0080202

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WSCF Laboratory

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

Memorandum

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 WSCF80098

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 WCSF80098

* 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

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF80098
Data Deliverable Date 12/21/08

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X08-048	B1W5F0	80098001	WATER	11/06/08	11/06/08
X08-048	B1W5F1	80098002	WATER	11/06/08	11/06/08
X08-048	B1W5F7	80098003	WATER	11/06/08	11/06/08
X08-048	B1W571	80098004	WATER	11/06/08	11/06/08
X08-048	B1W5F6	80098005	WATER	11/06/08	11/06/08
X08-048	B1W570	80098006	WATER	11/06/08	11/06/08

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF80098

Introduction

Six groundwater samples were received at the WSCF Laboratory on November 6, 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):

- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.

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.

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Attachment 2
Narrative
WSCF80098

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):

- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.

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.

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, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gross Alpha – Duplicate Relative Percent Difference (RPD) exceeded established laboratory limits due to low sample activity. No flags issued.
- Strontium-89/90 – Duplicate RPD exceeded established laboratory limits due to low sample activity. No flags issued.
- Technetium-99 – Duplicate RPD exceeded established laboratory limits due to low sample activity. No flags issued.

All other 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 47 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 #	WSCF80098
Report Date	January 14, 2009

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by Pauline Mix

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 # WSCF80098
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
5951	5951	1	BLANK	2253	BLANK		Anions by Ion Chromatography (Water)
5951	5951	2	LCS	2254	LCS		Anions by Ion Chromatography (Water)
5951	5951	4	SAMPLE	80098003	B1W5F7		Anions by Ion Chromatography (Water)
5951	5951	14	SAMPLE	80098002	B1W5F1		Anions by Ion Chromatography (Water)
5951	5951	15	DUP	2255	B1W5F7(80098003DUP)	80098003	Anions by Ion Chromatography (Water)
5951	5951	16	MS	2256	B1W5F7(80098003MS)	80098003	Anions by Ion Chromatography (Water)
5951	5951	17	MSD	2257	B1W5F7(80098003MSD)	80098003	Anions by Ion Chromatography (Water)
5952	5952	1	BLANK	2260	BLANK		Anions by Ion Chromatography (Water)
5952	5952	3	LCS	2262	LCS		Anions by Ion Chromatography (Water)
5952	5952	5	DUP	2263	B1W571(80098004DUP)	80098004	Anions by Ion Chromatography (Water)
5952	5952	6	MS	2264	B1W571(80098004MS)	80098004	Anions by Ion Chromatography (Water)
5952	5952	7	MSD	2265	B1W571(80098004MSD)	80098004	Anions by Ion Chromatography (Water)
5952	5952	8	SAMPLE	80098004	B1W571		Anions by Ion Chromatography (Water)
5993	6002	5	BLANK	2316	BLANK		ICP-6010 - All possible metals
5993	6002	7	LCS	2317	LCS		ICP-6010 - All possible metals
5993	6002	23	MS	2318	B1X713(80096003MS)	80096003	ICP-6010 - All possible metals
5993	6002	25	MSD	2319	B1X713(80096003MSD)	80096003	ICP-6010 - All possible metals
5993	6002	45	SAMPLE	80098001	B1W5F0		ICP-6010 - All possible metals
5993	6002	47	SAMPLE	80098002	B1W5F1		ICP-6010 - All possible metals
5993	6002	49	SAMPLE	80098003	B1W5F7		ICP-6010 - All possible metals
5993	6002	51	SAMPLE	80098004	B1W571		ICP-6010 - All possible metals
5993	6002	53	SAMPLE	80098005	B1W5F6		ICP-6010 - All possible metals
5993	6002	55	SAMPLE	80098006	B1W570		ICP-6010 - All possible metals

Batch QC List

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
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	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
12887	13287	119	SAMPLE	80098001	B1W5F0		ICP-2008 MS All possible metal
12887	13287	121	SAMPLE	80098002	B1W5F1		ICP-2008 MS All possible metal
12887	13287	128	SAMPLE	80098004	B1W571		ICP-2008 MS All possible metal
12887	13287	129	SAMPLE	80098006	B1W570		ICP-2008 MS All possible metal
12887	13287	134	SAMPLE	80098003	B1W5F7		ICP-2008 MS All possible metal
12887	13287	135	SAMPLE	80098005	B1W5F6		ICP-2008 MS All possible metal

