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WSCF Laboratory

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Memorandum

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

Date: January 14, 2009

From: WSCF Laboratory
WSCF Analytical Chemistry

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CC:

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Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF80121 ✓

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 WSCF80121

- * 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

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF80121
Data Deliverable Date 12/26/08

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X08-048	B1W5H8	80121001	WATER	11/11/08	11/11/08
X08-048	B1W5H9	80121002	WATER	11/11/08	11/11/08

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Two (2) groundwater samples were received at the WSCF Laboratory on November 11, 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):

- Strontium 89/90 (B1XR B1) – Duplicate RPD exceeded established laboratory limits due to low sample activity. No flags issued.
- TC-99 (B1XJ27) – Duplicate RPD exceeded established laboratory limits 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 30 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 # WSCF80121
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 # WSCF80121
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
10687	10687	1	BLANK	2576	BLANK		Anions by Ion Chromatography (Water)
10687	10687	3	LCS	2577	LCS		Anions by Ion Chromatography (Water)
10687	10687	6	DUP	2578	B1XFP9(80119017DUP)	80119017	Anions by Ion Chromatography (Water)
10687	10687	7	DUP	2578	B1XFP9(80119017DUP)	80119017	Anions by Ion Chromatography (Water)
10687	10687	8	MS	2579	B1XFP9(80119017MS)	80119017	Anions by Ion Chromatography (Water)
10687	10687	9	MS	2579	B1XFP9(80119017MS)	80119017	Anions by Ion Chromatography (Water)
10687	10687	10	MSD	2580	B1XFP9(80119017MSD)	80119017	Anions by Ion Chromatography (Water)
10687	10687	11	MSD	2580	B1XFP9(80119017MSD)	80119017	Anions by Ion Chromatography (Water)
10687	10687	14	SAMPLE	80121002	B1W5H9		Anions by Ion Chromatography (Water)
10687	10687	15	SAMPLE	80121002	B1W5H9		Anions by Ion Chromatography (Water)
11398	11400	8	BLANK	2715	BLANK		ICP-6010 - All possible metals
11398	11400	10	LCS	2716	LCS		ICP-6010 - All possible metals
11398	11400	12	MS	2717	B1XN51(80117003MS)	80117003	ICP-6010 - All possible metals
11398	11400	14	MSD	2718	B1XN51(80117003MSD)	80117003	ICP-6010 - All possible metals
11398	11400	32	SAMPLE	80121001	B1W5H8		ICP-6010 - All possible metals
11398	11400	34	SAMPLE	80121002	B1W5H9		ICP-6010 - All possible metals
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	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
14887	14988	66	SAMPLE	80121001	B1W5H8		ICP-2008 MS All possible metal
14887	14988	67	SAMPLE	80121002	B1W5H9		ICP-2008 MS All possible metal

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF80121
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
10387	10987	1	BLANK	2558	BLANK		TC99 by Liquid Scintillation
10387	10987	2	LCS	2559	LCS		TC99 by Liquid Scintillation
10387	10987	3	DUP	2560	B1XJ27(80109019DUP)	80109019	TC99 by Liquid Scintillation
10387	10987	4	MS	2561	B1XJ27(80109019MS)	80109019	TC99 by Liquid Scintillation
10387	10987	17	SAMPLE	80121002	B1W5H9		TC99 by Liquid Scintillation
10388	10989	1	BLANK	2562	BLANK		Tritium by LSC
10388	10989	2	LCS	2563	LCS		Tritium by LSC
10388	10989	4	DUP	2564	B1XMC9(80117009DUP)	80117009	Tritium by LSC
10388	10989	5	MS	2565	B1XMC9(80117009MS)	80117009	Tritium by LSC
10388	10989	12	SAMPLE	80121002	B1W5H9		Tritium by LSC
11190	13692	1	BLANK	2635	BLANK		Strontium 89/90 (GPC/GEA)
11190	13692	2	LCS	2636	LCS		Strontium 89/90 (GPC/GEA)
11190	13692	3	DUP	2637	B1XRB1(80125001DUP)	80125001	Strontium 89/90 (GPC/GEA)
11190	13692	7	SAMPLE	80121002	B1W5H9		Strontium 89/90 (GPC/GEA)
15288	15688	1	BLANK	2892	BLANK		Gross Alpha/Gross Beta
15288	15688	2	LCS	2893	LCS		Gross Alpha/Gross Beta
15288	15688	3	DUP	2894	B1XMF9(80117011DUP)	80117011	Gross Alpha/Gross Beta
15288	15688	14	SAMPLE	80121002	B1W5H9		Gross Alpha/Gross Beta
15288	15688	15	SAMPLE	80121002	B1W5H9		Gross Alpha/Gross Beta

