WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

RECEIVED JANUARY 27, 2011

0097639

January 26, 2011

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

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF103343

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF103343

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

Very truly yours,

Electronically signed by Jenny Filipy
For Lab Manager
WSCF Analytical Lab
(509) 373-7495

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EDMC

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF103343
Data Deliverable Date 01/27/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F10-197	B27R60	103343001	WATER	12/13/10	12/13/10

ATTACHMENT 2

NARRATIVE

Consisting of 5 pages
Including cover page

Attachment 2
Narrative
WSCF103343

Introduction

A sample was received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The sample was analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

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. Also find attached an Issue Resolution Form (IRF) pertaining to out of specification holding times for ICP-6010 Metals [Si and P] analysis.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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):

Attachment 2
Narrative
WSCF103343

- Nitrite-N – Duplicate Relative Percent Difference (RPD) does not apply to results near or below the minimum detectable level. No flags issued.

- All other applicable QC controls are within the established limits.

ICP-AES Metals – The hold time requirements for this analysis were not met for all analytes (Refer to analytical note below). A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- An Issue Resolution Form (CHPRC Tracking Number: 11-316) was issued for sample B27R60 (103343001) for the exceeding of the 28 day regulatory hold time for ICP-6010 Metals [Si and P] analysis.

- Sodium, Calcium and Silicon contamination was detected in the Blank. No sample results in this batch were affected. "C" Flags not required.

- Calcium, Magnesium, Potassium, Silicon and Sodium – exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.

- All other applicable QC controls are within the established limits.

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

- Zinc - was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.

- All other applicable 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):

- All applicable QC controls are within the established limits.

Organic Comments

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

- All applicable QC controls are within the established limits.

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

Attachment 2
Narrative
WSCF103343

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Attachment 2
Narrative
WSCF103343

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 11-316

Date: 1/25/2011 SAF No. F10-197

SDG: 103358, 103343 and 103397 TEST: ICP-6010 **DUE DATE: 1/28/11, 1/27/11 and 1/30/11**

LOGIN No.: 103358001, 103358002, 103343001 and103397001

Sample No.(s): B27R61, B27R62 B27R60 and B27R63

Submitted By: M. Avila
Phone No.:
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
These samples were collected on: 103358 12/14/10 103343 12/13/10 103397 12/16/10 These samples were not analyzed until January 17, 2011 and January 18th, 2011. These were analyzed outside the 28-day regulatory holding time for Silicon and Phosphorus.	Accept results as-is and document in the narrative.

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution with a commentary in the narrative concerning, specifically, the sensitivity of the analysis with old samples, whether a bias high or low is a consequence of missing hold times, and what effect (if any) would there be on the actual results recorded for these samples.

Sara Champoux 1/25/2011

Signature and Date

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 32 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 #	WSCF103343
Report Date	January 26, 2011

Analytical: Electronically signed by Jenny Filipy

Client Services: Electronically signed by Richard Barker

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

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Inorganic

Group # WSCF103343

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
171052	171052	2	BLANK	43901	BLANK		Anions by Ion Chromatography (Water)
171052	171052	3	LCS	43902	LCS		Anions by Ion Chromatography (Water)
171052	171052	4	DUP	43903	B27HK8(103326001DUP)	103326001	Anions by Ion Chromatography (Water)
171052	171052	5	MS	43904	B27HK8(103326001MS)	103326001	Anions by Ion Chromatography (Water)
171052	171052	6	MSD	43905	B27HK8(103326001MSD)	103326001	Anions by Ion Chromatography (Water)
171052	171052	15	SAMPLE	103343001	B27R60		Anions by Ion Chromatography (Water)
172581	172582	4	BLANK	44590	BLANK		ICP-2008 MS All possible metal
172581	172582	5	LCS	44591	LCS		ICP-2008 MS All possible metal
172581	172582	6	MS	44592	B27PN1(103320001MS)	103320001	ICP-2008 MS All possible metal
172581	172582	7	MSD	44593	B27PN1(103320001MSD)	103320001	ICP-2008 MS All possible metal
172581	172582	29	SAMPLE	103343001	B27R60		ICP-2008 MS All possible metal
174487	174511	1	BLANK	46693	BLANK		ICP-6010 - All possible metals
174487	174511	2	LCS	46694	LCS		ICP-6010 - All possible metals
174487	174511	3	MS	46695	B27R61(103358001MS)	103358001	ICP-6010 - All possible metals
174487	174511	4	MSD	46696	B27R61(103358001MSD)	103358001	ICP-6010 - All possible metals
174487	174511	7	SAMPLE	103343001	B27R60		ICP-6010 - All possible metals