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF80098
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
5987	11200	1	BLANK	2284	BLANK		Tritium by LSC
5987	11200	2	LCS	2285	LCS		Tritium by LSC
5987	11200	3	DUP	2286	B1W5F1(80098002DUP)	80098002	Tritium by LSC
5987	11200	4	MS	2287	B1W5F1(80098002MS)	80098002	Tritium by LSC
5987	11200	5	SAMPLE	80098002	B1W5F1		Tritium by LSC
5987	11200	6	SAMPLE	80098003	B1W5F7		Tritium by LSC
5987	11200	7	SAMPLE	80098004	B1W571		Tritium by LSC
5992	13691	1	BLANK	2313	BLANK		Strontium 89/90 (GPC/GEA)
5992	13691	2	LCS	2314	LCS		Strontium 89/90 (GPC/GEA)
5992	13691	3	DUP	2315	B1TPT8(80095001DUP)	80095001	Strontium 89/90 (GPC/GEA)
5992	13691	6	SAMPLE	80098002	B1W5F1		Strontium 89/90 (GPC/GEA)
5992	13691	7	SAMPLE	80098003	B1W5F7		Strontium 89/90 (GPC/GEA)
5992	13691	8	SAMPLE	80098004	B1W571		Strontium 89/90 (GPC/GEA)
7084	11203	1	BLANK	2417	BLANK		TC99 by Liquid Scintillation
7084	11203	2	LCS	2418	LCS		TC99 by Liquid Scintillation
7084	11203	3	DUP	2419	B1XH01(80079001DUP)	80079001	TC99 by Liquid Scintillation
7084	11203	4	MS	2420	B1XH01(80079001MS)	80079001	TC99 by Liquid Scintillation
7084	11203	12	SAMPLE	80098002	B1W5F1		TC99 by Liquid Scintillation
7084	11203	13	SAMPLE	80098003	B1W5F7		TC99 by Liquid Scintillation
7084	11203	14	SAMPLE	80098004	B1W571		TC99 by Liquid Scintillation
14087	14987	1	BLANK	2826	BLANK		Gross Alpha/Gross Beta
14087	14987	2	LCS	2827	LCS		Gross Alpha/Gross Beta
14087	14987	3	DUP	2828	B1W5F1(80098002DUP)	80098002	Gross Alpha/Gross Beta

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF80098
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
14087	14987	4	SAMPLE	80098002	B1W5F1		Gross Alpha/Gross Beta
14087	14987	5	SAMPLE	80098002	B1W5F1		Gross Alpha/Gross Beta
14087	14987	6	SAMPLE	80098003	B1W5F7		Gross Alpha/Gross Beta
14087	14987	7	SAMPLE	80098003	B1W5F7		Gross Alpha/Gross Beta
14087	14987	8	SAMPLE	80098004	B1W571		Gross Alpha/Gross Beta
14087	14987	9	SAMPLE	80098004	B1W571		Gross Alpha/Gross Beta

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF80098
Project Number X08-048

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
	6584	5	DUP	2399	B1W4V9(80076016DUP)	80076016	Total Alkalinity as mg/L CaCO3 (Water)
	6584	15	LCS	2397	LCS		Total Alkalinity as mg/L CaCO3 (Water)
	6584	23	SAMPLE	80098002	B1W5F1		Total Alkalinity as mg/L CaCO3 (Water)
	6584	26	LCS	2398	LCS		Total Alkalinity as mg/L CaCO3 (Water)
	8784	1	LCS	2459	LCS		Total Alkalinity as mg/L CaCO3 (Water)
	8784	4	DUP	2460	B1X722(80099013DUP)	80099013	Total Alkalinity as mg/L CaCO3 (Water)
	8784	5	SAMPLE	80098004	B1W571		Total Alkalinity as mg/L CaCO3 (Water)
	8784	10	SAMPLE	80098003	B1W5F7		Total Alkalinity as mg/L CaCO3 (Water)
	8784	14	LCS	2461	LCS		Total Alkalinity as mg/L CaCO3 (Water)

Method Reference

Attention	Michael Neely	**Group #**	WSCF80098
Department	Inorganic	**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 Emmision Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	Determination of Trace Elements in Waters & Wastes by ICP-Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
	HEIS	200.8_METALS_ICPMS	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma, Mass Spec.
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.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention	Michael Neely	**Group #**	WSCF80098
Department	Radiochemistry	**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	**Group #**	WSCF80098
Department	Wet Chemistry	**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 # WSCF80098
Project Number X08-048

Sample # 80098001
SAF# X08-048
Sample ID B1W5F0

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**11/07/08**
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		30.9		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		40000		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		12800		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		5930		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		23800		ug/L	1	50	260	12/11/08
Strontium	7440-24-6	LA-505-411		384		ug/L	1	4	20	12/11/08
Vanadium	7440-62-2	LA-505-411	B	17.8		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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098001
SAF# X08-048
Sample ID B1W5F0

Matrix WATER
Sampled 11/06/08
Received 11/06/08

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										**11/18/08**
ICP-MS										
Arsenic	7440-38-2	LA-505-412		5.14		ug/L	1	0.4	4.0	11/18/08
Lead	7439-92-1	LA-505-412	U	<0.1		ug/L	1	0.1	1.0	11/18/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098002
SAF# X08-048
Sample ID B1W5F1