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF80121
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
12187		1	LCS	2762	LCS		Total Alkalinity as mg/L CaCO3 (Water)
12187		3	DUP	2763	B1XMY8(80109009DUP)	80109009	Total Alkalinity as mg/L CaCO3 (Water)
12187		8	SAMPLE	80121002	B1W5H9		Total Alkalinity as mg/L CaCO3 (Water)
12187		13	LCS	2764	LCS		Total Alkalinity as mg/L CaCO3 (Water)

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF80121
Project Number X08-048

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

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

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

Method Reference

Attention Michael Neely
Department Radiochemistry

Group # WSCF80121
Project Number X08-048

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-508-415	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
LA-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer
HEIS	ALPHA_LSC A/B Liquid Scintillation
HEIS	BETA_LSC A/B Liquid Scintillation
HEIS	TC99_3MDSK_LSC TC99 by Liquid Scintillation
HEIS	TRITIUM_EIE_LSC Tritium, by Eichrome ion exchange, LSC

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

Method Reference

Attention Michael Neely
Department Wet Chemistry

Group # WSCF80121
Project Number X08-048

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

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

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

WSCF Analytical Results Report

Attention Michael Neely
 Department Inorganic

Group # WSCF80121
 Project Number X08-048

Sample # 80121001
 SAF# X08-048
 Sample ID B1W5H8

Matrix WATER
 Sampled 11/11/08
 Received 11/11/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										11/17/08
ICP-AES										
Antimony	7440-36-0	LA-505-411	U	<60		ug/L	1	60	280	12/11/08
Barium	7440-39-3	LA-505-411	U	<4		ug/L	1	4	20	12/11/08
Beryllium	7440-41-7	LA-505-411	U	<4		ug/L	1	4	20	12/11/08
Cadmium	7440-43-9	LA-505-411	U	<4		ug/L	1	4	20	12/11/08
Calcium	7440-70-2	LA-505-411		1230		ug/L	1	70	360	12/11/08
Chromium	7440-47-3	LA-505-411	U	<10		ug/L	1	10	20	12/11/08
Cobalt	7440-48-4	LA-505-411	U	<5		ug/L	1	5	25	12/11/08
Copper	7440-50-8	LA-505-411	U	<6		ug/L	1	6	30	12/11/08
Iron	7439-89-6	LA-505-411	U	<20		ug/L	1	20	120	12/11/08
Magnesium	7439-95-4	LA-505-411	B	84.9		ug/L	1	50	250	12/11/08
Manganese	7439-96-5	LA-505-411	U	<4		ug/L	1	4	20	12/11/08
Nickel	7440-02-0	LA-505-411	U	<6		ug/L	1	6	30	12/11/08
Potassium	7440-09-7	LA-505-411		14000		ug/L	1	200	850	12/11/08
Silver	7440-22-4	LA-505-411	U	<5		ug/L	1	5	25	12/11/08
Sodium	7440-23-5	LA-505-411		1.23E5		ug/L	1	50	260	12/11/08
Strontium	7440-24-6	LA-505-411	B	6.40		ug/L	1	4	20	12/11/08
Vanadium	7440-62-2	LA-505-411	U	<10		ug/L	1	10	60	12/11/08