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
172257	172258	1	BLANK	44141	BLANK		SW-846 8260B Volatiles, separate prep
172257	172258	2	LCS	44142	LCS		SW-846 8260B Volatiles, separate prep
172257	172258	3	MS	44143	B29HT4(103330001MS)	103330001	SW-846 8260B Volatiles, separate prep
172257	172258	4	MSD	44144	B29HT4(103330001MSD)	103330001	SW-846 8260B Volatiles, separate prep
172257	172258	6	SAMPLE	103343001	B27R60		SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103343

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
172524	172524	2	DUP	44450	B27WM7(103275006DUP	103275006	Total Alkalinity as mg/L CaCO3 (Water)
172524	172524	13	LCS	44451	LCS		Total Alkalinity as mg/L CaCO3 (Water)
172524	172524	22	SAMPLE	103343001	B27R60		Total Alkalinity as mg/L CaCO3 (Water)

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF103343

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
Department Organic, Volatiles

Group # WSCF103343

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

LA-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

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

Method Reference

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103343

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 # WSCF103343

Sample # 103343001
SAF# F10-197
Sample ID B27R60

Matrix WATER
Sampled 12/13/10
Received 12/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**12/13/10**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	BD	0.342		ug/mL	2	0.088	0.40	12/13/10
Chloride	16887-00-6	LA-533-410	D	17.3		ug/mL	2	0.084	0.80	12/13/10
Nitrite-N	NO2-N	LA-533-410	UD	<0.036		ug/mL	2	0.036	0.20	12/13/10
Bromide	24959-67-9	LA-533-410	BD	0.142		ug/mL	2	0.11	1.0	12/13/10
Nitrate-N	NO3-N	LA-533-410	D	5.32		ug/mL	2	0.019	0.20	12/13/10
Phosphate-P	PO4-P	LA-533-410	UD	<0.14		ug/mL	2	0.14	0.80	12/13/10
Sulfate	14808-79-8	LA-533-410	D	40.8		ug/mL	2	0.17	2.0	12/13/10
ICP Prep										**01/18/11**
ICP-AES										
Iron	7439-89-6	LA-505-411		215		ug/L	1	38	190	01/18/11
Magnesium	7439-95-4	LA-505-411		9650		ug/L	1	14	70	01/18/11
Potassium	7440-09-7	LA-505-411		5260		ug/L	1	73	360	01/18/11
Sodium	7440-23-5	LA-505-411		18400		ug/L	1	11	55	01/18/11
Calcium	7440-70-2	LA-505-411		43600		ug/L	1	28	140	01/18/11
Lithium	7439-93-2	LA-505-411	U	<4.0		ug/L	1	4.0	20	01/18/11
Boron	7440-42-8	LA-505-411	U	<41		ug/L	1	41	200	01/18/11
Bismuth	7440-69-9	LA-505-411	U	<37		ug/L	1	37	180	01/18/11

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

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

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Sample # 103343001
SAF# F10-197
Sample ID B27R60

Matrix WATER
Sampled 12/13/10
Received 12/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Silicon	7440-21-3	LA-505-411	X	16800		ug/L	1	25	120	01/18/11
Phosphorus	7723-14-0	LA-505-411	UX	<72		ug/L	1	72	360	01/18/11
ICPMS Prep										**12/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	BD	111		ug/L	2	10	200	12/27/10
Manganese	7439-96-5	LA-505-412	D	6.46		ug/L	2	0.20	2.0	12/27/10
Nickel	7440-02-0	LA-505-412	BD	2.29		ug/L	2	0.40	4.0	12/27/10
Silver	7440-22-4	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/27/10
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	12/27/10
Barium	7440-39-3	LA-505-412	D	41.2		ug/L	2	0.40	4.0	12/27/10
Beryllium	7440-41-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/27/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	12/27/10
Chromium	7440-47-3	LA-505-412	BD	1.81		ug/L	2	1.0	10	12/27/10
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	12/27/10
Copper	7440-50-8	LA-505-412	D	3.85		ug/L	2	0.20	2.0	12/27/10
Vanadium	7440-62-2	LA-505-412	D	9.99		ug/L	2	0.40	4.0	12/27/10
Zinc	7440-66-6	LA-505-412	DC	17.9		ug/L	2	1.6	10	12/27/10
Lead	7439-92-1	LA-505-412	BD	0.495		ug/L	2	0.20	2.0	12/27/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	12/27/10

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

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

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Sample # 103343001
SAF# F10-197
Sample ID B27R60