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**11/06/08**
Anions by IC										
Chloride	16887-00-6	LA-533-410	D	10.6		ug/mL	2	0.09	0.80	11/06/08
Fluoride	16984-48-8	LA-533-410	BD	0.193		ug/mL	2	0.05	0.40	11/06/08
Nitrate-N	NO3-N	LA-533-410	D	5.30		ug/mL	2	0.02	0.20	11/06/08
Nitrite-N	NO2-N	LA-533-410	UD	<0.03		ug/mL	2	0.03	0.20	11/06/08
Sulfate	14808-79-8	LA-533-410	D	40.3		ug/mL	2	0.3	2.0	11/06/08
ICP Prep										**11/07/08**
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		30.4		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		39600		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	B	38.0		ug/L	1	20	120	12/11/08
Magnesium	7439-95-4	LA-505-411		12400		ug/L	1	50	250	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)
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

Sample # 80098002
SAF# X08-048
Sample ID B1W5F1

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
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		5630		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		22700		ug/L	1	50	260	12/11/08
Strontium	7440-24-6	LA-505-411		376		ug/L	1	4	20	12/11/08
Vanadium	7440-62-2	LA-505-411	B	17.2		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
ICPMS Prep										**11/18/08**
ICP-MS										
Arsenic	7440-38-2	LA-505-412		5.03		ug/L	1	0.4	4.0	11/18/08
Lead	7439-92-1	LA-505-412	B	0.100		ug/L	1	0.1	1.0	11/18/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	11/18/08
Uranium	7440-61-1	LA-505-412		3.45		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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098003
SAF# X08-048
Sample ID B1W5F7

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**11/06/08**
Anions by IC										
Chloride	16887-00-6	LA-533-410	D	14.5		ug/mL	2	0.09	0.80	11/06/08
Fluoride	16984-48-8	LA-533-410	D	0.488		ug/mL	2	0.05	0.40	11/06/08
Nitrate-N	NO3-N	LA-533-410	UD	<0.02		ug/mL	2	0.02	0.20	11/06/08
Nitrite-N	NO2-N	LA-533-410	UD	<0.03		ug/mL	2	0.03	0.20	11/06/08
Sulfate	14808-79-8	LA-533-410	UD	<0.3		ug/mL	2	0.3	2.0	11/06/08
ICP Prep										**11/07/08**
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		50.7		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		23100		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	B	91.5		ug/L	1	20	120	12/11/08
Magnesium	7439-95-4	LA-505-411		5790		ug/L	1	50	250	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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098003
SAF# X08-048
Sample ID B1W5F7

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Manganese	7439-96-5	LA-505-411		37.0		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		8410		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		46800		ug/L	1	50	260	12/11/08
Strontium	7440-24-6	LA-505-411		158		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
Zinc	7440-66-6	LA-505-411	U	<9		ug/L	1	9	45	12/11/08
ICPMS Prep										**11/18/08**
ICP-MS										
Arsenic	7440-38-2	LA-505-412	B	0.614		ug/L	1	0.4	4.0	11/19/08
Lead	7439-92-1	LA-505-412	U	<0.1		ug/L	1	0.1	1.0	11/19/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	11/19/08
Uranium	7440-61-1	LA-505-412	U	<0.05		ug/L	1	0.05	0.20	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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098004
SAF# X08-048
Sample ID B1W571

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**11/07/08**
Anions by IC										
Chloride	16887-00-6	LA-533-410	D	7.53		ug/mL	2	0.09	0.80	11/07/08
Fluoride	16984-48-8	LA-533-410	BD	0.176		ug/mL	2	0.05	0.40	11/07/08
Nitrate-N	NO3-N	LA-533-410	D	4.43		ug/mL	2	0.02	0.20	11/07/08
Nitrite-N	NO2-N	LA-533-410	UD	<0.03		ug/mL	2	0.03	0.20	11/07/08
Sulfate	14808-79-8	LA-533-410	D	40.1		ug/mL	2	0.3	2.0	11/07/08
ICP Prep										**11/07/08**
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		57.4		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		69700		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	B	26.5		ug/L	1	20	120	12/11/08
Magnesium	7439-95-4	LA-505-411		18400		ug/L	1	50	250	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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098004
SAF# X08-048
Sample ID B1W571

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
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		8450		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		24200		ug/L	1	50	260	12/11/08
Strontium	7440-24-6	LA-505-411		445		ug/L	1	4	20	12/11/08
Vanadium	7440-62-2	LA-505-411	B	11.1		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
ICPMS Prep										**11/18/08**
ICP-MS										
Arsenic	7440-38-2	LA-505-412	B	2.96		ug/L	1	0.4	4.0	11/19/08
Lead	7439-92-1	LA-505-412	U	<0.1		ug/L	1	0.1	1.0	11/19/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	11/19/08
Uranium	7440-61-1	LA-505-412		8.04		ug/L	1	0.05	0.20	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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098005
SAF# X08-048
Sample ID B1W5F6