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. (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 # WSCF80121
 Project Number X08-048

Sample # 80121001
 SAF# X08-048
 Sample ID B1W5H8

Matrix WATER
 Sampled 11/11/08
 Received 11/11/08

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	12/11/08
ICPMS Prep										11/25/08
ICP-MS										
Arsenic	7440-38-2	LA-505-412	U	<0.4		ug/L	1	0.4	4.0	11/26/08
Lead	7439-92-1	LA-505-412	U	<0.1		ug/L	1	0.1	1.0	11/26/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	11/26/08

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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 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 # WSCF80121
 Project Number X08-048

Sample # 80121002
 SAF# X08-048
 Sample ID B1W5H9

Matrix WATER
 Sampled 11/11/08
 Received 11/11/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										11/12/08
Anions by IC										
Fluoride	16984-48-8	LA-533-410	D	8.23		ug/mL	2	0.05	0.40	11/12/08
Chloride	16887-00-6	LA-533-410	D	77.5		ug/mL	10	0.5	4.0	11/12/08
Nitrite-N	NO2-N	LA-533-410	UD	<0.03		ug/mL	2	0.03	0.20	11/12/08
Nitrate-N	NO3-N	LA-533-410	UD	<0.02		ug/mL	2	0.02	0.20	11/12/08
Sulfate	14808-79-8	LA-533-410	UD	<0.3		ug/mL	2	0.3	2.0	11/12/08
ICP Prep										11/17/08
ICP-AES										
Iron	7439-89-6	LA-505-411	U	<20		ug/L	1	20	120	12/11/08
Magnesium	7439-95-4	LA-505-411	U	<50		ug/L	1	50	250	12/11/08
Manganese	7439-96-5	LA-505-411	U	<4		ug/L	1	4	20	12/11/08
Nickel	7440-02-0	LA-505-411	U	<6		ug/L	1	6	30	12/11/08
Potassium	7440-09-7	LA-505-411		15000		ug/L	1	200	850	12/11/08
Silver	7440-22-4	LA-505-411	U	<5		ug/L	1	5	25	12/11/08
Sodium	7440-23-5	LA-505-411		1.21E5		ug/L	1	50	260	12/11/08
Antimony	7440-36-0	LA-505-411	U	<60		ug/L	1	60	280	12/11/08
Barium	7440-39-3	LA-505-411	B	4.00		ug/L	1	4	20	12/11/08
Cadmium	7440-43-9	LA-505-411	U	<4		ug/L	1	4	20	12/11/08

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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 # WSCF80121
 Project Number X08-048

Sample # 80121002
 SAF# X08-048
 Sample ID B1W5H9

Matrix WATER
 Sampled 11/11/08
 Received 11/11/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Chromium	7440-47-3	LA-505-411	U	<10		ug/L	1	10	20	12/11/08
Cobalt	7440-48-4	LA-505-411	U	<5		ug/L	1	5	25	12/11/08
Copper	7440-50-8	LA-505-411	U	<6		ug/L	1	6	30	12/11/08
Vanadium	7440-62-2	LA-505-411	U	<10		ug/L	1	10	60	12/11/08
Zinc	7440-66-6	LA-505-411	U	<9		ug/L	1	9	45	12/11/08
Calcium	7440-70-2	LA-505-411		923		ug/L	1	70	360	12/11/08
Strontium	7440-24-6	LA-505-411	B	4.60		ug/L	1	4	20	12/11/08
Beryllium	7440-41-7	LA-505-411	U	<4		ug/L	1	4	20	12/11/08
ICPMS Prep										11/25/08
ICP-MS										
Lead	7439-92-1	LA-505-412	B	0.305		ug/L	1	0.1	1.0	11/26/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	11/26/08
Uranium	7440-61-1	LA-505-412	U	<0.05		ug/L	1	0.05	0.20	11/26/08
Arsenic	7440-38-2	LA-505-412	U	<0.4		ug/L	1	0.4	4.0	11/26/08