Matrix WATER
Sampled 12/13/10
Received 12/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Molybdenum	7439-98-7	LA-505-412	D	4.73		ug/L	2	0.10	1.0	12/27/10
Strontium	7440-24-6	LA-505-412	D	182		ug/L	2	0.20	2.0	12/27/10
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/27/10
Tin	7440-31-5	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	12/27/10
Uranium	7440-61-1	LA-505-412	D	11.3		ug/L	2	0.10	0.40	12/27/10
Arsenic	7440-38-2	LA-505-412	BD	4.80		ug/L	2	0.80	8.0	12/27/10
Selenium	7782-49-2	LA-505-412	BD	1.29		ug/L	2	0.60	6.0	12/27/10

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

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

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

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

Sample # 103343001
SAF# F10-197
Sample ID B27R60

Matrix WATER
Sampled 12/13/10
Received 12/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**12/16/10**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	12/17/10

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

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

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

Sample # 103343001
SAF# F10-197
Sample ID B27R60

Matrix WATER
Sampled 12/13/10
Received 12/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
2-Hexanone	591-78-6	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Acetone	67-64-1	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Chloromethane	74-87-3	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Chloroethane	75-00-3	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Bromodichloromethane	75-27-4	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	12/17/10
trans-1,2-Dichloroethene	156-60-5	LA-523-455	U	<1		ug/L	1	1	5	12/17/10

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

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

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

Sample # 103343001
SAF# F10-197
Sample ID B27R60

Matrix WATER
Sampled 12/13/10
Received 12/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
cis-1,2-Dichloroethene	156-59-2	LA-523-455	U	<1		ug/L	1	1	5	12/17/10

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

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

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103343

Sample # 103343001
SAF# F10-197
Sample ID B27R60

Matrix WATER
Sampled 12/13/10
Received 12/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alkalinity										**12/15/10**
Alkalinity										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		110		mg/L	1	1	10	12/15/10

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.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

QC Batch 171052
Associated Samples 103343001

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #43901**							
Fluoride	16984-48-8		<0.044	ug/mL					U	12/13/10
Chloride	16887-00-6		<0.042	ug/mL					U	12/13/10
Nitrite-N	NO2-N		<0.018	ug/mL					U	12/13/10
Bromide	24959-67-9		<0.054	ug/mL					U	12/13/10
Nitrate-N	NO3-N		<9.7E-3	ug/mL					U	12/13/10
Phosphate-P	PO4-P		<0.072	ug/mL					U	12/13/10
Sulfate	14808-79-8		<0.083	ug/mL					U	12/13/10
LCS			**QC Sample #43902**							
Fluoride	16984-48-8		0.930	ug/mL	93.9	90 - 110				12/13/10
Chloride	16887-00-6		1.98	ug/mL	100.1	90 - 110				12/13/10
Nitrite-N	NO2-N		0.983	ug/mL	100.5	90 - 110				12/13/10
Bromide	24959-67-9		4.04	ug/mL	103.1	90 - 110				12/13/10
Nitrate-N	NO3-N		0.934	ug/mL	105.5	90 - 110				12/13/10
Phosphate-P	PO4-P		1.90	ug/mL	99.6	90 - 110				12/13/10
Sulfate	14808-79-8		4.02	ug/mL	102.5	90 - 110				12/13/10
DUP			**QC Sample #43903**							
			Original 103326001							
Fluoride	16984-48-8		0.210	ug/mL			2.40	20	BD	12/13/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Chloride	16887-00-6		7.70	ug/mL			1.70	20		D	12/13/10
Nitrite-N	NO2-N		0.0539	ug/mL			200.00	20	*	BXD	12/13/10
Bromide	24959-67-9		<0.11	ug/mL			0.00	20		UD	12/13/10
Nitrate-N	NO3-N		4.02	ug/mL			2.50	20		D	12/13/10
Phosphate-P	PO4-P		<0.14	ug/mL			0.00	20		UD	12/13/10
Sulfate	14808-79-8		33.6	ug/mL			0.90	20		D	12/13/10
MS			**QC Sample #43904**								
			Original 103326001								
Fluoride	16984-48-8		0.967	ug/mL	96.7	80 - 120				D	12/13/10
Chloride	16887-00-6		2.18	ug/mL	108.8	80 - 120				D	12/13/10
Nitrite-N	NO2-N		0.963	ug/mL	97.5	80 - 120				D	12/13/10
Bromide	24959-67-9		4.03	ug/mL	101.9	80 - 120				D	12/13/10
Nitrate-N	NO3-N		0.936	ug/mL	104.7	80 - 120				D	12/13/10
Phosphate-P	PO4-P		1.99	ug/mL	102.9	80 - 120				D	12/13/10
Sulfate	14808-79-8		3.49	ug/mL	88.1	80 - 120				D	12/13/10
MSD			**QC Sample #43905**								
			Original 103326001						**Paired**	**43904**	
Fluoride	16984-48-8		0.948	ug/mL	94.8	80 - 120	2.00	20		D	12/13/10
Chloride	16887-00-6		2.12	ug/mL	106.1	80 - 120	2.50	20		D	12/13/10
Nitrite-N	NO2-N		0.958	ug/mL	97	80 - 120	0.50	20		D	12/13/10
Bromide	24959-67-9		3.97	ug/mL	100.3	80 - 120	1.60	20		D	12/13/10
Nitrate-N	NO3-N		0.911	ug/mL	101.9	80 - 120	2.70	20		D	12/13/10
Phosphate-P	PO4-P		1.86	ug/mL	96.6	80 - 120	6.30	20		D	12/13/10
Sulfate	14808-79-8		3.40	ug/mL	85.9	80 - 120	2.50	20		D	12/13/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

