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RECEIVED AUGUST 26, 2008

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Memorandum

M4W41-SLF-08-904

To:	H. Hampt	E6-35	Date:	August 26, 2008
From:	S. L. Fitzgerald, Manager WSCF Analytical Lab			

cc: w/Attachments

T. F. Dale	S3-30	P. D. Mix	S3-30
D. Felmy (PNNL)	K6-75	J. E. Trechter	S3-30
A. J. Kopriva	S3-30	S. J. Trent	E6-35
H. K. Meznarich	S3-30	File/LB	

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081363

Reference:
1) Letter of Instruction for Analytical Services for the Groundwater Performance Assessment Project and Analytical Laboratory Transition Plan, FH-0602422, September 19, 2006
2) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This transmittal contains the following information for sample delivery group WSCF20081363:

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

SLF/grf

Attachments 4

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M4W41-SLF-08-904

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081363
Data Deliverable Date: 21-aug-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-037	B1V9F1	W08P003346	WATER
	B1V9X3	W08P003343	WATER
	B1V9X7	W08P003344	WATER
	B1VB10	W08P003345	WATER

M4W41-SLF-08-904

ATTACHMENT 2

NARRATIVE

Consisting of 5 pages
Including cover page

Introduction

Four groundwater samples were received at the WSCF Laboratory on July 7, 2008. Samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the sample container.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 15 through 17, for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 26 for QC details. Analytical Note(s):

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

All QC controls are within the established limits.

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 per GRP Letter of Instruction. See pages 27 through 29 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Duplicates, Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1VMC2 and B1VMC8 (SDG# 20081358).
- Batch QC - B1VMC2 – Spike Relative Percent Difference (RPD) for Chloride slightly exceeded established laboratory limits. No flags issued.

All other QC controls are within the established limits.

Cyanide – 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 per GRP Letter of Instruction. See page 30 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1VLM5 (SDG# 20081358).

All QC controls are within the established limits.

ICP-AES Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 34 through 37 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1VNJ8 (SDG# 20081358).
- Silver and Iron contamination detected in the Blank was evaluated and there was no affect on sample results.
- Calcium, Magnesium and Sodium concentrations exceeded spiking levels by a factor of 4. Spike recoveries are not valid. Check standard was analyzed to ensure linearity because the sample results were greater than the calibration standard.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31 through 32 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1V9X7 of this SDG; and, B1V7P8 and B1V7P9 (SDG# 20081455).
- Mercury – Sample results are X flagged. Due to a LABCORE glitch, the Batch QC data are offered below for

  <u>Batch QC - B1V9X7</u>

  Matrix Spike recovery – 90%

  Matrix Spike Duplicate recovery – 93%

  Spike Relative Percent Difference – 3.3%

  <u>Batch QC - B1V7P8</u>

Matrix Spike recovery – 98%

Matrix Spike Duplicate recovery – 96%

Spike Relative Percent Difference – 2.1%

Batch QC - B1V7P9

Matrix Spike recovery – 95%

Matrix Spike Duplicate recovery – 98%

Spike Relative Percent Difference – 3.1%

All QC controls are within the established limits.

Total Organic Carbon – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Method Spike were analyzed with this delivery group per the GRP Letter of Instruction. See page 33 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1VNJ4 (SDG# 20081358) and B1V9F1 of this SDG.

All QC controls are within the established limits.

Organic Comments

Alcohol/Glycols - The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 45 for QC details.

All 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 per the GPP Letter of Instruction. See pages 46 through 49 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1VKY6 (SDG# 20081406).

All 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. See page 50 for QC details. Analytical Note(s):

- Duplicates, Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1W1B5 (SDG# 20081371, SAF# F08-134) and B1V9X7 of this SDG.

All QC controls are within the established limits.

TPHG-WA – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 51 for QC details.

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 per the GRP Letter of Instruction. See pages 52 through 54 for QC details. Analytical Note(s):

- Sample results that were less than the lowest calibration standard, however greater than the method detection limit, were J flagged.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 58 through 60 for QC details. Analytical Note(s):

- Strontium-89/90 and 85 (tracer) – Duplicate QC was analyzed on sample# B1W1M5 (SDG# 20081334).
- Technetium-99 – Duplicate and Matrix Spike were analyzed on sample# B1VKN0 (SDG# 20081312).
- Tritium – Duplicate and Matrix Spike were analyzed on sample# B1VLD9 (SDG# 20081335).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-904

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 52 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: S. Fitzgerald 8/26/08

Client Services: P.D. Mix 8/20/2008

All results are reported on an "as received" basis unless otherwise noted in the comment section.

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.

Report#: WSCF20081363
Report Date: 24-aug-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 24-aug-2008 07:33:49

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081363

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37001	6	37424	41761	BLANK		Cyanide by Midi/Spectrophotom
37001	7	37424	41761	LCS		Cyanide by Midi/Spectrophotom
37001	12	37424	41761	MS	W08P003311	Cyanide by Midi/Spectrophotom
37001	13	37424	41761	MSD	W08P003311	Cyanide by Midi/Spectrophotom
37001	13	37424	41761	SPK-RPD	W08P003311	Cyanide by Midi/Spectrophotom
37001	16	37424	41761	SAMPLE	W08P003344	Cyanide by Midi/Spectrophotom
37001	17	37424	41761	SAMPLE	W08P003346	Cyanide by Midi/Spectrophotom
37012	2	37439	41797	BLANK		Anions by Ion Chromatography
37012	16	37439	41797	BLANK		Anions by Ion Chromatography
37012	27	37439	41797	BLANK		Anions by Ion Chromatography
37012	3	37439	41797	LCS		Anions by Ion Chromatography
37012	17	37439	41797	LCS		Anions by Ion Chromatography
37012	5	37439	41797	DUP	W08P003333	Anions by Ion Chromatography
37012	6	37439	41797	MS	W08P003333	Anions by Ion Chromatography
37012	7	37439	41797	MSD	W08P003333	Anions by Ion Chromatography
37012	7	37439	41797	SPK-RPD	W08P003333	Anions by Ion Chromatography
37012	19	37439	41797	DUP	W08P003334	Anions by Ion Chromatography
37012	21	37439	41797	MS	W08P003334	Anions by Ion Chromatography
37012	22	37439	41797	MSD	W08P003334	Anions by Ion Chromatography
37012	22	37439	41797	SPK-RPD	W08P003334	Anions by Ion Chromatography
37012	14	37439	41797	SAMPLE	W08P003344	Anions by Ion Chromatography
37012	15	37439	41797	SAMPLE	W08P003346	Anions by Ion Chromatography
37198	3	37634	41948	BLANK		Ammonia (N) by IC
37198	15	37634	41948	BLANK		Ammonia (N) by IC
37198	1	37634	41948	LCS		Ammonia (N) by IC
37198	5	37634	41948	DUP	W08P003344	Ammonia (N) by IC
37198	6	37634	41948	MS	W08P003344	Ammonia (N) by IC
37198	7	37634	41948	MSD	W08P003344	Ammonia (N) by IC
37198	4	37634	41948	SAMPLE	W08P003344	Ammonia (N) by IC
37198	7	37634	41948	SPK-RPD	W08P003344	Ammonia (N) by IC
37198	8	37634	41948	SAMPLE	W08P003346	Ammonia (N) by IC
37324	1	37758	42092	BLANK		Total Organic Carbon
37324	2	37758	42092	METHSPIKE		Total Organic Carbon
37324	3	37758	42092	SPK-RSD		Total Organic Carbon
37324	19	37758	42092	SPK-RSD		Total Organic Carbon
37324	4	37758	42092	MS	W08P003314	Total Organic Carbon
37324	5	37758	42092	MSD	W08P003314	Total Organic Carbon
37324	5	37758	42092	SPK-RPD	W08P003314	Total Organic Carbon
37324	15	37758	42092	SAMPLE	W08P003344	Total Organic Carbon
37324	17	37758	42092	MS	W08P003346	Total Organic Carbon
37324	18	37758	42092	MSD	W08P003346	Total Organic Carbon
37324	16	37758	42092	SAMPLE	W08P003346	Total Organic Carbon
37324	18	37758	42092	SPK-RPD	W08P003346	Total Organic Carbon
37445	1	37876	42191	BLANK		ICP-200.8 MS All possible meta
37445	2	37876	42191	LCS		ICP-200.8 MS All possible meta
37445	12	37876	42191	SAMPLE	W08P003343	ICP-200.8 MS All possible meta
37445	4	37876	42191	MS	W08P003344	ICP-200.8 MS All possible meta
37445	5	37876	42191	MSD	W08P003344	ICP-200.8 MS All possible meta

37445	3	37876	42191	SAMPLE	W08P003344	ICP-200.8 MS All possible meta
37445	5	37876	42191	SPK-RPD	W08P003344	ICP-200.8 MS All possible meta
37445	13	37876	42191	SAMPLE	W08P003345	ICP-200.8 MS All possible meta
37445	14	37876	42191	SAMPLE	W08P003346	ICP-200.8 MS All possible meta
37445	7	37876	42191	MS	W08P003520	ICP-200.8 MS All possible meta
37445	8	37876	42191	MSD	W08P003520	ICP-200.8 MS All possible meta
37445	8	37876	42191	SPK-RPD	W08P003520	ICP-200.8 MS All possible meta
37445	10	37876	42191	MS	W08P003521	ICP-200.8 MS All possible meta
37445	11	37876	42191	MSD	W08P003521	ICP-200.8 MS All possible meta
37445	11	37876	42191	SPK-RPD	W08P003521	ICP-200.8 MS All possible meta
37678	1	37636	42520	BLANK		ICP Metals Analysis, Grd H20 P
37678	2	37636	42520	LCS		ICP Metals Analysis, Grd H20 P
37678	4	37636	42520	MS	W08P003318	ICP Metals Analysis, Grd H20 P
37678	5	37636	42520	MSD	W08P003318	ICP Metals Analysis, Grd H20 P
37678	5	37636	42520	SPK-RPD	W08P003318	ICP Metals Analysis, Grd H20 P
37678	21	37636	42520	SAMPLE	W08P003343	ICP Metals Analysis, Grd H20 P
37678	22	37636	42520	SAMPLE	W08P003344	ICP Metals Analysis, Grd H20 P
37678	23	37636	42520	SAMPLE	W08P003345	ICP Metals Analysis, Grd H20 P
37678	24	37636	42520	SAMPLE	W08P003346	ICP Metals Analysis, Grd H20 P

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Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081363