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 # WSCF80121
 Project Number X08-048

Sample # 80121002
 SAF# X08-048
 Sample ID B1W5H9

Matrix WATER
 Sampled 11/11/08
 Received 11/11/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										12/02/08
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	-1.34	1.76	pCi/L	1	3.6		12/09/08
Gross Beta	12587-47-2	LA-508-415		9.11	3.09	pCi/L	1	4.2		12/09/08
H3 EICHROM										11/12/08
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421	U	47.3	183	pCi/L	1	220		11/13/08
SR-89/90										11/17/08
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	0.265	1.35	pCi/L	1	1.0		12/03/08
Tc-99										11/12/08
TRI-CARB LSC										
Technetium-99	14133-76-7	LA-508-421	U	0.900	3.5	pCi/L	1	5.7		11/15/08

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 # WSCF80121
Project Number X08-048

Sample # 80121002
SAF# X08-048
Sample ID B1W5H9

Matrix WATER
Sampled 11/11/08
Received 11/11/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alkalinity										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		160		mg/L	1	1.0	10	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.
 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 # WSCF80121
 Project Number X08-048

QC Batch 10687
 Associated Samples 80121002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #2576								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/12/08
Chloride	16887-00-6	<0.047		ug/mL					U	11/12/08
Nitrite-N	NO2-N	<0.013		ug/mL					U	11/12/08
Nitrate-N	NO3-N	<0.012		ug/mL					U	11/12/08
Sulfate	14808-79-8	<0.13		ug/mL					U	11/12/08
LCS		QC Sample #2577								
Fluoride	16984-48-8	0.942		ug/mL	92.3	90 - 110				11/12/08
Chloride	16887-00-6	1.86		ug/mL	93.6	90 - 110				11/12/08
Nitrite-N	NO2-N	0.915		ug/mL	91.6	90 - 110				11/12/08
Nitrate-N	NO3-N	0.812		ug/mL	90.3	90 - 110				11/12/08
Sulfate	14808-79-8	3.82		ug/mL	95.4	90 - 110				11/12/08
DUP		QC Sample #2578								
		Original 80119017								
Fluoride	16984-48-8	1.11		ug/mL			4.41	20	D	11/12/08
Chloride	16887-00-6	32.0		ug/mL			0.63	20	D	11/12/08
Nitrite-N	NO2-N	1.22		ug/mL			0.00	20	D	11/12/08
Nitrate-N	NO3-N	19.2		ug/mL			0.52	20	D	11/12/08
Sulfate	14808-79-8	70.9		ug/mL			0.28	20	D	11/12/08
MS		QC Sample #2579								
		Original 80119017								

Quality Control Report

Attention Michael Neely
 Department Inorganic

Group # WSCF80121
 Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8		2.05	ug/mL	87.1	80 - 120			D	11/12/08
Chloride	16887-00-6		41.0	ug/mL	93	80 - 120			D	11/12/08
Nitrite-N	NO2-N		5.87	ug/mL	93.1	80 - 120			D	11/12/08
Nitrate-N	NO3-N		23.4	ug/mL	94.7	80 - 120			D	11/12/08
Sulfate	14808-79-8		89.9	ug/mL	96.2	80 - 120			D	11/12/08
MSD			QC Sample #2580							
			Original 80119017					Paired 2579		
Fluoride	16984-48-8		2.02	ug/mL	84.2	80 - 120	3.39	20	D	11/12/08
Chloride	16887-00-6		41.1	ug/mL	94.2	80 - 120	1.28	20	D	11/12/08
Nitrite-N	NO2-N		5.93	ug/mL	94.3	80 - 120	1.28	20	D	11/12/08
Nitrate-N	NO3-N		23.5	ug/mL	97.2	80 - 120	2.61	20	D	11/12/08
Sulfate	14808-79-8		89.4	ug/mL	93.6	80 - 120	2.74	20	D	11/12/08

