WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

RECEIVED NOVEMBER 19, 2010

0093308

November 18, 2010

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

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF102939

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 WSCF102939

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

Very truly yours,

Electronically signed by Joseph Hale
For Lab Manager
WSCF Analytical Lab
(509) 373-7495

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Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF102939
Data Deliverable Date 11/18/10

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F11-020	B29BC0	102939001	WATER	11/11/10	11/11/10
F11-020	B29BC1	102939002	WATER	11/11/10	11/11/10

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Attachment 2
Narrative
WSCF102939

Introduction

Two (2) S&GRP samples were received at the WSCF Laboratory on November 11, 2010. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), 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

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):

- Batch QC 169847 analyzed on sample# B29BC0 (102939001)
  - Nitrate - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

1

- All other 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):

- Batch QC 169921 analyzed on sample# B29CJ4 (102926001)
  - All 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):

- Batch QC 169913 analyzed on sample# B25H89 (102883001)
  - All QC controls are within the established limits.

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

- Batch QC 169824 analyzed on sample# B29BC0 (102939001)
  - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.
  - All other QC controls are within the established limits.

Organic Comments

PCB – 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):

- Batch QC 169812 analyzed on sample# B29BC0 (102939001)
- The MS did not meet the acceptance limits for surrogate Tetrachloro-m-xylene. Sample results were not flagged. Quality control report was "X" flagged.

All other QC controls are within the established limits.

Semi-VOA – 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):

- Batch QC 169817 analyzed on sample# B25H89 (102883001)

Attachment 2
Narrative
WSCF102939

- Fluorene did not meet the MS and or MSD acceptance limits. Sample results for this analytes were "T" Flagged.
- Analysis performed by 8270 – PAH SIM method
- All other QC controls are within the established limits.

TPHD-WA – 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):

- Batch QC 169811 analyzed on sample# B29BC0 (102939001)
- Due to the co-elution of analytes for TPHD-WA (DRO) and kerosene analysis, samples are spiked and evaluated for TPHD only.
  - All QC controls are within the established limits.

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):

- Batch QC 169819 analyzed on sample# B28311 (102922001)
  - All QC controls are within the established limits.

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

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 35 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 #	WSCF102939
Report Date	November 18, 2010

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Susan Kon

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 # WSCF102939

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
169824	169824	17	LCS	41704	LCS		Hexavalent chromium Discrete Analyzer
169824	169824	18	BLANK	41705	BLANK		Hexavalent chromium Discrete Analyzer
169824	169824	19	DUP	41706	B29BC0(102939001DUP)	102939001	Hexavalent chromium Discrete Analyzer
169824	169824	20	MS	41707	B29BC0(102939001MS)	102939001	Hexavalent chromium Discrete Analyzer
169824	169824	21	SAMPLE	102939001	B29BC0		Hexavalent chromium Discrete Analyzer
169847	169847	2	BLANK	41790	BLANK		Anions by Ion Chromatography (Water)
169847	169847	3	LCS	41791	LCS		Anions by Ion Chromatography (Water)
169847	169847	4	DUP	41792	B29BC0(102939001DUP)	102939001	Anions by Ion Chromatography (Water)
169847	169847	5	MS	41793	B29BC0(102939001MS)	102939001	Anions by Ion Chromatography (Water)
169847	169847	6	MSD	41794	B29BC0(102939001MSD)	102939001	Anions by Ion Chromatography (Water)
169847	169847	8	SAMPLE	102939001	B29BC0		Anions by Ion Chromatography (Water)
169913	169914	4	BLANK	41909	BLANK		ICP-2008 MS All possible metal
169913	169914	5	LCS	41910	LCS		ICP-2008 MS All possible metal
169913	169914	6	MS	41911	B25H89(102883001MS)	102883001	ICP-2008 MS All possible metal
169913	169914	7	MSD	41912	B25H89(102883001MSD)	102883001	ICP-2008 MS All possible metal
169913	169914	31	SAMPLE	102939001	B29BC0		ICP-2008 MS All possible metal
169921	170052	1	BLANK	41943	BLANK		ICP-6010 - All possible metals
169921	170052	2	LCS	41944	LCS		ICP-6010 - All possible metals
169921	170052	3	MS	41945	B29CJ4(102926001MS)	102926001	ICP-6010 - All possible metals
169921	170052	4	MSD	41946	B29CJ4(102926001MSD)	102926001	ICP-6010 - All possible metals
169921	170052	6	SAMPLE	102939001	B29BC0		ICP-6010 - All possible metals

Batch QC List

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
169811	169878	1	BLANK	41661	BLANK		Extractable Diesel and Petroleum
169811	169878	2	LCS	41662	LCS		Extractable Diesel and Petroleum
169811	169878	3	MS	41663	B29BC0(102939001MS)	102939001	Extractable Diesel and Petroleum
169811	169878	4	MSD	41664	B29BC0(102939001MSD)	102939001	Extractable Diesel and Petroleum
169811	169878	5	SAMPLE	102939001	B29BC0		Extractable Diesel and Petroleum
169812	169877	1	MS	41665	B29BC0(102939001MS)	102939001	PCBs by EPA SW-846 Method 8082
169812	169877	2	MSD	41666	B29BC0(102939001MSD)	102939001	PCBs by EPA SW-846 Method 8082
169812	169877	3	BLANK	41667	BLANK		PCBs by EPA SW-846 Method 8082
169812	169877	4	LCS	41668	LCS		PCBs by EPA SW-846 Method 8082
169812	169877	5	SAMPLE	102939001	B29BC0		PCBs by EPA SW-846 Method 8082
169817	169818	1	BLANK	41678	BLANK		SW-846 8270D Semivolatiles (PAHSIM)
169817	169818	2	LCS	41679	LCS		SW-846 8270D Semivolatiles (PAHSIM)
169817	169818	3	MS	41680	B25H89(102883001MS)	102883001	SW-846 8270D Semivolatiles (PAHSIM)
169817	169818	4	MSD	41681	B25H89(102883001MSD)	102883001	SW-846 8270D Semivolatiles (PAHSIM)
169817	169818	7	SAMPLE	102939001	B29BC0		SW-846 8270D Semivolatiles (PAHSIM)