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			41940	BLANK		NWTPH-D TPH Diesel Range (Wa)
			41940	LCS		NWTPH-D TPH Diesel Range (Wa)
			41940	MS	W08GR02298	NWTPH-D TPH Diesel Range (Wa)
			41940	MSD	W08GR02298	NWTPH-D TPH Diesel Range (Wa)
			41940	MS	W08P003344	NWTPH-D TPH Diesel Range (Wa)
			41940	MSD	W08P003344	NWTPH-D TPH Diesel Range (Wa)
			41940	SAMPLE	W08P003344	NWTPH-D TPH Diesel Range (Wa)
			41940	SPK-RPD	W08P003344	NWTPH-D TPH Diesel Range (Wa)
			41940	SURR	W08P003344	NWTPH-D TPH Diesel Range (Wa)
			41940	SAMPLE	W08P003346	NWTPH-D TPH Diesel Range (Wa)
			41940	SURR	W08P003346	NWTPH-D TPH Diesel Range (Wa)
			41983	BLANK		SW-846 8270C Semi-Vols
			41983	LCS		SW-846 8270C Semi-Vols
			41983	SAMPLE	W08P003344	SW-846 8270C Semi-Vols
			41983	SURR	W08P003344	SW-846 8270C Semi-Vols
			41983	SAMPLE	W08P003346	SW-846 8270C Semi-Vols
			41983	SURR	W08P003346	SW-846 8270C Semi-Vols
			41983	MS	W08P003413	SW-846 8270C Semi-Vols
			41983	MSD	W08P003413	SW-846 8270C Semi-Vols
			41983	SPK-RPD	W08P003413	SW-846 8270C Semi-Vols
			42208	BLANK		VOA Ground Water Protection
			42208	LCS		VOA Ground Water Protection
			42208	MS	W08P003344	VOA Ground Water Protection
			42208	MSD	W08P003344	VOA Ground Water Protection
			42208	SAMPLE	W08P003344	VOA Ground Water Protection
			42208	SPK-RPD	W08P003344	VOA Ground Water Protection
			42208	SURR	W08P003344	VOA Ground Water Protection
			42208	SAMPLE	W08P003346	VOA Ground Water Protection
			42208	SURR	W08P003346	VOA Ground Water Protection
37513	1	37953	42276	BLANK		Alcohols, Glycols - 8015
37513	2	37953	42276	LCS		Alcohols, Glycols - 8015
37513	4	37953	42276	DUP	W08P003344	Alcohols, Glycols - 8015
37513	5	37953	42276	MS	W08P003344	Alcohols, Glycols - 8015
37513	6	37953	42276	MSD	W08P003344	Alcohols, Glycols - 8015
37513	3	37953	42276	SAMPLE	W08P003344	Alcohols, Glycols - 8015
37513	6	37953	42276	SPK-RPD	W08P003344	Alcohols, Glycols - 8015
37513	7	37953	42276	SAMPLE	W08P003346	Alcohols, Glycols - 8015
37521	1	37961	42284	BLANK		NWTPH-GX TPH Gasoline Range
37521	2	37961	42284	LCS		NWTPH-GX TPH Gasoline Range
37521	4	37961	42284	DUP	W08P003344	NWTPH-GX TPH Gasoline Range
37521	5	37961	42284	MS	W08P003344	NWTPH-GX TPH Gasoline Range
37521	6	37961	42284	MSD	W08P003344	NWTPH-GX TPH Gasoline Range
37521	3	37961	42284	SAMPLE	W08P003344	NWTPH-GX TPH Gasoline Range
37521	6	37961	42284	SPK-RPD	W08P003344	NWTPH-GX TPH Gasoline Range
37521	7	37961	42284	SAMPLE	W08P003346	NWTPH-GX TPH Gasoline Range

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Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081363

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37038	1	37464	42012	BLANK		TC99 by Liquid Scin.
37038	2	37464	42012	LCS		TC99 by Liquid Scin.
37038	3	37464	42012	DUP	W08P003233	TC99 by Liquid Scin.
37038	4	37464	42012	MS	W08P003233	TC99 by Liquid Scin.
37038	18	37464	42012	SAMPLE	W08P003344	TC99 by Liquid Scin.
37038	19	37464	42012	SAMPLE	W08P003346	TC99 by Liquid Scin.
37086	1	37513	42018	BLANK		Strontium 89/90
37086	2	37513	42018	LCS		Strontium 89/90
37086	3	37513	42018	DUP	W08P003297	Strontium 89/90
37086	12	37513	42018	SAMPLE	W08P003344	Strontium 89/90
37086	13	37513	42018	SURR	W08P003344	Strontium 89/90
37086	14	37513	42018	SAMPLE	W08P003346	Strontium 89/90
37086	15	37513	42018	SURR	W08P003346	Strontium 89/90
37164	1	37590	42108	BLANK		Tritium by Liq Sct column prep
37164	4	37590	42108	LCS		Tritium by Liq Sct column prep
37164	3	37590	42108	DUP	W08P003305	Tritium by Liq Sct column prep
37164	2	37590	42108	MS	W08P003305	Tritium by Liq Sct column prep
37164	15	37590	42108	SAMPLE	W08P003344	Tritium by Liq Sct column prep
37164	16	37590	42108	SAMPLE	W08P003346	Tritium by Liq Sct column prep

WSCF
METHOD REFERENCES REPORT

Department: Inorganic

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 or industry 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 the 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-344-406	LA-344-406: TOTAL ORGANIC CARBON (TOC) BASED ON SW-846	
	EPA SW-846 9060	TOTAL ORGANIC CARBON
	HEIS 9060_TOC	Total Organic Carbon
LA-503-401	LA-503-401: ANALYSIS OF CATIONS BY ION CHROMATOGRAPHY	
	EPA-600/4-86-024 300.7	Dissolved Sodium, Ammonium, Potassium, and Calcium in Wet Deposition by Chemical
	HEIS 300.7_CATIONS_IC	Determination of Ammonium by Ion Chromatography
LA-505-411	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE	
	HEIS 6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY	
	EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
	HEIS 200.8_METALS_ICPMS	Inductively Coupled Plasma - Mass Spectrometry
	HEIS RADISOTOPES_ICPMS	Radioisotopes by ICP/MS
LA-533-410	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
LA-695-402	LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC	
	EPA-600/4-79-020 335.2	Cyanide, Total
	HEIS 335.2_CYANIDE	Cyanide, Total

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
METHOD REFERENCES REPORT

Department: Organic

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 or industry 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 the 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-523-443	LA-523-443: GAS CHROMATOGRAPH ANALYSIS OF GASOLINE RANGE TOTAL PETROLEUM HYDROCA	
	HEIS WTPH_GASOLINE	Total Petroleum Hydrocarbons, Gasoline
	WDOE TPH NWTPH-G	Volatile Petroleum Products Method for Soil and Water
LA-523-455	LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC 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)
LA-523-456	LA-523-456: SEMIVOLATILE SAMPLE ANALYSIS BY SW-846, METHOD 8270C	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
	HEIS 8270_SVOA_GCMS	Semivolatile Orgamoc Compounds By Gas Chromatography/Mass Spectrometry (GC/MS)
LA-523-493	NWTPH-Diesel and/or Gasoline	
	HEIS WTPH_DIESEL (HEIS)	Total Petroleum Hydrocarbons in Diesel
	WDOE TPHD	Total Petroleum Hydrocarbons in Diesel
Organics	Organics - Alcohols, Glycols	
	EPA SW-846 8015B	Nonhalogenated Organics Using GC/FID

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

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 or industry 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 the 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-508-415 LA-508-415: OPERATION OF THE PROTEAN 2-INCH ALPHA/BETA COUNTING SYSTEM FOR GROSS

HEIS	**ALPHA_GPC**	GROSS ALPHA GPC
HEIS	**BETA_GPC**	GROSS BETA GPC
HEIS	**SRTOT_SEP_PRECIP_GPC**	Strontium 89/90

LA-508-421 LA-508-421: OPERATION OF THE TRI-CARB MODEL 2500TR LIQUID SCINTILLATION ANALYZER

HEIS	**ALPHA_LSC**	A/B Liquid Scintilillation
HEIS	**BETA_LSC**	A/B Liquid Scintilallation
HEIS	**TC99_3MDSK_LSC**	TC99 by Liquid Scintillation
HEIS	**TRITIUM_EIE_LSC**	Tritium Liquid Scintillation

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003343
Client ID: B1V9X3 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/19/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		08/20/08
Magnesium	7439-95-4	LA-505-411		1.49e+04	ug/L			1.00	50		08/20/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Potassium	7440-09-7	LA-505-411		6.37e+03	ug/L			1.00	1.7e+02		08/20/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/20/08
Sodium	7440-23-5	LA-505-411		2.58e+04	ug/L			1.00	51		08/20/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/20/08
Barium	7440-39-3	LA-505-411		47.2	ug/L			1.00	4.0		08/20/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Chromium	7440-47-3	LA-505-411		29.7	ug/L			1.00	13		08/20/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/20/08
Vanadium	7440-62-2	LA-505-411		21.9	ug/L			1.00	12		08/20/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		08/20/08
Calcium	7440-70-2	LA-505-411		5.70e+04	ug/L			1.00	73		08/20/08
Lithium	7439-93-2	LA-505-411		5.50	ug/L			1.00	4.0		08/20/08
Strontium	7440-24-6	LA-505-411		321	ug/L			1.00	4.0		08/20/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/05/08
Mercury	7439-97-6	LA-505-412	UX	< 0.0500	ug/L			1.00	0.0500		08/05/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003343
Client ID: B1V9X3 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Arsenic	7440-38-2	LA-505-412		2.44	ug/L			1.00	0.400		08/05/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003344
Client ID: B1V9X7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	D	0.369	mg/L			2.00	0.042		07/08/08
Chloride	16887-00-6	LA-533-410	D	18.1	mg/L			2.00	0.22		07/08/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		07/08/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	7.05	mg/L			2.00	0.072		07/08/08
Sulfate	14808-79-8	LA-533-410	D	53.2	mg/L			2.00	0.15		07/08/08
Cyanide											
Cyanide	57-12-5	LA-695-402	U	< 4.00	ug/L			1.00	4.0		07/08/08
ICP Metals Analysis, Grd H20 P Prep											**08/19/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		08/20/08
Magnesium	7439-95-4	LA-505-411		1.47e+04	ug/L			1.00	50		08/20/08
Manganese	7439-96-5	LA-505-411		6.90	ug/L			1.00	4.0		08/20/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Potassium	7440-09-7	LA-505-411		6.08e+03	ug/L			1.00	1.7e+02		08/20/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/20/08
Sodium	7440-23-5	LA-505-411		2.48e+04	ug/L			1.00	51		08/20/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/20/08
Barium	7440-39-3	LA-505-411		47.4	ug/L			1.00	4.0		08/20/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Chromium	7440-47-3	LA-505-411		37.4	ug/L			1.00	13		08/20/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/20/08
Vanadium	7440-62-2	LA-505-411		23.3	ug/L			1.00	12		08/20/08
Zinc	7440-66-6	LA-505-411		9.90	ug/L			1.00	9.0		08/20/08

