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FLUOR

Memorandum

M4W41-SLF-08-1004

To:	H. Hampt	E6-35	Date:	September 15, 2008
From:	S. L. Fitzgerald, Manager WSCF Analytical Lab			

cc: w/Attachments

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

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081620

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 WSCF20081620:

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

SLF/grf

Attachments 4

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081620
Data Deliverable Date: 02-sep-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-043	B1VKT4	W08P003681	WATER
	B1VL07	W08P003668	WATER
	B1VL08	W08P003669	WATER
I08-044	B1VL28	W08P003671	WATER
	B1VL29	W08P003670	WATER
S08-005	B1V7X6	W08P003674	WATER
	B1V7X7	W08P003675	WATER
S08-006	B1VLF0	W08P003676	WATER
	B1VLF1	W08P003677	WATER
	B1VLV2	W08P003678	WATER
W08-005	B1V8H0	W08P003679	WATER
	B1V8H1	W08P003680	WATER
W08-007	B1W337	W08P003672	WATER
	B1W357	W08P003673	WATER

M4W41-SLF-08-1004

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Introduction

Fourteen (14) groundwater samples were received at the WSCF Laboratory on August 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 15 through 17, 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 34 through 36 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however less than the method detection limit were B flagged.
- Duplicates, Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1VL08 of this SDG and sample# B1VM67 (SDG# 20081625).

All QC controls are within the established limits.

Cyanide – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 37 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1VRF4 (SDG# 20081609).

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 38 through 41 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1VKB0 (SDG# 20081590).
- Sample results that were less than the reportable limit, however greater than the method detection limit, were B flagged.
- Calcium, Magnesium and Sodium sample concentrations exceeded spiking levels by a factor of 4. Sample results are not valid. Check standard was analyzed to ensure linearity, because the sample results exceeded the calibration standard.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 42 through 43 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1V9X7 (SDG# 20081363); and, B1V7P8 and B1V7P9 (SDG# 20081455).

All QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 44 for QC details. Analytical Note(s):

- Duplicates were analyzed on samples B1V571 (SDG# 20081538, SAF# F08-100) and B1V8H1 (SDG# 20081620).

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 52 through 54 for QC details. Analytical Note(s):

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

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 65 through 71 for QC details. Analytical Note(s):

- Gross Alpha/Gross Beta – Duplicate QC was analyzed on sample# B1VLT0 (SDG# 20081609).
- Strontium89/90 and 85 (tracer) – Duplicate QC was analyzed on sample# B1VM51 (SDG# 20081609).
- Tritium – Duplicates and Matrix Spikes were analyzed on samples B1VK84 (SDG# 20081590) and B1VL28 of this SDG.
- Technetium-99 – Duplicate and Matrix Spike were analyzed on sample# B1V7N8 (SDG# 20081455). Matrix Spike recovery exceeded established laboratory limits due to high sample activity.

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-08-1004

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 65 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: S.F. Fitzgerald 9/15/08

Client Services: P.D. Mix 9/15/2008

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#: WSCF20081620
Report Date: 14-sep-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 14-sep-2008 15:18:16

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081620

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37414	2	37828	42152	BLANK		Anions by Ion Chromatography
37414	13	37828	42152	BLANK		Anions by Ion Chromatography
37414	3	37828	42152	LCS		Anions by Ion Chromatography
37414	5	37828	42152	DUP	W08P003669	Anions by Ion Chromatography
37414	6	37828	42152	MS	W08P003669	Anions by Ion Chromatography
37414	7	37828	42152	MSD	W08P003669	Anions by Ion Chromatography
37414	4	37828	42152	SAMPLE	W08P003669	Anions by Ion Chromatography
37414	7	37828	42152	SPK-RPD	W08P003669	Anions by Ion Chromatography
37414	8	37828	42152	SAMPLE	W08P003670	Anions by Ion Chromatography
37414	9	37828	42152	SAMPLE	W08P003671	Anions by Ion Chromatography
37414	10	37828	42152	SAMPLE	W08P003675	Anions by Ion Chromatography
37414	11	37828	42152	SAMPLE	W08P003677	Anions by Ion Chromatography
37414	12	37828	42152	SAMPLE	W08P003680	Anions by Ion Chromatography
37418	1	37843	42156	LCS		Total Alkalinity as mg/L CaCO3
37418	13	37843	42156	LCS		Total Alkalinity as mg/L CaCO3
37418	24	37843	42156	LCS		Total Alkalinity as mg/L CaCO3
37418	3	37843	42156	DUP	W08GR02877	Total Alkalinity as mg/L CaCO3
37418	10	37843	42156	SAMPLE	W08P003672	Total Alkalinity as mg/L CaCO3
37418	11	37843	42156	SAMPLE	W08P003673	Total Alkalinity as mg/L CaCO3
37418	12	37843	42156	SAMPLE	W08P003675	Total Alkalinity as mg/L CaCO3
37418	15	37843	42156	DUP	W08P003680	Total Alkalinity as mg/L CaCO3
37418	14	37843	42156	SAMPLE	W08P003680	Total Alkalinity as mg/L CaCO3
37426	2	37856	42173	BLANK		Anions by Ion Chromatography
37426	15	37856	42173	BLANK		Anions by Ion Chromatography
37426	3	37856	42173	LCS		Anions by Ion Chromatography
37426	8	37856	42173	SAMPLE	W08P003681	Anions by Ion Chromatography
37426	5	37856	42173	DUP	W08P003695	Anions by Ion Chromatography
37426	6	37856	42173	MS	W08P003695	Anions by Ion Chromatography
37426	7	37856	42173	MSD	W08P003695	Anions by Ion Chromatography
37426	7	37856	42173	SPK-RPD	W08P003695	Anions by Ion Chromatography
37445	1	37876	42191	BLANK		ICP-200.8 MS All possible meta
37445	2	37876	42191	LCS		ICP-200.8 MS All possible meta
37445	4	37876	42191	MS	W08P003344	ICP-200.8 MS All possible meta
37445	5	37876	42191	MSD	W08P003344	ICP-200.8 MS All possible meta
37445	5	37876	42191	SPK-RPD	W08P003344	ICP-200.8 MS All possible meta
37445	7	37876	42191	MS	W08P003520	ICP-200.8 MS All possible meta
37445	8	37876	42191	MSD	W08P003520	ICP-200.8 MS All possible meta
37445	8	37876	42191	SPK-RPD	W08P003520	ICP-200.8 MS All possible meta
37445	10	37876	42191	MS	W08P003521	ICP-200.8 MS All possible meta
37445	11	37876	42191	MSD	W08P003521	ICP-200.8 MS All possible meta
37445	11	37876	42191	SPK-RPD	W08P003521	ICP-200.8 MS All possible meta
37445	50	37876	42191	SAMPLE	W08P003670	ICP-200.8 MS All possible meta
37445	51	37876	42191	SAMPLE	W08P003671	ICP-200.8 MS All possible meta
37445	52	37876	42191	SAMPLE	W08P003676	ICP-200.8 MS All possible meta
37445	53	37876	42191	SAMPLE	W08P003677	ICP-200.8 MS All possible meta
37445	54	37876	42191	SAMPLE	W08P003680	ICP-200.8 MS All possible meta
37445	55	37876	42191	SAMPLE	W08P003681	ICP-200.8 MS All possible meta
37531	1	37971	42328	BLANK		Cyanide by Midi/Spectrophotom