QC Batch 172257
Associated Samples 103343001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #44141**						
1,1-Dichloroethene	75-35-4		<1	ug/L				U	12/16/10
Trichloroethene	79-01-6		<1	ug/L				U	12/16/10
Benzene	71-43-2		<1	ug/L				U	12/16/10
Toluene	108-88-3		<1	ug/L				U	12/16/10
Chlorobenzene	108-90-7		<1	ug/L				U	12/16/10
1,1-Dichloroethane	75-34-3		<1	ug/L				U	12/16/10
Ethylbenzene	100-41-4		<1	ug/L				U	12/16/10
Styrene	100-42-5		<1	ug/L				U	12/16/10
cis-1,3-Dichloropropene	10061-01-5		<1	ug/L				U	12/16/10
trans-1,3-Dichloropropene	10061-02-6		<1	ug/L				U	12/16/10
1,2-Dichloroethane	107-06-2		<1	ug/L				U	12/16/10
Methyl isobutyl ketone	108-10-1		<1	ug/L				U	12/16/10
Dibromochloromethane	124-48-1		<1	ug/L				U	12/16/10
Tetrachloroethene	127-18-4		<1	ug/L				U	12/16/10
Total Xylenes	1330-20-7		<1	ug/L				U	12/16/10
Total 1,2-Dichloroethene	540-59-0		<1	ug/L				U	12/16/10
Carbon tetrachloride	56-23-5		<1	ug/L				U	12/16/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
2-Hexanone	591-78-6		<1	ug/L					U	12/16/10
Acetone	67-64-1		<1	ug/L					U	12/16/10
Chloroform	67-66-3		<1	ug/L					U	12/16/10
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	12/16/10
Bromomethane	74-83-9		<1	ug/L					U	12/16/10
Chloromethane	74-87-3		<1	ug/L					U	12/16/10
Chloroethane	75-00-3		<1	ug/L					U	12/16/10
Vinyl chloride	75-01-4		<1	ug/L					U	12/16/10
Methylene chloride	75-09-2		<1	ug/L					U	12/16/10
Carbon disulfide	75-15-0		<1	ug/L					U	12/16/10
Bromoform	75-25-2		<1	ug/L					U	12/16/10
Bromodichloromethan e	75-27-4		<1	ug/L					U	12/16/10
1,2-Dichloropropane	78-87-5		<1	ug/L					U	12/16/10
Methyl ethyl ketone	78-93-3		<1	ug/L					U	12/16/10
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	12/16/10
1,1,2,2-Tetrachloroethane	79-34-5		<1	ug/L					U	12/16/10
trans-1,2-Dichloroethene	156-60-5		<1	ug/L					U	12/16/10
cis-1,2-Dichloroethene	156-59-2		<1	ug/L					U	12/16/10
LCS			**QC Sample #44142**							
1,1-Dichloroethene	75-35-4		19	ug/L	77.9	75 - 125				12/17/10
Trichloroethene	79-01-6		22	ug/L	86.6	75 - 125				12/17/10
Benzene	71-43-2		25	ug/L	99	75 - 125				12/17/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene	108-88-3		25	ug/L	98.9	75 - 125				12/17/10
Chlorobenzene	108-90-7		25	ug/L	99	75 - 125				12/17/10
MS			**QC Sample #44143**							
			Original 103330001							
1,1-Dichloroethene	75-35-4		19	ug/L	75.9	75 - 125				12/17/10
Trichloroethene	79-01-6		22	ug/L	87.2	75 - 125				12/17/10
Benzene	71-43-2		24	ug/L	96.4	75 - 125				12/17/10
Toluene	108-88-3		25	ug/L	98.5	75 - 125				12/17/10
Chlorobenzene	108-90-7		25	ug/L	100.6	75 - 125				12/17/10
MSD			**QC Sample #44144**							
			Original 103330001					**Paired**	**44143**	
1,1-Dichloroethene	75-35-4		19	ug/L	76.1	75 - 125	0.30	20		12/17/10
Trichloroethene	79-01-6		21	ug/L	85.8	75 - 125	1.60	20		12/17/10
Benzene	71-43-2		25	ug/L	99.2	75 - 125	2.90	20		12/17/10
Toluene	108-88-3		25	ug/L	98.9	75 - 125	0.40	20		12/17/10
Chlorobenzene	108-90-7		25	ug/L	99.3	75 - 125	1.30	20		12/17/10