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF102939

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
169819	169820	1	BLANK	41682	BLANK		SW-846 8260B Volatiles, separate prep
169819	169820	2	LCS	41683	LCS		SW-846 8260B Volatiles, separate prep
169819	169820	3	MS	41684	B28311(102922001MS)	102922001	SW-846 8260B Volatiles, separate prep
169819	169820	4	MSD	41685	B28311(102922001MSD)	102922001	SW-846 8260B Volatiles, separate prep
169819	169820	5	SAMPLE	102939001	B29BC0		SW-846 8260B Volatiles, separate prep
169819	169820	6	SAMPLE	102939002	B29BC1		SW-846 8260B Volatiles, separate prep

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF102939

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-265-403	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium
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, Semivolatiles

Group # WSCF102939

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-523-456	Semivolatile Sample Analysis by SW-846 Method 8270D		
	EPA SW-846	8000B	Determinative Chromagraphic Separations
	EPA SW-846	3510C	Separatory Funnel Liquid-Liquid Extraction
	EPA SW-846	8270D	Semivolatile Organic Compounds by Gas
	EPA SW-846	3545	Pressurized Fluid Extraction (PFE)
			Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8270_SVOA_GCMS	Semivolatile Organic Compounds by Gas
			Chromatography/Mass Spectrometry(GC/MS)
LA-523-427	Polychlorinated Biphenyls (PCB'S) by Gas Chromatography		
	EPA SW-846	3510C	Separatory Funnel Liquid-Liquid Extraction
	EPA SW-846	3545	Pressurized Fluid Extraction (PFE)
	EPA SW-846	3665A	Sulfuric Acid/Permanganate Cleanup
	EPA SW-846	8000B	Determinative Chromatographic Separations
	EPA SW-846	8082	Polychlorinated Biphenyls (PCBs) by Gas
			Chromatography
	HEIS	8082_PCB_GC	Polychlorinated Biphenyls (PCBs) by Gas
			Chromatography
LA-523-493	NWTPH-Dx, Extractible Diesel and Petroleum Productions Analysis in Soil and Water		
	WDOE	WDOE	Total Petroleum Hydrocarbons in Diesel
	HEIS	WTPH_DIESEL	TPH Diesel

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 # WSCF102939

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

Sample # 102939001
SAF# F11-020
Sample ID B29BC0

Matrix WATER
Sampled 11/11/10
Received 11/11/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**11/12/10**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410	UD	<0.019		ug/mL	2	0.019	0.20	11/12/10
Cr(VI)										**11/11/10**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/11/10
ICP Prep										**11/16/10**
ICP-AES										
Lithium	7439-93-2	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/18/10
Boron	7440-42-8	LA-505-411	U	<41		ug/L	1	41	200	11/18/10
ICPMS Prep										**11/16/10**
ICP-MS										
Manganese	7439-96-5	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	11/17/10
Nickel	7440-02-0	LA-505-412	BD	0.680		ug/L	2	0.40	4.0	11/17/10
Silver	7440-22-4	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	11/17/10
Antimony	7440-36-0	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	11/17/10
Barium	7440-39-3	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	11/17/10
Beryllium	7440-41-7	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	11/17/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	11/17/10

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 # WSCF102939

Sample # 102939001
SAF# F11-020
Sample ID B29BC0

Matrix WATER
Sampled 11/11/10
Received 11/11/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Chromium	7440-47-3	LA-505-412	UD	<1.0		ug/L	2	1.0	10	11/17/10
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	11/17/10
Copper	7440-50-8	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	11/17/10
Vanadium	7440-62-2	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	11/17/10
Zinc	7440-66-6	LA-505-412	BD	6.58		ug/L	2	1.6	10	11/17/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	11/17/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	11/17/10
Strontium	7440-24-6	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	11/17/10
Thallium	7440-28-0	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	11/17/10
Tin	7440-31-5	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	11/17/10
Uranium	7440-61-1	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	11/17/10
Arsenic	7440-38-2	LA-505-412	UD	<0.80		ug/L	2	0.80	8.0	11/17/10
Selenium	7782-49-2	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	11/17/10