37531	2	37971	42328	LCS		Cyanide by Midi/Spectrophotom
37531	5	37971	42328	MS	W08P003655	Cyanide by Midi/Spectrophotom
37531	6	37971	42328	MSD	W08P003655	Cyanide by Midi/Spectrophotom
37531	6	37971	42328	SPK-RPD	W08P003655	Cyanide by Midi/Spectrophotom
37531	7	37971	42328	SAMPLE	W08P003680	Cyanide by Midi/Spectrophotom
37787	1	38112	42638	BLANK		ICP Metals Analysis, Grd H20 P
37787	2	38112	42638	LCS		ICP Metals Analysis, Grd H20 P
37787	4	38112	42638	MS	W08P003630	ICP Metals Analysis, Grd H20 P
37787	5	38112	42638	MSD	W08P003630	ICP Metals Analysis, Grd H20 P
37787	5	38112	42638	SPK-RPD	W08P003630	ICP Metals Analysis, Grd H20 P
37787	13	38112	42638	SAMPLE	W08P003668	ICP Metals Analysis, Grd H20 P
37787	14	38112	42638	SAMPLE	W08P003669	ICP Metals Analysis, Grd H20 P
37787	15	38112	42638	SAMPLE	W08P003674	ICP Metals Analysis, Grd H20 P
37787	16	38112	42638	SAMPLE	W08P003675	ICP Metals Analysis, Grd H20 P
37787	17	38112	42638	SAMPLE	W08P003679	ICP Metals Analysis, Grd H20 P
37787	18	38112	42638	SAMPLE	W08P003680	ICP Metals Analysis, Grd H20 P

w13qlog v4.2 14-sep-2008 15:18:16

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081620

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			42655	BLANK		VOA Ground Water Protection
			42655	LCS		VOA Ground Water Protection
			42655	MS	W08P003670	VOA Ground Water Protection
			42655	MSD	W08P003670	VOA Ground Water Protection
			42655	SAMPLE	W08P003670	VOA Ground Water Protection
			42655	SPK-RPD	W08P003670	VOA Ground Water Protection
			42655	SURR	W08P003670	VOA Ground Water Protection
			42655	SAMPLE	W08P003671	VOA Ground Water Protection
			42655	SURR	W08P003671	VOA Ground Water Protection
			42655	SAMPLE	W08P003681	VOA Ground Water Protection
			42655	SURR	W08P003681	VOA Ground Water Protection

w13qlog v4.2 14-sep-2008 15:18:16

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081620

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37431	1	37862	42370	BLANK		TC99 by Liquid Scin.
37431	2	37862	42370	LCS		TC99 by Liquid Scin.
37431	4	37862	42370	DUP	W08P003525	TC99 by Liquid Scin.
37431	3	37862	42370	MS	W08P003525	TC99 by Liquid Scin.
37431	18	37862	42370	SAMPLE	W08P003675	TC99 by Liquid Scin.
37431	19	37862	42370	SAMPLE	W08P003681	TC99 by Liquid Scin.
37642	1	38073	42440	BLANK		Strontium 89/90
37642	2	38073	42440	LCS		Strontium 89/90
37642	3	38073	42440	DUP	W08P003659	Strontium 89/90
37642	6	38073	42440	SAMPLE	W08P003675	Strontium 89/90
37642	10	38073	42440	SAMPLE	W08P003677	Strontium 89/90
37642	7	38073	42440	SAMPLE	W08P003681	Strontium 89/90
37489	1	37920	42513	BLANK		Tritium by Liq Sct column prep
37489	2	37920	42513	LCS		Tritium by Liq Sct column prep
37489	4	37920	42513	DUP	W08P003621	Tritium by Liq Sct column prep
37489	3	37920	42513	MS	W08P003621	Tritium by Liq Sct column prep
37489	15	37920	42513	SAMPLE	W08P003669	Tritium by Liq Sct column prep
37489	16	37920	42513	SAMPLE	W08P003670	Tritium by Liq Sct column prep
37508	1	37937	42536	BLANK		Tritium by Liq Sct column prep
37508	2	37937	42536	LCS		Tritium by Liq Sct column prep
37508	4	37937	42536	DUP	W08P003671	Tritium by Liq Sct column prep
37508	3	37937	42536	MS	W08P003671	Tritium by Liq Sct column prep
37508	5	37937	42536	SAMPLE	W08P003671	Tritium by Liq Sct column prep
37508	6	37937	42536	SAMPLE	W08P003675	Tritium by Liq Sct column prep
37508	7	37937	42536	SAMPLE	W08P003677	Tritium by Liq Sct column prep
37508	8	37937	42536	SAMPLE	W08P003680	Tritium by Liq Sct column prep
37508	9	37937	42536	SAMPLE	W08P003681	Tritium by Liq Sct column prep
37648	1	38079	42538	BLANK		Gross Alpha/Gross Beta (AB32)
37648	2	38079	42538	LCS		Gross Alpha/Gross Beta (AB32)
37648	3	38079	42538	DUP	W08P003657	Gross Alpha/Gross Beta (AB32)
37648	6	38079	42538	SAMPLE	W08P003672	Gross Alpha/Gross Beta (AB32)
37648	7	38079	42538	SAMPLE	W08P003673	Gross Alpha/Gross Beta (AB32)
37648	8	38079	42538	SAMPLE	W08P003677	Gross Alpha/Gross Beta (AB32)
37648	9	38079	42538	SAMPLE	W08P003680	Gross Alpha/Gross Beta (AB32)
37730	1	38164	42611	BLANK		Gross Alpha on Alpha Plateau
37730	2	38164	42611	LCS		Gross Alpha on Alpha Plateau
37730	3	38164	42611	DUP	W08P003657	Gross Alpha on Alpha Plateau
37730	6	38164	42611	SAMPLE	W08P003672	Gross Alpha on Alpha Plateau
37730	7	38164	42611	SAMPLE	W08P003673	Gross Alpha on Alpha Plateau
37730	8	38164	42611	SAMPLE	W08P003677	Gross Alpha on Alpha Plateau
37730	9	38164	42611	SAMPLE	W08P003680	Gross Alpha on Alpha Plateau
37924	1	38351	42794	BLANK		Plutonium Isotopics by AEA
37924	2	38351	42794	LCS		Plutonium Isotopics by AEA
37924	3	38351	42794	DUP	W08P003678	Plutonium Isotopics by AEA
37924	12	38351	42794	SAMPLE	W08P003678	Plutonium Isotopics by AEA
37924	13	38351	42794	SURR	W08P003678	Plutonium Isotopics by AEA

37925	1	38352	42799	BLANK		Americium by AEA
37925	2	38352	42799	LCS		Americium by AEA
37925	3	38352	42799	DUP	W08P003678	Americium by AEA
37925	8	38352	42799	SAMPLE	W08P003678	Americium by AEA
37925	9	38352	42799	SURR	W08P003678	Americium by AEA

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-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY	
	EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
	HEIS 200.8_METALS_ICPMS	Inductively Coupled Plasma - Mass Spectrometry
	HEIS RADISOTOPES_ICPMS	Radioisotopes by ICP/MS
LA-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
LA-695-402	LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC	
	EPA-600/4-79-020 335.2	Cyanide, Total
	HEIS 335.2_CYANIDE	Cyanide, Total

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

WSCF
METHOD REFERENCES REPORT

Department: Organic

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

LA-523-455 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_GP**	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

LA-508-471 LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP

HEIS	**PUISO_IE_PRECIP_AEA**	Plutonium by Alpha Energy Analysis
HEIS	**RAISO_AEA**	Radium-226

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: I08-043
Sample # W08P003668
Client ID: B1VL07 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/24/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		08/28/08
Magnesium	7439-95-4	LA-505-411		1.25e+04	ug/L			1.00	50		08/28/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Potassium	7440-09-7	LA-505-411		4.70e+03	ug/L			1.00	1.7e+02		08/28/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/28/08
Sodium	7440-23-5	LA-505-411		1.51e+04	ug/L			1.00	51		08/28/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/28/08
Barium	7440-39-3	LA-505-411		37.3	ug/L			1.00	4.0		08/28/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		08/28/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/28/08
Vanadium	7440-62-2	LA-505-411	B	20.8	ug/L			1.00	12		08/28/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		08/28/08
Calcium	7440-70-2	LA-505-411		4.06e+04	ug/L			1.00	73		08/28/08
Strontium	7440-24-6	LA-505-411		217	ug/L			1.00	4.0		08/28/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08