Quality Control Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF103343

QC Batch 172524
Associated Samples 103343001

Test Total Alkalinity as mg/L CaCO3 (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
DUP			**QC Sample #44450**							
			Original 103275006							
Total Alkalinity as CaCO3	ALKALINITY		110	mg/L			0.00	20		12/15/10
LCS			**QC Sample #44451**							
Total Alkalinity as CaCO3	ALKALINITY		100	mg/L	101.1	80 - 120				12/15/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

QC Batch 172581
Associated Samples 103343001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #44590**						
Aluminum	7429-90-5		<5.0	ug/L				U	12/27/10
Manganese	7439-96-5		<0.10	ug/L				U	12/27/10
Nickel	7440-02-0		<0.20	ug/L				U	12/27/10
Silver	7440-22-4		<0.10	ug/L				U	12/27/10
Antimony	7440-36-0		<0.30	ug/L				U	12/27/10
Barium	7440-39-3		<0.20	ug/L				U	12/27/10
Beryllium	7440-41-7		<0.10	ug/L				U	12/27/10
Cadmium	7440-43-9		<0.10	ug/L				U	12/27/10
Chromium	7440-47-3		<0.50	ug/L				U	12/27/10
Cobalt	7440-48-4		<0.050	ug/L				U	12/27/10
Copper	7440-50-8		<0.10	ug/L				U	12/27/10
Vanadium	7440-62-2		<0.20	ug/L				U	12/27/10
Zinc	7440-66-6		2.53	ug/L				B	12/27/10
Lead	7439-92-1		<0.10	ug/L				U	12/27/10
Mercury	7439-97-6		<0.050	ug/L				U	12/27/10
Molybdenum	7439-98-7		<0.050	ug/L				U	12/27/10
Strontium	7440-24-6		<0.10	ug/L				U	12/27/10
Thallium	7440-28-0		<0.050	ug/L				U	12/27/10
Tin	7440-31-5		<0.050	ug/L				U	12/27/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Uranium	7440-61-1		<0.050	ug/L					U	12/27/10
Arsenic	7440-38-2		<0.40	ug/L					U	12/27/10
Selenium	7782-49-2		<0.30	ug/L					U	12/27/10
LCS			**QC Sample #44591**							
Aluminum	7429-90-5		409	ug/L	102.2	85 - 115				12/27/10
Manganese	7439-96-5		41.0	ug/L	102.4	85 - 115				12/27/10
Nickel	7440-02-0		40.8	ug/L	101.9	85 - 115				12/27/10
Silver	7440-22-4		41.7	ug/L	104.2	85 - 115				12/27/10
Antimony	7440-36-0		38.6	ug/L	96.5	85 - 115				12/27/10
Barium	7440-39-3		40.2	ug/L	100.4	85 - 115				12/27/10
Beryllium	7440-41-7		41.0	ug/L	102.6	85 - 115				12/27/10
Cadmium	7440-43-9		39.2	ug/L	98	85 - 115				12/27/10
Chromium	7440-47-3		42.7	ug/L	106.7	85 - 115				12/27/10
Cobalt	7440-48-4		41.8	ug/L	104.6	85 - 115				12/27/10
Copper	7440-50-8		41.0	ug/L	102.5	85 - 115				12/27/10
Vanadium	7440-62-2		41.7	ug/L	104.2	85 - 115				12/27/10
Zinc	7440-66-6		40.5	ug/L	101.2	85 - 115				12/27/10
Lead	7439-92-1		41.9	ug/L	104.8	85 - 115				12/27/10
Mercury	7439-97-6		2.11	ug/L	105.6	85 - 115				12/27/10
Molybdenum	7439-98-7		40.3	ug/L	100.8	85 - 115				12/27/10
Strontium	7440-24-6		40.4	ug/L	101	85 - 115				12/27/10
Thallium	7440-28-0		40.5	ug/L	101.2	85 - 115				12/27/10
Tin	7440-31-5		39.8	ug/L	99.4	85 - 115				12/27/10
Uranium	7440-61-1		42.4	ug/L	106	85 - 115				12/27/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		38.1	ug/L	95.2	85 - 115				12/27/10