Quality Control Report

Attention Michael Neely
 Department Inorganic

Group # WSCF80121
 Project Number X08-048

QC Batch 11398 Test ICP-6010 - All possible metals
 Associated Samples 80121001, 80121002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			QC Sample #2715							
Iron	7439-89-6	<25		ug/L					U	12/11/08
Magnesium	7439-95-4	<50		ug/L					U	12/11/08
Manganese	7439-96-5	<4.0		ug/L					U	12/11/08
Nickel	7440-02-0	<6.0		ug/L					U	12/11/08
Potassium	7440-09-7	<170		ug/L					U	12/11/08
Silver	7440-22-4	<5.0		ug/L					U	12/11/08
Sodium	7440-23-5	<51		ug/L					U	12/11/08
Antimony	7440-36-0	<56		ug/L					U	12/11/08
Barium	7440-39-3	<4.0		ug/L					U	12/11/08
Cadmium	7440-43-9	<4.0		ug/L					U	12/11/08
Chromium	7440-47-3	<13		ug/L					U	12/11/08
Cobalt	7440-48-4	<5.0		ug/L					U	12/11/08
Copper	7440-50-8	<6.0		ug/L					U	12/11/08
Vanadium	7440-62-2	<12		ug/L					U	12/11/08
Zinc	7440-66-6	<9.0		ug/L					U	12/11/08
Calcium	7440-70-2	<73		ug/L					U	12/11/08
Strontium	7440-24-6	<4.0		ug/L					U	12/11/08
Beryllium	7440-41-7	<4.0		ug/L					U	12/11/08
LCS			QC Sample #2716							
Iron	7439-89-6	981		ug/L	98.1	80 - 120				12/11/08

Quality Control Report

Attention Michael Neely
 Department Inorganic

Group # WSCF80121
 Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		986	ug/L	98.6	80 - 120				12/11/08
Manganese	7439-96-5		989	ug/L	98.9	80 - 120				12/11/08
Nickel	7440-02-0		1000	ug/L	100	80 - 120				12/11/08
Potassium	7440-09-7		10800	ug/L	108	80 - 120				12/11/08
Silver	7440-22-4		976	ug/L	97.6	80 - 120				12/11/08
Sodium	7440-23-5		1060	ug/L	106	80 - 120				12/11/08
Antimony	7440-36-0		1010	ug/L	101	80 - 120				12/11/08
Barium	7440-39-3		466	ug/L	93.3	80 - 120				12/11/08
Cadmium	7440-43-9		1010	ug/L	101	80 - 120				12/11/08
Chromium	7440-47-3		940	ug/L	94	80 - 120				12/11/08
Cobalt	7440-48-4		991	ug/L	99.1	80 - 120				12/11/08
Copper	7440-50-8		998	ug/L	99.8	80 - 120				12/11/08
Vanadium	7440-62-2		974	ug/L	97.4	80 - 120				12/11/08
Zinc	7440-66-6		1010	ug/L	101	80 - 120				12/11/08
Calcium	7440-70-2		1170	ug/L	117	80 - 120				12/11/08
Strontium	7440-24-6		501	ug/L	100	80 - 120				12/11/08
Beryllium	7440-41-7		531	ug/L	106	80 - 120				12/11/08
MS										
			QC Sample #2717							
			Original 80117003							
Iron	7439-89-6		983	ug/L	98.3	75 - 125				12/11/08
Magnesium	7439-95-4		21700	ug/L	91	75 - 125				12/11/08
Manganese	7439-96-5		989	ug/L	98.9	75 - 125				12/11/08
Nickel	7440-02-0		967	ug/L	96.7	75 - 125				12/11/08
Potassium	7440-09-7		18800	ug/L	98.6	75 - 125				12/11/08
Silver	7440-22-4		969	ug/L	96.9	75 - 125				12/11/08
Sodium	7440-23-5		27700	ug/L	89	75 - 125				12/11/08
Antimony	7440-36-0		971	ug/L	97.1	75 - 125				12/11/08
Barium	7440-39-3		541	ug/L	94.5	75 - 125				12/11/08