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, Semivolatiles

Group # WSCF102939

Sample # 102939001
SAF# F11-020
Sample ID B29BC0

Matrix WATER
Sampled 11/11/10
Received 11/11/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8270 Prep										**11/14/10**
SW-846 8270D										
Naphthalene	91-20-3	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Acenaphthylene	208-96-8	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Acenaphthene	83-32-9	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Fluorene	86-73-7	LA-523-456	UT	<1		ug/L	1	1	4	11/15/10
Phenanthrene	85-01-8	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Anthracene	120-12-7	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Fluoranthene	206-44-0	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Pyrene	129-00-0	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Benzo(a)anthracene	56-55-3	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Chrysene	218-01-9	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Benzo(b)fluoranthene	205-99-2	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Benzo(k)fluoranthene	207-08-9	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Benzo(a)pyrene	50-32-8	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Indeno(1,2,3-cd)pyrene	193-39-5	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Dibenzo(a,h)anthracene	53-70-3	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Benzo(g,h,i)perylene	191-24-2	LA-523-456	U	<1		ug/L	1	1	4	11/15/10
Prep for Water										**11/12/10**

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 < lowest calibration but >= 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.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

Sample # 102939001
SAF# F11-020
Sample ID B29BC0

Matrix WATER
Sampled 11/11/10
Received 11/11/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<70		ug/L	1	70	100	11/17/10
Kerosene	TPHKEROSEN	LA-523-493	U	<70		ug/L	1	70	100	11/17/10
SPE										**11/15/10**
PCBs										
Aroclor-1016	12674-11-2	LA-523-427	U	<0.09		ug/L	1	0.09	0.2	11/16/10
Aroclor-1221	11104-28-2	LA-523-427	U	<0.2		ug/L	1	0.2	0.4	11/16/10
Aroclor-1232	11141-16-5	LA-523-427	U	<0.09		ug/L	1	0.09	0.2	11/16/10
Aroclor-1242	53469-21-9	LA-523-427	U	<0.09		ug/L	1	0.09	0.2	11/16/10
Aroclor-1248	12672-29-6	LA-523-427	U	<0.09		ug/L	1	0.09	0.2	11/16/10
Aroclor-1254	11097-69-1	LA-523-427	U	<0.09		ug/L	1	0.09	0.2	11/16/10
Aroclor-1260	11096-82-5	LA-523-427	U	<0.09		ug/L	1	0.09	0.2	11/16/10

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 < lowest calibration but >= 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.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF102939

Sample # 102939001
SAF# F11-020
Sample ID B29BC0

Matrix WATER
Sampled 11/11/10
Received 11/11/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**11/14/10**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	5	11/14/10

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 # WSCF102939

Sample # 102939002
SAF# F11-020
Sample ID B29BC1

Matrix WATER
Sampled 11/11/10
Received 11/11/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**11/14/10**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	11/14/10
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	5	11/14/10

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)

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

QC Batch 169811
Associated Samples 102939001

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #41661**							
Diesel	TPHDIESEL		<80	ug/L					U	11/17/10
Kerosene	TPHKEROSE		<80	ug/L					U	11/17/10
LCS			**QC Sample #41662**							
Diesel	TPHDIESEL		2900	ug/L	117.4	65 - 128				11/17/10
MS			**QC Sample #41663**							
			Original 102939001							
Diesel	TPHDIESEL	<70	2900	ug/L	122.1	73 - 123				11/17/10
MSD			**QC Sample #41664**							
			Original 102939001					**Paired**	**41663**	
Diesel	TPHDIESEL	<70	2700	ug/L	114	73 - 123	6.90	20		11/17/10

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

QC Batch 169812
Associated Samples 102939001

Test PCBs by EPA SW-846 Method 8082

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #41665**							
			Original 102939001							
Aroclor-1254	11097-69-1	<0.09	2.0	ug/L	102.2	60 - 130				11/16/10
MSD			**QC Sample #41666**							
			Original 102939001					**Paired**	**41665**	
Aroclor-1254	11097-69-1	<0.09	2.1	ug/L	102.9	60 - 130	0.70	20		11/16/10
BLANK			**QC Sample #41667**							
Aroclor-1016	12674-11-2		<0.09	ug/L					U	11/16/10
Aroclor-1221	11104-28-2		<0.2	ug/L					U	11/16/10
Aroclor-1232	11141-16-5		<0.09	ug/L					U	11/16/10
Aroclor-1242	53469-21-9		<0.09	ug/L					U	11/16/10
Aroclor-1248	12672-29-6		<0.09	ug/L					U	11/16/10
Aroclor-1254	11097-69-1		<0.09	ug/L					U	11/16/10
Aroclor-1260	11096-82-5		<0.09	ug/L					U	11/16/10
LCS			**QC Sample #41668**							
Aroclor-1254	11097-69-1		2.1	ug/L	102.7	70 - 130				11/16/10

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

QC Batch 169817
Associated Samples 102939001

Test SW-846 8270D Semivolatiles (PAHSIM)

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #41678**						
Naphthalene	91-20-3		<1	ug/L				U	11/15/10
Acenaphthylene	208-96-8		<1	ug/L				U	11/15/10
Acenaphthene	83-32-9		<1	ug/L				U	11/15/10
Fluorene	86-73-7		<1	ug/L				U	11/15/10
Phenanthrene	85-01-8		<1	ug/L				U	11/15/10
Anthracene	120-12-7		<1	ug/L				U	11/15/10
Fluoranthene	206-44-0		<1	ug/L				U	11/15/10
Pyrene	129-00-0		<1	ug/L				U	11/15/10
Benzo(a)anthracene	56-55-3		<1	ug/L				U	11/15/10
Chrysene	218-01-9		<1	ug/L				U	11/15/10
Benzo(b)fluoranthene	205-99-2		<1	ug/L				U	11/15/10
Benzo(k)fluoranthene	207-08-9		<1	ug/L				U	11/15/10
Benzo(a)pyrene	50-32-8		<1	ug/L				U	11/15/10
Indeno(1,2,3-cd)pyrene	193-39-5		<1	ug/L				U	11/15/10
Dibenzo(a,h)anthracene	53-70-3		<1	ug/L				U	11/15/10
Benzo(g,h,i)perylene	191-24-2		<1	ug/L				U	11/15/10
LCS			**QC Sample #41679**						