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TP Err = Total Propagated Error
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003344
Client ID: B1V9X7 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Calcium	7440-70-2	LA-505-411		5.75e+04	ug/L			1.00	73		08/20/08
Lithium	7439-93-2	LA-505-411		5.80	ug/L			1.00	4.0		08/20/08
Strontium	7440-24-6	LA-505-411		319	ug/L			1.00	4.0		08/20/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/05/08
Mercury	7439-97-6	LA-505-412	UX	< 0.0500	ug/L			1.00	0.0500		08/05/08
Uranium	7440-61-1	LA-505-412		6.39	ug/L			1.00	0.0500		08/05/08
Arsenic	7440-38-2	LA-505-412		2.59	ug/L			1.00	0.400		08/05/08
Nitrogen in ammonium											
Nitrogen in ammonium	NH4-N	LA-503-401	B	0.0164	mg/L			1.00	9.3e-03		07/21/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.599	mg/L			1.00	0.30		07/30/08

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003345
Client ID: B1VB10 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/19/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		08/20/08
Magnesium	7439-95-4	LA-505-411		1.06e+04	ug/L			1.00	50		08/20/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Potassium	7440-09-7	LA-505-411		3.72e+03	ug/L			1.00	1.7e+02		08/20/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/20/08
Sodium	7440-23-5	LA-505-411		1.72e+04	ug/L			1.00	51		08/20/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/20/08
Barium	7440-39-3	LA-505-411		28.0	ug/L			1.00	4.0		08/20/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Chromium	7440-47-3	LA-505-411		15.4	ug/L			1.00	13		08/20/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/20/08
Vanadium	7440-62-2	LA-505-411		27.5	ug/L			1.00	12		08/20/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		08/20/08
Calcium	7440-70-2	LA-505-411		3.60e+04	ug/L			1.00	73		08/20/08
Lithium	7439-93-2	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Strontium	7440-24-6	LA-505-411		195	ug/L			1.00	4.0		08/20/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/05/08
Mercury	7439-97-6	LA-505-412	UX	< 0.0500	ug/L			1.00	0.0500		08/05/08

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TP Err=Total Propagated Error
DF=Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003345
Client ID: B1VB10 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Arsenic	7440-38-2	LA-505-412		2.87	ug/L			1.00	0.400		08/05/08

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TP Err=Total Propagated Error
DF=Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003346
Client ID: B1V9F1 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	D	0.348	mg/L			2.00	0.042		07/08/08
Chloride	16887-00-6	LA-533-410	D	8.72	mg/L			2.00	0.22		07/08/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		07/08/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	3.16	mg/L			2.00	0.072		07/08/08
Sulfate	14808-79-8	LA-533-410	D	25.1	mg/L			2.00	0.15		07/08/08
Cyanide											
Cyanide	57-12-5	LA-695-402	U	< 4.00	ug/L			1.00	4.0		07/08/08
ICP Metals Analysis, Grd H20 P Prep											**08/19/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		08/20/08
Magnesium	7439-95-4	LA-505-411		1.07e+04	ug/L			1.00	50		08/20/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Potassium	7440-09-7	LA-505-411		3.76e+03	ug/L			1.00	1.7e+02		08/20/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/20/08
Sodium	7440-23-5	LA-505-411		1.73e+04	ug/L			1.00	51		08/20/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/20/08
Barium	7440-39-3	LA-505-411		28.2	ug/L			1.00	4.0		08/20/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Chromium	7440-47-3	LA-505-411		13.5	ug/L			1.00	13		08/20/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/20/08
Vanadium	7440-62-2	LA-505-411		28.4	ug/L			1.00	12		08/20/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		08/20/08

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RQ = Result Qualifier
TP Err = Total Propagated Error
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003346
Client ID: B1V9F1 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Inorganic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Calcium	7440-70-2	LA-505-411		3.58e+04	ug/L			1.00	73		08/20/08
Lithium	7439-93-2	LA-505-411		4.10	ug/L			1.00	4.0		08/20/08
Strontium	7440-24-6	LA-505-411		196	ug/L			1.00	4.0		08/20/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/20/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/05/08
Mercury	7439-97-6	LA-505-412	UX	< 0.0500	ug/L			1.00	0.0500		08/05/08
Uranium	7440-61-1	LA-505-412		1.72	ug/L			1.00	0.0500		08/05/08
Arsenic	7440-38-2	LA-505-412		2.92	ug/L			1.00	0.400		08/05/08
Nitrogen in ammonium											
Nitrogen in ammonium	NH4-N	LA-503-401	B	9.40e-03	mg/L			1.00	9.3e-03		07/21/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.361	mg/L			1.00	0.30		07/30/08

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: Ammonia (N) by IC

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Ammonia (N) by IC	7664-41-7	1.52e-2		RPD			7.595	20.000		07/21/08
MS	Ammonia (N) by IC	7664-41-7	0.5039	101.185	% Recov	80.000	120.000				07/21/08
MSD	Ammonia (N) by IC	7664-41-7	0.5189	104.197	% Recov	80.000	120.000				07/21/08
SPK-RPD	Ammonia (N) by IC	7664-41-7	104.197		RPD			2.933	20.000		07/21/08
BATCH QC											
BLANK	Ammonia (N) by IC	7664-41-7	<9.32e-3	n/a	mg/L	0.000	0.002			U	07/21/08
BLANK	Ammonia (N) by IC	7664-41-7	<9.32e-3	n/a	mg/L	0.000	0.002			U	07/21/08
LCS	Ammonia (N) by IC	7664-41-7	109.9239	109.924	% Recov	80.000	120.000				07/21/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003333											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	8.5028		RPD			0.154	20.000		07/08/08
DUP	Fluoride	16984-48-8	0.3435		RPD			3.714	20.000		07/08/08
DUP	Nitrogen in Nitrite	NO2-N	<1.98e-2		RPD			n/a	20.000	U	07/08/08
DUP	Nitrogen in Nitrate	NO3-N	<7.2e-2		RPD			n/a	20.000	U	07/08/08
DUP	Sulfate	14808-79-8	6.1988		RPD			0.781	20.000		07/08/08
MS	Chloride	16887-00-6	1.0012	100.623	% Recov	80.000	120.000				07/08/08
MS	Fluoride	16984-48-8	0.5628	114.158	% Recov	80.000	120.000				07/08/08
MS	Nitrogen in Nitrite	NO2-N	0.449	91.260	% Recov	80.000	120.000				07/08/08
MS	Nitrogen in Nitrate	NO3-N	0.44515	99.809	% Recov	80.000	120.000				07/08/08
MS	Sulfate	14808-79-8	1.92845	98.390	% Recov	80.000	120.000				07/08/08
MSD	Chloride	16887-00-6	0.7973	80.131	% Recov	80.000	120.000				07/08/08
MSD	Fluoride	16984-48-8	0.56965	115.548	% Recov	80.000	120.000				07/08/08
MSD	Nitrogen in Nitrite	NO2-N	0.4492	91.301	% Recov	80.000	120.000				07/08/08
MSD	Nitrogen in Nitrate	NO3-N	0.4458	99.955	% Recov	80.000	120.000				07/08/08
MSD	Sulfate	14808-79-8	1.9466	99.316	% Recov	80.000	120.000				07/08/08
SPK-RPD	Chloride	16887-00-6	80.131		RPD			22.674	20.000 *		07/08/08
SPK-RPD	Fluoride	16984-48-8	115.548		RPD			1.210	20.000		07/08/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	91.301		RPD			0.045	20.000		07/08/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	99.955		RPD			0.146	20.000		07/08/08
SPK-RPD	Sulfate	14808-79-8	99.316		RPD			0.937	20.000		07/08/08
Lab ID: W08P003334											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	2.0601		RPD			0.441	20.000		07/08/08
DUP	Fluoride	16984-48-8	0.3515		RPD			3.439	20.000		07/08/08
DUP	Nitrogen in Nitrite	NO2-N	<1.98e-2		RPD			n/a	20.000	U	07/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Nitrogen in Nitrate	NO3-N	0.841		RPD			0.876	20.000		07/08/08
DUP	Sulfate	14808-79-8	12.3477		RPD			0.015	20.000		07/08/08
MS	Chloride	16887-00-6	0.95175	95.653	% Recov	80.000	120.000				07/08/08
MS	Fluoride	16984-48-8	0.5575	113.083	% Recov	80.000	120.000				07/08/08
MS	Nitrogen in Nitrite	NO2-N	0.4988	101.382	% Recov	80.000	120.000				07/08/08
MS	Nitrogen in Nitrate	NO3-N	0.4519	101.323	% Recov	80.000	120.000				07/08/08
MS	Sulfate	14808-79-8	1.9276	98.347	% Recov	80.000	120.000				07/08/08
MSD	Chloride	16887-00-6	0.91235	91.693	% Recov	80.000	120.000				07/08/08
MSD	Fluoride	16984-48-8	0.5524	112.049	% Recov	80.000	120.000				07/08/08
MSD	Nitrogen in Nitrite	NO2-N	0.4655	94.614	% Recov	80.000	120.000				07/08/08
MSD	Nitrogen in Nitrate	NO3-N	0.44935	100.751	% Recov	80.000	120.000				07/08/08
MSD	Sulfate	14808-79-8	1.9096	97.429	% Recov	80.000	120.000				07/08/08
SPK-RPD	Chloride	16887-00-6	91.693		RPD			4.227	20.000		07/08/08
SPK-RPD	Fluoride	16984-48-8	112.049		RPD			0.919	20.000		07/08/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	94.614		RPD			6.906	20.000		07/08/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	100.751		RPD			0.566	20.000		07/08/08
SPK-RPD	Sulfate	14808-79-8	97.429		RPD			0.938	20.000		07/08/08