Quality Control Report

Attention Michael Neely
 Department Inorganic

Group # WSCF80121
 Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Cadmium	7440-43-9		985	ug/L	98.5	75 - 125				12/11/08
Chromium	7440-47-3		965	ug/L	95	75 - 125				12/11/08
Cobalt	7440-48-4		964	ug/L	96.4	75 - 125				12/11/08
Copper	7440-50-8		944	ug/L	94.4	75 - 125				12/11/08
Vanadium	7440-62-2		990	ug/L	97.2	75 - 125				12/11/08
Zinc	7440-66-6		987	ug/L	98.7	75 - 125				12/11/08
Calcium	7440-70-2		78700	ug/L	2	75 - 125				12/11/08
Strontium	7440-24-6		1030	ug/L	102	75 - 125				12/11/08
Beryllium	7440-41-7		516	ug/L	103	75 - 125				12/11/08
MSD			QC Sample #2718							
			Original 80117003						Paired 2717	
Iron	7439-89-6		987	ug/L	98.7	75 - 125	0.41	20		12/11/08
Magnesium	7439-95-4		21400	ug/L	64	75 - 125	34.80	20	*	12/11/08
Manganese	7439-96-5		989	ug/L	98.9	75 - 125	0.00	20		12/11/08
Nickel	7440-02-0		966	ug/L	96.6	75 - 125	0.10	20		12/11/08
Potassium	7440-09-7		18500	ug/L	95.3	75 - 125	3.40	20		12/11/08
Silver	7440-22-4		958	ug/L	95.8	75 - 125	1.14	20		12/11/08
Sodium	7440-23-5		27000	ug/L	24	75 - 125	115.00	20	*	12/11/08
Antimony	7440-36-0		946	ug/L	94.6	75 - 125	2.61	20		12/11/08
Barium	7440-39-3		540	ug/L	94.3	75 - 125	0.21	20		12/11/08
Cadmium	7440-43-9		978	ug/L	97.8	75 - 125	0.71	20		12/11/08
Chromium	7440-47-3		980	ug/L	96.5	75 - 125	1.57	20		12/11/08
Cobalt	7440-48-4		963	ug/L	96.3	75 - 125	0.10	20		12/11/08
Copper	7440-50-8		939	ug/L	93.9	75 - 125	0.53	20		12/11/08
Vanadium	7440-62-2		986	ug/L	96.8	75 - 125	0.41	20		12/11/08
Zinc	7440-66-6		986	ug/L	98.6	75 - 125	0.10	20		12/11/08
Calcium	7440-70-2		78000	ug/L	-73	75 - 125	-211.00	20		12/11/08
Strontium	7440-24-6		1020	ug/L	101	75 - 125	0.99	20		12/11/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80121
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		516	ug/L	103	75 - 125	0.00	20		12/11/08

Quality Control Report

Attention Michael Neely
 Department Wet Chemistry

Group # WSCF80121
 Project Number X08-048

QC Batch 12187
 Associated Samples 80121002

Test Total Alkalinity as mg/L CaCO3 (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS		QC Sample #2762								
Total Alkalinity as DUP	ALKALINITY	30.6	mg/L	102	80 - 120					11/18/08
		QC Sample #2763 Original 80109009								
Total Alkalinity as LCS	ALKALINITY	97.0	mg/L				1.04	20		11/18/08
		QC Sample #2764								
Total Alkalinity as	ALKALINITY	31.4	mg/L	105	80 - 120					11/18/08

