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FLUOR

Memorandum

M4W41-SLF-08-719

To:	H. Hampt	E6-35	Date:	July 18, 2008
From:	S. L. Fitzgerald, Manager WSCF Analytical Lab	Marlene Stauffer for SLF		

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 WSCF20081121

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 WSCF20081121:

- 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-08-719

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081121
Data Deliverable Date: 16-jul-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-035	B1V5C5	W08P002668	WATER
I08-038	B1V6M3	W08P002675	WATER
	B1V6M4	W08P002678	WATER
	B1V6N6	W08P002682	WATER
	B1V6N7	W08P002681	WATER
I08-039	B1V6W1	W08P002683	WATER
	B1V6Y2	W08P002667	WATER
	B1V6Y5	W08P002684	WATER
S08-005	B1V7K0	W08P002669	WATER
	B1V7K4	W08P002670	WATER
	B1V9F3	W08P002671	WATER
W08-004	B1V384	W08P002672	WATER
W08-005	B1V826	W08P002673	WATER
	B1V827	W08P002674	WATER

M4W41-SLF-08-719

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Introduction

Fourteen (14) groundwater samples were received at the WSCF Laboratory on June 3, 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 13 through 15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 29 through 31 for QC details. Analytical Note(s):

- Duplicates, Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1V7H6 (SDG# 20081134); and, B1V6Y2 and B1V6Y5 of this SDG,
- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.

All QC controls are within the established limits.

ICP-AES Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 32 through 35 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1V9P4 (SDG# 20081079).

- Calcium, Magnesium, Manganese and Sodium – Sample results exceeded spiking levels by a factor of 4. Spike recoveries are not valid. Check standard was analyzed to ensure linearity, because sample results were greater than the calibration standard.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 36 for QC details. Analytical Note(s):

- Duplicates were analyzed on samples B1TT54 (SDG# 20081085, SAF# F08-076) and B1TH60 (SDG# 20081067).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 46 through 48 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.

- Acetone contamination detected in the Blank was evaluated and affected sample results were B flagged.

All other 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 54 through 57 for QC details.

- Technetium-99 – Duplicate and Matrix Spike were analyzed on sample# B1V7J6 (SDG# 20081110)

- Tritium – Duplicate and Matrix Spike were analyzed on sample# B1V6F7 (SDG# 20081110).

- Gross Alpha/Gross Beta – Duplicate QC was analyzed on sample# B1TH60. Gross Beta Blank result was outside established limits.

All other 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-08-719

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 51 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: Markus Stauffer 7/18/08

Client Services: P.D. Mio 7/18/2008

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#: WSCF20081121
Report Date: 17-jul-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 17-jul-2008 12:01:00

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081121

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36537	2	36956	41313	BLANK		Anions by Ion Chromatography
36537	14	36956	41313	BLANK		Anions by Ion Chromatography
36537	22	36956	41313	BLANK		Anions by Ion Chromatography
36537	3	36956	41313	LCS		Anions by Ion Chromatography
36537	15	36956	41313	LCS		Anions by Ion Chromatography
36537	5	36956	41313	DUP	W08P002667	Anions by Ion Chromatography
36537	6	36956	41313	MS	W08P002667	Anions by Ion Chromatography
36537	7	36956	41313	MSD	W08P002667	Anions by Ion Chromatography
36537	4	36956	41313	SAMPLE	W08P002667	Anions by Ion Chromatography
36537	7	36956	41313	SPK-RPD	W08P002667	Anions by Ion Chromatography
36537	8	36956	41313	SAMPLE	W08P002668	Anions by Ion Chromatography
36537	9	36956	41313	SAMPLE	W08P002670	Anions by Ion Chromatography
36537	10	36956	41313	SAMPLE	W08P002674	Anions by Ion Chromatography
36537	11	36956	41313	SAMPLE	W08P002678	Anions by Ion Chromatography
36537	12	36956	41313	SAMPLE	W08P002681	Anions by Ion Chromatography
36537	13	36956	41313	SAMPLE	W08P002682	Anions by Ion Chromatography
36537	21	36956	41313	SAMPLE	W08P002683	Anions by Ion Chromatography
36537	17	36956	41313	DUP	W08P002684	Anions by Ion Chromatography
36537	18	36956	41313	MS	W08P002684	Anions by Ion Chromatography
36537	19	36956	41313	MSD	W08P002684	Anions by Ion Chromatography
36537	16	36956	41313	SAMPLE	W08P002684	Anions by Ion Chromatography
36537	19	36956	41313	SPK-RPD	W08P002684	Anions by Ion Chromatography
36565	2	36981	41333	BLANK		Anions by Ion Chromatography
36565	11	36981	41333	BLANK		Anions by Ion Chromatography
36565	3	36981	41333	LCS		Anions by Ion Chromatography
36537	13	36981	41333	SAMPLE	W08P002682	Anions by Ion Chromatography
36565	5	36981	41333	DUP	W08P002690	Anions by Ion Chromatography
36565	6	36981	41333	MS	W08P002690	Anions by Ion Chromatography
36565	7	36981	41333	MSD	W08P002690	Anions by Ion Chromatography
36565	7	36981	41333	SPK-RPD	W08P002690	Anions by Ion Chromatography
36589	1	37006	41351	LCS		Total Alkalinity as mg/L CaCO3
36589	14	37006	41351	LCS		Total Alkalinity as mg/L CaCO3
36589	22	37006	41351	LCS		Total Alkalinity as mg/L CaCO3
36589	3	37006	41351	DUP	W08GR01411	Total Alkalinity as mg/L CaCO3
36589	6	37006	41351	DUP	W08P002581	Total Alkalinity as mg/L CaCO3
36589	19	37006	41351	SAMPLE	W08P002674	Total Alkalinity as mg/L CaCO3
36995	1	37415	41885	BLANK		ICP Metals Analysis, Grd H20 P
36995	2	37415	41885	LCS		ICP Metals Analysis, Grd H20 P
36995	4	37415	41885	MS	W08P002617	ICP Metals Analysis, Grd H20 P
36995	5	37415	41885	MSD	W08P002617	ICP Metals Analysis, Grd H20 P
36995	5	37415	41885	SPK-RPD	W08P002617	ICP Metals Analysis, Grd H20 P
36995	6	37415	41885	SAMPLE	W08P002673	ICP Metals Analysis, Grd H20 P
36995	7	37415	41885	SAMPLE	W08P002674	ICP Metals Analysis, Grd H20 P
36995	8	37415	41885	SAMPLE	W08P002675	ICP Metals Analysis, Grd H20 P
36995	9	37415	41885	SAMPLE	W08P002678	ICP Metals Analysis, Grd H20 P