BATCH QC

BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	07/08/08
BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	07/08/08
BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	07/08/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	07/08/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	07/08/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	07/08/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	07/08/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	07/08/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	07/08/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	07/08/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	07/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	07/08/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	07/08/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	07/08/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	07/08/08
LCS	Chloride	16887-00-6	198.3814	98.697	% Recov	80.000	120.000				07/08/08
LCS	Chloride	16887-00-6	198.4317	98.722	% Recov	80.000	120.000				07/08/08
LCS	Fluoride	16984-48-8	108.1074	108.542	% Recov	80.000	120.000				07/08/08
LCS	Fluoride	16984-48-8	110.2944	110.737	% Recov	80.000	120.000				07/08/08
LCS	Nitrogen in Nitrite	NO2-N	99.177	99.776	% Recov	80.000	120.000				07/08/08
LCS	Nitrogen in Nitrite	NO2-N	99.7759	100.378	% Recov	80.000	120.000				07/08/08
LCS	Nitrogen in Nitrate	NO3-N	91.225	101.249	% Recov	80.000	120.000				07/08/08
LCS	Nitrogen in Nitrate	NO3-N	92.5641	102.735	% Recov	80.000	120.000				07/08/08
LCS	Sulfate	14808-79-8	396.0996	100.025	% Recov	80.000	120.000				07/08/08
LCS	Sulfate	14808-79-8	399.1605	100.798	% Recov	80.000	120.000				07/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: Cyanide by Midi/Spectrophotom

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003311											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cyanide by Midi/Spectrophotom	57-12-5	43.7	109.250	% Recov	75.000	125.000				07/08/08
MSD	Cyanide by Midi/Spectrophotom	57-12-5	40.6	101.500	% Recov	75.000	125.000				07/08/08
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	101.500		RPD			7.355	20.000		07/08/08
BATCH QC											
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	< 4	n/a	ug/L	-4.000	4.000			U	07/08/08
LCS	Cyanide by Midi/Spectrophotom	57-12-5	50.9	101.800	% Recov	85.000	115.000				07/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	34.13	85.325	% Recov	70.000	130.000				08/05/08
MS	Lead	7439-92-1	33.88	84.700	% Recov	70.000	130.000				08/05/08
MS	Uranium	7440-61-1	34.82	87.050	% Recov	70.000	130.000				08/05/08
MSD	Arsenic	7440-38-2	35.34	88.350	% Recov	70.000	130.000				08/05/08
MSD	Lead	7439-92-1	34.27	85.675	% Recov	70.000	130.000				08/05/08
MSD	Uranium	7440-61-1	35.92	89.800	% Recov	70.000	130.000				08/05/08
SPK-RPD	Arsenic	7440-38-2	88.350		RPD			3.484	20.000		08/05/08
SPK-RPD	Lead	7439-92-1	85.675		RPD			1.145	20.000		08/05/08
SPK-RPD	Uranium	7440-61-1	89.800		RPD			3.110	20.000		08/05/08
Lab ID: W08P003520											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	34.89	87.225	% Recov	70.000	130.000				08/05/08
MS	Lead	7439-92-1	35.48	88.700	% Recov	70.000	130.000				08/05/08
MSD	Arsenic	7440-38-2	34.04	85.100	% Recov	70.000	130.000				08/05/08
MSD	Lead	7439-92-1	34.83	87.075	% Recov	70.000	130.000				08/05/08
SPK-RPD	Arsenic	7440-38-2	85.100		RPD			2.466	20.000		08/05/08
SPK-RPD	Lead	7439-92-1	87.075		RPD			1.849	20.000		08/05/08
Lab ID: W08P003521											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	34.32	85.800	% Recov	70.000	130.000				08/05/08
MS	Lead	7439-92-1	34.6	86.500	% Recov	70.000	130.000				08/05/08
MS	Uranium	7440-61-1	30.1	75.250	% Recov	70.000	130.000				08/05/08
MSD	Arsenic	7440-38-2	34.58	86.450	% Recov	70.000	130.000				08/05/08
MSD	Lead	7439-92-1	34.79	86.975	% Recov	70.000	130.000				08/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 07/15/08
Receive Date:07/15/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Uranium	7440-61-1	32.8	82.000	% Recov	70.000	130.000				08/05/08
SPK-RPD	Arsenic	7440-38-2	86.450		RPD			0.755	20.000		08/05/08
SPK-RPD	Lead	7439-92-1	86.975		RPD			0.548	20.000		08/05/08
SPK-RPD	Uranium	7440-61-1	82.000		RPD			8.585	20.000		08/05/08
BATCH QC											
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	08/05/08
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	08/05/08
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	08/05/08
LCS	Arsenic	7440-38-2	37.3	93.250	% Recov	85.000	115.000				08/05/08
LCS	Lead	7439-92-1	37.64	94.100	% Recov	85.000	115.000				08/05/08
LCS	Uranium	7440-61-1	37.87	94.675	% Recov	85.000	115.000				08/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: Total Organic Carbon

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003314											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	4.159	103.975	% Recov	75.000	125.000				07/30/08
MSD	Total Organic Carbon	TOC	4.172	104.300	% Recov	75.000	125.000				07/30/08
SPK-RPD	Total Organic Carbon	TOC	104.300		RPD			0.312	20.000		07/30/08
Lab ID: W08P003346											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	4.231	105.775	% Recov	75.000	125.000				07/30/08
MSD	Total Organic Carbon	TOC	4.167	104.175	% Recov	75.000	125.000				07/30/08
SPK-RPD	Total Organic Carbon	TOC	104.300		RPD			0.312	20.000		07/30/08
BATCH QC											
BLANK	Total Organic Carbon	TOC	<0.045	n/a	mg/L	0.000	300.000			U	07/30/08
METHSPIKE	Total Organic Carbon	TOC	2.107	105.350	% Recov	80.000	120.000				07/30/08
SPK-RSD	Total Organic Carbon	TOC	na	n/a	% RSD	0.000	20.000				07/30/08
SPK-RSD	Total Organic Carbon	TOC	1.052	1.052	% RSD	0.000	20.000				07/30/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 07/07/08
Receive Date:07/07/08

Lab ID: W08P003318
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	Silver	7440-22-4	991.3	99.130	% Recov	75.000	125.000				08/20/08
MS	Barium	7440-39-3	483.6	96.720	% Recov	75.000	125.000				08/20/08
MS	Beryllium	7440-41-7	520.7	104.140	% Recov	75.000	125.000				08/20/08
MS	Calcium	7440-70-2	1670	167.000	% Recov	75.000	125.000			*	08/20/08
MS	Cadmium	7440-43-9	1025	102.500	% Recov	75.000	125.000				08/20/08
MS	Cobalt	7440-48-4	1018	101.800	% Recov	75.000	125.000				08/20/08
MS	Chromium	7440-47-3	1010	101.000	% Recov	75.000	125.000				08/20/08
MS	Copper	7440-50-8	973.5	97.350	% Recov	75.000	125.000				08/20/08
MS	Iron	7439-89-6	1019	101.900	% Recov	75.000	125.000				08/20/08
MS	Potassium	7440-09-7	10036	100.360	% Recov	75.000	125.000				08/20/08
MS	Magnesium	7439-95-4	920	92.000	% Recov	75.000	125.000				08/20/08
MS	Manganese	7439-96-5	1019	101.900	% Recov	75.000	125.000				08/20/08
MS	Sodium	7440-23-5	790	79.000	% Recov	75.000	125.000				08/20/08
MS	Nickel	7440-02-0	999.5	99.950	% Recov	75.000	125.000				08/20/08
MS	Antimony	7440-36-0	999.1	99.910	% Recov	75.000	125.000				08/20/08
MS	Strontium	7440-24-6	499.4	99.880	% Recov	75.000	125.000				08/20/08
MS	Vanadium	7440-62-2	997.6	99.760	% Recov	75.000	125.000				08/20/08
MS	Zinc	7440-66-6	1008	100.800	% Recov	75.000	125.000				08/20/08
MSD	Silver	7440-22-4	995.4	99.540	% Recov	75.000	125.000				08/20/08
MSD	Barium	7440-39-3	488.9	97.780	% Recov	75.000	125.000				08/20/08
MSD	Beryllium	7440-41-7	524.8	104.960	% Recov	75.000	125.000				08/20/08
MSD	Calcium	7440-70-2	2400	240.000	% Recov	75.000	125.000			*	08/20/08
MSD	Cadmium	7440-43-9	1023	102.300	% Recov	75.000	125.000				08/20/08
MSD	Cobalt	7440-48-4	1033	103.300	% Recov	75.000	125.000				08/20/08
MSD	Chromium	7440-47-3	1025	102.500	% Recov	75.000	125.000				08/20/08
MSD	Copper	7440-50-8	969.7	96.970	% Recov	75.000	125.000				08/20/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1028	102.800	% Recov	75.000	125.000				08/20/08
MSD	Potassium	7440-09-7	9706	97.060	% Recov	75.000	125.000				08/20/08
MSD	Magnesium	7439-95-4	690	69.000	% Recov	75.000	125.000			*	08/20/08
MSD	Manganese	7439-96-5	1032	103.200	% Recov	75.000	125.000				08/20/08
MSD	Sodium	7440-23-5	-120	-12.000	% Recov	75.000	125.000			*	08/20/08
MSD	Nickel	7440-02-0	1006.5	100.650	% Recov	75.000	125.000				08/20/08
MSD	Antimony	7440-36-0	1009	100.900	% Recov	75.000	125.000				08/20/08
MSD	Strontium	7440-24-6	511.6	102.320	% Recov	75.000	125.000				08/20/08
MSD	Vanadium	7440-62-2	1008.6	100.860	% Recov	75.000	125.000				08/20/08
MSD	Zinc	7440-66-6	1007	100.700	% Recov	75.000	125.000				08/20/08
SPK-RPD	Silver	7440-22-4	99.540		RPD			0.413	20.000		08/20/08
SPK-RPD	Barium	7440-39-3	97.780		RPD			1.090	20.000		08/20/08
SPK-RPD	Beryllium	7440-41-7	104.960		RPD			0.784	20.000		08/20/08
SPK-RPD	Calcium	7440-70-2	240.000		RPD			35.872	20.000 *		08/20/08
SPK-RPD	Cadmium	7440-43-9	102.300		RPD			0.195	20.000		08/20/08
SPK-RPD	Cobalt	7440-48-4	103.300		RPD			1.463	20.000		08/20/08
SPK-RPD	Chromium	7440-47-3	102.500		RPD			1.474	20.000		08/20/08
SPK-RPD	Copper	7440-50-8	96.970		RPD			0.391	20.000		08/20/08
SPK-RPD	Iron	7439-89-6	102.800		RPD			0.879	20.000		08/20/08
SPK-RPD	Potassium	7440-09-7	97.060		RPD			3.343	20.000		08/20/08
SPK-RPD	Magnesium	7439-95-4	69.000		RPD			28.571	20.000 *		08/20/08
SPK-RPD	Manganese	7439-96-5	103.200		RPD			1.268	20.000		08/20/08
SPK-RPD	Sodium	7440-23-5	-12.000		RPD			271.642	20.000 *		08/20/08
SPK-RPD	Nickel	7440-02-0	100.650		RPD			0.698	20.000		08/20/08
SPK-RPD	Antimony	7440-36-0	100.900		RPD			0.986	20.000		08/20/08
SPK-RPD	Strontium	7440-24-6	102.320		RPD			2.413	20.000		08/20/08
SPK-RPD	Vanadium	7440-62-2	100.860		RPD			1.097	20.000		08/20/08
SPK-RPD	Zinc	7440-66-6	100.700		RPD			0.099	20.000		08/20/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Silver	7440-22-4	18.9	18.900	ug/L						08/20/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	08/20/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	08/20/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	08/20/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	08/20/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	08/20/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	08/20/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	08/20/08
BLANK	Iron	7439-89-6	128.8	128.800	ug/L						08/20/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	08/20/08
BLANK	Lithium	7439-93-2	<4	n/a	ug/L					U	08/20/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	08/20/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	08/20/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	08/20/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	08/20/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	08/20/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	08/20/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	08/20/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	08/20/08
LCS	Silver	7440-22-4	968.4	96.840	% Recov	80.000	120.000				08/20/08
LCS	Barium	7440-39-3	473.5	94.700	% Recov	80.000	120.000				08/20/08
LCS	Beryllium	7440-41-7	536.6	107.320	% Recov	80.000	120.000				08/20/08
LCS	Calcium	7440-70-2	1018	101.800	% Recov	80.000	120.000				08/20/08
LCS	Cadmium	7440-43-9	1008	100.800	% Recov	80.000	120.000				08/20/08
LCS	Cobalt	7440-48-4	1038	103.800	% Recov	80.000	120.000				08/20/08
LCS	Chromium	7440-47-3	1018	101.800	% Recov	80.000	120.000				08/20/08
LCS	Copper	7440-50-8	974.8	97.480	% Recov	80.000	120.000				08/20/08
LCS	Iron	7439-89-6	1007	100.700	% Recov	80.000	120.000				08/20/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081363
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Potassium	7440-09-7	9418	94.180	% Recov	80.000	120.000				08/20/08
LCS	Lithium	7439-93-2	433.7	86.740	% Recov	80.000	120.000				08/20/08
LCS	Magnesium	7439-95-4	923.5	92.350	% Recov	80.000	120.000				08/20/08
LCS	Manganese	7439-96-5	1017	101.700	% Recov	80.000	120.000				08/20/08
LCS	Sodium	7440-23-5	928	92.800	% Recov	80.000	120.000				08/20/08
LCS	Nickel	7440-02-0	1029	102.900	% Recov	80.000	120.000				08/20/08
LCS	Antimony	7440-36-0	973.7	97.370	% Recov	80.000	120.000				08/20/08
LCS	Strontium	7440-24-6	488.1	97.620	% Recov	80.000	120.000				08/20/08
LCS	Vanadium	7440-62-2	1000	100.000	% Recov	80.000	120.000				08/20/08
LCS	Zinc	7440-66-6	982.5	98.250	% Recov	80.000	120.000				08/20/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081363
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		SVOA: Low phenolic surrogate recoveries are matrix effects on a sample unrelated to this sample. Surrogate recoveries for these samples meet all QC control limits. cgc ICP-MS: Mercury data not uploaded. Spike recovery data not available. Samples spiked were W08P-3344(90% & 93% recovery) W08P-3520(98% & 96% recovery), W08P-3521(95% & 98% recovery) Information is in the raw data "X" flags ICP-AES: High silver and iron preparation blank results; "C" flag if applicable. No zirconium present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure sodium, calcium, and magnesium linearity because sample results are greater than the calibration standard.