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Naphthalene	91-20-3		28	ug/L	94.8	59 - 113				11/15/10
Acenaphthene	83-32-9		31	ug/L	102	60 - 115				11/15/10
Fluorene	86-73-7		31	ug/L	104.6	61 - 116				11/15/10
Anthracene	120-12-7		32	ug/L	107.7	30 - 140				11/15/10
Pyrene	129-00-0		33	ug/L	109.8	56 - 135				11/15/10
Benzo(a)pyrene	50-32-8		33	ug/L	110.3	44 - 148				11/15/10
MS			**QC Sample #41680**							
			Original 102883001							
Naphthalene	91-20-3		31	ug/L	102.9	64 - 112				11/15/10
Acenaphthene	83-32-9		33	ug/L	111.2	62 - 116				11/15/10
Fluorene	86-73-7		34	ug/L	112.4	65 - 112			T	11/15/10
Anthracene	120-12-7		34	ug/L	112.2	65 - 114				11/15/10
Pyrene	129-00-0		34	ug/L	113.1	67 - 123				11/15/10
Benzo(a)pyrene	50-32-8		37	ug/L	124	52 - 129				11/15/10
MSD			**QC Sample #41681**							
			Original 102883001					**Paired**	**41680**	
Naphthalene	91-20-3		29	ug/L	96.2	64 - 112	6.70	20		11/16/10
Acenaphthene	83-32-9		31	ug/L	101.9	62 - 116	8.70	20		11/16/10
Fluorene	86-73-7		31	ug/L	102.5	65 - 112	9.20	20		11/16/10
Anthracene	120-12-7		32	ug/L	105.4	65 - 114	6.20	20		11/16/10
Pyrene	129-00-0		33	ug/L	108.8	67 - 123	3.90	20		11/16/10
Benzo(a)pyrene	50-32-8		31	ug/L	104.2	52 - 129	17.40	20		11/16/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF102939

QC Batch 169819
Associated Samples 102939001, 102939002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #41682**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	11/14/10
Trichloroethene	79-01-6		<1	ug/L					U	11/14/10
Benzene	71-43-2		<1	ug/L					U	11/14/10
Toluene	108-88-3		<1	ug/L					U	11/14/10
Chlorobenzene	108-90-7		<1	ug/L					U	11/14/10
Carbon tetrachloride	56-23-5		<1	ug/L					U	11/14/10
LCS			**QC Sample #41683**							
1,1-Dichloroethene	75-35-4		29	ug/L	114.6	75 - 125				11/14/10
Trichloroethene	79-01-6		30	ug/L	118.7	75 - 125				11/14/10
Benzene	71-43-2		31	ug/L	122.9	75 - 125				11/14/10
Toluene	108-88-3		30	ug/L	121.4	75 - 125				11/14/10
Chlorobenzene	108-90-7		31	ug/L	123.3	75 - 125				11/14/10
MS			**QC Sample #41684**							
			Original 102922001							
1,1-Dichloroethene	75-35-4		28	ug/L	112.9	75 - 125				11/14/10
Trichloroethene	79-01-6		30	ug/L	122	75 - 125				11/14/10
Benzene	71-43-2		31	ug/L	122.6	75 - 125				11/14/10
Toluene	108-88-3		31	ug/L	123.7	75 - 125				11/14/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF102939

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Chlorobenzene	108-90-7		31	ug/L	123.8	75 - 125				11/14/10
MSD			**QC Sample #41685**							
			Original 102922001					**Paired**	**41684**	
1,1-Dichloroethene	75-35-4		28	ug/L	113.6	75 - 125	0.60	20		11/14/10
Trichloroethene	79-01-6		28	ug/L	112.4	75 - 125	8.20	20		11/14/10
Benzene	71-43-2		30	ug/L	119	75 - 125	3.00	20		11/14/10
Toluene	108-88-3		31	ug/L	122.7	75 - 125	0.80	20		11/14/10
Chlorobenzene	108-90-7		31	ug/L	123.3	75 - 125	0.40	20		11/14/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

QC Batch 169824
Associated Samples 102939001

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #41704**							
Hexavalent chromium	18540-29-9		0.0511	mg/L	102.2	90 - 110				11/11/10
BLANK			**QC Sample #41705**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/11/10
DUP			**QC Sample #41706**							
			Original 102939001							
Hexavalent chromium	18540-29-9	<0.0020	<0.0020	mg/L			-28.60	20	U	11/11/10
MS			**QC Sample #41707**							
			Original 102939001							
Hexavalent chromium	18540-29-9	<0.0020	0.0397	mg/L	99.2	85 - 115				11/11/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