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

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P003669
Client ID: B1VL08 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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	0.249	mg/L			2.00	0.046		08/03/08
Chloride	16887-00-6	LA-533-410	D	11.3	mg/L			2.00	0.094		08/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	4.39	mg/L			2.00	0.024		08/03/08
Sulfate	14808-79-8	LA-533-410	D	24.8	mg/L			2.00	0.26		08/03/08
ICP Metals Analysis, Grd H20 P Prep											**08/24/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		222	ug/L			1.00	25		08/28/08
Magnesium	7439-95-4	LA-505-411		1.27e+04	ug/L			1.00	50		08/28/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Potassium	7440-09-7	LA-505-411		4.79e+03	ug/L			1.00	1.7e+02		08/28/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/28/08
Sodium	7440-23-5	LA-505-411		1.55e+04	ug/L			1.00	51		08/28/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/28/08
Barium	7440-39-3	LA-505-411		38.3	ug/L			1.00	4.0		08/28/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Chromium	7440-47-3	LA-505-411	B	22.2	ug/L			1.00	13		08/28/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/28/08
Vanadium	7440-62-2	LA-505-411	B	21.5	ug/L			1.00	12		08/28/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		08/28/08
Calcium	7440-70-2	LA-505-411		4.10e+04	ug/L			1.00	73		08/28/08
Strontium	7440-24-6	LA-505-411		220	ug/L			1.00	4.0		08/28/08

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

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P003669
Client ID: B1VL08 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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		08/28/08

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

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-044
Sample # W08P003670
Client ID: B1VL29 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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	< 0.0464	mg/L			2.00	0.046		08/03/08
Chloride	16887-00-6	LA-533-410	DU	< 0.0938	mg/L			2.00	0.094		08/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	DU	< 0.0242	mg/L			2.00	0.024		08/03/08
Sulfate	14808-79-8	LA-533-410	DU	< 0.264	mg/L			2.00	0.26		08/03/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500		08/05/08

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

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-044
Sample # W08P003671
Client ID: B1VL28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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	0.192	mg/L			2.00	0.046		08/03/08
Chloride	16887-00-6	LA-533-410	D	7.65	mg/L			2.00	0.094		08/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	65.0	mg/L			20.00	0.24		08/03/08
Sulfate	14808-79-8	LA-533-410	D	22.3	mg/L			2.00	0.26		08/03/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		1.18	ug/L			1.00	0.0500		08/05/08

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

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P003672
Client ID: B1W337 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		110	mg/L			1.00	1.0		08/04/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P003673
Client ID: B1W357 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		96.0	mg/L			1.00	1.0		08/04/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P003674
Client ID: B1V7X6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/24/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	29.9	ug/L			1.00	25		08/28/08
Magnesium	7439-95-4	LA-505-411		9.23e+03	ug/L			1.00	50		08/28/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Potassium	7440-09-7	LA-505-411		4.59e+03	ug/L			1.00	1.7e+02		08/28/08
Silver	7440-22-4	LA-505-411	B	7.70	ug/L			1.00	5.0		08/28/08
Sodium	7440-23-5	LA-505-411		5.40e+03	ug/L			1.00	51		08/28/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/28/08
Barium	7440-39-3	LA-505-411	B	8.20	ug/L			1.00	4.0		08/28/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		08/28/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/28/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		08/28/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		08/28/08
Calcium	7440-70-2	LA-505-411		3.58e+04	ug/L			1.00	73		08/28/08
Strontium	7440-24-6	LA-505-411		200	ug/L			1.00	4.0		08/28/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08

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

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P003675
Client ID: B1V7X7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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	0.120	mg/L			2.00	0.046		08/03/08
Chloride	16887-00-6	LA-533-410	D	9.33	mg/L			2.00	0.094		08/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	1.68	mg/L			2.00	0.024		08/03/08
Sulfate	14808-79-8	LA-533-410	D	20.0	mg/L			2.00	0.26		08/03/08
ICP Metals Analysis, Grd H20 P Prep											**08/24/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	39.3	ug/L			1.00	25		08/28/08
Magnesium	7439-95-4	LA-505-411		9.70e+03	ug/L			1.00	50		08/28/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Potassium	7440-09-7	LA-505-411		4.83e+03	ug/L			1.00	1.7e+02		08/28/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/28/08
Sodium	7440-23-5	LA-505-411		5.74e+03	ug/L			1.00	51		08/28/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/28/08
Barium	7440-39-3	LA-505-411	B	8.10	ug/L			1.00	4.0		08/28/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		08/28/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/28/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		08/28/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		08/28/08
Calcium	7440-70-2	LA-505-411		3.72e+04	ug/L			1.00	73		08/28/08
Strontium	7440-24-6	LA-505-411		205	ug/L			1.00	4.0		08/28/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P003675
Client ID: B1V7X7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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		08/28/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		110	mg/L			1.00	1.0		08/04/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-006
Sample # W08P003676
Client ID: B1VLF0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Arsenic	7440-38-2	LA-505-412		2.96	ug/L			1.00	0.400		08/05/08

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-006
Sample # W08P003677
Client ID: B1VLF1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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	0.368	mg/L			2.00	0.046		08/03/08
Chloride	16887-00-6	LA-533-410	D	16.7	mg/L			2.00	0.094		08/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	12.1	mg/L			10.00	0.12		08/03/08
Sulfate	14808-79-8	LA-533-410	D	111	mg/L			2.00	0.26		08/03/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		17.3	ug/L			1.00	0.0500		08/05/08
Arsenic	7440-38-2	LA-505-412		2.92	ug/L			1.00	0.400		08/05/08

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

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

* - 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 # W08P003679
Client ID: B1V8H0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/24/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	41.1	ug/L			1.00	25		08/28/08
Magnesium	7439-95-4	LA-505-411		1.96e+04	ug/L			1.00	50		08/28/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Potassium	7440-09-7	LA-505-411		8.26e+03	ug/L			1.00	1.7e+02		08/28/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/28/08
Sodium	7440-23-5	LA-505-411		2.38e+04	ug/L			1.00	51		08/28/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/28/08
Barium	7440-39-3	LA-505-411		71.0	ug/L			1.00	4.0		08/28/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Chromium	7440-47-3	LA-505-411	B	19.0	ug/L			1.00	13		08/28/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/28/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		08/28/08
Zinc	7440-66-6	LA-505-411	B	9.90	ug/L			1.00	9.0		08/28/08
Calcium	7440-70-2	LA-505-411		7.98e+04	ug/L			1.00	73		08/28/08
Strontium	7440-24-6	LA-505-411		464	ug/L			1.00	4.0		08/28/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08

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

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

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

* - 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 # W08P003680
Client ID: B1V8H1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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	0.202	mg/L			2.00	0.046		08/03/08
Chloride	16887-00-6	LA-533-410	D	21.7	mg/L			2.00	0.094		08/03/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/03/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	21.2	mg/L			10.00	0.12		08/03/08
Sulfate	14808-79-8	LA-533-410	D	104	mg/L			2.00	0.26		08/03/08
Cyanide											
Cyanide	57-12-5	LA-695-402	U	< 4.00	ug/L			1.00	4.0		08/11/08
ICP Metals Analysis, Grd H20 P Prep											**08/24/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	51.4	ug/L			1.00	25		08/28/08
Magnesium	7439-95-4	LA-505-411		1.98e+04	ug/L			1.00	50		08/28/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Potassium	7440-09-7	LA-505-411		8.44e+03	ug/L			1.00	1.7e+02		08/28/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		08/28/08
Sodium	7440-23-5	LA-505-411		2.48e+04	ug/L			1.00	51		08/28/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		08/28/08
Barium	7440-39-3	LA-505-411		70.7	ug/L			1.00	4.0		08/28/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Chromium	7440-47-3	LA-505-411	B	14.4	ug/L			1.00	13		08/28/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		08/28/08
Vanadium	7440-62-2	LA-505-411	B	14.3	ug/L			1.00	12		08/28/08
Zinc	7440-66-6	LA-505-411	B	10.8	ug/L			1.00	9.0		08/28/08