w13qlog v4.2 17-jul-2008 12:01:00

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081121

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			41803	BLANK		VOA Ground Water Protection
			41803	LCS		VOA Ground Water Protection
			41803	MS	W08P002672	VOA Ground Water Protection
			41803	MSD	W08P002672	VOA Ground Water Protection
			41803	SAMPLE	W08P002672	VOA Ground Water Protection
			41803	SPK-RPD	W08P002672	VOA Ground Water Protection
			41803	SURR	W08P002672	VOA Ground Water Protection
			41803	SAMPLE	W08P002678	VOA Ground Water Protection
			41803	SURR	W08P002678	VOA Ground Water Protection
			41803	SAMPLE	W08P002681	VOA Ground Water Protection
			41803	SURR	W08P002681	VOA Ground Water Protection
			41803	SAMPLE	W08P002682	VOA Ground Water Protection
			41803	SURR	W08P002682	VOA Ground Water Protection

w13qlog v4.2 17-jul-2008 12:01:00

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081121

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36629	1	37046	41392	BLANK		Gross Alpha on Alpha Plateau
36629	2	37046	41392	LCS		Gross Alpha on Alpha Plateau
36629	3	37046	41392	DUP	W08P002581	Gross Alpha on Alpha Plateau
36629	6	37046	41392	SAMPLE	W08P002669	Gross Alpha on Alpha Plateau
36629	7	37046	41392	SAMPLE	W08P002671	Gross Alpha on Alpha Plateau
36599	1	37016	41458	BLANK		Gross Alpha/Gross Beta (AB32)
36599	2	37016	41458	LCS		Gross Alpha/Gross Beta (AB32)
36599	3	37016	41458	DUP	W08P002581	Gross Alpha/Gross Beta (AB32)
36599	6	37016	41458	SAMPLE	W08P002669	Gross Alpha/Gross Beta (AB32)
36599	7	37016	41458	SAMPLE	W08P002671	Gross Alpha/Gross Beta (AB32)
36695	1	37112	41480	BLANK		Tritium by Liq Sct column prep
36695	2	37112	41480	LCS		Tritium by Liq Sct column prep
36695	4	37112	41480	DUP	W08P002658	Tritium by Liq Sct column prep
36695	3	37112	41480	MS	W08P002658	Tritium by Liq Sct column prep
36695	10	37112	41480	SAMPLE	W08P002671	Tritium by Liq Sct column prep
36695	11	37112	41480	SAMPLE	W08P002674	Tritium by Liq Sct column prep
36601	1	37018	41598	BLANK		TC99 by Liquid Scin.
36601	4	37018	41598	LCS		TC99 by Liquid Scin.
36601	3	37018	41598	DUP	W08P002653	TC99 by Liquid Scin.
36601	2	37018	41598	MS	W08P002653	TC99 by Liquid Scin.
36601	5	37018	41598	SAMPLE	W08P002674	TC99 by Liquid Scin.
36601	6	37018	41598	SAMPLE	W08P002678	TC99 by Liquid Scin.

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-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-531-411	LA-531-411: ALKALINITY (TITRIMETRIC)	
	HEIS 2320B	Alkalinity
	Standard Methods 2320B	Alkalinity
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

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-523-455	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)