QC Batch 169847
Associated Samples 102939001

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #41790**								
Nitrate-N	NO3-N		<9.7E-3	ug/mL						U	11/12/10
LCS			**QC Sample #41791**								
Nitrate-N	NO3-N		0.943	ug/mL	106.5	90 - 110					11/12/10
DUP			**QC Sample #41792**								
			Original 102939001								
Nitrate-N	NO3-N	<0.019	<0.019	ug/mL			200.00	20	*	UXD	11/12/10
MS			**QC Sample #41793**								
			Original 102939001								
Nitrate-N	NO3-N	<0.019	0.988	ug/mL	110.5	80 - 120				D	11/12/10
MSD			**QC Sample #41794**								
			Original 102939001						**Paired**	**41793**	
Nitrate-N	NO3-N	<0.019	0.938	ug/mL	104.9	80 - 120	5.20	20		D	11/12/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

QC Batch 169913
Associated Samples 102939001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #41909**						
Manganese	7439-96-5		<0.10	ug/L				U	11/17/10
Nickel	7440-02-0		<0.20	ug/L				U	11/17/10
Silver	7440-22-4		<0.10	ug/L				U	11/17/10
Antimony	7440-36-0		<0.30	ug/L				U	11/17/10
Barium	7440-39-3		<0.20	ug/L				U	11/17/10
Beryllium	7440-41-7		<0.10	ug/L				U	11/17/10
Cadmium	7440-43-9		<0.10	ug/L				U	11/17/10
Chromium	7440-47-3		<0.50	ug/L				U	11/17/10
Cobalt	7440-48-4		<0.050	ug/L				U	11/17/10
Copper	7440-50-8		<0.10	ug/L				U	11/17/10
Vanadium	7440-62-2		<0.20	ug/L				U	11/17/10
Zinc	7440-66-6		<0.80	ug/L				U	11/17/10
Lead	7439-92-1		<0.10	ug/L				U	11/17/10
Mercury	7439-97-6		<0.050	ug/L				U	11/17/10
Strontium	7440-24-6		<0.10	ug/L				U	11/17/10
Thallium	7440-28-0		<0.050	ug/L				U	11/17/10
Tin	7440-31-5		<0.050	ug/L				U	11/17/10
Uranium	7440-61-1		<0.050	ug/L				U	11/17/10
Arsenic	7440-38-2		<0.40	ug/L				U	11/17/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Selenium	7782-49-2		<0.30	ug/L					U	11/17/10
LCS			**QC Sample #41910**							
Manganese	7439-96-5		40.4	ug/L	101	85 - 115				11/17/10
Nickel	7440-02-0		39.6	ug/L	99.1	85 - 115				11/17/10
Silver	7440-22-4		39.8	ug/L	99.6	85 - 115				11/17/10
Antimony	7440-36-0		41.0	ug/L	102.5	85 - 115				11/17/10
Barium	7440-39-3		41.0	ug/L	102.4	85 - 115				11/17/10
Beryllium	7440-41-7		38.3	ug/L	95.8	85 - 115				11/17/10
Cadmium	7440-43-9		40.0	ug/L	100.1	85 - 115				11/17/10
Chromium	7440-47-3		40.2	ug/L	100.5	85 - 115				11/17/10
Cobalt	7440-48-4		40.3	ug/L	100.6	85 - 115				11/17/10
Copper	7440-50-8		39.3	ug/L	98.2	85 - 115				11/17/10
Vanadium	7440-62-2		39.9	ug/L	99.8	85 - 115				11/17/10
Zinc	7440-66-6		39.5	ug/L	98.7	85 - 115				11/17/10
Lead	7439-92-1		40.9	ug/L	102.2	85 - 115				11/17/10
Mercury	7439-97-6		1.90	ug/L	95.2	85 - 115				11/17/10
Strontium	7440-24-6		41.4	ug/L	103.4	85 - 115				11/17/10
Thallium	7440-28-0		40.4	ug/L	101.1	85 - 115				11/17/10
Tin	7440-31-5		41.0	ug/L	102.5	85 - 115				11/17/10
Uranium	7440-61-1		41.0	ug/L	102.4	85 - 115				11/17/10
Arsenic	7440-38-2		41.0	ug/L	102.4	85 - 115				11/17/10
Selenium	7782-49-2		38.4	ug/L	96	85 - 115				11/17/10
MS			**QC Sample #41911**							
			Original 102883001							