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

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

* - 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 # W08P003680
Client ID: B1V8H1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Calcium	7440-70-2	LA-505-411		7.69e+04	ug/L			1.00	73		08/28/08
Strontium	7440-24-6	LA-505-411		456	ug/L			1.00	4.0		08/28/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		08/28/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		11.4	ug/L			1.00	0.0500		08/05/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		120	mg/L			1.00	1.0		08/04/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P003681
Client ID: B1VKT4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Inorganic
Sampled: 08/03/08
Received: 08/03/08

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	0.322	mg/L			2.00	0.046		08/04/08
Chloride	16887-00-6	LA-533-410	D	16.0	mg/L			2.00	0.094		08/04/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/04/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	12.0	mg/L			10.00	0.12		08/04/08
Sulfate	14808-79-8	LA-533-410	D	31.9	mg/L			2.00	0.26		08/04/08
ICP-200.8 MS All possible meta Prep											**08/04/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		3.55	ug/L			1.00	0.0500		08/05/08

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

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

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: Anions by Ion Chromatography

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

Lab ID: W08P003669

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Chloride	16887-00-6	11.3927		RPD			0.647	20.000		08/03/08
DUP	Fluoride	16984-48-8	0.2679		RPD			7.153	20.000		08/03/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/03/08
DUP	Nitrogen in Nitrate	NO3-N	4.404		RPD			0.261	20.000		08/03/08
DUP	Sulfate	14808-79-8	24.7111		RPD			0.293	20.000		08/03/08
MS	Chloride	16887-00-6	0.9746	97.950	% Recov	80.000	120.000				08/03/08
MS	Fluoride	16984-48-8	0.5204	105.558	% Recov	80.000	120.000				08/03/08
MS	Nitrogen in Nitrite	NO2-N	0.4977	101.159	% Recov	80.000	120.000				08/03/08
MS	Nitrogen in Nitrate	NO3-N	0.44385	99.518	% Recov	80.000	120.000				08/03/08
MS	Sulfate	14808-79-8	2.02065	103.094	% Recov	80.000	120.000				08/03/08
MSD	Chloride	16887-00-6	0.96635	97.121	% Recov	80.000	120.000				08/03/08
MSD	Fluoride	16984-48-8	0.5141	104.280	% Recov	80.000	120.000				08/03/08
MSD	Nitrogen in Nitrite	NO2-N	0.503	102.236	% Recov	80.000	120.000				08/03/08
MSD	Nitrogen in Nitrate	NO3-N	0.4585	102.803	% Recov	80.000	120.000				08/03/08
MSD	Sulfate	14808-79-8	2.02985	103.564	% Recov	80.000	120.000				08/03/08
SPK-RPD	Chloride	16887-00-6	97.121		RPD			0.850	20.000		08/03/08
SPK-RPD	Fluoride	16984-48-8	104.280		RPD			1.218	20.000		08/03/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	102.236		RPD			1.059	20.000		08/03/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	102.803		RPD			3.247	20.000		08/03/08
SPK-RPD	Sulfate	14808-79-8	103.564		RPD			0.455	20.000		08/03/08

BATCH QC

BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/03/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/03/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/03/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/03/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
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 Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/03/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/03/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/03/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/03/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/03/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/03/08
LCS	Chloride	16887-00-6	198.1744	98.594	% Recov	80.000	120.000				08/03/08
LCS	Fluoride	16984-48-8	108.0783	108.512	% Recov	80.000	120.000				08/03/08
LCS	Nitrogen in Nitrite	NO2-N	99.9952	100.599	% Recov	80.000	120.000				08/03/08
LCS	Nitrogen in Nitrate	NO3-N	92.3983	102.551	% Recov	80.000	120.000				08/03/08
LCS	Sulfate	14808-79-8	380.8357	96.171	% Recov	80.000	120.000				08/03/08

Lab ID: W08P003695
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Chloride	16887-00-6	16.1083		RPD			0.335	20.000		08/04/08
DUP	Fluoride	16984-48-8	0.2469		RPD			4.513	20.000		08/04/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/04/08
DUP	Nitrogen in Nitrate	NO3-N	6.0182		RPD			0.410	20.000		08/04/08
DUP	Sulfate	14808-79-8	53.0692		RPD			0.045	20.000		08/04/08
MS	Chloride	16887-00-6	0.8271	83.126	% Recov	80.000	120.000				08/04/08
MS	Fluoride	16984-48-8	0.53045	107.596	% Recov	80.000	120.000				08/04/08
MS	Nitrogen in Nitrite	NO2-N	0.5026	102.154	% Recov	80.000	120.000				08/04/08
MS	Nitrogen in Nitrate	NO3-N	0.42035	94.249	% Recov	80.000	120.000				08/04/08
MS	Sulfate	14808-79-8	1.76215	89.906	% Recov	80.000	120.000				08/04/08
MSD	Chloride	16887-00-6	0.83265	83.683	% Recov	80.000	120.000				08/04/08
MSD	Fluoride	16984-48-8	0.53265	108.043	% Recov	80.000	120.000				08/04/08
MSD	Nitrogen in Nitrite	NO2-N	0.50515	102.673	% Recov	80.000	120.000				08/04/08
MSD	Nitrogen in Nitrate	NO3-N	0.4157	93.206	% Recov	80.000	120.000				08/04/08
MSD	Sulfate	14808-79-8	1.84045	93.901	% Recov	80.000	120.000				08/04/08
SPK-RPD	Chloride	16887-00-6	83.683		RPD			0.668	20.000		08/04/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: Anions by Ion Chromatography

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Fluoride	16984-48-8	108.043		RPD			0.415	20.000		08/04/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	102.673		RPD			0.507	20.000		08/04/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	93.206		RPD			1.113	20.000		08/04/08
SPK-RPD	Sulfate	14808-79-8	93.901		RPD			4.347	20.000		08/04/08
BATCH QC											
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/04/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/04/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/04/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/04/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/04/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/04/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/04/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/04/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/04/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/04/08
LCS	Chloride	16887-00-6	198.1418	98.578	% Recov	80.000	120.000				08/04/08
LCS	Fluoride	16984-48-8	109.3544	109.794	% Recov	80.000	120.000				08/04/08
LCS	Nitrogen in Nitrite	NO2-N	101.6436	102.257	% Recov	80.000	120.000				08/04/08
LCS	Nitrogen in Nitrate	NO3-N	93.2762	103.525	% Recov	80.000	120.000				08/04/08
LCS	Sulfate	14808-79-8	383.7838	96.915	% Recov	80.000	120.000				08/04/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: Cyanide by Midi/Spectrophotom

Sample Date: 07/31/08
Receive Date:07/31/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003655											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cyanide by Midi/Spectrophotom	57-12-5	45.8	114.500	% Recov	75.000	125.000				08/11/08
MSD	Cyanide by Midi/Spectrophotom	57-12-5	47	117.500	% Recov	75.000	125.000				08/11/08
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	117.500		RPD			2.586	20.000		08/11/08
BATCH QC											
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	< 4	n/a	ug/L	-4.000	4.000			U	08/11/08
LCS	Cyanide by Midi/Spectrophotom	57-12-5	47	94.000	% Recov	85.000	115.000				08/11/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 07/30/08
Receive Date:07/30/08