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: I08-039
Sample # W08P002667
Client ID: B1V6Y2 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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	BD	0.160	mg/L			2.00	0.042		06/03/08
Chloride	16887-00-6	LA-533-410	D	5.22	mg/L			2.00	0.22		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	1.90	mg/L			2.00	0.072		06/03/08
Sulfate	14808-79-8	LA-533-410	D	27.4	mg/L			2.00	0.15		06/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: I08-035
Sample # W08P002668
Client ID: B1V5C5 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Sulfate	14808-79-8	LA-533-410	D	84.7	mg/L			2.00	0.15		06/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: S08-005
Sample # W08P002670
Client ID: B1V7K4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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	BD	0.196	mg/L			2.00	0.042		06/03/08
Chloride	16887-00-6	LA-533-410	D	7.59	mg/L			2.00	0.22		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	8.66	mg/L			2.00	0.072		06/03/08
Sulfate	14808-79-8	LA-533-410	D	36.3	mg/L			2.00	0.15		06/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: W08-005
Sample # W08P002673
Client ID: B1V826 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		2.01e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		4.95e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		2.22e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		56.5	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		19.1	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		6.06e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		257	ug/L			1.00	4.0		07/16/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: W08-005
Sample # W08P002674
Client ID: B1V827 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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		06/03/08
Chloride	16887-00-6	LA-533-410	D	44.6	mg/L			10.00	1.1		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	25.2	mg/L			10.00	0.36		06/03/08
Sulfate	14808-79-8	LA-533-410	D	34.8	mg/L			2.00	0.15		06/03/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		2.15e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		5.16e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		2.38e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		60.4	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		20.6	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		6.39e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		273	ug/L			1.00	4.0		07/16/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: W08-005
Sample # W08P002674
Client ID: B1V827 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		110	mg/L			1.00	1.0		06/05/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but >= the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: I08-038
Sample # W08P002675
Client ID: B1V6M3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.58e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		4.39e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.48e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		48.7	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		23.0	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		4.72e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		198	ug/L			1.00	4.0		07/16/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (Inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: I08-038
Sample # W08P002678
Client ID: B1V6M4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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	0.300	mg/L			2.00	0.042		06/03/08
Chloride	16887-00-6	LA-533-410	D	7.41	mg/L			2.00	0.22		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	26.2	mg/L			10.00	0.36		06/03/08
Sulfate	14808-79-8	LA-533-410	D	19.1	mg/L			2.00	0.15		06/03/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		25.4	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.63e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		4.47e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.50e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		50.7	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		23.7	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		4.90e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		206	ug/L			1.00	4.0		07/16/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
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: I08-038
Sample # W08P002678
Client ID: B1V6M4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
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: I08-038
Sample # W08P002681
Client ID: B1V6N7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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	DU	< 0.0420	mg/L			2.00	0.042		06/03/08
Chloride	16887-00-6	LA-533-410	DU	< 0.220	mg/L			2.00	0.22		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	DU	< 0.0720	mg/L			2.00	0.072		06/03/08
Sulfate	14808-79-8	LA-533-410	DU	< 0.154	mg/L			2.00	0.15		06/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
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: I08-038
Sample # W08P002682
Client ID: B1V6N6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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	0.347	mg/L			2.00	0.042		06/03/08
Chloride	16887-00-6	LA-533-410	D	17.1	mg/L			2.00	0.22		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	143	mg/L			51.00	1.8		06/04/08
Sulfate	14808-79-8	LA-533-410	D	32.4	mg/L			2.00	0.15		06/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
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: I08-039
Sample # W08P002683
Client ID: B1V6W1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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	DU	< 0.105	mg/L			5.00	0.10		06/03/08
Chloride	16887-00-6	LA-533-410	D	26.0	mg/L			5.00	0.55		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0495	mg/L			5.00	0.050		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	1.61	mg/L			5.00	0.18		06/03/08
Sulfate	14808-79-8	LA-533-410	D	278	mg/L			10.00	0.77		06/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
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: I08-039
Sample # W08P002684
Client ID: B1V6Y5 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Inorganic
Sampled: 06/03/08
Received: 06/03/08

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	DU	< 0.0420	mg/L			2.00	0.042		06/03/08
Chloride	16887-00-6	LA-533-410	D	3.43	mg/L			2.00	0.22		06/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	1.23	mg/L			2.00	0.072		06/03/08
Sulfate	14808-79-8	LA-533-410	D	18.5	mg/L			2.00	0.15		06/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
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 LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081121
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 06/03/08
Receive Date:06/03/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002667											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	5.2301		RPD			0.134	20.000		06/03/08
DUP	Fluoride	16984-48-8	0.1574		RPD			1.763	20.000		06/03/08
DUP	Nitrogen in Nitrite	NO2-N	<1.98e-2		RPD			n/a	20.000	U	06/03/08
DUP	Nitrogen in Nitrate	NO3-N	1.8822		RPD			0.999	20.000		06/03/08
DUP	Sulfate	14808-79-8	27.4008		RPD			0.051	20.000		06/03/08
MS	Chloride	16887-00-6	0.94265	94.739	% Recov	80.000	120.000				06/03/08
MS	Fluoride	16984-48-8	0.5008	101.582	% Recov	80.000	120.000				06/03/08
MS	Nitrogen in Nitrite	NO2-N	0.495	100.610	% Recov	80.000	120.000				06/03/08
MS	Nitrogen in Nitrate	NO3-N	0.44165	99.025	% Recov	80.000	120.000				06/03/08
MS	Sulfate	14808-79-8	1.8346	93.602	% Recov	80.000	120.000				06/03/08
MSD	Chloride	16887-00-6	0.90085	90.538	% Recov	80.000	120.000				06/03/08
MSD	Fluoride	16984-48-8	0.5059	102.617	% Recov	80.000	120.000				06/03/08
MSD	Nitrogen in Nitrite	NO2-N	0.47515	96.575	% Recov	80.000	120.000				06/03/08
MSD	Nitrogen in Nitrate	NO3-N	0.4603	103.206	% Recov	80.000	120.000				06/03/08
MSD	Sulfate	14808-79-8	1.8291	93.321	% Recov	80.000	120.000				06/03/08
SPK-RPD	Chloride	16887-00-6	90.538		RPD			4.535	20.000		06/03/08
SPK-RPD	Fluoride	16984-48-8	102.617		RPD			1.014	20.000		06/03/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	96.575		RPD			4.093	20.000		06/03/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	103.206		RPD			4.135	20.000		06/03/08
SPK-RPD	Sulfate	14808-79-8	93.321		RPD			0.301	20.000		06/03/08
Lab ID: W08P002684											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	3.4119		RPD			0.407	20.000		06/03/08
DUP	Fluoride	16984-48-8	<4.2e-2		RPD			n/a	20.000	U	06/03/08
DUP	Nitrogen in Nitrite	NO2-N	<1.98e-2		RPD			n/a	20.000	U	06/03/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081121
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 06/03/08
Receive Date:06/03/08