Selenium	7782-49-2		38.5	ug/L	96.2	85 - 115				12/27/10
MS			**QC Sample #44592**							
			Original 103320001							
Aluminum	7429-90-5		414	ug/L	103.4	70 - 130				12/27/10
Manganese	7439-96-5		40.7	ug/L	101.8	70 - 130				12/27/10
Nickel	7440-02-0		40.2	ug/L	100.4	70 - 130				12/27/10
Silver	7440-22-4		41.2	ug/L	102.9	70 - 130				12/27/10
Antimony	7440-36-0		38.3	ug/L	95.8	70 - 130				12/27/10
Barium	7440-39-3		40.5	ug/L	101.2	70 - 130				12/27/10
Beryllium	7440-41-7		39.3	ug/L	98.2	70 - 130				12/27/10
Cadmium	7440-43-9		38.8	ug/L	97	70 - 130				12/27/10
Chromium	7440-47-3		42.3	ug/L	105.7	70 - 130				12/27/10
Cobalt	7440-48-4		41.2	ug/L	103	70 - 130				12/27/10
Copper	7440-50-8		40.6	ug/L	101.5	70 - 130				12/27/10
Vanadium	7440-62-2		41.5	ug/L	103.8	70 - 130				12/27/10
Zinc	7440-66-6		38.2	ug/L	95.4	70 - 130				12/27/10
Lead	7439-92-1		41.9	ug/L	104.8	70 - 130				12/27/10
Mercury	7439-97-6		2.07	ug/L	103.4	70 - 130				12/27/10
Molybdenum	7439-98-7		40.1	ug/L	100.3	70 - 130				12/27/10
Strontium	7440-24-6		40.3	ug/L	100.6	70 - 130				12/27/10
Thallium	7440-28-0		40.8	ug/L	102	70 - 130				12/27/10
Tin	7440-31-5		39.3	ug/L	98.3	70 - 130				12/27/10
Uranium	7440-61-1		41.7	ug/L	104.2	70 - 130				12/27/10
Arsenic	7440-38-2		37.9	ug/L	94.7	70 - 130				12/27/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Selenium	7782-49-2		39.0	ug/L	97.6	70 - 130				12/27/10
MSD			**QC Sample #44593**							
			Original 103320001					**Paired**	**44592**	
Aluminum	7429-90-5		405	ug/L	101.3	70 - 130	2.10	20		12/27/10
Manganese	7439-96-5		39.8	ug/L	99.5	70 - 130	2.30	20		12/27/10
Nickel	7440-02-0		39.5	ug/L	98.6	70 - 130	1.80	20		12/27/10
Silver	7440-22-4		41.1	ug/L	102.8	70 - 130	0.10	20		12/27/10
Antimony	7440-36-0		38.4	ug/L	96	70 - 130	0.20	20		12/27/10
Barium	7440-39-3		40.2	ug/L	100.5	70 - 130	0.70	20		12/27/10
Beryllium	7440-41-7		38.6	ug/L	96.6	70 - 130	1.60	20		12/27/10
Cadmium	7440-43-9		38.7	ug/L	96.8	70 - 130	0.20	20		12/27/10
Chromium	7440-47-3		41.4	ug/L	103.4	70 - 130	2.20	20		12/27/10
Cobalt	7440-48-4		40.3	ug/L	100.8	70 - 130	2.20	20		12/27/10
Copper	7440-50-8		39.1	ug/L	97.7	70 - 130	3.80	20		12/27/10
Vanadium	7440-62-2		40.5	ug/L	101.2	70 - 130	2.50	20		12/27/10
Zinc	7440-66-6		37.0	ug/L	92.4	70 - 130	3.20	20		12/27/10
Lead	7439-92-1		41.2	ug/L	103.1	70 - 130	1.60	20		12/27/10
Mercury	7439-97-6		2.07	ug/L	103.4	70 - 130	0.00	20		12/27/10
Molybdenum	7439-98-7		40.2	ug/L	100.4	70 - 130	0.10	20		12/27/10
Strontium	7440-24-6		40.2	ug/L	100.5	70 - 130	0.10	20		12/27/10
Thallium	7440-28-0		40.2	ug/L	100.4	70 - 130	1.60	20		12/27/10
Tin	7440-31-5		39.4	ug/L	98.6	70 - 130	0.30	20		12/27/10
Uranium	7440-61-1		41.5	ug/L	103.8	70 - 130	0.40	20		12/27/10
Arsenic	7440-38-2		36.9	ug/L	92.3	70 - 130	2.60	20		12/27/10
Selenium	7782-49-2		35.6	ug/L	89.1	70 - 130	9.10	20		12/27/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