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003344
Client ID: B1V9X7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Organic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Alcohols, Glycols - 8015 Prep											**07/18/08**
Alcohols, Glycols - 8015											
Ethyl acetate	141-78-6	Organics	U	< 5.00e+03	ug/L			1.00	5.0e+03		07/18/08
NWTPH-D TPH Diesel Range (Wa) Prep											**07/10/08**
NWTPH-D TPH Diesel Range (Wa)											
Total Pet. Hydrocarbons Diesel	TPHDIESEL	LA-523-493	U	< 71.0	ug/L			1.00	71		07/21/08
Kerosene	TPHKEROSENE	LA-523-493	U	< 71.0	ug/L			1.00	71		07/21/08
NWTPH-GX TPH Gasoline Range Prep											**07/16/08**
NWTPH-GX TPH Gasoline Range											
Total Pet. Hydrocarbons Gas	TPHGASOLINE	LA-523-443	U	< 50.0	ug/L			1.00	50		07/16/08
SW-846 8270C Semi-Vols Prep											**07/14/08**
SW-846 8270C Semi-Vols											
4-Nitrophenol	100-02-7	LA-523-456	U	< 1.20	ug/L			1.00	1.2		07/21/08
1,4-Dichlorobenzene	106-46-7	LA-523-456	U	< 1.60	ug/L			1.00	1.6		07/21/08
Phenol	108-95-2	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
1,2,4-Trichlorobenzene	120-82-1	LA-523-456	U	< 2.60	ug/L			1.00	2.6		07/21/08
2,4-Dinitrotoluene	121-14-2	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
Pyrene	129-00-0	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
4-Chloro-3-methylphenol	59-50-7	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
N-Nitrosodi-n-dipropylamine	621-64-7	LA-523-456	U	< 0.710	ug/L			1.00	0.71		07/21/08
Acenaphthene	83-32-9	LA-523-456	U	< 3.10	ug/L			1.00	3.1		07/21/08
Pentachlorophenol	87-86-5	LA-523-456	U	< 1.80	ug/L			1.00	1.8		07/21/08
2-Chlorophenol	95-57-8	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
Bis(2-ethylhexyl) phthalate	117-81-7	LA-523-456	U	< 0.940	ug/L			1.00	0.94		07/21/08
2,4-Dichlorophenol	120-83-2	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

. - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003344
Client ID: B1V9X7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Organic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
2-Nitrophenol	88-75-5	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
Naphthalene	91-20-3	LA-523-456	U	< 2.50	ug/L			1.00	2.5		07/21/08
2-Methylphenol (cresol, o-)	95-48-7	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
3 & 4 Methylphenol Total	65794-96-9	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
Tributyl phosphate	126-73-8	LA-523-456	U	< 0.590	ug/L			1.00	0.59		07/21/08
Benzothiazole	95-16-9	LA-523-456	U	< 0.710	ug/L			1.00	0.71		07/21/08
2-Picoline	109-06-8	LA-523-456	U	< 5.90	ug/L			1.00	5.9		07/21/08
Total cresols	1319-77-3	LA-523-456	U	< 1.20	ug/L			1.00	1.2		07/21/08
Tris-2-chloroethyl phosphate	115-96-8	LA-523-456	U	< 0.760	ug/L			1.00	0.76		07/21/08
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Chloroform	67-66-3	LA-523-455	J	2.50	ug/L			1.00	1.0		07/18/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

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J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

. - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003344
Client ID: B1V9X7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Organic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		07/18/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		07/18/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		07/18/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

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J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003346
Client ID: B1V9F1 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081363
Department: Organic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Alcohols, Glycols - 8015 Prep											**07/18/08**
Alcohols, Glycols - 8015											
Ethyl acetate	141-78-6	Organics	U	< 5.00e+03	ug/L			1.00	5.0e+03		07/18/08
NWTPH-D TPH Diesel Range (Wa) Prep											**07/10/08**
NWTPH-D TPH Diesel Range (Wa)											
Total Pet. Hydrocarbons Diesel	TPHDIESEL	LA-523-493	U	< 71.0	ug/L			1.00	71		07/21/08
Kerosene	TPHKEROSENE	LA-523-493	U	< 71.0	ug/L			1.00	71		07/21/08
NWTPH-GX TPH Gasoline Range Prep											**07/16/08**
NWTPH-GX TPH Gasoline Range											
Total Pet. Hydrocarbons Gas	TPHGASOLINE	LA-523-443	U	< 50.0	ug/L			1.00	50		07/16/08
SW-846 8270C Semi-Vols Prep											**07/14/08**
SW-846 8270C Semi-Vols											
4-Nitrophenol	100-02-7	LA-523-456	U	< 0.950	ug/L			1.00	0.95		07/21/08
1,4-Dichlorobenzene	106-46-7	LA-523-456	U	< 1.30	ug/L			1.00	1.3		07/21/08
Phenol	108-95-2	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
1,2,4-Trichlorobenzene	120-82-1	LA-523-456	U	< 2.10	ug/L			1.00	2.1		07/21/08
2,4-Dinitrotoluene	121-14-2	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
Pyrene	129-00-0	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
4-Chloro-3-methylphenol	59-50-7	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
N-Nitrosodi-n-dipropylamine	621-64-7	LA-523-456	U	< 0.570	ug/L			1.00	0.57		07/21/08
Acenaphthene	83-32-9	LA-523-456	U	< 2.50	ug/L			1.00	2.5		07/21/08
Pentachlorophenol	87-86-5	LA-523-456	U	< 1.40	ug/L			1.00	1.4		07/21/08
2-Chlorophenol	95-57-8	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
Bis(2-ethylhexyl) phthalate	117-81-7	LA-523-456	U	< 0.760	ug/L			1.00	0.76		07/21/08
2,4-Dichlorophenol	120-83-2	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08

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RQ=Result Qualifier
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DF=Dilution Factor

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U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003346
Client ID: B1V9F1 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081363
Department: Organic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
2-Nitrophenol	88-75-5	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
Naphthalene	91-20-3	LA-523-456	U	< 2.00	ug/L			1.00	2.0		07/21/08
2-Methylphenol (cresol, o-)	95-48-7	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
3 & 4 Methylphenol Total	65794-96-9	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
Tributyl phosphate	126-73-8	LA-523-456	U	< 0.480	ug/L			1.00	0.48		07/21/08
Benzothiazole	95-16-9	LA-523-456	U	< 0.570	ug/L			1.00	0.57		07/21/08
2-Picoline	109-06-8	LA-523-456	U	< 4.80	ug/L			1.00	4.8		07/21/08
Total cresols	1319-77-3	LA-523-456	U	< 0.950	ug/L			1.00	0.95		07/21/08
Tris-2-chloroethyl phosphate	115-96-8	LA-523-456	U	< 0.620	ug/L			1.00	0.62		07/21/08
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003346
Client ID: B1V9F1 GPP-PNNL TRENT WSCF