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	1.2264		RPD			0.634	20.000		06/03/08
DUP	Sulfate	14808-79-8	18.3445		RPD			0.681	20.000		06/03/08
MS	Chloride	16887-00-6	0.9631	96.794	% Recov	80.000	120.000				06/03/08
MS	Fluoride	16984-48-8	0.5274	106.978	% Recov	80.000	120.000				06/03/08
MS	Nitrogen in Nitrite	NO2-N	0.5303	107.785	% Recov	80.000	120.000				06/03/08
MS	Nitrogen in Nitrate	NO3-N	0.45425	101.850	% Recov	80.000	120.000				06/03/08
MS	Sulfate	14808-79-8	1.85745	94.768	% Recov	80.000	120.000				06/03/08
MSD	Chloride	16887-00-6	0.9094	91.397	% Recov	80.000	120.000				06/03/08
MSD	Fluoride	16984-48-8	0.52	105.477	% Recov	80.000	120.000				06/03/08
MSD	Nitrogen in Nitrite	NO2-N	0.4777	97.093	% Recov	80.000	120.000				06/03/08
MSD	Nitrogen in Nitrate	NO3-N	0.4638	103.991	% Recov	80.000	120.000				06/03/08
MSD	Sulfate	14808-79-8	1.89325	96.594	% Recov	80.000	120.000				06/03/08
SPK-RPD	Chloride	16887-00-6	91.397		RPD			5.736	20.000		06/03/08
SPK-RPD	Fluoride	16984-48-8	105.477		RPD			1.413	20.000		06/03/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	97.093		RPD			10.437	20.000		06/03/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	103.991		RPD			2.080	20.000		06/03/08
SPK-RPD	Sulfate	14808-79-8	96.594		RPD			1.908	20.000		06/03/08

BATCH QC

BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/03/08
BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/03/08
BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/03/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/03/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/03/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/03/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/03/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/03/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/03/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/03/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/03/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081121
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	06/03/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/03/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/03/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/03/08
LCS	Chloride	16887-00-6	199.1207	99.065	% Recov	80.000	120.000				06/03/08
LCS	Chloride	16887-00-6	197.9582	98.487	% Recov	80.000	120.000				06/03/08
LCS	Fluoride	16984-48-8	101.0959	101.502	% Recov	80.000	120.000				06/03/08
LCS	Fluoride	16984-48-8	100.8868	101.292	% Recov	80.000	120.000				06/03/08
LCS	Nitrogen in Nitrite	NO2-N	99.958	100.561	% Recov	80.000	120.000				06/03/08
LCS	Nitrogen in Nitrite	NO2-N	100.8935	101.503	% Recov	80.000	120.000				06/03/08
LCS	Nitrogen in Nitrate	NO3-N	94.159	104.505	% Recov	80.000	120.000				06/03/08
LCS	Nitrogen in Nitrate	NO3-N	90.7983	100.775	% Recov	80.000	120.000				06/03/08
LCS	Sulfate	14808-79-8	401.9409	101.500	% Recov	80.000	120.000				06/03/08
LCS	Sulfate	14808-79-8	401.6886	101.437	% Recov	80.000	120.000				06/03/08

Lab ID: W08P002690
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Nitrogen in Nitrate	NO3-N	16.3698		RPD			0.040	20.000		06/04/08
MS	Nitrogen in Nitrate	NO3-N	0.45222	101.395	% Recov	80.000	120.000				06/04/08
MSD	Nitrogen in Nitrate	NO3-N	0.46195	103.576	% Recov	80.000	120.000				06/04/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	103.576		RPD			2.128	20.000		06/04/08

BATCH QC

BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/04/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/04/08
LCS	Nitrogen in Nitrate	NO3-N	94.7648	105.177	% Recov	80.000	120.000				06/04/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081121
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 05/28/08
Receive Date:05/28/08