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**11/07/08**
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		50.6		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		22900		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	B	91.7		ug/L	1	20	120	12/11/08
Magnesium	7439-95-4	LA-505-411		5870		ug/L	1	50	250	12/11/08
Manganese	7439-96-5	LA-505-411		36.5		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		8510		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		47800		ug/L	1	50	260	12/11/08
Strontium	7440-24-6	LA-505-411		159		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

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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098005
SAF# X08-048
Sample ID B1W5F6

Matrix WATER
Sampled 11/06/08
Received 11/06/08

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										**11/18/08**
ICP-MS										
Arsenic	7440-38-2	LA-505-412	B	0.651		ug/L	1	0.4	4.0	11/19/08
Lead	7439-92-1	LA-505-412	U	<0.1		ug/L	1	0.1	1.0	11/19/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098006
SAF# X08-048
Sample ID B1W570

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**11/07/08**
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		56.0		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		69300		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		17800		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		7940		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		22700		ug/L	1	50	260	12/11/08
Strontium	7440-24-6	LA-505-411		438		ug/L	1	4	20	12/11/08
Vanadium	7440-62-2	LA-505-411	B	12.7		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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098006
SAF# X08-048
Sample ID B1W570

Matrix WATER
Sampled 11/06/08
Received 11/06/08

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										**11/18/08**
ICP-MS										
Arsenic	7440-38-2	LA-505-412	B	3.10		ug/L	1	0.4	4.0	11/19/08
Lead	7439-92-1	LA-505-412	U	<0.1		ug/L	1	0.1	1.0	11/19/08
Thallium	7440-28-0	LA-505-412	U	<0.05		ug/L	1	0.05	0.50	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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098002
SAF# X08-048
Sample ID B1W5F1

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**11/25/08**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.527	.92	pCi/L	1	1.6		12/05/08
Gross Beta	12587-47-2	LA-508-415		54.8	6.54	pCi/L	1	2.7		12/05/08
H3 EICHROM										**11/10/08**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		49700	9960	pCi/L	1	220		11/12/08
SR-89/90										**11/10/08**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-0.231	1.15	pCi/L	1	0.93		12/05/08
Tc-99										**11/11/08**
TRI-CARB LSC										
Technetium-99	14133-76-7	LA-508-421		87.0	18.06	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 # WSCF80098
Project Number X08-048

Sample # 80098003
SAF# X08-048
Sample ID B1W5F7

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**11/25/08**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	-0.0990	.714	pCi/L	1	1.5		12/05/08
Gross Beta	12587-47-2	LA-508-415		8.68	2.17	pCi/L	1	2.7		12/05/08
H3 EICHROM										**11/10/08**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421	U	78.4	104	pCi/L	1	220		11/12/08
SR-89/90										**11/10/08**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-0.145	1.09	pCi/L	1	0.95		12/05/08
Tc-99										**11/11/08**
TRI-CARB LSC										
Technetium-99	14133-76-7	LA-508-421	U	-4.20	3.65	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 # WSCF80098
Project Number X08-048

Sample # 80098004
SAF# X08-048
Sample ID B1W571

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**11/25/08**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		3.14	1.93	pCi/L	1	2.5		12/05/08
Gross Beta	12587-47-2	LA-508-415		25.1	4.43	pCi/L	1	4.2		12/05/08
H3 EICHROM										**11/10/08**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		27000	5440	pCi/L	1	220		11/12/08
SR-89/90										**11/10/08**
SR-89/90										
Strontium-89/90	SR-RAD	LA-220-406	U	-0.154	1.07	pCi/L	1	0.84		12/05/08
Tc-99										**11/11/08**
TRI-CARB LSC										
Technetium-99	14133-76-7	LA-508-421		595	119.3	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 # WSCF80098
Project Number X08-048

Sample # 80098002
SAF# X08-048
Sample ID B1W5F1

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alkalinity										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		120		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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098003
SAF# X08-048
Sample ID B1W5F7

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alkalinity										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		170		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 diltution 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 # WSCF80098
Project Number X08-048

Sample # 80098004
SAF# X08-048
Sample ID B1W571

Matrix WATER
Sampled 11/06/08
Received 11/06/08

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alkalinity										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		230		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 diltution 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 # WSCF80098
Project Number X08-048