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Manganese	7439-96-5		41.5	ug/L	103.8	70 - 130				11/17/10
Nickel	7440-02-0		40.7	ug/L	101.6	70 - 130				11/17/10
Silver	7440-22-4		40.5	ug/L	101.3	70 - 130				11/17/10
Antimony	7440-36-0		41.1	ug/L	102.6	70 - 130				11/17/10
Barium	7440-39-3		40.8	ug/L	101.9	70 - 130				11/17/10
Beryllium	7440-41-7		41.9	ug/L	104.8	70 - 130				11/17/10
Cadmium	7440-43-9		40.6	ug/L	101.4	70 - 130				11/17/10
Chromium	7440-47-3		41.3	ug/L	103.3	70 - 130				11/17/10
Cobalt	7440-48-4		40.7	ug/L	101.8	70 - 130				11/17/10
Copper	7440-50-8		39.8	ug/L	99.5	70 - 130				11/17/10
Vanadium	7440-62-2		40.3	ug/L	100.6	70 - 130				11/17/10
Zinc	7440-66-6		39.6	ug/L	98.9	70 - 130				11/17/10
Lead	7439-92-1		41.2	ug/L	103	70 - 130				11/17/10
Mercury	7439-97-6		1.96	ug/L	98.2	70 - 130				11/17/10
Strontium	7440-24-6		42.2	ug/L	105.5	70 - 130				11/17/10
Thallium	7440-28-0		40.9	ug/L	102.2	70 - 130				11/17/10
Tin	7440-31-5		41.4	ug/L	103.4	70 - 130				11/17/10
Uranium	7440-61-1		42.0	ug/L	104.9	70 - 130				11/17/10
Arsenic	7440-38-2		41.1	ug/L	102.7	70 - 130				11/17/10
Selenium	7782-49-2		40.7	ug/L	101.8	70 - 130				11/17/10
MSD			**QC Sample #41912**							
			Original 102883001						**Paired 41911**	
Manganese	7439-96-5		43.0	ug/L	107.5	70 - 130	3.50	20		11/17/10
Nickel	7440-02-0		42.6	ug/L	106.6	70 - 130	4.80	20		11/17/10
Silver	7440-22-4		41.5	ug/L	103.7	70 - 130	2.30	20		11/17/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Antimony	7440-36-0		41.7	ug/L	104.2	70 - 130	1.50	20		11/17/10
Barium	7440-39-3		42.0	ug/L	105.1	70 - 130	3.10	20		11/17/10
Beryllium	7440-41-7		40.4	ug/L	101	70 - 130	3.70	20		11/17/10
Cadmium	7440-43-9		40.7	ug/L	101.8	70 - 130	0.40	20		11/17/10
Chromium	7440-47-3		43.6	ug/L	109	70 - 130	5.40	20		11/17/10
Cobalt	7440-48-4		42.5	ug/L	106.3	70 - 130	4.30	20		11/17/10
Copper	7440-50-8		42.3	ug/L	105.6	70 - 130	5.90	20		11/17/10
Vanadium	7440-62-2		42.6	ug/L	106.6	70 - 130	5.80	20		11/17/10
Zinc	7440-66-6		41.6	ug/L	103.9	70 - 130	4.90	20		11/17/10
Lead	7439-92-1		42.1	ug/L	105.2	70 - 130	2.10	20		11/17/10
Mercury	7439-97-6		2.00	ug/L	100.2	70 - 130	2.00	20		11/17/10
Strontium	7440-24-6		43.2	ug/L	108.1	70 - 130	2.40	20		11/17/10
Thallium	7440-28-0		41.7	ug/L	104.2	70 - 130	1.90	20		11/17/10
Tin	7440-31-5		42.1	ug/L	105.2	70 - 130	1.70	20		11/17/10
Uranium	7440-61-1		42.6	ug/L	106.5	70 - 130	1.50	20		11/17/10
Arsenic	7440-38-2		41.4	ug/L	103.5	70 - 130	0.80	20		11/17/10
Selenium	7782-49-2		41.1	ug/L	102.8	70 - 130	1.00	20		11/17/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF102939

QC Batch 169921
Associated Samples 102939001

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #41943**							
Lithium	7439-93-2		<4.0	ug/L					U	11/18/10
Boron	7440-42-8		<41	ug/L					U	11/18/10
LCS			**QC Sample #41944**							
Lithium	7439-93-2		497	ug/L	99.4	80 - 120				11/18/10
Boron	7440-42-8		1010	ug/L	101	80 - 120				11/18/10
MS			**QC Sample #41945**							
			Original 102926001							
Lithium	7439-93-2		459	ug/L	91.8	75 - 125				11/18/10
Boron	7440-42-8		985	ug/L	98.5	75 - 125				11/18/10
MSD			**QC Sample #41946**							
			Original 102926001					**Paired**	**41945**	
Lithium	7439-93-2		466	ug/L	93.2	75 - 125	1.50	20		11/18/10
Boron	7440-42-8		958	ug/L	95.8	75 - 125	2.80	20		11/18/10

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

QC Batch 169811
Associated Samples 102939001

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #102939001**							
o-Terphenyl	84-15-1				79.9	70 - 130				11/17/10
BLANK			**QC Sample #41661**							
o-Terphenyl	84-15-1				93.1	70 - 130				11/17/10
LCS			**QC Sample #41662**							
o-Terphenyl	84-15-1				103.6	70 - 130				11/17/10
MS			**QC Sample #41663**							
			Original 102939001							
o-Terphenyl	84-15-1				105.6	70 - 130				11/17/10
MSD			**QC Sample #41664**							
			Original 102939001						**Paired 41663**	
o-Terphenyl	84-15-1				108.3	70 - 130	2.50	20		11/17/10

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

QC Batch 169812
Associated Samples 102939001

Test PCBs by EPA SW-846 Method 8082

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #102939001**							
Tetrachloro-m-xylene	877-09-8				26	60 - 140			X	11/16/10
Decachlorobiphenyl	2051-24-3				89.6	60 - 140				11/16/10
MS			**QC Sample #41665**							
			Original 102939001							
Tetrachloro-m-xylene	877-09-8				24.3	60 - 140			X	11/16/10
Decachlorobiphenyl	2051-24-3				90.1	60 - 140				11/16/10
MSD			**QC Sample #41666**							
			Original 102939001					**Paired**	**41665**	
Tetrachloro-m-xylene	877-09-8				70.6	60 - 140	97.60			11/16/10
Decachlorobiphenyl	2051-24-3				89.7	60 - 140	0.40			11/16/10
BLANK			**QC Sample #41667**							
Tetrachloro-m-xylene	877-09-8				72.9	60 - 140				11/16/10
Decachlorobiphenyl	2051-24-3				86.5	60 - 140				11/16/10
LCS			**QC Sample #41668**							
Tetrachloro-m-xylene	877-09-8				73.4	60 - 140				11/16/10
Decachlorobiphenyl	2051-24-3				87.9	60 - 140				11/16/10