Lab ID: W08P002617
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	1009	100.900	% Recov	75.000	125.000				07/16/08
MS	Barium	7440-39-3	513.7	102.740	% Recov	75.000	125.000				07/16/08
MS	Beryllium	7440-41-7	537.8	107.560	% Recov	75.000	125.000				07/16/08
MS	Calcium	7440-70-2	-700	-70.000	% Recov	75.000	125.000			*	07/16/08
MS	Cadmium	7440-43-9	1001	100.100	% Recov	75.000	125.000				07/16/08
MS	Cobalt	7440-48-4	942	94.200	% Recov	75.000	125.000				07/16/08
MS	Chromium	7440-47-3	992	99.200	% Recov	75.000	125.000				07/16/08
MS	Copper	7440-50-8	1040	104.000	% Recov	75.000	125.000				07/16/08
MS	Iron	7439-89-6	975	97.500	% Recov	75.000	125.000				07/16/08
MS	Potassium	7440-09-7	9449	94.490	% Recov	75.000	125.000				07/16/08
MS	Magnesium	7439-95-4	490	49.000	% Recov	75.000	125.000			*	07/16/08
MS	Manganese	7439-96-5	892	89.200	% Recov	75.000	125.000				07/16/08
MS	Sodium	7440-23-5	750	75.000	% Recov	75.000	125.000				07/16/08
MS	Nickel	7440-02-0	964.4	96.440	% Recov	75.000	125.000				07/16/08
MS	Antimony	7440-36-0	1013	101.300	% Recov	75.000	125.000				07/16/08
MS	Strontium	7440-24-6	503.1	100.620	% Recov	75.000	125.000				07/16/08
MS	Vanadium	7440-62-2	991.4	99.140	% Recov	75.000	125.000				07/16/08
MS	Zinc	7440-66-6	1058	105.800	% Recov	75.000	125.000				07/16/08
MSD	Silver	7440-22-4	1021	102.100	% Recov	75.000	125.000				07/16/08
MSD	Barium	7440-39-3	520.6	104.120	% Recov	75.000	125.000				07/16/08
MSD	Beryllium	7440-41-7	544.7	108.940	% Recov	75.000	125.000				07/16/08
MSD	Calcium	7440-70-2	2300	230.000	% Recov	75.000	125.000			*	07/16/08
MSD	Cadmium	7440-43-9	1007	100.700	% Recov	75.000	125.000				07/16/08
MSD	Cobalt	7440-48-4	946.7	94.670	% Recov	75.000	125.000				07/16/08
MSD	Chromium	7440-47-3	1003	100.300	% Recov	75.000	125.000				07/16/08
MSD	Copper	7440-50-8	1045	104.500	% Recov	75.000	125.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081121
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 05/28/08
Receive Date:05/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1010	101.000	% Recov	75.000	125.000				07/16/08
MSD	Potassium	7440-09-7	9259	92.590	% Recov	75.000	125.000				07/16/08
MSD	Magnesium	7439-95-4	840	84.000	% Recov	75.000	125.000				07/16/08
MSD	Manganese	7439-96-5	1043	104.300	% Recov	75.000	125.000				07/16/08
MSD	Sodium	7440-23-5	660	66.000	% Recov	75.000	125.000			•	07/16/08
MSD	Nickel	7440-02-0	978.3	97.830	% Recov	75.000	125.000				07/16/08
MSD	Antimony	7440-36-0	1022	102.200	% Recov	75.000	125.000				07/16/08
MSD	Strontium	7440-24-6	518.1	103.620	% Recov	75.000	125.000				07/16/08
MSD	Vanadium	7440-62-2	1001	100.100	% Recov	75.000	125.000				07/16/08
MSD	Zinc	7440-66-6	1066	106.600	% Recov	75.000	125.000				07/16/08
SPK-RPD	Silver	7440-22-4	102.100		RPD			1.182	20.000		07/16/08
SPK-RPD	Barium	7440-39-3	104.120		RPD			1.334	20.000		07/16/08
SPK-RPD	Beryllium	7440-41-7	108.940		RPD			1.275	20.000		07/16/08
SPK-RPD	Calcium	7440-70-2	230.000		RPD			375.000	20.000	•	07/16/08
SPK-RPD	Cadmium	7440-43-9	100.700		RPD			0.598	20.000		07/16/08
SPK-RPD	Cobalt	7440-48-4	94.670		RPD			0.498	20.000		07/16/08
SPK-RPD	Chromium	7440-47-3	100.300		RPD			1.103	20.000		07/16/08
SPK-RPD	Copper	7440-50-8	104.500		RPD			0.480	20.000		07/16/08
SPK-RPD	Iron	7439-89-6	101.000		RPD			3.526	20.000		07/16/08
SPK-RPD	Potassium	7440-09-7	92.590		RPD			2.031	20.000		07/16/08
SPK-RPD	Magnesium	7439-95-4	84.000		RPD			52.632	20.000	•	07/16/08
SPK-RPD	Manganese	7439-96-5	104.300		RPD			15.607	20.000		07/16/08
SPK-RPD	Sodium	7440-23-5	66.000		RPD			12.766	20.000		07/16/08
SPK-RPD	Nickel	7440-02-0	97.830		RPD			1.431	20.000		07/16/08
SPK-RPD	Antimony	7440-36-0	102.200		RPD			0.885	20.000		07/16/08
SPK-RPD	Strontium	7440-24-6	103.620		RPD			2.938	20.000		07/16/08
SPK-RPD	Vanadium	7440-62-2	100.100		RPD			0.964	20.000		07/16/08
SPK-RPD	Zinc	7440-66-6	106.600		RPD			0.753	20.000		07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081121
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	<5	n/a	ug/L					U	07/16/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	07/16/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	07/16/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	07/16/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	07/16/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	07/16/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	07/16/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	07/16/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	07/16/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	07/16/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	07/16/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	07/16/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	07/16/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	07/16/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	07/16/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	07/16/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	07/16/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	07/16/08
LCS	Silver	7440-22-4	1025	102.500	% Recov	80.000	120.000				07/16/08
LCS	Barium	7440-39-3	534.9	106.980	% Recov	80.000	120.000				07/16/08
LCS	Beryllium	7440-41-7	575.6	115.120	% Recov	80.000	120.000				07/16/08
LCS	Calcium	7440-70-2	1017	101.700	% Recov	80.000	120.000				07/16/08
LCS	Cadmium	7440-43-9	1036	103.600	% Recov	80.000	120.000				07/16/08
LCS	Cobalt	7440-48-4	1004	100.400	% Recov	80.000	120.000				07/16/08
LCS	Chromium	7440-47-3	1034	103.400	% Recov	80.000	120.000				07/16/08
LCS	Copper	7440-50-8	1068	106.800	% Recov	80.000	120.000				07/16/08
LCS	Iron	7439-89-6	1021	102.100	% Recov	80.000	120.000				07/16/08
LCS	Potassium	7440-09-7	10750	107.500	% Recov	80.000	120.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081121
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	Magnesium	7439-95-4	1074	107.400	% Recov	80.000	120.000				07/16/08
LCS	Manganese	7439-96-5	1046	104.600	% Recov	80.000	120.000				07/16/08
LCS	Sodium	7440-23-5	1188	118.800	% Recov	80.000	120.000				07/16/08
LCS	Nickel	7440-02-0	1026	102.600	% Recov	80.000	120.000				07/16/08
LCS	Antimony	7440-36-0	1065	106.500	% Recov	80.000	120.000				07/16/08
LCS	Strontium	7440-24-6	551.8	110.360	% Recov	80.000	120.000				07/16/08
LCS	Vanadium	7440-62-2	1038	103.800	% Recov	80.000	120.000				07/16/08
LCS	Zinc	7440-66-6	1103	110.300	% Recov	80.000	120.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081121
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 05/28/08
Receive Date:05/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01411											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	84.6		RPD			0.000	20.000		06/05/08
Lab ID: W08P002581											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	54.8		RPD			0.182	20.000		06/05/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	114.5	99.565	%Recove	80.000	120.000				06/05/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	114.3	99.391	%Recove	80.000	120.000				06/05/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	117.3	102.000	%Recove	80.000	120.000				06/05/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081121
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W08P002669, W08P002671/Gross beta prep blank is flagged for having a high result. Since all the other QC checks came out fine, this batch has been approved. lmh VOA: Large amt of Acetone in Blank, hence B-flagged. All sample results for this target was less than in the Blank. gar ICP-AES: No zirconium present in the LCS. Manganese, sodium, magnesium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure calcium, sodium, 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: W08-004
Sample # W08P002672
Client ID: B1V384 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Acetone	67-64-1	LA-523-455	B	14.0	ug/L			1.00	1.0		06/09/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Methylenechloride	75-09-2	LA-523-455	J	1.80	ug/L			1.00	1.0		06/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/09/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: W08-004
Sample # W08P002672
Client ID: B1V384 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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B - The analyte < the RDL but > = the IDL/MDL (inorg)
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: I08-038
Sample # W08P002678
Client ID: B1V6M4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Trichloroethene	79-01-6	LA-523-455		9.80	ug/L			1.00	1.0		06/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon tetrachloride	56-23-5	LA-523-455		2.90e+03	ug/L			1.00	25		06/10/08
Acetone	67-64-1	LA-523-455	B	29.0	ug/L			1.00	1.0		06/09/08
Chloroform	67-66-3	LA-523-455		15.0	ug/L			1.00	1.0		06/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/09/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
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U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002678
Client ID: B1V6M4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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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: I08-038
Sample # W08P002681
Client ID: B1V6N7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon tetrachloride	56-23-5	LA-523-455	J	2.50	ug/L			1.00	1.0		06/09/08
Acetone	67-64-1	LA-523-455	B	34.0	ug/L			1.00	1.0		06/09/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Methylenechloride	75-09-2	LA-523-455	J	1.40	ug/L			1.00	1.0		06/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/09/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002681
Client ID: B1V6N7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002682
Client ID: B1V6N6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon tetrachloride	56-23-5	LA-523-455		360	ug/L			1.00	5.0		06/10/08
Acetone	67-64-1	LA-523-455	B	100	ug/L			1.00	1.0		06/09/08
Chloroform	67-66-3	LA-523-455	J	5.00	ug/L			1.00	1.0		06/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/09/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002682
Client ID: B1V6N6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Organic
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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B - The analyte < the RDL but > = the IDL/MDL (inorg)
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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081121
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 06/03/08
Receive Date:06/03/08