QC Batch 5951
Associated Samples 80098002, 80098003

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #2253**							
Fluoride	16984-48-8		<0.023	ug/mL					U	11/06/08
Chloride	16887-00-6		<0.047	ug/mL					U	11/06/08
Nitrite-N	NO2-N		<0.013	ug/mL					U	11/06/08
Nitrate-N	NO3-N		<0.012	ug/mL					U	11/06/08
Sulfate	14808-79-8		<0.13	ug/mL					U	11/06/08
LCS			**QC Sample #2254**							
Fluoride	16984-48-8		0.937	ug/mL	91.9	90 - 110				11/06/08
Chloride	16887-00-6		1.86	ug/mL	93.5	90 - 110				11/06/08
Nitrite-N	NO2-N		0.936	ug/mL	93.7	90 - 110				11/06/08
Nitrate-N	NO3-N		0.871	ug/mL	96.8	90 - 110				11/06/08
Sulfate	14808-79-8		3.72	ug/mL	93	90 - 110				11/06/08
DUP			**QC Sample #2255**							
			Original 80098003							
Fluoride	16984-48-8	.488	0.514	ug/mL			5.19	20	D	11/06/08
Chloride	16887-00-6	14.5	14.6	ug/mL			0.69	20	D	11/06/08
Nitrite-N	NO2-N	0	<0.026	ug/mL			0.00	20	UD	11/06/08
Nitrate-N	NO3-N	0	<0.024	ug/mL			0.00	20	UD	11/06/08
Sulfate	14808-79-8	0	<0.26	ug/mL			0.00	20	UD	11/06/08
MS			**QC Sample #2256**							
			Original 80098003							

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8	.488	1.42	ug/mL	91.1	80 - 120			D	11/06/08
Chloride	16887-00-6	14.5	16.1	ug/mL	80.3	80 - 120			D	11/06/08
Nitrite-N	NO2-N	0	1.09	ug/mL	109	80 - 120			D	11/06/08
Nitrate-N	NO3-N	0	0.872	ug/mL	96.9	80 - 120			D	11/06/08
Sulfate	14808-79-8	0	3.74	ug/mL	93.6	80 - 120			D	11/06/08
MSD			**QC Sample #2257**							
			Original 80098003					**Paired**	**2256**	
Fluoride	16984-48-8	.488	1.46	ug/mL	95.5	80 - 120	4.72	20	D	11/06/08
Chloride	16887-00-6	14.5	16.3	ug/mL	87.4	80 - 120	8.47	20	D	11/06/08
Nitrite-N	NO2-N	0	1.04	ug/mL	104	80 - 120	4.69	20	D	11/06/08
Nitrate-N	NO3-N	0	0.836	ug/mL	93	80 - 120	4.11	20	D	11/06/08
Sulfate	14808-79-8	0	3.77	ug/mL	94.3	80 - 120	0.75	20	D	11/06/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

QC Batch 5952
Associated Samples 80098004

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #2260**							
Fluoride	16984-48-8		<0.023	ug/mL					U	11/07/08
Chloride	16887-00-6		<0.047	ug/mL					U	11/07/08
Nitrite-N	NO2-N		<0.013	ug/mL					U	11/07/08
Nitrate-N	NO3-N		<0.012	ug/mL					U	11/07/08
Sulfate	14808-79-8		<0.13	ug/mL					U	11/07/08
LCS			**QC Sample #2262**							
Fluoride	16984-48-8		0.961	ug/mL	94.2	90 - 110				11/07/08
Chloride	16887-00-6		1.91	ug/mL	96	90 - 110				11/07/08
Nitrite-N	NO2-N		0.915	ug/mL	91.6	90 - 110				11/07/08
Nitrate-N	NO3-N		0.896	ug/mL	99.6	90 - 110				11/07/08
Sulfate	14808-79-8		3.81	ug/mL	95.2	90 - 110				11/07/08
DUP			**QC Sample #2263**							
			Original 80098004							
Fluoride	16984-48-8	.176	0.177	ug/mL			0.57	20	BD	11/07/08
Chloride	16887-00-6	7.53	7.57	ug/mL			0.53	20	D	11/07/08
Nitrite-N	NO2-N	0	<0.026	ug/mL			0.00	20	UD	11/07/08
Nitrate-N	NO3-N	4.43	4.43	ug/mL			0.00	20	D	11/07/08
Sulfate	14808-79-8	40.1	40.3	ug/mL			0.50	20	D	11/07/08
MS			**QC Sample #2264**							
			Original 80098004							

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8	.176	1.11	ug/mL	91.7	80 - 120			D	11/07/08
Chloride	16887-00-6	7.53	9.80	ug/mL	114	80 - 120			D	11/07/08
Nitrite-N	NO2-N	0	0.824	ug/mL	82.5	80 - 120			D	11/07/08
Nitrate-N	NO3-N	4.43	5.30	ug/mL	97.3	80 - 120			D	11/07/08
Sulfate	14808-79-8	40.1	44.0	ug/mL	96.2	80 - 120			D	11/07/08
MSD			**QC Sample #2265**							
			Original 80098004					**Paired**	**2264**	
Fluoride	16984-48-8	.176	1.16	ug/mL	96.8	80 - 120	5.41	20	D	11/07/08
Chloride	16887-00-6	7.53	9.79	ug/mL	113	80 - 120	0.88	20	D	11/07/08
Nitrite-N	NO2-N	0	0.827	ug/mL	82.8	80 - 120	0.36	20	D	11/07/08
Nitrate-N	NO3-N	4.43	5.38	ug/mL	106	80 - 120	8.56	20	D	11/07/08
Sulfate	14808-79-8	40.1	44.1	ug/mL	100	80 - 120	3.87	20	D	11/07/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