Quality Control Report

Attention Michael Neely
 Department Inorganic

Group # WSCF80121
 Project Number X08-048

QC Batch 14887 Test ICP-2008 MS All possible metal
 Associated Samples 80121001, 80121002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limts	RPD	RPD Limit	RQ	Analyzed
BLANK										
QC Sample #2857										
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
LCS										
QC Sample #2860										
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
MS										
QC Sample #2865										
Original 80107004										
Lead	7439-92-1		40.9	ug/L	102	70 - 130				11/25/08
Thallium	7440-28-0		40.4	ug/L	101	70 - 130				11/25/08
Uranium	7440-61-1		41.7	ug/L	103	70 - 130				11/25/08
Arsenic	7440-38-2		41.6	ug/L	97.3	70 - 130				11/25/08
MSD										
QC Sample #2866										
Original 80107004										
Paired 2865										
Lead	7439-92-1		40.3	ug/L	100	70 - 130	1.98	20		11/25/08
Thallium	7440-28-0		39.3	ug/L	98.4	70 - 130	2.61	20		11/25/08
Uranium	7440-61-1		41.4	ug/L	103	70 - 130	0.00	20		11/25/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80121
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		41.4	ug/L	96.7	70 - 130	0.62	20		11/25/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80121
Project Number X08-048

QC Batch 10387
Associated Samples 80121002

Test TC99 by Liquid Scintillation

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
										QC Sample #2558
Technetium-99 LCS	14133-76-7		3.50	pCi/L						11/15/08
										QC Sample #2559
Technetium-99 DUP	14133-76-7		163	pCi/L	102.6	80 - 120				11/15/08
										QC Sample #2560
										Original 80109019
Technetium-99 MS	14133-76-7		5.10	pCi/L			285.71	-20 - 20	* 1	11/15/08
										QC Sample #2561
										Original 80109019
Technetium-99	14133-76-7		658	pCi/L	103.41	75 - 125				11/15/08

Quality Control Report

Attention Michael Neely
 Department Radiochemistry

Group # WSCF80121
 Project Number X08-048

QC Batch 10388
 Associated Samples 80121002

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #2562							
Tritium LCS	10028-17-8	14.0		pCi/L						11/13/08
			QC Sample #2563							
Tritium DUP	10028-17-8	2690		pCi/L	93.58	80 - 120				11/13/08
			QC Sample #2564							
			Original 80117009							
Tritium MS	10028-17-8	8420		pCi/L			0.95	-20 - 20		11/13/08
			QC Sample #2565							
			Original 80117009							
Tritium	10028-17-8	28000		pCi/L	87.26	75 - 125				11/13/08

Quality Control Report

Attention Michael Neely
 Department Radiochemistry

Group # WSCF80121
 Project Number X08-048

QC Batch 11190
 Associated Samples 80121002

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Strontium-89/90 LCS	SR-RAD		-0.453	pCi/L					U	12/03/08
Strontium-89/90 DUP	SR-RAD		143	pCi/L	103.8	80 - 120				12/03/08
Strontium-89/90	SR-RAD		-0.935	pCi/L			1666.67	-20 - 20	* U1	12/03/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80121
Project Number X08-048

QC Batch 15288 **Test** Gross Alpha/Gross Beta
Associated Samples 80121002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #2892								
Gross Alpha	12587-46-1		-0.446	pCi/L					U	12/09/08
Gross Beta	12587-47-2		-0.450	pCi/L					U	12/09/08
LCS		QC Sample #2893								
Gross Alpha	12587-46-1		36.3	pCi/L	93.68	80 - 120				12/09/08
Gross Beta	12587-47-2		126	pCi/L	112.5	80 - 120				12/09/08
DUP		QC Sample #2894								
		Original 80117011								
Gross Alpha	12587-46-1		94.0	pCi/L			5.08	-20 - 20		12/09/08
Gross Beta	12587-47-2		2790	pCi/L			5.15	-20 - 20		12/09/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80121
Project Number X08-048

QC Batch 11190 **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 80121002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
										QC Sample #2635
Strontium-85 LCS	13967-73-2				91.4	25 - 102.5				12/03/08
										QC Sample #2636
Strontium-85 DUP	13967-73-2				99	25 - 102.5				12/03/08
										QC Sample #2637
										Original 80125001
Strontium-85 SAMPLE	13967-73-2				79.4	25 - 102.5	16.67			12/03/08
										Sample #80121002
Strontium-85	13967-73-2				83.8	25 - 102.5				12/03/08