Lab ID: W08P002672
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	24.640	98.600	% Recov	63.000	117.000				06/09/08
MS	Benzene	71-43-2	23.770	95.100	% Recov	75.000	129.000				06/09/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	54.920	110.000	% Recov	75.000	125.000				06/09/08
MS	Chlorobenzene	108-90-7	25.740	103.000	% Recov	79.000	119.000				06/09/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.710	115.000	% Recov	75.000	125.000				06/09/08
MS	Toluene-d8(Surr)	2037-26-5	52.250	104.000	% Recov	75.000	125.000				06/09/08
MS	Toluene	108-88-3	24.800	99.200	% Recov	76.000	120.000				06/09/08
MS	Trichloroethene	79-01-6	21.200	84.800	% Recov	73.000	123.000				06/09/08
MSD	1,1-Dichloroethene	75-35-4	23.040	92.200	% Recov	63.000	117.000				06/09/08
MSD	Benzene	71-43-2	25.240	101.000	% Recov	75.000	129.000				06/09/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	55.490	111.000	% Recov	75.000	125.000				06/09/08
MSD	Chlorobenzene	108-90-7	27.000	108.000	% Recov	79.000	119.000				06/09/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.420	117.000	% Recov	75.000	125.000				06/09/08
MSD	Toluene-d8(Surr)	2037-26-5	52.080	104.000	% Recov	75.000	125.000				06/09/08
MSD	Toluene	108-88-3	26.210	105.000	% Recov	76.000	120.000				06/09/08
MSD	Trichloroethene	79-01-6	21.950	87.800	% Recov	73.000	123.000				06/09/08
SPK-RPD	1,1-Dichloroethene	75-35-4	92.200		RPD			6.709	20.000		06/09/08
SPK-RPD	Benzene	71-43-2	101.000		RPD			6.017	20.000		06/09/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	111.000		RPD			0.905	20.000		06/09/08
SPK-RPD	Chlorobenzene	108-90-7	108.000		RPD			4.739	20.000		06/09/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	117.000		RPD			1.724	20.000		06/09/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	104.000		RPD			0.000	20.000		06/09/08
SPK-RPD	Toluene	108-88-3	105.000		RPD			5.681	20.000		06/09/08
SPK-RPD	Trichloroethene	79-01-6	87.800		RPD			3.476	20.000		06/09/08
SURR	4-Bromofluorobenzene(Surr)	460-00-4	55.490	111.000	% Recov	75.000	125.000				06/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.240	116.000	% Recov	75.000	125.000				06/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Organic**

SDG Number: WSCF20081121
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 06/03/08
Receive Date:06/03/08