QC Batch 5993 **Test** ICP-6010 - All possible metals
Associated Samples 80098001, 80098002, 80098003, 80098004, 80098005, 80098006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #2316**							
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 #2317**							
Iron	7439-89-6		967	ug/L	96.7	80 - 120				12/11/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		970	ug/L	97	80 - 120				12/11/08
Manganese	7439-96-5		972	ug/L	97.2	80 - 120				12/11/08
Nickel	7440-02-0		993	ug/L	99.3	80 - 120				12/11/08
Potassium	7440-09-7		10700	ug/L	107	80 - 120				12/11/08
Silver	7440-22-4		957	ug/L	95.7	80 - 120				12/11/08
Sodium	7440-23-5		1030	ug/L	103	80 - 120				12/11/08
Antimony	7440-36-0		998	ug/L	99.8	80 - 120				12/11/08
Barium	7440-39-3		470	ug/L	94.1	80 - 120				12/11/08
Cadmium	7440-43-9		1010	ug/L	101	80 - 120				12/11/08
Chromium	7440-47-3		951	ug/L	95.1	80 - 120				12/11/08
Cobalt	7440-48-4		985	ug/L	98.5	80 - 120				12/11/08
Copper	7440-50-8		988	ug/L	98.8	80 - 120				12/11/08
Vanadium	7440-62-2		971	ug/L	97.1	80 - 120				12/11/08
Zinc	7440-66-6		1000	ug/L	100	80 - 120				12/11/08
Calcium	7440-70-2		1100	ug/L	110	80 - 120				12/11/08
Strontium	7440-24-6		503	ug/L	101	80 - 120				12/11/08
Beryllium	7440-41-7		530	ug/L	106	80 - 120				12/11/08
MS			**QC Sample #2318**							
			Original 80096003							
Iron	7439-89-6		979	ug/L	97.9	75 - 125				12/11/08
Magnesium	7439-95-4		24800	ug/L	0	75 - 125				12/11/08
Manganese	7439-96-5		970	ug/L	97	75 - 125				12/11/08
Nickel	7440-02-0		934	ug/L	93.4	75 - 125				12/11/08
Potassium	7440-09-7		18000	ug/L	101	75 - 125				12/11/08
Silver	7440-22-4		963	ug/L	96.3	75 - 125				12/11/08
Sodium	7440-23-5		40000	ug/L	-49	75 - 125				12/11/08
Antimony	7440-36-0		969	ug/L	96.9	75 - 125				12/11/08
Barium	7440-39-3		552	ug/L	96.6	75 - 125				12/11/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Cadmium	7440-43-9		970	ug/L	97	75 - 125				12/11/08
Chromium	7440-47-3		920	ug/L	92	75 - 125				12/11/08
Cobalt	7440-48-4		924	ug/L	92.4	75 - 125				12/11/08
Copper	7440-50-8		936	ug/L	93.6	75 - 125				12/11/08
Vanadium	7440-62-2		962	ug/L	96.2	75 - 125				12/11/08
Zinc	7440-66-6		975	ug/L	97.5	75 - 125				12/11/08
Calcium	7440-70-2		1.17E5	ug/L	-180	75 - 125				12/11/08
Strontium	7440-24-6		1560	ug/L	98.2	75 - 125				12/11/08
Beryllium	7440-41-7		517	ug/L	103	75 - 125				12/11/08
MSD			**QC Sample #2319**							
			Original 80096003						**Paired 2318**	
Iron	7439-89-6		977	ug/L	97.7	75 - 125	0.20	20		12/11/08
Magnesium	7439-95-4		24600	ug/L	-22	75 - 125	-200.00	20		12/11/08
Manganese	7439-96-5		960	ug/L	96	75 - 125	1.04	20		12/11/08
Nickel	7440-02-0		932	ug/L	93.2	75 - 125	0.21	20		12/11/08
Potassium	7440-09-7		18100	ug/L	103	75 - 125	1.96	20		12/11/08
Silver	7440-22-4		960	ug/L	96	75 - 125	0.31	20		12/11/08
Sodium	7440-23-5		39700	ug/L	-77	75 - 125	-44.40	20		12/11/08
Antimony	7440-36-0		946	ug/L	94.6	75 - 125	2.40	20		12/11/08
Barium	7440-39-3		548	ug/L	95.9	75 - 125	0.73	20		12/11/08
Cadmium	7440-43-9		970	ug/L	97	75 - 125	0.00	20		12/11/08
Chromium	7440-47-3		910	ug/L	91	75 - 125	1.09	20		12/11/08
Cobalt	7440-48-4		918	ug/L	91.8	75 - 125	0.65	20		12/11/08
Copper	7440-50-8		931	ug/L	93.1	75 - 125	0.54	20		12/11/08
Vanadium	7440-62-2		961	ug/L	96.1	75 - 125	0.10	20		12/11/08
Zinc	7440-66-6		968	ug/L	96.8	75 - 125	0.72	20		12/11/08
Calcium	7440-70-2		1.16E5	ug/L	-340	75 - 125	-61.50	20		12/11/08
Strontium	7440-24-6		1540	ug/L	95.2	75 - 125	3.10	20		12/11/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		517	ug/L	103	75 - 125	0.00	20		12/11/08