Lab ID: W08P003630
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	977.3	97.730	% Recov	75.000	125.000				08/28/08
MS	Barium	7440-39-3	480.1	96.020	% Recov	75.000	125.000				08/28/08
MS	Beryllium	7440-41-7	512.8	102.560	% Recov	75.000	125.000				08/28/08
MS	Calcium	7440-70-2	1150	115.000	% Recov	75.000	125.000				08/28/08
MS	Cadmium	7440-43-9	1008.7	100.870	% Recov	75.000	125.000				08/28/08
MS	Cobalt	7440-48-4	996.6	99.660	% Recov	75.000	125.000				08/28/08
MS	Chromium	7440-47-3	994	99.400	% Recov	75.000	125.000				08/28/08
MS	Copper	7440-50-8	970.1	97.010	% Recov	75.000	125.000				08/28/08
MS	Iron	7439-89-6	996	99.600	% Recov	75.000	125.000				08/28/08
MS	Potassium	7440-09-7	10549	105.490	% Recov	75.000	125.000				08/28/08
MS	Magnesium	7439-95-4	1094	109.400	% Recov	75.000	125.000				08/28/08
MS	Manganese	7439-96-5	990.7	99.070	% Recov	75.000	125.000				08/28/08
MS	Sodium	7440-23-5	1403	140.300	% Recov	75.000	125.000			*	08/28/08
MS	Nickel	7440-02-0	1001.9	100.190	% Recov	75.000	125.000				08/28/08
MS	Antimony	7440-36-0	1042	104.200	% Recov	75.000	125.000				08/28/08
MS	Strontium	7440-24-6	486.7	97.340	% Recov	75.000	125.000				08/28/08
MS	Vanadium	7440-62-2	979.3	97.930	% Recov	75.000	125.000				08/28/08
MS	Zinc	7440-66-6	996.4	99.640	% Recov	75.000	125.000				08/28/08
MSD	Silver	7440-22-4	974.2	97.420	% Recov	75.000	125.000				08/28/08
MSD	Barium	7440-39-3	479.7	95.940	% Recov	75.000	125.000				08/28/08
MSD	Beryllium	7440-41-7	517.7	103.540	% Recov	75.000	125.000				08/28/08
MSD	Calcium	7440-70-2	2470	247.000	% Recov	75.000	125.000			*	08/28/08
MSD	Cadmium	7440-43-9	1013.7	101.370	% Recov	75.000	125.000				08/28/08
MSD	Cobalt	7440-48-4	1026	102.600	% Recov	75.000	125.000				08/28/08
MSD	Chromium	7440-47-3	1017	101.700	% Recov	75.000	125.000				08/28/08
MSD	Copper	7440-50-8	943.6	94.360	% Recov	75.000	125.000				08/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 07/30/08
Receive Date:07/30/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1022	102.200	% Recov	75.000	125.000				08/28/08
MSD	Potassium	7440-09-7	9629	96.290	% Recov	75.000	125.000				08/28/08
MSD	Magnesium	7439-95-4	857	85.700	% Recov	75.000	125.000				08/28/08
MSD	Manganese	7439-96-5	1020	102.000	% Recov	75.000	125.000				08/28/08
MSD	Sodium	7440-23-5	498	49.800	% Recov	75.000	125.000				08/28/08
MSD	Nickel	7440-02-0	1019.9	101.990	% Recov	75.000	125.000				08/28/08
MSD	Antimony	7440-36-0	1009	100.900	% Recov	75.000	125.000				08/28/08
MSD	Strontium	7440-24-6	483.5	96.700	% Recov	75.000	125.000				08/28/08
MSD	Vanadium	7440-62-2	1013	101.300	% Recov	75.000	125.000				08/28/08
MSD	Zinc	7440-66-6	996.9	99.690	% Recov	75.000	125.000				08/28/08
SPK-RPD	Silver	7440-22-4	97.420		RPD			0.318	20.000		08/28/08
SPK-RPD	Barium	7440-39-3	95.940		RPD			0.083	20.000		08/28/08
SPK-RPD	Beryllium	7440-41-7	103.540		RPD			0.951	20.000		08/28/08
SPK-RPD	Calcium	7440-70-2	247.000		RPD			72.928	20.000	*	08/28/08
SPK-RPD	Cadmium	7440-43-9	101.370		RPD			0.494	20.000		08/28/08
SPK-RPD	Cobalt	7440-48-4	102.600		RPD			2.907	20.000		08/28/08
SPK-RPD	Chromium	7440-47-3	101.700		RPD			2.287	20.000		08/28/08
SPK-RPD	Copper	7440-50-8	94.360		RPD			2.770	20.000		08/28/08
SPK-RPD	Iron	7439-89-6	102.200		RPD			2.577	20.000		08/28/08
SPK-RPD	Potassium	7440-09-7	96.290		RPD			9.119	20.000		08/28/08
SPK-RPD	Magnesium	7439-95-4	85.700		RPD			24.295	20.000	*	08/28/08
SPK-RPD	Manganese	7439-96-5	102.000		RPD			2.914	20.000		08/28/08
SPK-RPD	Sodium	7440-23-5	49.800		RPD			95.213	20.000	*	08/28/08
SPK-RPD	Nickel	7440-02-0	101.990		RPD			1.781	20.000		08/28/08
SPK-RPD	Antimony	7440-36-0	100.900		RPD			3.218	20.000		08/28/08
SPK-RPD	Strontium	7440-24-6	96.700		RPD			0.660	20.000		08/28/08
SPK-RPD	Vanadium	7440-62-2	101.300		RPD			3.383	20.000		08/28/08
SPK-RPD	Zinc	7440-66-6	99.690		RPD			0.050	20.000		08/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
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	08/28/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	08/28/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	08/28/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	08/28/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	08/28/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	08/28/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	08/28/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	08/28/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	08/28/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	08/28/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	08/28/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	08/28/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	08/28/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	08/28/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	08/28/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	08/28/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	08/28/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	08/28/08
LCS	Silver	7440-22-4	1007	100.700	% Recov	80.000	120.000				08/28/08
LCS	Barium	7440-39-3	491.9	98.380	% Recov	80.000	120.000				08/28/08
LCS	Beryllium	7440-41-7	537.4	107.480	% Recov	80.000	120.000				08/28/08
LCS	Calcium	7440-70-2	1034	103.400	% Recov	80.000	120.000				08/28/08
LCS	Cadmium	7440-43-9	1052	105.200	% Recov	80.000	120.000				08/28/08
LCS	Cobalt	7440-48-4	1044	104.400	% Recov	80.000	120.000				08/28/08
LCS	Chromium	7440-47-3	1032	103.200	% Recov	80.000	120.000				08/28/08
LCS	Copper	7440-50-8	1009	100.900	% Recov	80.000	120.000				08/28/08
LCS	Iron	7439-89-6	1011	101.100	% Recov	80.000	120.000				08/28/08
LCS	Potassium	7440-09-7	10850	108.500	% Recov	80.000	120.000				08/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
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	1001	100.100	% Recov	80.000	120.000				08/28/08
LCS	Manganese	7439-96-5	1027	102.700	% Recov	80.000	120.000				08/28/08
LCS	Sodium	7440-23-5	1073	107.300	% Recov	80.000	120.000				08/28/08
LCS	Nickel	7440-02-0	1051	105.100	% Recov	80.000	120.000				08/28/08
LCS	Antimony	7440-36-0	1064	106.400	% Recov	80.000	120.000				08/28/08
LCS	Strontium	7440-24-6	494.2	98.840	% Recov	80.000	120.000				08/28/08
LCS	Vanadium	7440-62-2	1013	101.300	% Recov	80.000	120.000				08/28/08
LCS	Zinc	7440-66-6	1031	103.100	% Recov	80.000	120.000				08/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: ICP-200.8 MS All possible meta

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003344											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	34.13	85.325	% Recov	70.000	130.000				08/05/08
MS	Uranium	7440-61-1	34.82	87.050	% Recov	70.000	130.000				08/05/08
MSD	Arsenic	7440-38-2	35.34	88.350	% Recov	70.000	130.000				08/05/08
MSD	Uranium	7440-61-1	35.92	89.800	% Recov	70.000	130.000				08/05/08
SPK-RPD	Arsenic	7440-38-2	88.350		RPD			3.484	20.000		08/05/08
SPK-RPD	Uranium	7440-61-1	89.800		RPD			3.110	20.000		08/05/08
Lab ID: W08P003520											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	34.89	87.225	% Recov	70.000	130.000				08/05/08
MSD	Arsenic	7440-38-2	34.04	85.100	% Recov	70.000	130.000				08/05/08
SPK-RPD	Arsenic	7440-38-2	85.100		RPD			2.466	20.000		08/05/08
Lab ID: W08P003521											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	34.32	85.800	% Recov	70.000	130.000				08/05/08
MS	Uranium	7440-61-1	30.1	75.250	% Recov	70.000	130.000				08/05/08
MSD	Arsenic	7440-38-2	34.58	86.450	% Recov	70.000	130.000				08/05/08
MSD	Uranium	7440-61-1	32.8	82.000	% Recov	70.000	130.000				08/05/08
SPK-RPD	Arsenic	7440-38-2	86.450		RPD			0.755	20.000		08/05/08
SPK-RPD	Uranium	7440-61-1	82.000		RPD			8.585	20.000		08/05/08
BATCH QC											
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	08/05/08
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	08/05/08
LCS	Arsenic	7440-38-2	37.3	93.250	% Recov	85.000	115.000				08/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Uranium	7440-61-1	37.87	94.675	% Recov	85.000	115.000				08/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081620
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 07/23/08
Receive Date:07/24/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR02877											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	108.5		RPD			0.369	20.000		08/04/08
Lab ID: W08P003680											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	121.2		RPD			0.248	20.000		08/04/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	31.77	106.611	%Recove	80.000	120.000				08/04/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	31.54	105.839	%Recove	80.000	120.000				08/04/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	122.7	106.696	%Recove	80.000	120.000				08/04/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081620
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Tc99 high matrix recovery due to high Tc99 sample activity. ICP-AES: [Samples W08P3668-3669; 3674-3675; 3679-3680] No zirconium present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure magnesium, sodium, and calcium linearity because sample results are greater than the calibration standard. B flags used for samples < 5X MDL

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-044
Sample # W08P003670
Client ID: B1VL29 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Organic
Sampled: 08/03/08
Received: 08/03/08

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		08/14/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/14/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/14/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-044
Sample # W08P003670
Client ID: B1VL29 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Organic
Sampled: 08/03/08
Received: 08/03/08

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		08/14/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-044
Sample # W08P003671
Client ID: B1VL28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Organic
Sampled: 08/03/08
Received: 08/03/08

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		08/14/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Carbon tetrachloride	56-23-5	LA-523-455		63.0	ug/L			1.00	1.0		08/14/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Chloroform	67-66-3	LA-523-455	J	2.00	ug/L			1.00	1.0		08/14/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/14/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/14/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08

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RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

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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: I08-044
Sample # W08P003671
Client ID: B1VL28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Organic
Sampled: 08/03/08
Received: 08/03/08

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		08/14/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08

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

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P003681
Client ID: B1VKT4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Organic
Sampled: 08/03/08
Received: 08/03/08

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		08/14/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Carbon tetrachloride	56-23-5	LA-523-455		21.0	ug/L			1.00	1.0		08/14/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Chloroform	67-66-3	LA-523-455	J	1.30	ug/L			1.00	1.0		08/14/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/14/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/14/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08

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

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J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P003681
Client ID: B1VKT4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Organic
Sampled: 08/03/08
Received: 08/03/08

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		08/14/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/14/08

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

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

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

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081620
Matrix: WATER
Test: VOA Ground Water Protection

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

Lab ID: W08P003670
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	20.920	83.700	% Recov	63.000	117.000				08/14/08
MS	Benzene	71-43-2	22.930	91.700	% Recov	75.000	129.000				08/14/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	46.030	92.100	% Recov	75.000	125.000				08/14/08
MS	Chlorobenzene	108-90-7	24.570	98.300	% Recov	79.000	119.000				08/14/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.090	106.000	% Recov	75.000	125.000				08/14/08
MS	Toluene-d8(Surr)	2037-26-5	47.570	95.100	% Recov	75.000	125.000				08/14/08
MS	Toluene	108-88-3	23.720	94.900	% Recov	76.000	120.000				08/14/08
MS	Trichloroethene	79-01-6	19.920	79.700	% Recov	73.000	123.000				08/14/08
MSD	1,1-Dichloroethene	75-35-4	23.030	92.100	% Recov	63.000	117.000				08/14/08
MSD	Benzene	71-43-2	23.400	93.600	% Recov	75.000	129.000				08/14/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	46.600	93.200	% Recov	75.000	125.000				08/14/08
MSD	Chlorobenzene	108-90-7	25.210	101.000	% Recov	79.000	119.000				08/14/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.830	108.000	% Recov	75.000	125.000				08/14/08
MSD	Toluene-d8(Surr)	2037-26-5	47.580	95.200	% Recov	75.000	125.000				08/14/08
MSD	Toluene	108-88-3	24.090	96.400	% Recov	76.000	120.000				08/14/08
MSD	Trichloroethene	79-01-6	20.270	81.100	% Recov	73.000	123.000				08/14/08
SPK-RPD	1,1-Dichloroethene	75-35-4	92.100		RPD			9.556	20.000		08/14/08
SPK-RPD	Benzene	71-43-2	93.600		RPD			2.051	20.000		08/14/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	93.200		RPD			1.187	20.000		08/14/08
SPK-RPD	Chlorobenzene	108-90-7	101.000		RPD			2.709	20.000		08/14/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	108.000		RPD			1.869	20.000		08/14/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	95.200		RPD			0.105	20.000		08/14/08
SPK-RPD	Toluene	108-88-3	96.400		RPD			1.568	20.000		08/14/08
SPK-RPD	Trichloroethene	79-01-6	81.100		RPD			1.741	20.000		08/14/08
SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.750	93.500	% Recov	75.000	125.000				08/14/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	54.510	109.000	% Recov	75.000	125.000				08/14/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081620
Matrix: WATER
Test: VOA Ground Water Protection

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

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	48.230	96.500	% Recov	75.000	125.000				08/14/08
Lab ID: W08P003671											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	45.560	91.100	% Recov	75.000	125.000				08/14/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.410	107.000	% Recov	75.000	125.000				08/14/08
SURR	Toluene-d8(Surr)	2037-26-5	48.340	96.700	% Recov	75.000	125.000				08/14/08
Lab ID: W08P003681											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	45.950	91.900	% Recov	75.000	125.000				08/14/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.440	107.000	% Recov	75.000	125.000				08/14/08
SURR	Toluene-d8(Surr)	2037-26-5	48.740	97.500	% Recov	75.000	125.000				08/14/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	08/14/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	08/14/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	08/14/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	08/14/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	08/14/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	08/14/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	08/14/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	08/14/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	48.210	96.400	% Recov	75.000	125.000				08/14/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	08/14/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081620
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	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	08/14/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	54.480	109.000	% Recov	75.000	125.000				08/14/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	08/14/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	08/14/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	08/14/08
BLANK	Toluene-d8(Surr)	2037-26-5	47.340	94.700	% Recov	75.000	125.000				08/14/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	08/14/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	08/14/08
LCS	1,1-Dichloroethene	75-35-4	20.910	83.600	% Recov	75.000	125.000				08/14/08
LCS	Benzene	71-43-2	23.920	95.700	% Recov	75.000	125.000				08/14/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	45.360	90.700	% Recov	75.000	125.000				08/14/08
LCS	Chlorobenzene	108-90-7	25.030	100.000	% Recov	75.000	125.000				08/14/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	55.370	111.000	% Recov	75.000	125.000				08/14/08
LCS	Toluene-d8(Surr)	2037-26-5	48.820	97.600	% Recov	75.000	125.000				08/14/08
LCS	Toluene	108-88-3	24.540	98.200	% Recov	75.000	125.000				08/14/08
LCS	Trichloroethene	79-01-6	19.450	77.800	% Recov	75.000	125.000				08/14/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P003669
Client ID: B1VL08 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		4.60e+04	pCi/L	+-9.20e+03	pCi/L	1.00	2.0e+02		08/09/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-044
Sample # W08P003670
Client ID: B1VL29 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	92.0	pCi/L	+-104	pCi/L	1.00	2.0e+02		08/09/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-044
Sample # W08P003671
Client ID: B1VL28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		750	pCi/L	+-202	pCi/L	1.00	2.1e+02		08/09/08

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

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P003672
Client ID: B1W337 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

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	+-0.984	pCi/L	1.00	1.0		08/21/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		6.20	pCi/L	+-1.49	pCi/L	1.00	1.8		08/19/08

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

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P003673
Client ID: B1W357 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

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		1.40	pCi/L	+-0.798	pCi/L	1.00	1.0		08/21/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		13.0	pCi/L	+-2.08	pCi/L	1.00	1.8		08/19/08

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

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

* - 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 # W08P003675
Client ID: B1V7X7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-1.00	pCi/L	+-1.80	pCi/L	1.00	1.1		08/13/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		82.1	Percent			1.00	0.0		08/13/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	-7.10	pCi/L	+-7.10	pCi/L	1.00	6.3		08/08/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	83.0	pCi/L	+-137	pCi/L	1.00	2.1e+02		08/09/08

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-006
Sample # W08P003677
Client ID: B1VLF1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

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		4.60	pCi/L	+-1.79	pCi/L	1.00	1.8		08/21/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		3.40e+04	pCi/L	+-3.40e+03	pCi/L	1.00	2.9		08/19/08
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		1.50e+03	pCi/L	+-180	pCi/L	1.00	1.3		08/13/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		69.5	Percent			1.00	0.0		08/13/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		6.40e+03	pCi/L	+-1.28e+03	pCi/L	1.00	2.1e+02		08/09/08

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-006
Sample # W08P003678
Client ID: B1VLV2 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471	U	-0.0240	pCi/L	+-0.123	pCi/L	1.00	0.24		09/10/08
Am-243 tracer by AEA	AM243	LA-508-471		20.0	pCi/L			1.00	0.13		09/10/08
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	-0.170	pCi/L	+-0.122	pCi/L	1.00	0.25		09/10/08
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.630	pCi/L	+-0.227	pCi/L	1.00	0.072		09/10/08
Pu-242 tracer by AEA	PU242	LA-508-471		31.0	pCi/L			1.00	0.026		09/10/08

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

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

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

* - 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 # W08P003680
Client ID: B1V8H1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

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		4.20	pCi/L	+-1.89	pCi/L	1.00	2.1		08/21/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		650	pCi/L	+-65.0	pCi/L	1.00	3.6		08/19/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		8.20e+03	pCi/L	+-1.64e+03	pCi/L	1.00	2.1e+02		08/09/08

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P003681
Client ID: B1VKT4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081620
Department: Radiochemistry
Sampled: 08/03/08
Received: 08/03/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-1.90	pCi/L	+-1.90	pCi/L	1.00	0.98		08/13/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		92.0	Percent			1.00	0.0		08/13/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		130	pCi/L	+-26.0	pCi/L	1.00	6.3		08/08/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		1.00e+04	pCi/L	+-2.00e+03	pCi/L	1.00	2.1e+02		08/09/08

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

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

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081620
Matrix: WATER
Test: Americium by AEA

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003678											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Americium-241	14596-10-2	U-8.7e-3		RPD			n/a	20.000		09/10/08
DUP	Am-243 tracer by AEA	AM243	20.01	100.840	% Recov	30.000	105.000				09/10/08
SURR	Am-243 tracer by AEA	AM243	20.01	69.640	% Recov	30.000	105.000				09/10/08
BATCH QC											
BLANK	Americium-241	14596-10-2	U0.11	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Am-243 tracer by AEA	AM243	20.01	80.560	% Recov	30.000	105.000				09/10/08
LCS	Americium-241	14596-10-2	13	109.705	% Recov	80.000	120.000				09/10/08
LCS	Am-243 tracer by AEA	AM243	11.11	85.870	% Recov	30.000	105.000				09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081620
Matrix: WATER
Test: Gross Alpha on Alpha Plateau

Sample Date: 07/31/08
Receive Date:07/31/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003657											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross alpha on alpha plateau	12587-46-1	2.6E+01		RPD			7.407	20.000		08/21/08
BATCH QC											
BLANK	Gross alpha on alpha plateau	12587-46-1-ap	U-2.2E-01	n/a	pCi/L	-100.000	100.000				08/21/08
LCS	Gross alpha on alpha plateau	12587-46-1-ap	33.3	85.958	% Recov	80.000	120.000				08/21/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081620
Matrix: WATER
Test: Gross Alpha/Gross Beta (AB32)

Sample Date: 07/31/08
Receive Date:07/31/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003657											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross beta	12587-47-2	7.4E+03		RPD			6.536	20.000		08/19/08
BATCH QC											
BLANK	Gross beta	12587-47-2	U9.5E-01	n/a	pCi/L	-10.000	10.000				08/19/08
LCS	Gross beta	12587-47-2	123	109.626	% Recov	80.000	120.000				08/19/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081620
Matrix: WATER
Test: Plutonium Isotopics by AEA

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003678											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Plutonium-238	13981-16-3	U-8.9e-3		RPD			n/a	20.000		09/10/08
DUP	Pu-239/240 by AEA	PU-239/240	0.68		RPD			7.634	20.000		09/10/08
DUP	Pu-242 tracer by AEA	PU242	31.18	93.830	% Recov	30.000	105.000				09/10/08
SURR	Pu-242 tracer by AEA	PU242	31.18	84.080	% Recov	30.000	105.000				09/10/08
BATCH QC											
BLANK	Plutonium-238	13981-16-3	U9.5e-2	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Pu-239/240 by AEA	PU-239/240	U1.7e-2	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Pu-242 tracer by AEA	PU242	31.18	94.150	% Recov	30.000	105.000				09/10/08
LCS	Pu-239/240 by AEA	PU-239/240	12.64	98.404	% Recov	80.000	120.000				09/10/08
LCS	Pu-242 tracer by AEA	PU242	17.3	90.740	% Recov	30.000	105.000				09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081620
Matrix: WATER
Test: Strontium 89/90

Sample Date: 07/31/08
Receive Date:07/31/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003659											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	80.6	80.600	% Recov	30.000	105.000				08/13/08
DUP	Strontium-89/90	SR-RAD	3.3E+03		RPD			2.985	20.000		08/13/08
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	85.6	85.600	% Recov	30.000	105.000				08/13/08
BLANK	Strontium-89/90	10098-97-2	U-3.7	n/a	pCi/L	-10.000	100.000				08/13/08
LCS	Sr-85 Tracer by Beta Counting	SR85	81.3	81.300	% Recov	30.000	105.000				08/13/08
LCS	Strontium-89/90	10098-97-2	135	97.262	% Recov	80.000	120.000				08/13/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081620
Matrix: WATER
Test: TC99 by Liquid Scin.

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003525											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	1.8E+04		RPD			0.000	20.000		08/08/08
MS	Tc-99 by Liquid Scin.	14133-76-7	1332.8	177.234	% Recov	75.000	125.000			*	08/08/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U-3.5	n/a	pCi/L	-10.000	10.000				08/08/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	201	106.858	% Recov	80.000	120.000				08/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081620
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 07/30/08
Receive Date:07/30/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003621											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	2.3E+03		RPD			4.255	20.000		08/09/08
MS	Tritium	10028-17-8	22400	87.205	% Recov	75.000	125.000				08/09/08
BATCH QC											
BLANK	Tritium	10028-17-8	U1.1E+02	n/a	pCi/L	-10.000	1000.000				08/09/08
LCS	Tritium	10028-17-8	3270.0	96.041	% Recov	80.000	120.000				08/09/08
Lab ID: W08P003671											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	7.7E+02		RPD			2.632	20.000		08/09/08
MS	Tritium	10028-17-8	22252.0	86.655	% Recov	75.000	125.000				08/09/08
BATCH QC											
BLANK	Tritium	10028-17-8	U3.5E+01	n/a	pCi/L	-10.000	1000.000				08/09/08
LCS	Tritium	10028-17-8	3010	88.431	% Recov	80.000	120.000				08/09/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081620
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Tc99 high matrix recovery due to high Tc99 sample activity. ICP-AES: [Samples W08P3668-3669; 3674-3675; 3679-3680] No zirconium present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure magnesium, sodium, and calcium linearity because sample results are greater than the calibration standard. B flags used for samples < 5X MDL

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-08-1004

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 12 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
~~09/20/08~~ 09/02/0

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081620

The following samples were received from you on 08/03/08. 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
W08P003668	B1VL07	PNNL-GPP @GPP6010	Water	08/03/08
W08P003669	B1VL08	PNNL-GPP @GPP6010 @H3-33 @IC-30	Water	08/03/08
W08P003670	B1VL29	PNNL-GPP @2008 @H3-33 @IC-30 @VOA-GPP	Water	08/03/08
W08P003671	B1VL28	PNNL-GPP @2008 @H3-33 @IC-30 @VOA-GPP	Water	08/03/08
W08P003672	B1W337	PNNL-GPP @AB-32 @ALPHA ALKALI	Water	08/03/08
W08P003673	B1W357	PNNL-GPP @AB-32 @ALPHA ALKALI	Water	08/03/08
W08P003674	B1V7X6	PNNL-GPP @GPP6010	Water	08/03/08
W08P003675	B1V7X7	PNNL-GPP @GPP6010 @H3-33 @IC-30 @SR89_90 @TC99-30 ALKALI	Water	08/03/08
W08P003676	B1VLF0	PNNL-GPP @2008	Water	08/03/08
W08P003677	B1VLF1	PNNL-GPP @2008 @AB-32 @ALPHA @H3-33 @IC-30 @SR89_90	Water	08/03/08
W08P003678	B1VLV2	PNNL-GPP @AEA-30 @AEA-31	Water	08/03/08
W08P003679	B1V8H0	PNNL-GPP @GPP6010	Water	08/03/08
W08P003680	B1V8H1	PNNL-GPP @2008 @AB-32 @ALPHA @GPP6010 @H3-33 @IC-30 ALKALI CN-02	Water	08/03/08
W08P003681	B1VKT4	PNNL-GPP @2008 @H3-33 @IC-30 @SR89_90 @TC99-30 @VOA-GPP	Water	08/03/08

Test Acronym Description

Test Acronym	Description

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081620

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@AB-32	Gross Alpha/Gross Beta (AB32)
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA
@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
@SR89_90	Strontium 89/90
@TC99-30	TC99 by Liquid Scin.
@VOA-GPP	VOA Ground Water Protection
ALKALI	Total Alkalinity as mg/L CaCO3
CN-02	Cyanide by Midi/Spectrophotom

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

09/02/08 20081620

I08-043-71

Collector ~~RM Arnold~~ RM Arnold	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-043	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2UP1 JUNE 2008	HNF-N-506-16	**Ice Chest No.** GW3-010 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** 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
B1VL07 (F)	W0P003668	W	8/3/08	1013	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VL08	3669	W	↓	↓	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VL08	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VL08	↓	W	↓	↓	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RM Arnold	RM Arnold		8-3-08 1205				AUG 09 2008 1205
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

I08-044-25

Collector R. Ellingsworth	Contact/Requester Steve Trent	Telephone No. 509-373-5869 MSIN FAX
SAF No. I08-044	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title 2ZP1, JUNE 2008	HNF-N-506-15	Ice Chest No. GW3-026 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
B1VL29	i08P003670	W	8/3/8	0600	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1VL29	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VL29		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1VL29		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			AUG 03 2008 1330				AUG 03 2008 1230
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

I08-044-24

Collector R. Ellingsworth	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-044	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2ZP1, JUNE 2008	HNF-N-506-15	**Ice Chest No.** GWS-206 **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
B1VL28	3671	W	8/3/8	0846	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1VL28	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VL28	↓	W	↓	↓	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1VL28	↓	W	↓	↓	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth	R. Ellingsworth	AUG 03 2008	8/3/08 1230	TAFNOZIN	Jennifer Tafnozin	AUG 03 2008	1230
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

W08-007-174

Collector R. Ellingsworth	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-007	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA JULY 2008	HNF - N - 506 - 15	**Ice Chest No.** GUS-026 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol RCRA	**Priority:** 30 Days **PRIORITY**	**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
B1W337	3672	W	8/3/8	1040	1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1W337	↓	W	↓	↓	1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			AUG 0 3 2008 1230	TA Pnazin			AUG 0 3 2008 1230
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

W08-007-186

Collector R. Ellingsworth	Contact/Requester Steve Trent	Telephone No. 509-373-5869 MSIN FAX
SAF No. W08-007	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA, JULY 2008	HHF-M-506-15	Ice Chest No. GWS-026 Temp.
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol RCRA	Priority: 30 Days **PRIORITY**	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
B1W357	3673	W	8/3/8	1155	1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1W357	↓	W	↓	↓	1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			AUG 03 2008 1230	TA Frazier			AUG 03 2008 1230
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

S08-005-190

Collector: R. Ellingsworth	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.: GWS-026 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: SURV	Priority: 45 Days	Offsite Property No.

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V7X6 (F)	3674	W	8/3/8	0925	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7X7	3675	W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V7X7		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7X7		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V7X7		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V7X7		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V7X7		W			1x1-L G/P	Strontium-89,90 -- Total Sr	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth		AUG 0 3 2008	1230	TA Frazier		AUG 0 3 2008	1230
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

S08-006-58

Collector D Bertens	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. S08-006	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title SURV JUNE 2008	HNF-N- 566-14 / 53	**Ice Chest No.** 49 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.**

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1VLF0 (F)	W0P003676	W	8-3-08	0548	1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1)	HNO3 to pH <2
B1VLF1	3677	W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1VLF1		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1VLF1		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VLF1		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1VLF1		W			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1)	HNO3 to pH <2
B1VLF1		W			1x1-L G/P	Strontium-89,90 -- Total Sr	HNO3 to pH <2
B1VLV2	3678	W			1x1000-mL G/P	AMCMISO_EIE_PLT_AEA: Am-241 (1)	HNO3 to pH <2
B1VLV2		W			1x1000-mL G/P	PUISO_PLATE_AEA: Pu-238 + 239/240 (2)	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. Bertens		D Bertens	8/3/08 1240	TA Frazier	James Frazier		8/3/08 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 Liqui
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

W08-005-118

Collector	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-506-14/53	Ice Chest No.: 401 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
B1V8H0 (F)	3679	W	8-3-08	1002	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V8H1	3680	W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1V8H1		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V8H1		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V8H1		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V8H1		W			1x250-mL G/P	335.2_CYANIDE: Cyanide (1)	NaOH to pH >= 12 Cool~4C
B1V8H1		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V8H1		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. Bates			AUG 03 2008 1240	TA Pinzin			AUG 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 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

I08-043-6

Collector: D. Bates	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: I08-043	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: 2UPL JUNE 2008	HNF-N-506-14 / 63	Ice Chest No.: 401 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: SURV	Priority: 45 Days	Offsite Property No.

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1VKT4	3681	W	8.3.08	1128	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1VKT4		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1VKT4		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VKT4		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1VKT4		W			1x1-L G/P	Strontium-89,90 -- Total Sr	HNO3 to pH <2
B1VKT4		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
~~D. Bates~~	D. Bates	D. Bates	AUG 03 2008 1240	TA Frazier	Teresa Frazier		AUG 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 Liqui	
SO = Solid		T = Tissue	
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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