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	52.560	105.000	% Recov	75.000	125.000				06/09/08
Lab ID: W08P002678											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	54.840	110.000	% Recov	75.000	125.000				06/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.290	115.000	% Recov	75.000	125.000				06/09/08
SURR	Toluene-d8(Surr)	2037-26-5	52.000	104.000	% Recov	75.000	125.000				06/09/08
Lab ID: W08P002681											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	54.310	109.000	% Recov	75.000	125.000				06/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.290	115.000	% Recov	75.000	125.000				06/09/08
SURR	Toluene-d8(Surr)	2037-26-5	53.240	106.000	% Recov	75.000	125.000				06/09/08
Lab ID: W08P002682											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	55.910	112.000	% Recov	75.000	125.000				06/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.220	114.000	% Recov	75.000	125.000				06/09/08
SURR	Toluene-d8(Surr)	2037-26-5	52.890	106.000	% Recov	75.000	125.000				06/09/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	06/09/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Acetone	67-64-1	270	270.000	ug/L						06/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081121
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	Benzene	71-43-2	< 1.0	n/a	ug/L					U	06/09/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	55.790	112.000	% Recov	75.000	125.000				06/09/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	06/09/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.010	116.000	% Recov	75.000	125.000				06/09/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	06/09/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	06/09/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	06/09/08
BLANK	Toluene-d8(Surr)	2037-26-5	51.820	104.000	% Recov	75.000	125.000				06/09/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	06/09/08
LCS	1,1-Dichloroethene	75-35-4	24.340	97.400	% Recov	75.000	125.000				06/09/08
LCS	Benzene	71-43-2	23.830	95.300	% Recov	75.000	125.000				06/09/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	54.970	110.000	% Recov	75.000	125.000				06/09/08
LCS	Chlorobenzene	108-90-7	25.710	103.000	% Recov	75.000	125.000				06/09/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.740	115.000	% Recov	75.000	125.000				06/09/08
LCS	Toluene-d8(Surr)	2037-26-5	52.220	104.000	% Recov	75.000	125.000				06/09/08
LCS	Toluene	108-88-3	24.450	97.800	% Recov	75.000	125.000				06/09/08
LCS	Trichloroethene	79-01-6	20.740	83.000	% Recov	75.000	125.000				06/09/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081121
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W08P002669, W08P002671/Gross beta prep blank is flagged for having a high result. Since all the other QC checks came out fine, this batch has been approved. lmh VOA: Large amt of Acetone in Blank, hence B-flagged. All sample results for this target was less than in the Blank. gar ICP-AES: No zirconium present in the LCS. Manganese, sodium, magnesium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure calcium, sodium, 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: S08-005
Sample # W08P002669
Client ID: B1V7K0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Radiochemistry
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415		2.40	pCi/L	+-1.46	pCi/L	1.00	1.9		06/09/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		10.0	pCi/L	+-2.80	pCi/L	1.00	3.9		06/06/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: S08-005
Sample # W08P002671
Client ID: B1V9F3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Radiochemistry
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415		3.10	pCi/L	+-1.67	pCi/L	1.00	2.0		06/09/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415	U	3.10	pCi/L	+-2.48	pCi/L	1.00	3.9		06/06/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		440	pCi/L	+-167	pCi/L	1.00	2.1e+02		06/14/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: W08-005
Sample # W08P002674
Client ID: B1V827 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20081121
Department: Radiochemistry
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		420	pCi/L	+-84.0	pCi/L	1.00	6.1		06/05/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		3.70e+03	pCi/L	+-777	pCi/L	1.00	2.1e+02		06/14/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(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: I08-038
Sample # W08P002678
Client ID: B1V6M4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081121
Department: Radiochemistry
Sampled: 06/03/08
Received: 06/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		62.0	pCi/L	+-13.0	pCi/L	1.00	6.1		06/05/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
D - Analyte was identified at a secondary dilution factor
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081121
Matrix: WATER
Test: Gross Alpha on Alpha Plateau

Sample Date: 05/27/08
Receive Date:05/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002581											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross alpha on alpha plateau	12587-46-1	2.5		RPD			n/a	20.000		06/09/08
BATCH QC											
BLANK	Gross alpha on alpha plateau	12587-46-1-ap	U-4.4E-01	n/a	pCi/L	-100.000	100.000				06/09/08
LCS	Gross alpha on alpha plateau	12587-46-1-ap	73.4	94.832	% Recov	80.000	120.000				06/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081121
Matrix: WATER
Test: Gross Alpha/Gross Beta (AB32)

Sample Date: 05/27/08
Receive Date:05/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002581											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross beta	12587-47-2	3.8E+03		RPD			5.405	20.000		06/06/08
BATCH QC											
BLANK	Gross beta	12587-47-2	1.1E+01	11.000	pCi/L	-10.000	10.000			*	06/06/08
LCS	Gross beta	12587-47-2	25.9	115.470	% Recov	80.000	120.000				06/06/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081121
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 06/02/08
Receive Date:06/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002653											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	U-6.9		RPD			n/a	20.000		06/05/08
MS	Tc-99 by Liquid Scin.	14133-76-7	794.0	105.452	% Recov	75.000	125.000				06/05/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U-5.1	n/a	pCi/L	-10.000	10.000				06/05/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	202.3	107.549	% Recov	80.000	120.000				06/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081121
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 06/02/08
Receive Date:06/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002658											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	2.0E+02		RPD			16.216	20.000		06/14/08
MS	Tritium	10028-17-8	23632	91.162	% Recov	75.000	125.000				06/14/08
BATCH QC											
BLANK	Tritium	10028-17-8	U-2.2E+01	n/a	pCi/L	-10.000	1000.000				06/14/08
LCS	Tritium	10028-17-8	3180.0	92.547	% Recov	80.000	120.000				06/14/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081121
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W08P002669, W08P002671/Gross beta prep blank is flagged for having a high result. Since all the other QC checks came out fine, this batch has been approved. lmh VOA: Large amt of Acetone in Blank, hence B-flagged. All sample results for this target was less than in the Blank. gar ICP-AES: No zirconium present in the LCS. Manganese, sodium, magnesium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure calcium, sodium, 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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M4W41-SLF-08-719

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 14 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

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081121

07/16/
-1d

The following samples were received from you on 06/03/08. 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
W08P002667	B1V6Y2	PNNL-GPP @IC-30	Water	06/03/
W08P002668	B1V5C5	PNNL-GPP @IC-30	Water	06/03/
W08P002669	B1V7K0	PNNL-GPP @AB-32 @ALPHA	Water	06/03/
W08P002670	B1V7K4	PNNL-GPP @IC-30	Water	06/03/
W08P002671	B1V9F3	PNNL-GPP @AB-32 @ALPHA @H3-33	Water	06/03/
W08P002672	B1V384	PNNL-GPP @VOA-GPP	Water	06/03/
W08P002673	B1V826	PNNL-GPP @GPP6010	Water	06/03/
W08P002674	B1V827	PNNL-GPP @GPP6010 @H3-33 @IC-30 @TC99-30 ALKALI	Water	06/03/
W08P002675	B1V6M3	PNNL-GPP @GPP6010	Water	06/03/
W08P002678	B1V6M4	PNNL-GPP @GPP6010 @IC-30 @TC99-30 @VOA-GPP	Water	06/03/
W08P002681	B1V6N7	PNNL-GPP @IC-30 @VOA-GPP	Water	06/03/
W08P002682	B1V6N6	PNNL-GPP @IC-30 @VOA-GPP	Water	06/03/
W08P002683	B1V6W1	PNNL-GPP @IC-30	Water	06/03/
W08P002684	B1V6Y5	PNNL-GPP @IC-30	Water	06/03/