Matrix: WATER

Group #: WSCF20081363
Department: Organic
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		07/18/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		07/18/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		07/18/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/18/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: Alcohols, Glycols - 8015

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	2-Bromoethanol	540-51-2	16000		RPD			9.524	25.000		07/18/08
DUP	Ethyl acetate	141-78-6	<5000		RPD			n/a	25.000	U	07/18/08
MS	2-Bromoethanol	540-51-2	14900	84.659	% Recov	70.000	125.000				07/18/08
MS	Ethyl acetate	141-78-6	8000	88.889	% Recov	75.000	125.000				07/18/08
MSD	2-Bromoethanol	540-51-2	15900	90.341	% Recov	70.000	125.000				07/18/08
MSD	Ethyl acetate	141-78-6	7100	78.889	% Recov	75.000	125.000				07/18/08
SPK-RPD	2-Bromoethanol	540-51-2	90.341		RPD			6.494	20.000		07/18/08
SPK-RPD	Ethyl acetate	141-78-6	78.889		RPD			11.921	20.000		07/18/08
BATCH QC											
BLANK	2-Bromoethanol	540-51-2	37000	105.114	% Recov	75.000	125.000				07/18/08
BLANK	Ethyl acetate	141-78-6	<5000	n/a	ug/L	0.000	5.000			U	07/18/08
LCS	2-Bromoethanol	540-51-2	33000	93.750	% Recov	70.000	130.000				07/18/08
LCS	Ethyl acetate	141-78-6	7200	80.000	% Recov	70.000	130.000				07/18/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: SW-846 8270C Semi-Vols

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	2-Fluorophenol(Surr)	367-12-4	25.376	108.000	% Recov	50.000	110.000				07/21/08
SURR	2-Fluorobiphenyl(Surr)	321-60-8	25.594	109.000	% Recov	58.000	109.000				07/21/08
SURR	Nitrobenzene-d5(Surr)	4165-60-0	26.127	111.000	% Recov	60.000	118.000				07/21/08
SURR	Phenol-d5(Surr)	4165-62-2	25.299	108.000	% Recov	59.000	116.000				07/21/08
SURR	2,4,6-Tribromophenol(Surr)	118-79-6	22.512	95.700	% Recov	60.000	120.000				07/21/08
SURR	Terphenyl-d14(Surr)	98904-43-9	26.600	113.000	% Recov	60.000	120.000				07/21/08
Lab ID: W08P003346											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	2-Fluorophenol(Surr)	367-12-4	14.448	75.900	% Recov	50.000	110.000				07/21/08
SURR	2-Fluorobiphenyl(Surr)	321-60-8	17.117	89.900	% Recov	58.000	109.000				07/21/08
SURR	Nitrobenzene-d5(Surr)	4165-60-0	17.408	91.400	% Recov	60.000	118.000				07/21/08
SURR	Phenol-d5(Surr)	4165-62-2	16.561	86.900	% Recov	59.000	116.000				07/21/08
SURR	2,4,6-Tribromophenol(Surr)	118-79-6	14.728	77.300	% Recov	60.000	120.000				07/21/08
SURR	Terphenyl-d14(Surr)	98904-43-9	20.074	105.000	% Recov	60.000	120.000				07/21/08
Lab ID: W08P003413											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	1,2,4-Trichlorobenzene	120-82-1	22.039	99.200	% Recov	50.000	120.000				07/21/08
MS	1,4-Dichlorobenzene	106-46-7	21.802	98.100	% Recov	41.000	113.000				07/21/08
MS	2,4-Dinitrotoluene	121-14-2	20.514	92.300	% Recov	65.000	109.000				07/21/08
MS	2-Fluorophenol(Surr)	367-12-4	17.246	77.600	% Recov	50.000	110.000				07/21/08
MS	Acenaphthene	83-32-9	22.010	99.000	% Recov	62.000	112.000				07/21/08
MS	4-Chloro-3-methylphenol	59-50-7	33.101	99.300	% Recov	59.000	115.000				07/21/08
MS	2-Chlorophenol	95-57-8	30.374	91.100	% Recov	69.000	111.000				07/21/08
MS	N-Nitrosodi-n-dipropylamine	621-64-7	21.537	96.900	% Recov	69.000	115.000				07/21/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: SW-846 8270C Semi-Vols

Sample Date: 07/10/08
Receive Date:07/10/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	2-Fluorobiphenyl(Surr)	321-60-8	21.861	98.400	% Recov	58.000	109.000				07/21/08
MS	Phenol	108-95-2	27.406	82.200	% Recov	59.000	115.000				07/21/08
MS	Nitrobenzene-d5(Surr)	4165-60-0	22.329	100.000	% Recov	60.000	118.000				07/21/08
MS	4-Nitrophenol	100-02-7	28.955	86.900	% Recov	32.000	130.000				07/21/08
MS	Pentachlorophenol	87-86-5	30.250	90.800	% Recov	51.000	121.000				07/21/08
MS	Phenol-d5(Surr)	4165-62-2	20.957	94.300	% Recov	59.000	116.000				07/21/08
MS	Pyrene	129-00-0	24.024	108.000	% Recov	58.000	116.000				07/21/08
MS	2,4,6-Tribromophenol(Surr)	118-79-6	21.059	94.800	% Recov	60.000	120.000				07/21/08
MS	Terphenyl-d14(Surr)	98904-43-9	24.189	109.000	% Recov	60.000	120.000				07/21/08
MSD	1,2,4-Trichlorobenzene	120-82-1	21.050	94.700	% Recov	50.000	120.000				07/21/08
MSD	1,4-Dichlorobenzene	106-46-7	21.032	94.600	% Recov	41.000	113.000				07/21/08
MSD	2,4-Dinitrotoluene	121-14-2	19.612	88.300	% Recov	65.000	109.000				07/21/08
MSD	2-Fluorophenol(Surr)	367-12-4	14.876	66.900	% Recov	50.000	110.000				07/21/08
MSD	Acenaphthene	83-32-9	21.752	97.900	% Recov	62.000	112.000				07/21/08
MSD	4-Chloro-3-methylphenol	59-50-7	31.078	93.200	% Recov	59.000	115.000				07/21/08
MSD	2-Chlorophenol	95-57-8	29.390	88.200	% Recov	69.000	111.000				07/21/08
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	21.233	95.500	% Recov	69.000	115.000				07/21/08
MSD	2-Fluorobiphenyl(Surr)	321-60-8	21.823	98.200	% Recov	58.000	109.000				07/21/08
MSD	Phenol	108-95-2	26.436	79.300	% Recov	59.000	115.000				07/21/08
MSD	Nitrobenzene-d5(Surr)	4165-60-0	21.574	97.100	% Recov	60.000	118.000				07/21/08
MSD	4-Nitrophenol	100-02-7	28.723	86.200	% Recov	32.000	130.000				07/21/08
MSD	Pentachlorophenol	87-86-5	29.578	88.700	% Recov	51.000	121.000				07/21/08
MSD	Phenol-d5(Surr)	4165-62-2	19.798	89.100	% Recov	59.000	116.000				07/21/08
MSD	Pyrene	129-00-0	24.057	108.000	% Recov	58.000	116.000				07/21/08
MSD	2,4,6-Tribromophenol(Surr)	118-79-6	20.372	91.700	% Recov	60.000	120.000				07/21/08
MSD	Terphenyl-d14(Surr)	98904-43-9	24.067	108.000	% Recov	60.000	120.000				07/21/08
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	94.700		RPD			4.642	25.000		07/21/08
SPK-RPD	1,4-Dichlorobenzene	106-46-7	94.600		RPD			3.633	25.000		07/21/08
SPK-RPD	2,4-Dinitrotoluene	121-14-2	88.300		RPD			4.430	25.000		07/21/08
SPK-RPD	2-Fluorophenol(Surr)	367-12-4	66.900		RPD			14.810	25.000		07/21/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: SW-846 8270C Semi-Vols

Sample Date: 07/10/08
Receive Date:07/10/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Acenaphthene	83-32-9	97.900		RPD			1.117	25.000		07/21/08
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	93.200		RPD			6.338	25.000		07/21/08
SPK-RPD	2-Chlorophenol	95-57-8	88.200		RPD			3.235	25.000		07/21/08
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	95.500		RPD			1.455	25.000		07/21/08
SPK-RPD	2-Fluorobiphenyl(Surr)	321-60-8	98.200		RPD			0.203	25.000		07/21/08
SPK-RPD	Phenol	108-95-2	79.300		RPD			3.591	16.000		07/21/08
SPK-RPD	Nitrobenzene-d5(Surr)	4165-60-0	97.100		RPD			2.943	25.000		07/21/08
SPK-RPD	4-Nitrophenol	100-02-7	86.200		RPD			0.809	25.000		07/21/08
SPK-RPD	Pentachlorophenol	87-86-5	88.700		RPD			2.340	25.000		07/21/08
SPK-RPD	Phenol-d5(Surr)	4165-62-2	89.100		RPD			5.671	25.000		07/21/08
SPK-RPD	Pyrene	129-00-0	108.000		RPD			0.000	25.000		07/21/08
SPK-RPD	2,4,6-Tribromophenol(Surr)	118-79-6	91.700		RPD			3.324	25.000		07/21/08
SPK-RPD	Terphenyl-d14(Surr)	98904-43-9	108.000		RPD			0.922	25.000		07/21/08

BATCH QC

BLANK	1,2,4-Trichlorobenzene	120-82-1	< 2.2	n/a	ug/L					U	07/21/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.4	n/a	ug/L					U	07/21/08
BLANK	2,4-Dichlorophenol	120-83-2	< 0.50	n/a	ug/L					U	07/21/08
BLANK	2,4-Dinitrotoluene	121-14-2	< 0.50	n/a	ug/L					U	07/21/08
BLANK	2-Fluorophenol(Surr)	367-12-4	17.902	89.500	% Recov	50.000	110.000				07/21/08
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 0.50	n/a	ug/L					U	07/21/08
BLANK	2-Nitrophenol	88-75-5	< 0.50	n/a	ug/L					U	07/21/08
BLANK	2-Picoline	109-06-8	< 5.0	n/a	ug/L					U	07/21/08
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 0.50	n/a	ug/L	0.000	5.000			U	07/21/08
BLANK	Acenaphthene	83-32-9	< 2.6	n/a	ug/L					U	07/21/08
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	< 0.80	n/a	ug/L					U	07/21/08
BLANK	Benzothiazole	95-16-9	< 0.60	n/a	ug/L	0.000	300.000			U	07/21/08
BLANK	4-Chloro-3-methylphenol	59-50-7	< 0.50	n/a	ug/L					U	07/21/08
BLANK	2-Chlorophenol	95-57-8	< 0.50	n/a	ug/L					U	07/21/08
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 0.60	n/a	ug/L					U	07/21/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: SW-846 8270C Semi-Vols