Quality Control Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF80098
Project Number X08-048

QC Batch 6584
Associated Samples 80098002

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 #2397**							
Total Alkalinity as	ALKALINITY		31.6	mg/L	105	80 - 120				11/11/08
LCS			**QC Sample #2398**							
Total Alkalinity as	ALKALINITY		31.5	mg/L	105	80 - 120				11/11/08
DUP			**QC Sample #2399**							
			Original 80076016							
Total Alkalinity as	ALKALINITY		100	mg/L			0.00	20		11/11/08

Quality Control Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF80098
Project Number X08-048

QC Batch 8784
Associated Samples 80098003, 80098004

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 #2459**							
Total Alkalinity as	ALKALINITY		32.1	mg/L	107	80 - 120				11/11/08
DUP			**QC Sample #2460**							
			Original 80099013							
Total Alkalinity as	ALKALINITY		230	mg/L			0.00	20		11/11/08
LCS			**QC Sample #2461**							
Total Alkalinity as	ALKALINITY		31.7	mg/L	106	80 - 120				11/11/08

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

QC Batch 12887 **Test** ICP-2008 MS All possible metal
Associated Samples 80098001, 80098002, 80098003, 80098004, 80098005, 80098006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #2774**							
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
LCS			**QC Sample #2777**							
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
MS			**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	7440-38-2		44.0	ug/L	106	70 - 130				11/18/08
MSD			**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

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF80098
Project Number X08-048

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		42.7	ug/L	102	70 - 130	3.85	20		11/18/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80098
Project Number X08-048

QC Batch 5987
Associated Samples 80098002, 80098003, 80098004

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #2284**							
Tritium	10028-17-8		130	pCi/L						11/12/08
LCS			**QC Sample #2285**							
Tritium	10028-17-8		2810	pCi/L	97.33	80 - 120				11/12/08
DUP			**QC Sample #2286**							
			Original 80098002							
Tritium	10028-17-8	49700	49200	pCi/L			1.01	-20 - 20		11/12/08
MS			**QC Sample #2287**							
			Original 80098002							
Tritium	10028-17-8	49700	69300	pCi/L	86.36	75 - 125				11/12/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80098
Project Number X08-048

QC Batch 5992
Associated Samples 80098002, 80098003, 80098004

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #2313**								
Strontium-89/90	SR-RAD		-0.972	pCi/L						U	12/05/08
LCS			**QC Sample #2314**								
Strontium-89/90	SR-RAD		164	pCi/L	118.8	80 - 120					12/05/08
DUP			**QC Sample #2315**								
			Original 80095001								
Strontium-89/90	SR-RAD		-1.49	pCi/L			-88.20	-20 - 20	*	U1	12/05/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80098
Project Number X08-048

QC Batch 7084
Associated Samples 80098002, 80098003, 80098004

Test TC99 by Liquid Scintillation

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #2417**								
Technetium-99	14133-76-7		-2.70	pCi/L						U	11/14/08
LCS			**QC Sample #2418**								
Technetium-99	14133-76-7		175	pCi/L	109.7	80 - 120					11/14/08
DUP			**QC Sample #2419**								
			Original 80079001								
Technetium-99	14133-76-7		-3.90	pCi/L			-55.74	-20 - 20	*	U1	11/14/08
MS			**QC Sample #2420**								
			Original 80079001								
Technetium-99	14133-76-7		682	pCi/L	107.53	75 - 125					11/14/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80098
Project Number X08-048

QC Batch 14087
Associated Samples 80098002, 80098003, 80098004

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #2826**								
Gross Alpha	12587-46-1		0.0900	pCi/L							12/05/08
Gross Beta	12587-47-2		0.739	pCi/L							12/05/08
LCS			**QC Sample #2827**								
Gross Alpha	12587-46-1		35.5	pCi/L	91.61	80 - 120					12/05/08
Gross Beta	12587-47-2		123	pCi/L	109.82	80 - 120					12/05/08
DUP			**QC Sample #2828**								
			Original 80098002								
Gross Alpha	12587-46-1	.527	1.30	pCi/L			84.62	-20 - 20	*	1	12/05/08
Gross Beta	12587-47-2	54.8	54.9	pCi/L			0.18	-20 - 20			12/05/08

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF80098
Project Number X08-048