QC Batch 174487
Associated Samples 103343001

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #46693**							
Iron	7439-89-6		<38	ug/L					U	01/18/11
Magnesium	7439-95-4		<14	ug/L					U	01/18/11
Potassium	7440-09-7		<73	ug/L					U	01/18/11
Sodium	7440-23-5		22.0	ug/L					B	01/18/11
Calcium	7440-70-2		61.0	ug/L					B	01/18/11
Lithium	7439-93-2		<4.0	ug/L					U	01/18/11
Boron	7440-42-8		<41	ug/L					U	01/18/11
Bismuth	7440-69-9		<37	ug/L					U	01/18/11
Silicon	7440-21-3		301	ug/L						01/18/11
Phosphorus	7723-14-0		<72	ug/L					U	01/18/11
LCS			**QC Sample #46694**							
Iron	7439-89-6		1030	ug/L	103	80 - 120				01/18/11
Magnesium	7439-95-4		985	ug/L	98.5	80 - 120				01/18/11
Potassium	7440-09-7		1010	ug/L	101	80 - 120				01/18/11
Sodium	7440-23-5		1010	ug/L	101	80 - 120				01/18/11
Calcium	7440-70-2		1050	ug/L	105	80 - 120				01/18/11
Lithium	7439-93-2		514	ug/L	102.8	80 - 120				01/18/11
Boron	7440-42-8		1030	ug/L	103	80 - 120				01/18/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Bismuth	7440-69-9		1020	ug/L	102	80 - 120				01/18/11
Silicon	7440-21-3		1010	ug/L	101	80 - 120				01/18/11
Phosphorus	7723-14-0		1050	ug/L	105	80 - 120				01/18/11
MS			**QC Sample #46695**							
			Original 103358001							
Iron	7439-89-6		983	ug/L	98.3	75 - 125				01/18/11
Magnesium	7439-95-4		900	ug/L	90	75 - 125			X	01/18/11
Potassium	7440-09-7		940	ug/L	94	75 - 125			X	01/18/11
Sodium	7440-23-5		900	ug/L	90	75 - 125			X	01/18/11
Calcium	7440-70-2		1600	ug/L	160	75 - 125			X	01/18/11
Lithium	7439-93-2		498	ug/L	99.6	75 - 125				01/18/11
Boron	7440-42-8		1030	ug/L	103	75 - 125				01/18/11
Bismuth	7440-69-9		999	ug/L	99.9	75 - 125				01/18/11
Silicon	7440-21-3		1300	ug/L	130	75 - 125			X	01/18/11
Phosphorus	7723-14-0		1040	ug/L	104	75 - 125				01/18/11
MSD			**QC Sample #46696**							
			Original 103358001					**Paired**	**46695**	
Iron	7439-89-6		1000	ug/L	100.3	75 - 125	2.00	20		01/18/11
Magnesium	7439-95-4		1000	ug/L	100	75 - 125	10.50	20	X	01/18/11
Potassium	7440-09-7		950	ug/L	95	75 - 125	1.10	20	X	01/18/11
Sodium	7440-23-5		900	ug/L	90	75 - 125	0.00	20	X	01/18/11
Calcium	7440-70-2		1800	ug/L	180	75 - 125	11.80	20	X	01/18/11
Lithium	7439-93-2		505	ug/L	101	75 - 125	1.40	20		01/18/11
Boron	7440-42-8		1070	ug/L	107	75 - 125	3.80	20		01/18/11
Bismuth	7440-69-9		989	ug/L	98.9	75 - 125	1.00	20		01/18/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Silicon	7440-21-3		1200	ug/L	120	75 - 125	8.00	20	X	01/18/11
Phosphorus	7723-14-0		1120	ug/L	112	75 - 125	7.40	20		01/18/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

QC Batch 172257
Associated Samples 103343001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #103343001**							
1,2-Dichloroethane-d4	17060-07-0				124.7	75 - 125				12/17/10
Toluene-d8	2037-26-5				101.2	75 - 125				12/17/10
4-Bromofluorobenzene	460-00-4				113	75 - 125				12/17/10
BLANK			**QC Sample #44141**							
1,2-Dichloroethane-d4	17060-07-0				123.8	75 - 125				12/16/10
Toluene-d8	2037-26-5				99.6	75 - 125				12/16/10
4-Bromofluorobenzene	460-00-4				109.4	75 - 125				12/16/10
LCS			**QC Sample #44142**							
1,2-Dichloroethane-d4	17060-07-0				121.2	75 - 125				12/17/10
Toluene-d8	2037-26-5				100.8	75 - 125				12/17/10
4-Bromofluorobenzene	460-00-4				111.9	75 - 125				12/17/10
MS			**QC Sample #44143**							
			Original 103330001							
1,2-Dichloroethane-d4	17060-07-0				123.8	75 - 125				12/17/10
Toluene-d8	2037-26-5				101.3	75 - 125				12/17/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF103343

