR89/90-W; TC99-W	10/9/2008 10:53	11/10/2008 08
80107004	B1W5J5	WATER 2008-W; 6010-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; IC-W; SR89/90-W; TC99-W	10/9/2008 12:55	11/10/2008 08

### Test Acronym Description

Test Acronym	Description
2008-W	ICP-MS (W)
6010-W	ICP-AES (W)
ALK-W	Total Alkalinity (W)
GAB-AO-W	Gross Alpha/Beta (A only)(W)
GAB-BO-W	Gross Alpha/Beta (B only)(W)
H3-COL-W	Tritium by EICHROM Column (W)
IC-W	Anions by IC (W)
SR89/90-W	Strontium 89/90 (GPC) (W)
TC99-W	Technetium-99 (W)

<b>FLUOR HANFORD</b>	<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>	<b>C.O.C. #</b> <b>X08-048-115</b>
		Page 1 of 1
<b>Collector</b> F. M. Hall	<b>Contact/Requester</b> Steve Tenn	<b>Telephone No.</b> MSN FAX 509-373-5869
<b>SAF No.</b> X08-048	<b>Sampling Origin</b> Hanford Site	<b>Purchase Order/Charge Code</b>
<b>Project Title</b> 2POL CHARACTERIZATION	<b>Handwritten:</b> HNF-NI-506-17	<b>Ice Chest No.</b> Temp.
<b>Shipped To (Lab)</b> Waste Sampling & Characterization	<b>Method of Shipment</b> Govt. Vehicle	<b>Bill of Lading/Air Bill No.</b>
<b>Protocol</b> SURV	<b>Priority: 45 Days</b>	<b>Offsite Property No.</b>
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		<b>SPECIAL INSTRUCTIONS</b> Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Do not combine X SAF samples with other sets. Need SOG to be stand alone. Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	Date	Time	No/Type Container	Sample Analysis	Preservative
B1W552 (F)	001	11/09/08	1053	1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1); 200.8_METALS_ICPMS: Thallium (1)	HNO3 to pH <2
B1W552 (F)				1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W553	003			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1); 200.8_METALS_ICPMS: Thallium (1)	HNO3 to pH <2
B1W553				1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1W553				1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W553				1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool-4C
B1W553				1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool-4C
B1W553				1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1W553				1x1-L G/P	Strontium-89,90 - Total Sr	HNO3 to pH <2
B1W553				1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1W553				1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
<b>ICED</b>						

<b>Relinquished By</b> F. M. Hall	<b>Print</b> 	<b>Sign</b>	<b>Date/Time</b> 11-10-08	<b>Received By</b> TA #722m	<b>Print</b> 	<b>Sign</b>	<b>Date/Time</b> 11-10-08	<b>Matrix *</b>
<b>Relinquished By</b>			<b>Date/Time</b>	<b>Received By</b>			<b>Date/Time</b>	S = Soil DS = Drum Solid SF = Sediment DI = Drum Liquid SG = Solid T = Tissue SL = Sludge W1 = Wine W = Water V = Liquid O = Oil Y = Venection A = Air X = Other
<b>Relinquished By</b>			<b>Date/Time</b>	<b>Received By</b>			<b>Date/Time</b>	
<b>Relinquished By</b>			<b>Date/Time</b>	<b>Received By</b>			<b>Date/Time</b>	

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FLUOR HANFORD		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				C.O.C. # <b>X08-048-200</b>	
Collector <b>F.M. Hall</b>		Contact/Requester Steve Trent		Telephone No. <b>MSIN FAX</b> 509-373-5869		Page 1 of 1	
SAF No. <b>X08-048</b>		Sampling Origin Hanford Site		Purchase Order/Charge Code			
Project Title <b>2POL CHARACTERIZATION</b>		<b>KNF-W-SCG-17</b>		Ice Chest No.      Temp.			
Shipped To (Lab) <b>Waste Sampling &amp; Characterization</b>		Method of Shipment Govt. Vehicle		Bill of Lading/Air Bill No.			
Protocol <b>SLRV</b>		Priority: 45 Days		Offsite Property No.			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				<b>SPECIAL INSTRUCTIONS</b> Hold Time      Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Do not combine X SAF samples with other sets. Need SDG to be stand alone. Site-Wide Generator Knowledge Information Form applies.			
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1W5J4 (F)	052	W	11/10/03	1255	1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1); 200.8_METALS_ICPMS: Thallium (1)	HNO3 to pH <2
B1W5J4 (F)		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W5J5	054	W			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1); 200.8_METALS_ICPMS: Thallium (1)	HNO3 to pH <2
B1W5J5		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1W5J5		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W5J5		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool-4C
B1W5J5		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool-4C
B1W5J5		W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1W5J5		W			1x1-L G/P	Strontium-89,90 - Total Sr	HNO3 to pH <2
B1W5J5		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1W5J5		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
<b>ICED</b>							
Relinquished By <b>F.M. Hall</b>		Print Sign <i>[Signature]</i>		Date/Time <b>11-10-03</b>		Received By <b>JA Ramirez</b>	
Relinquished By		Print Sign		Date/Time		Received By	
Relinquished By		Print Sign		Date/Time		Received By	
Relinquished By		Print Sign		Date/Time		Received By	

- Matrix \*
- S = Soil
  - SF = Sediment
  - SO = Solid
  - SL = Surface
  - W = Water
  - O = FM
  - A = Air
  - DS = Dism Solid
  - DL = Dism Liq
  - T = Tissue
  - WI = Wine
  - I = Initial
  - V = Vegetation
  - X = Other