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	2-Fluorobiphenyl(Surr)	321-60-8	19.725	98.600	% Recov	58.000	109.000				07/21/08
BLANK	Phenol	108-95-2	< 0.50	n/a	ug/L					U	07/21/08
BLANK	Naphthalene	91-20-3	< 2.1	n/a	ug/L					U	07/21/08
BLANK	Nitrobenzene-d5(Surr)	4165-60-0	19.651	98.300	% Recov	60.000	118.000				07/21/08
BLANK	4-Nitrophenol	100-02-7	< 1.0	n/a	ug/L					U	07/21/08
BLANK	Pentachlorophenol	87-86-5	< 1.5	n/a	ug/L					U	07/21/08
BLANK	Phenol-d5(Surr)	4165-62-2	18.838	94.200	% Recov	59.000	116.000				07/21/08
BLANK	Pyrene	129-00-0	< 0.50	n/a	ug/L					U	07/21/08
BLANK	Tris-2-chloroethyl phosphate	115-96-8	< 0.65	n/a	ug/L	0.000	300.000			U	07/21/08
BLANK	Tributyl phosphate	126-73-8	< 0.50	n/a	ug/L					U	07/21/08
BLANK	2,4,6-Tribromophenol(Surr)	118-79-6	17.552	87.800	% Recov	60.000	120.000				07/21/08
BLANK	Terphenyl-d14(Surr)	98904-43-9	22.237	111.000	% Recov	60.000	120.000				07/21/08
LCS	1,2,4-Trichlorobenzene	120-82-1	19.154	95.800	% Recov	46.000	107.000				07/21/08
LCS	1,4-Dichlorobenzene	106-46-7	18.815	94.100	% Recov	42.000	111.000				07/21/08
LCS	2,4-Dinitrotoluene	121-14-2	18.183	90.900	% Recov	59.000	106.000				07/21/08
LCS	2-Fluorophenol(Surr)	367-12-4	15.580	77.900	% Recov	50.000	110.000				07/21/08
LCS	Acenaphthene	83-32-9	19.490	97.400	% Recov	61.000	116.000				07/21/08
LCS	4-Chloro-3-methylphenol	59-50-7	28.483	94.900	% Recov	61.000	106.000				07/21/08
LCS	2-Chlorophenol	95-57-8	27.294	91.000	% Recov	66.000	106.000				07/21/08
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	18.842	94.200	% Recov	71.000	114.000				07/21/08
LCS	2-Fluorobiphenyl(Surr)	321-60-8	19.913	99.600	% Recov	58.000	109.000				07/21/08
LCS	Phenol	108-95-2	24.129	80.400	% Recov	67.000	105.000				07/21/08
LCS	Nitrobenzene-d5(Surr)	4165-60-0	19.612	98.100	% Recov	60.000	118.000				07/21/08
LCS	4-Nitrophenol	100-02-7	26.913	89.700	% Recov	32.000	118.000				07/21/08
LCS	Pentachlorophenol	87-86-5	26.463	88.200	% Recov	62.000	114.000				07/21/08
LCS	Phenol-d5(Surr)	4165-62-2	18.431	92.200	% Recov	59.000	116.000				07/21/08
LCS	Pyrene	129-00-0	21.176	106.000	% Recov	66.000	118.000				07/21/08
LCS	2,4,6-Tribromophenol(Surr)	118-79-6	19.486	97.400	% Recov	60.000	120.000				07/21/08
LCS	Terphenyl-d14(Surr)	98904-43-9	21.782	109.000	% Recov	60.000	120.000				07/21/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: NWTPH-D TPH Diesel Range (Wa)

Sample Date: 07/08/08
Receive Date:07/08/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR02298											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	ortho-Terphenyl Surr	84-15-1	457.71	96.100	% Recov	70.000	130.000				07/21/08
MS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2508.1	105.000	% Recov	75.000	125.000				07/21/08
MSD	ortho-Terphenyl Surr	84-15-1	502.96	101.000	% Recov	70.000	130.000				07/21/08
MSD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2831.8	113.000	% Recov	75.000	125.000				07/21/08
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	ortho-Terphenyl Surr	84-15-1	487.53	102.000	% Recov	70.000	130.000				07/21/08
MS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2566.0	108.000	% Recov	75.000	125.000				07/21/08
MSD	ortho-Terphenyl Surr	84-15-1	518.25	109.000	% Recov	70.000	130.000				07/21/08
MSD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2722.7	114.000	% Recov	75.000	125.000				07/21/08
SPK-RPD	ortho-Terphenyl Surr	84-15-1	109.000		RPD			6.635	20.000		07/21/08
SPK-RPD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	114.000		RPD			5.405	20.000		07/21/08
SURR	ortho-Terphenyl Surr	84-15-1	484.58	102.000	% Recov	70.000	130.000				07/21/08
Lab ID: W08P003346											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	ortho-Terphenyl Surr	84-15-1	470.31	98.800	% Recov	70.000	130.000				07/21/08
BATCH QC											
BLANK	Kerosene	TPHKEROSENE	< 75	n/a	ug/L					U	07/21/08
BLANK	ortho-Terphenyl Surr	84-15-1	448.16	89.600	% Recov	70.000	130.000				07/21/08
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 75	n/a	ug/L					U	07/21/08
LCS	ortho-Terphenyl Surr	84-15-1	513.78	103.000	% Recov	70.000	130.000				07/21/08
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2644.9	106.000	% Recov	80.000	120.000				07/21/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: NWTPH-GX TPH Gasoline Range

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<50		RPD			n/a	20.000	U	07/16/08
MS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	2700	108.000	% Recov	75.000	125.000				07/16/08
MSD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	2700	108.000	% Recov	75.000	125.000				07/16/08
SPK-RPD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	108.000		RPD			0.000	20.000		07/16/08
BATCH QC											
BLANK	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<50	n/a	mg/L	0.000	300.000			U	07/16/08
LCS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	2500	100.000	%rec	80.000	120.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 07/07/08
Receive Date:07/07/08

Lab ID: W08P003344
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	1,1-Dichloroethene	75-35-4	28.220	113.000	% Recov	63.000	117.000				07/18/08
MS	Benzene	71-43-2	25.200	101.000	% Recov	75.000	129.000				07/18/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	50.130	100.000	% Recov	75.000	125.000				07/18/08
MS	Chlorobenzene	108-90-7	25.630	103.000	% Recov	79.000	119.000				07/18/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	56.270	113.000	% Recov	75.000	125.000				07/18/08
MS	Toluene-d8(Surr)	2037-26-5	50.390	101.000	% Recov	75.000	125.000				07/18/08
MS	Toluene	108-88-3	25.580	102.000	% Recov	76.000	120.000				07/18/08
MS	Trichloroethene	79-01-6	24.780	99.100	% Recov	73.000	123.000				07/18/08
MSD	1,1-Dichloroethene	75-35-4	27.920	112.000	% Recov	63.000	117.000				07/18/08
MSD	Benzene	71-43-2	24.720	98.900	% Recov	75.000	129.000				07/18/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	51.340	103.000	% Recov	75.000	125.000				07/18/08
MSD	Chlorobenzene	108-90-7	25.270	101.000	% Recov	79.000	119.000				07/18/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	56.600	113.000	% Recov	75.000	125.000				07/18/08
MSD	Toluene-d8(Surr)	2037-26-5	50.060	100.000	% Recov	75.000	125.000				07/18/08
MSD	Toluene	108-88-3	25.120	100.000	% Recov	76.000	120.000				07/18/08
MSD	Trichloroethene	79-01-6	23.590	94.400	% Recov	73.000	123.000				07/18/08
SPK-RPD	1,1-Dichloroethene	75-35-4	112.000		RPD			0.889	20.000		07/18/08
SPK-RPD	Benzene	71-43-2	98.900		RPD			2.101	20.000		07/18/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	103.000		RPD			2.956	20.000		07/18/08
SPK-RPD	Chlorobenzene	108-90-7	101.000		RPD			1.961	20.000		07/18/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	113.000		RPD			0.000	20.000		07/18/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	100.000		RPD			0.995	20.000		07/18/08
SPK-RPD	Toluene	108-88-3	100.000		RPD			1.980	20.000		07/18/08
SPK-RPD	Trichloroethene	79-01-6	94.400		RPD			4.858	20.000		07/18/08
SURR	4-Bromofluorobenzene(Surr)	460-00-4	50.620	101.000	% Recov	75.000	125.000				07/18/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.340	115.000	% Recov	75.000	125.000				07/18/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 07/07/08
Receive Date:07/07/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SURR	Toluene-d8(Surr)	2037-26-5	50.620	101.000	% Recov	75.000	125.000				07/18/08

Lab ID: W08P003346
BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene(Surr)	460-00-4	49.600	99.200	% Recov	75.000	125.000				07/18/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.220	116.000	% Recov	75.000	125.000				07/18/08
SURR	Toluene-d8(Surr)	2037-26-5	50.460	101.000	% Recov	75.000	125.000				07/18/08

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	07/17/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	07/17/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	07/17/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	07/17/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	07/17/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	07/17/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	07/17/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	07/17/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	50.930	102.000	% Recov	75.000	125.000				07/17/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	07/17/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	07/17/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	55.280	111.000	% Recov	75.000	125.000				07/17/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	07/17/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	07/17/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081363
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	07/17/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	07/17/08
BLANK	Toluene-d8(Surr)	2037-26-5	49.060	98.100	% Recov	75.000	125.000				07/17/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	07/17/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	07/17/08
LCS	1,1-Dichloroethene	75-35-4	28.380	114.000	% Recov	75.000	125.000				07/18/08
LCS	Benzene	71-43-2	26.300	105.000	% Recov	75.000	125.000				07/18/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	50.610	101.000	% Recov	75.000	125.000				07/18/08
LCS	Chlorobenzene	108-90-7	26.260	105.000	% Recov	75.000	125.000				07/18/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.080	106.000	% Recov	75.000	125.000				07/18/08
LCS	Toluene-d8(Surr)	2037-26-5	50.090	100.000	% Recov	75.000	125.000				07/18/08
LCS	Toluene	108-88-3	26.530	106.000	% Recov	75.000	125.000				07/18/08
LCS	Trichloroethene	79-01-6	20.840	83.400	% Recov	75.000	125.000				07/18/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081363
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		SVOA: Low phenolic surrogate recoveries are matrix effects on a sample unrelated to this sample. Surrogate recoveries for these samples meet all QC control limits. cgc ICP-MS: Mercury data not uploaded. Spike recovery data not available. Samples spiked were W08P-3344(90% & 93% recovery) W08P-3520(98% & 96% recovery), W08P-3521(95% & 98% recovery) Information is in the raw data "X" flags ICP-AES: High silver and iron preparation blank results; "C" flag if applicable. No zirconium present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure sodium, calcium, and magnesium linearity because sample results are greater than the calibration standard.