Analytical Comment Report

Attention Michael Neely

Group # WSCF80121
Project Number X08-048

80121001 **B1W5H8**

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

80121002 **B1W5H9**

ICP-AES: High/Check standard used to ensure linearity
due to sample results exceeding the calibration standard
for the following elements: sodium.
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

Analytical Comment Report

Attention Michael Neely

Group # WSCF80121

Project Number X08-048

Quality Control Comments

Department Radiochemistry

2560 B1XJ27(80109019DUP)

Analyte Technetium-99 - TC99 by Liquid Scintillation

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

Department Radiochemistry

2637 B1XRB1(80125001DUP)

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.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 3 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 #: 80121
Profile #: X08-048-195
Proj. Mgr.:
Phone:

The following samples were received from you on 11/11/2008 2:00:00 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		
80121001	B1W5H8	WATER 2008-W; 6010-W	11/11/2008 10:23	11/11/2008 14
80121002	B1W5H9	WATER 2008-W; 6010-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; IC-W; SR89/90-W; TC99-W	11/11/2008 10:23	11/11/2008 14

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 EICHRON Column (W)
IC-W	Anions by IC (W)
SR89/90-W	Strontium 89/90 (GPC) (W)
TC99-W	Technetium-99 (W)

Wednesday, November 12, 2008 4:49:43 AM
Page 2 of 2



FLUOR HANFORD		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X08-048-195	
Collector KJ Young		Contact/Requester Steve Trent		Telephone No. 509-373-5869		MSIN FAX	
SAF No. X08-048		Sampling Origin Hanford Site		Purchase Order/Charge Code			
Project Title 2PO1 CHARACTERIZATION		HNF-N-506-16		Ice Chest No. 6W503		Temp.	
Shipped To (Lab) Waste Sampling & Characterization		Method of Shipment Govt. Vehicle		Bill of Lading/Air Bill No.			
Protocol SURV		Priority: 45 Days		Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS 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.			
80121							
Sample No.	Lab ID	Date	Time	No/Type Container	Sample Analysis	Preservative	
B1W5H8 (F)	001	W 11/11/08	10:33	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	
B1W5H8 (F)		W		1x500-mL G/P	6010_METALS_ICP: Lith-3 (18)	HNO3 to pH <2	
B1W5H9		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	
B1W5H9		W		1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2	
B1W5H9		W		1x500-mL G/P	6010_METALS_ICP: Lith-3 (18)	HNO3 to pH <2	
B1W5H9		W		1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool-4C	
B1W5H9		W		1x500-mL P	300.0_ANIONS_IC: Lith-1 (5)	Cool-4C	
B1W5H9		W		1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2	
B1W5H9		W		1x1-L G/P	Strontium-89,90 - Total Sr	HNO3 to pH <2	
B1W5H9		W		1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2	
B1W5H9		W		1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None	
ICED							
Relinquished By KJ Young		Print <i>[Signature]</i>		Sign <i>[Signature]</i>		Date/Time NOV 11 2008	
Received By JA Frazier		Print <i>[Signature]</i>		Sign <i>[Signature]</i>		Date/Time NOV 11 2008	
Relinquished By		Date/Time		Received By		Date/Time	
Relinquished By		Date/Time		Received By		Date/Time	
Relinquished By		Date/Time		Received By		Date/Time	
Relinquished By		Date/Time		Received By		Date/Time	

- Matrix *
- S = Soil
 - SE = Sediment
 - SO = Solid
 - SL = Slurries
 - W = Water
 - O = Oil
 - A = Air
 - DS = Drum Solid
 - DL = Drum Liquid
 - T = Tissue
 - WI = Wine
 - L = Liquid
 - V = Vegetation
 - X = Other

Sample Receipt