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				110.4	75 - 125				12/17/10
MSD			**QC Sample #44144**							
			Original	**103330001**				**Paired**	**44143**	
1,2-Dichloroethane-d4	17060-07-0				124.6	75 - 125	0.60	20		12/17/10
Toluene-d8	2037-26-5				101.9	75 - 125	0.60	20		12/17/10
4-Bromofluorobenzene	460-00-4				114.8	75 - 125	3.90	20		12/17/10

Analytical Comment Report

Attention: Michael Neely **Group #** WSCF103343

103343001	B27R60

Department Inorganic

Analyte Phosphorus - ICP-6010 - All possible metals
[1] Hold time for analyte exceeded.

Analyte Silicon - ICP-6010 - All possible metals
[1] Hold time for analyte exceeded.

Quality Control Comments

Department Inorganic

43903 B27HK8(103326001DUP)

Analyte Nitrite-N - Anions by Ion Chromatography (Water)
[1] Duplicate is flagged for RPD out-of-limits. RPD does not apply to samples concentrations below the calibration range. RPD is calculated on measured values and not applicable for a result below the RDL.

46695 B27R61(103358001MS)

Analyte Calcium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Magnesium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Potassium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Silicon - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Sodium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

46696 B27R61(103358001MSD)

Analyte Calcium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Magnesium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Potassium - ICP-6010 - All possible metals
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Silicon - ICP-6010 - All possible metals

Analytical Comment Report

Attention: Michael Neely

Group # WSCF103343

Quality Control Comments

[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Sodium - ICP-6010 - All possible metals

[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 3 pages
Including cover page

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

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

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

ATTN: Michael Neely

Customer Code:	CHPRC
PO #:	401980/ES20
Work Order #:	103343
Profile #:	F10-197-052
Proj. Mgr.:	
Phone:	

The following samples were received from you on 12/13/2010 3:05:00 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		
103343001	B27R60	WATER	12/13/2010 11:05	12/13/2010 15:05
		2008-W; 6010-W; 8260V-W; ALK-W; IC-W		

Test Acronym Description

Test Acronym	Description
2008-W	ICP-MS (W)
6010-W	ICP-AES (W)
8260V-W	Volatiles by 8260B (W)
ALK-W	Total Alkalinity (W)
IC-W	Anions by IC (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F10-197-052 PAGE 1 OF 1

COLLECTOR: Regular
Rosane Rust Kasee Higgerson

SAMPLING LOCATION: C/659 (399-1-59); 1-012

ICE CHEST NO.:

COMPANY CONTACT: DYEKMAN, DL

TELEPHONE NO.: 373-2530

PROJECT DESIGNATION: 300 Area Remedial Investigation/Feasibility Analysis - 300 FF-5 Water

FIELD LOGBOOK NO.: HNF-N-503-2 pg 73

ACTUAL SAMPLE DEPTH: 56.0

PROJECT COORDINATOR: DYEKMAN, DL

SAF NO.: F10-197

COA: 300204ES10

PRICE CODE: 7N

AIR QUALITY:

DATA TURNAROUND: 45 Days / 45 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE: 103343

PRESERVATION	HCl to H2SO4 to pH <2/Cool-4C	HNO3 to pH <2	Cool-4C	Cool-4C
HOLDING TIME	14 Days	6 Months	48 Hours	14 Days
TYPE OF CONTAINER	8Gs	G/P	P	G/P
NO. OF CONTAINER(S)	3	1	1	1
VOLUME	40mL	500mL	500mL	250mL
SAMPLE ANALYSIS	VOA 8260 (TCL 300 Area RI/FS)	SEE LIST (1) IN SPECIAL INSTRUCTIONS	IC 300.0 (300 Area RI/FS)	2329_RADIUM 226 (300 Area RI/FS)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B27R80	WATER	12-13-10	1105	✓	✓	✓	✓

Air entrained in Water on VOA's JJR 12-13-10

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Larry Rossman Larry Rossman	12-13-10 1505	L Benedek L Benedek	12/13/10 1505
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 401980ES20.☐** The 300 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.☐☐** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (300 Area RI/FS); ICP/MS - 200.8 (Add-on 300 Area RI/FS) (Uranium); 200.8_HG - ICPMS (300 Area RI/FS) (Mercury); ICP Metals - 6010 (300 Area RI/FS);

ORIGINAL

LABORATORY SECTION: RECEIVED BY

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD

TITLE: DATE/TIME

DISPOSED BY: DATE/TIME

A-6001-618(01/08)