Test Acronym Description

Test Acronym	Description
@AB-32	Gross Alpha/Gross Beta (AB32)

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081121

Test Acronym Description

Test Acronym	Description
@ALPHA	Gross Alpha on Alpha Plateau
@GPP6010	ICP Metals Analysis, Grd H20 P
@H3-33	Tritium by Liq Sct column prep
@IC-30	Anions by Ion Chromatography
@TC99-30	TC99 by Liquid Scin.
@VOA-GPP	VOA Ground Water Protection
ALKALI	Total Alkalinity as mg/L CaCO3

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

07/16/08 20081121

I08-039-98

Page 1 of 1

Collector Scott E. Hamaker	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: I08-039	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: ISRM, MAY 2008	HNF-N-506-15	Ice Chest No.: GW-1 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: CERCLA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6Y2	W08A02667	W	6-3-08	1130	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C

ICED

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
Scott E. Hamaker	Scott Hamaker	JUN 03 2008 1255	TAPMAZIM		JUN 03 2008 1255
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

I08-035-9

Collector Scott E. Hamaker	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-035	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 100HR3IAM(1/2), MAY 2008	HNF-N-506-15	**Ice Chest No.** GW-1 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V5C5	2668	W	6-3-08	1208	1x500-mL P	300.0_ANIONS_IC: Sulfate (1)	Cool~4C

ICED

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
Scott E. Hamaker	Scott Hamaker	JUN 03 2008 1255	TA Brazier	Teresa Brazier	JUN 03 2008 1255
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

S08-005-16

Page 1 of 1

Collector: Scott E. Hamaker	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: S08-005	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: SURV, MAY 2008	HNF-N 526-15	Ice Chest No.: GW-1 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: SURV	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V7K0	2669	W	6308	0924	1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1V7K4	2670	W	✓	✓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C

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Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
Scott E. Hamaker	Scott Hamaker	JUN 03 2008 1255	JA Fowzin	[signature]	JUN 03 2008 1255
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 Liqui	
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

S08-005-205

Collector Scott E. Hamaker	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. S08-005	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title SURV. MAY 2008	HNF-N-506-15	**Ice Chest No.** GW-1 **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 ☐
Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V9F3	2671	W	6-3-08	1034	1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1V9F3	↓	W	↓	↓	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Scott E. Hamaker		Scott Hamaker	JUN 03 2008 1255	TARNAZIN			JUN 03 2008 1255
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

W08-004-193

Collector D. R. Williamson	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-004	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA, APRIL 2008	HNF-N-506-16	**Ice Chest No.** GRP-03-004 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol RCRA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V384	W08P002672	W	6-3-08	1003	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V384		W	↓	↓	1x20-mL P	Activity Scan	None

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Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
D. R. Williamson	David Williamson	JUN 03 2008 1340	CA Hudson		JUN 03 2008 1340
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 Liqui	
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

W08-005-306

Page 1 of 1

Collector: D. R. Williamson	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: W08-005	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: RCRA MAY 2008	HNF-N-506-16	Ice Chest No.: GRP-03-004 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: RCRA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V826 (F)	2673	W	6/03/08	1256	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V827	2674	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V827		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V827		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V827		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V827		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

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Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
D. R. Williamson David Williamson	JUN 03 2008 1340	CA Hudson	JUN 03 2008 1340
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

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FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-038-72

Collector D. R. Williamson	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-038	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2ZP1, MAY 2008	HNF-N-506-16	**Ice Chest No.** GRP-03-004 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6M3 (F)	2675	W	6/03/08	1141	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V6M4	2678	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V6M4	↓	W	↓	↓	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V6M4	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V6M4	↓	W	↓	↓	1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

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Relinquished By D. R. Williamson Print David Williamson Sign Date/Time 1240 JUN 03 2008	Received By C A Hudson Print Sign Date/Time 1240 JUN 03 2008	Matrix *
Relinquished By Date/Time	Received By Date/Time	S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air, DS = Drum Solid, DL = Drum Liquid, T = Tissue, WI = Wipe, L = Liquid, V = Vegetation, X = Other
Relinquished By Date/Time	Received By Date/Time	
Relinquished By Date/Time	Received By Date/Time	

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

I08-038-83

Collector D. R. Williamson	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-038	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2ZPL MAY 2008	HNF-N-506-16	**Ice Chest No.** ERP-03-004 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6N7	2681	W	6-3-08	1003	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V6N7	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. R. Williamson	David Williamson		JUN 03 2008 1310	CA Hudson			JUN 03 2008 1340
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

I08-038-82

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Collector D. R. Williamson	Contact/Requester Steve Trent	Telephone No. 509-373-5869 MSIN FAX
SAF No. I08-038	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title 2ZP1 MAY 2008	HNF-N-506-16	Ice Chest No. 6PP-03-004 Temp.
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol CERCLA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6N6		W	6-3-08	1003	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V6N6		W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. R. Williamson	David Williamson		JUN 03 2008 1240	CA Hudon			JUN 03 2008 1240
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

I08-039-58

Collector	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-039	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title ISRM, MAY 2008	HNF-N-506-12	**Ice Chest No.** SAWS109 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6W1	2683	W	06/03/08	1131	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. D. Julien		JUN 03 2008	13:40	Victor Sims		JUN 03 2008	13:40
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 Liqui	
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

I08-039-106

Collector R. D. Julien	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-039	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title ISRM, MAY 2008	HNF-N-506-12	**Ice Chest No.** SAWS 109 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6Y5	2674	W	06/03/08	0840	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. D. Julien			JUN 03 2008 13:40	Victor Blue			JUN 03 2008 13:40
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 Liqui	
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

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