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

QC Batch 169817
Associated Samples 102939001

Test SW-846 8270D Semivolatiles (PAHSIM)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #102939001**							
Nitrobenzene-d5	4165-60-0				102.5	25 - 144				11/15/10
2-Fluorobiphenyl	321-60-8				106.4	52 - 113				11/15/10
Terphenyl-d14	98904-43-9				116.9	63 - 132				11/15/10
BLANK			**QC Sample #41678**							
Nitrobenzene-d5	4165-60-0				112.1	25 - 144				11/15/10
2-Fluorobiphenyl	321-60-8				111.8	52 - 113				11/15/10
Terphenyl-d14	98904-43-9				112.1	63 - 132				11/15/10
LCS			**QC Sample #41679**							
Nitrobenzene-d5	4165-60-0				98.7	25 - 144				11/15/10
2-Fluorobiphenyl	321-60-8				105.1	52 - 113				11/15/10
Terphenyl-d14	98904-43-9				113.1	63 - 132				11/15/10
MS			**QC Sample #41680**							
			Original 102883001							
Nitrobenzene-d5	4165-60-0				101.6	25 - 144				11/15/10
2-Fluorobiphenyl	321-60-8				107.5	52 - 113				11/15/10
Terphenyl-d14	98904-43-9				122.3	63 - 132				11/15/10
MSD			**QC Sample #41681**							
			Original 102883001					**Paired 41680**		

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF102939

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Nitrobenzene-d5	4165-60-0				94.8	25 - 144	6.90			11/16/10
2-Fluorobiphenyl	321-60-8				101.3	52 - 113	5.90			11/16/10
Terphenyl-d14	98904-43-9				113.2	63 - 132	7.70			11/16/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF102939

QC Batch 169819
Associated Samples 102939001, 102939002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #102939001**							
1,2-Dichloroethane-d4	17060-07-0				121.6	75 - 125				11/14/10
Toluene-d8	2037-26-5				122.2	75 - 125				11/14/10
4-Bromofluorobenzene	460-00-4				124.8	75 - 125				11/14/10
SAMPLE			**Sample #102939002**							
1,2-Dichloroethane-d4	17060-07-0				123.5	75 - 125				11/14/10
Toluene-d8	2037-26-5				123.4	75 - 125				11/14/10
4-Bromofluorobenzene	460-00-4				124.3	75 - 125				11/14/10
BLANK			**QC Sample #41682**							
1,2-Dichloroethane-d4	17060-07-0				118.7	75 - 125				11/14/10
Toluene-d8	2037-26-5				123.3	75 - 125				11/14/10
4-Bromofluorobenzene	460-00-4				116.1	75 - 125				11/14/10
LCS			**QC Sample #41683**							
1,2-Dichloroethane-d4	17060-07-0				123.2	75 - 125				11/14/10
Toluene-d8	2037-26-5				124	75 - 125				11/14/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF102939

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				119.2	75 - 125				11/14/10
MS			**QC Sample #41684**							
			Original	**102922001**						
1,2-Dichloroethane-d4	17060-07-0				122.4	75 - 125				11/14/10
Toluene-d8	2037-26-5				124.5	75 - 125				11/14/10
4-Bromofluorobenzene	460-00-4				119.2	75 - 125				11/14/10
MSD			**QC Sample #41685**							
			Original	**102922001**				**Paired**	**41684**	
1,2-Dichloroethane-d4	17060-07-0				123.8	75 - 125	1.10	20		11/14/10
Toluene-d8	2037-26-5				121	75 - 125	2.90	20		11/14/10
4-Bromofluorobenzene	460-00-4				124.6	75 - 125	4.40	20		11/14/10

Analytical Comment Report

Attention: Michael Neely **Group #** WSCF102939

102939001	B29BC0

Department Organic, Semivolatiles

Analyte Tetrachloro-m-xylene - PCBs by EPA SW-846 Method 8082

[1] Surrogate recovery outside of established laboratory control limits.

Quality Control Comments

Department Inorganic

41792 B29BC0(102939001DUP)

Analyte Nitrate-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.

Analytical Comment Report

Attention: Michael Neely **Group #** WSCF102939

Quality Control Comments

Department Organic, Semivolatiles

41665 B29BC0(102939001MS)

Analyte Tetrachloro-m-xylene - PCBs by EPA SW-846 Method 8082

[1] Surrogate recovery outside of established laboratory control limits.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 5 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 #: 402109/ES20
Work Order #: 102939
Profile #: F11-020-001
Proj. Mgr.:
Phone:

The following samples were received from you on 11/11/2010 1:50:00 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		
102939001	B29BC0	WATER	11/11/2010 08:45	11/11/2010 13:50
		2008-W, 6010-W, 8260V-W, CR6DA-W, IC-W, PAHSIM-W, PCB-W, TPHDWA-W		
102939002	B29BC1	WATER	11/11/2010 11:35	11/11/2010 13:50
		8260V-W		