QC Batch 5992
Associated Samples 80098002, 80098003, 80098004

Test Strontium 89/90 (GPC/GEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #2313**							
Strontium-85	13967-73-2				100.6	25 - 102.5				12/05/08
LCS			**QC Sample #2314**							
Strontium-85	13967-73-2				86.3	25 - 102.5				12/05/08
DUP			**QC Sample #2315**							
			Original 80095001							
Strontium-85	13967-73-2				86.7	25 - 102.5	3.32			12/05/08
SAMPLE			**Sample #80098002**							
Strontium-85	13967-73-2				84.3	25 - 102.5				12/05/08
SAMPLE			**Sample #80098003**							
Strontium-85	13967-73-2				82.2	25 - 102.5				12/05/08
SAMPLE			**Sample #80098004**							
Strontium-85	13967-73-2				93.3	25 - 102.5				12/05/08

Analytical Comment Report

Attention Michael Neely

Group # WSCF80098
Project Number X08-048

80098001 **B1W5F0**

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

80098002 **B1W5F1**

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

80098003 **B1W5F7**

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 concentraton
exceed spiking level by a factor of 4. Spike recoveries
are not valid: magnesium, sodium, and calcium.

80098004 **B1W571**

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

80098005 **B1W5F6**

Attention Michael Neely

Group # WSCF80098
Project Number X08-048

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 concentraton
exceed spiking level by a factor of 4. Spike recoveries
are not valid: magnesium, sodium, and calcium.

80098006 **B1W570**

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

Quality Control Comments

Department Radiochemistry

2315 B1TPT8(80095001DUP)

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

2419 B1XH01(80079001DUP)

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

2828 B1W5F1(80098002DUP)

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.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 6 pages
Including cover page

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

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 1000 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code:	CHPRC
PO #:	300071
Work Order #:	80098
Profile #:	X08-048-180
Proj. Mgr.:	
Phone:	

The following samples were received from you on 11/6/2008 1:20:00 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		
80098001	B1W5F0	WATER	11/6/2008 09:46	11/6/2008 13:2
		2008-W; 6010-W		
80098002	B1W5F1	WATER	11/6/2008 09:46	11/6/2008 13:2
		2008-W; 6010-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; IC-W; SR89/90-W; TC99-W		
80098003	B1W5F7	WATER	11/6/2008 12:46	11/6/2008 13:2
		2008-W; 6010-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; IC-W; SR89/90-W; TC99-W		
80098004	B1W571	WATER	11/6/2008 11:05	11/6/2008 13:2
		2008-W; 6010-W; ALK-W; GAB-AO-W; GAB-BO-W; H3-COL-W; IC-W; SR89/90-W; TC99-W		
80098005	B1W5F6	WATER	11/6/2008 12:46	11/6/2008 13:2
		2008-W; 6010-W		
80098006	B1W570	WATER	11/6/2008 11:05	11/6/2008 13:2
		2008-W; 6010-W		

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)

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

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)

FLUOR HANFORD	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST Y0098	C.O.C. # X08-048-180 Page 1 of 1

Collector: R. Ellingsworth	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: 2POI CHARACTERIZATION	HNF-N-506-18	Ice Chest No.: SALW-18 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
** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
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
B1W5F0 (F)	001	W	11/6/0	0946	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
B1W5F0 (F)	↓	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W5F1	002	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
B1W5F1		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1W5F1		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W5F1		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool-4C
B1W5F1		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool-4C
B1W5F1		W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1W5F1		W			1x1-L G/P	Strontium-89,90 – Total Sr	HNO3 to pH <2
B1W5F1		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1W5F1	↓	W	↓		1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			NOV 06 2008 1320	MJ Kessler		MJ Kessler	NOV 06 2008 1320
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		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X08-048-185

Page 1 of 1

Collector: R. Ellingsworth	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: 2POI CHARACTERIZATION	HHF-M-506-18	Ice Chest No.: SAW-10 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
** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time — Total Activity Exemption: Yes ☑ No ☐
Do not combine X SAF samples with other ones. 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
B1W5F6 (F)	005	W	11/6/8	1246	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
B1W5F6 (F)		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W5F7	003	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
B1W5F7		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1W5F7		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W5F7		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool-4C
B1W5F7		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool-4C
B1W5F7		W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1W5F7		W			1x1-L G/P	Strontium-89,90 – Total Sr	HNO3 to pH <2
B1W5F7		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1W5F7		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			NOV 06 2008 1320	MD Kessler			NOV 06 2008 1320
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		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FLUOR HANFORD	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X08-048-130 Page 1 of 1

Collector: R. Ellingsworth	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	HHF-N-506-18	Ice Chest No.: SAW-10 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
** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
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
B1W570 (F)	006	W	11/6/8	1105	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
B1W570 (F)		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W571	004	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
B1W571		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1W571		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W571		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool-4C
B1W571		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool-4C
B1W571		W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1W571		W			1x1-L G/P	Strontium-89,90 – Total Sr	HNO3 to pH <2
B1W571		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1W571		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			NOV 06 2008 1320				NOV 06 2008 1320
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	DS = Drum Solid		
SE = Sediment	DL = Drum Liquid		
SO = Solid	T = Tissue		
SL = Sludge	WT = Wipe		
W = Water	L = Liquid		
O = Oil	V = Vegetation		
A = Air	X = Other		