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003344
Client ID: B1V9X7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081363
Department: Radiochemistry
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.960	pCi/L	+-1.67	pCi/L	1.00	0.88		07/16/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		91.1	Percent			1.00	0.0		07/16/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		87.0	pCi/L	+-18.3	pCi/L	1.00	6.0		07/13/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		2.40e+04	pCi/L	+-4.80e+03	pCi/L	1.00	2.2e+02		07/18/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P003346
Client ID: B1V9F1 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081363
Department: Radiochemistry
Sampled: 07/07/08
Received: 07/07/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-2.10	pCi/L	+-2.10	pCi/L	1.00	0.86		07/16/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		93.8	Percent			1.00	0.0		07/16/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	0.100	pCi/L	+-1.00	pCi/L	1.00	6.0		07/13/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	-48.0	pCi/L	+-260	pCi/L	1.00	2.2e+02		07/18/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081363
Matrix: WATER
Test: Strontium 89/90

Sample Date: 07/02/08
Receive Date:07/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003297											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	89.2	89.200	% Recov	30.000	105.000				07/16/08
DUP	Strontium-89/90	SR-RAD	U-1.5		RPD			n/a	20.000		07/16/08
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	91.1	91.100	% Recov	30.000	105.000				07/16/08
Lab ID: W08P003346											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	93.8	93.800	% Recov	30.000	105.000				07/16/08
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	90.1	90.100	% Recov	30.000	105.000				07/16/08
BLANK	Strontium-89/90	10098-97-2	U2.5E-01	n/a	pCi/L	-10.000	100.000				07/16/08
LCS	Sr-85 Tracer by Beta Counting	SR85	103.8	103.800	% Recov	30.000	105.000				07/16/08
LCS	Strontium-89/90	10098-97-2	136.0	97.983	% Recov	80.000	120.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081363
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 06/30/08
Receive Date:06/30/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003233											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	U-0.7		RPD			n/a	20.000		07/13/08
MS	Tc-99 by Liquid Scin.	14133-76-7	812.9	108.062	% Recov	75.000	125.000				07/13/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U-0.3	n/a	pCi/L	-10.000	10.000				07/13/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	200.2	106.433	% Recov	80.000	120.000				07/13/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081363
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 07/02/08
Receive Date:07/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003305											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	8.4E+03		RPD			7.407	20.000		07/18/08
MS	Tritium	10028-17-8	22860.0	88.697	% Recov	75.000	125.000				07/18/08
BATCH QC											
BLANK	Tritium	10028-17-8	U5.4E+01	n/a	pCi/L	-10.000	1000.000				07/18/08
LCS	Tritium	10028-17-8	3250	95.135	% Recov	80.000	120.000				07/18/08

M4W41-SLF-08-904

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 6 pages
Including cover page

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

File
NB
8/21/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081363

The following samples were received from you on 07/07/08. 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	Tests Scheduled	Matrix					Sample Date
W08P003343	B1V9X3	GPP-PNNL	TRENT Water					07/07/0
		@2008	@GPP6010					
W08P003344	B1V9X7	GPP-PNNL	TRENT Water					07/07/0
		@2008	@8015GPP	@GPP6010	@H3-33	@IC-30		
		@SR89_90	@SVOCGPP	@TC99-30	@TPHD-WA	@TPHG-WA	@VOA-	
		CN-02	NH4-IC	TOC-30				
W08P003345	B1VB10	GPP-PNNL	TRENT Water					07/07/0
		@2008	@GPP6010					
W08P003346	B1V9F1	GPP-PNNL	TRENT Water					07/07/0
		@2008	@8015GPP	@GPP6010	@H3-33	@IC-30		
		@SR89_90	@SVOCGPP	@TC99-30	@TPHD-WA	@TPHG-WA	@VOA-	
		CN-02	NH4-IC	TOC-30				

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@8015GPP	Alcohols, Glycols - 8015
@GPP6010	ICP Metals Analysis, Grd H20 P
@H3-33	Tritium by Liq Sct column prep
@IC-30	Anions by Ion Chromatography
@SR89_90	Strontium 89/90
@SVOCGPP	SW-846 8270C Semi-Vols
@TC99-30	TC99 by Liquid Scin.
@TPHD-WA	NWTPH-D TPH Diesel Range (Wa)
@TPHG-WA	NWTPH-GX TPH Gasoline Range
@VOA-GPP	VOA Ground Water Protection
CN-02	Cyanide by Midi/Spectrophotom
NH4-IC	Ammonia (N) by IC
TOC-30	Total Organic Carbon

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-037-106

Collector RM Arnold	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-037	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2UP1, MAY 2008	HNF-N-506-12	**Ice Chest No.** GWS - 010 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV 20081363	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
200 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V9X3 (F)	W08P003343	W	7-7-08	1105	1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1)	HNO3 to pH <2
B1V9X3 (F)		W			1x500-mL G/P	200.8_METALS_ICPMS: Mercury (1)	HNO3 to pH <2
B1V9X3 (F)		W			1x500-mL G/P	6010_METALS_ICP: List-3 + Lithium (19)	HNO3 to pH <2
B1V9X7	3347	W			4x40-mL aGs*	8260_VOA_GCMS: List-2 (25) X	HCl or H2SO4 to pH <2 Cool~4C
B1V9X7		W			3x40-mL aGs*	Alcohols, Glycols, & Ketones - 8015 X	Cool~4C
B1V9X7		W			4x1000-mL aG	8270_SVOA_GCMS: List-1 + Cresol (14) X	Cool~4C
B1V9X7		W			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1) X	HNO3 to pH <2
B1V9X7		W			1x500-mL G/P	200.8_METALS_ICPMS: Mercury (1) X	HNO3 to pH <2
B1V9X7		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1) X	HNO3 to pH <2
B1V9X7		W			1x500-mL G/P	6010_METALS_ICP: List-3 + Lithium (19) X	HNO3 to pH <2
B1V9X7		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5) X	Cool~4C
B1V9X7		W			1x250-mL G/P	300.7_CATIONS_IC: Ammonia (1) X	H2SO4 to pH <2
B1V9X7		W			1x250-mL G/P	335.2_CYANIDE: Cyanide (1) X	NaOH to pH >= 12 Cool~4C
B1V9X7		W			1x1-L G/P	Strontium-90 X	HNO3 to pH <2
B1V9X7		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1) X	HCl to pH <2
B1V9X7		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1) X	None

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RM Arnold	RM Arnold		JUL 07 2008 14:35				JUL 07 2008 14:35
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-037-106

SAF No.	Contact/Requestor	Telephone No.	MSIN	FAX
108-037	Steve Trent	509-373-5869		

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V9X7		W	7-7-08	1105	1x250-mL aGs*	9060_TOC: TOC (1) X	HCl or H2SO4 to pH <2 Cool~4C
B1V9X7		W	↓	↓	3x1000-mL aG	TPH-DieselKerosene Range - WTPH-D X	HCl to pH <2 Cool~4C
B1V9X7		W			4x40-mL aGs*	TPH-Gasoline Range - WTPH-G X	HCl to pH <2 Cool~4C

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RM Arnold	RM Arnold		JUL 07 2008 14:35	Victor Sims			7/7/08 14:35
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-037-67

SAF No.	Contact/Requestor	Telephone No.	MSIN	FAX
I08-037	Steve Trent	509-373-5869		

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1VB10 (F)	WDP003345	W	7-7-08	1318	1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1)	HNO3 to pH <2
B1VB10 (F)		W	↓	↓	1x500-mL G/P	200.8_METALS_ICPMS: Mercury (1)	HNO3 to pH <2
B1VB10 (F)		W	↓	↓	1x500-mL G/P	6010_METALS_ICP: List-3 + Lithium (19)	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RM Arnold	RM Arnold		JUL 07 2008 14:35	Victor Bins			JUL 07 2008 14:35
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-037-67

Collector RM Arnold	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-037	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2UP1 MAY 2008	HNF-N-506-12	**Ice Chest No.** GWS-010 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
200 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V9F1	W0KP003344	W	7-7-08	1314	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V9F1		W			3x40-mL aGs*	Alcohols, Glycols, & Ketones - 8015	Cool~4C
B1V9F1		W			4x1000-mL aG	8270_SVOA_GCMS: List-1 + Cresol (14)	Cool~4C
B1V9F1		W			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1); 200.8_METALS_ICPMS: Lead (1)	HNO3 to pH <2
B1V9F1		W			1x500-mL G/P	200.8_METALS_ICPMS: Mercury (1)	HNO3 to pH <2
B1V9F1		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V9F1		W			1x500-mL G/P	6010_METALS_ICP: List-3 + Lithium (19)	HNO3 to pH <2
B1V9F1		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V9F1		W			1x250-mL G/P	300.7_CATIONS_IC: Ammonia (1)	H2SO4 to pH <2
B1V9F1		W			1x250-mL G/P	335.2_CYANIDE: Cyanide (1)	NaOH to pH >= 12 Cool~4C
B1V9F1		W			1x1-L G/P	Strontium-90	HNO3 to pH <2
B1V9F1		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V9F1		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V9F1		W			1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1V9F1		W			3x1000-mL aG	TPH-DieselKerosene Range - WTPH-D	HCl to pH <2 Cool~4C
B1V9F1		W			4x40-mL aGs*	TPH-Gasoline Range - WTPH-G	HCl to pH <2 Cool~4C

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RM Arnold	RM Arnold		JUL 07 2008 14:35	Victor Sims			JUL 07 2008 14:35
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time