Test Acronym Description

Test Acronym	Description
2008-W	ICP-MS (W)
6010-W	ICP-AES (W)
8260V-W	Volatiles by 8260B (W)
CR6DA-W	Cr6 (W-Discrete analyzer)
IC-W	Anions by IC (W)
PAHSIM-W	PAHSIM by 8270D SemiVOA (W)
PCB-W	PCB (8082) (W)
TPHDWA-W	TPHD-WA (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-020-005 PAGE 1 OF 2

COLLECTOR: B.E. Briggs, CHPRC

COMPANY CONTACT: WORTZ, EL

TELEPHONE NO.: 376-1859

PROJECT COORDINATOR: YOERIG, EL

PRICE CODE: 7R

DATA TURNAROUND: 7 Days / 14 Days

SAMPLING LOCATION: 600-222 Ex 1

PROJECT DESIGNATION: 600-222 Waste Site (1400 Burn Site) Verification - QC Sampling

SAF NO.: F11-020

AIR QUALITY:

ICE CHEST NO.: N/A

FIELD LOGBOOK NO.: HNF-N-507-15-34

ACTUAL SAMPLE DEPTH: N/A

COA: 102932.010

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

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

MATRIX*: Soil, Solid, Liquid, Sludge, Leachate, Oil, Soil, Air, Sediment, Tissue, Vegetation, W-Water, Wipe, 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 regulated per DOE Order 5400.5 (1990/1993)

102939

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	Cool-4C	HCl to pH<2 Cool-4C	Cool-4C	HNO3 to pH<2	Cool-4C	Cool-4C
HOLDING TIME	14 Days	180 Days	28 Days	14 Days	28 Days	28 Days	28 Days/ Cool
TYPE OF CONTAINER	Jar	Jar	Jar	Jar	Jar	Jar	Jar
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	500 g	1L	1L	1L	500 g	500 g	500 g
SAMPLE ANALYSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B28ECQ	WATER	NOV 11 2010	0945	✓	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
B.E. Briggs CHPRC	NOV 11 2010 1350	Mandy A. Nelson	NOV 11 2010/350
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

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

ORIGINAL

LABORATORY SECTION: RECEIVED BY

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD

TITLE: DATE/TIME

DISPOSED BY: DATE/TIME

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-020-001 PAGE 2 OF 2

COLLECTOR: B.E. Briggs CHPRC	COMPANY CONTACT: Williams, D.	TELEPHONE NO.: 376-2458	PROJECT COORDINATOR: Williams, D.
PRICE CODE: 7B	DATA TURNAROUND: 7 Days / 45 Days		
SAMPLING LOCATION: 600-227 (9-1)	PROJECT DESIGNATION: 600-222 Waste Site 200-CO Gen Site Verification - QC Sampling		SAF NO.: F11-020
AIR QUALITY:			
TCE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-15, 34	ACTUAL SAMPLE DEPTH: N/A	COA: 382590519
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402109E520.

** The 200 Area S&GPP Characterization and Monitoring Sampling and Analysis CKI applies to this SAF.

** The laboratory shall report only the requested constituents of concern in all preliminary or final hardcopy data reports, or EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report narrative. No TICs shall be reported.

(1) Semi-VOA - 8270 (TCL) (Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene);

(2) TPH-Diesel/Kerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range);

(3) PCBs - 8082 (Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260);

(4) 200.8_HG - ICPMS (Mercury); ICP/MS - 200.8 (TAL) (Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc); ICP/MS - 200.8 (Add-on) (Arsenic, Beryllium, Lead, Selenium, Strontium, Thallium, Tin, Uranium); ICP Metals - 6010 (Add-On) (Boron, Lithium);

DEPT 4

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-020-002 PAGE 1 OF 1

COLLECTOR: KB Huise, CHPRC	COMPANY CONTACT: WEBBS, DL	TELEPHONE NO.	PROJECT COORDINATOR: WEBBS, DL
PRICE CODE: 7B	DATA TURNAROUND: 7 Days / 35 Days	AIR QUALITY	
SAMPLING LOCATION: 629-122 PAR 1	PROJECT DESIGNATION: 200-223 Waste Site (H-63 Site) Step Verification - QC Sampling	SAF NO.: F11-020	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-E-34	ACTUAL SAMPLE DEPTH: N/A	COA: 9021009S16
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: 1-Air, 2-Biological, 3-Food, 4-Liquid, 5-Oil, 6-Soil, 7-Tissue, 8-Vegetation, 9-Wipe, 10-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 regulated per DOE Order 5400.5 (2/08/1993)

SPECIAL HANDLING AND/ OR STORAGE

PRESERVATION	Not or NONE to be added
HOLDING TIME	14 days
TYPE OF CONTAINER	Glass
NO. OF CONTAINER(S)	2
VOLUME	40ml
SAMPLE ANALYSIS	200-West GW/VZ Sampling Requirements

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
S2980C1 2	WATER	NOV 11 2010	1135	✓

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Huise	NOV 11 2010 1350	Mandy A Nelson	NOV 11 2010 1350

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 4021109E520.
** The 200 Area SAGR2 Characterization and Monitoring Sampling and Analysis GNI applies to this SAF.
** The laboratory shall report only the requested constituents of concern in all preliminary or final hardcopy data reports, or EDDs. QC results for non-requested constituents need not be reported, but samples chosen for matrix spike, and all spike compounds shall be identified in the final data report narrative. No TICs shall be reported.

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME