0066040

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FLUOR

Memorandum

M8141-SLF-05-178

To: S. J. Trent A0-21 Date: April 13, 2005

From: S. L. Fitzgerald, Manager
WSCF Analytical Chemistry

cc:

w/Attachments		w/o Attachments	
T. F. Dale	S3-30	D. J. Hart	S3-30
H. K. Meznarich	S3-30	M. A. Neely	S3-30
P. D. Mix	S3-30	H. S. Rich	S3-28
J. E. Trechter	S3-30	L. C. Swanson	E6-35
		File/LB	

Subject: FINAL RESULTS FOR U PLANT CLOSURE CONTAMINANT PLUME REFINEMENT–SAMPLE DELIVERY GROUP WSCF20050575 - SAF NUMBER F05-009

Reference: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001, October 31, 2002

(2) HNF-SD-CD-QAPP-017, Rev. 6, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains a narrative (Attachment 1) for sample delivery group WSCF20050575, the analytical results (Attachment 2), and the sample receipt information (Attachment 3).

SLF/grf

Attachments 3

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M8141-SLF-05-178

ATTACHMENT 1

NARRATIVE

Consisting of 3 pages
Including cover page

Sample Delivery Group	**WSCF20050575**
Sample Matrix	**SOIL**
Sample Visual	**N/A**
SAF Number	**F05-009**
Data Deliverable	**Summary Report**

Introduction

One (1) U Plant Closure Contaminant Plume Refinement, 216-U-12/C4726, 44' – 46', GRP sample (B1CFC2) was received at the WSCF Laboratory on March 14, 2005. The sample was 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 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Percent Solids by EPA Method 160.3. Analytical work was performed with no deviations to the approved method.

Organic

- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.
- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Percent Solids – analyzed for organic analysis correction only.

Organic Comments

- Sample results were moisture corrected and reported on a dry-weight basis.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 9 through 12 for QC details.

All QC controls are within the established limits.

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 13 through 14 for QC details. Analytical Note:

- Preparation Date: 17-mar-2005

All QC controls are within the established limits.

This Summary Report is in compliance with the SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the WSCF Laboratory Analytical Manager and Client Services, as verified by the following signature.

Pauline D. Mix
WSCF Client Services

Abbreviations

Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

M8141-SLF-05-178

ATTACHMENT 2

ANALYTICAL RESULTS

Consisting of 14 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: S. Fitzgerald

Client Services: P.D. Mix 4/13/2005

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

Confidentiality Notice: The information contained in this report is privileged and confidential information intended only for the use of the addressee. If the reader of this report is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone at (509) 373-7020.

Contract#: FH-EIS-2003-MEM-001
Report#: WSCF20050575
Report Date: 12-apr-2005
Report WGPP/ver. 1.1
Groundwater Remediation Program

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F05-009: F05-009

Group #: WSCF20050575

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic													
W050000994	B1CFC2 GRP TRENT	TS	Total solids	SOIL	LA-519-412		89.0	%	1.00	0.0	03/23/05	03/14/05	03/14/05

MDL=Minimum Detection Limit U - Analyzed for but not detected above limiting criteria.
RQ=Result Qualifier

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F05-009: F05-009

Group #: WSCF20050575

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic															
W050000994	B1CFC2	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 96.0	ug/kg	1.00	96	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 77.0	ug/kg	1.00	77	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 61.0	ug/kg	1.00	61	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 87.0	ug/kg	1.00	87	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 52.0	ug/kg	1.00	52	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 84.0	ug/kg	1.00	84	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 77.0	ug/kg	1.00	77	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 81.0	ug/kg	1.00	81	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 85.0	ug/kg	1.00	85	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	84-74-2	Di-n-butylphthalate	SOIL	LA-523-456	U	< 180	ug/kg	1.00	1.8e+02	03/21/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05
W050000994	B1CFC2	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.20	ug/kg	1.00	2.2	03/24/05	03/14/05	03/14/05

MDL = Minimum Detection Limit U - Analyzed for but not detected above limiting criteria.
RQ = Result Qualifier

DF = Dilution Factor

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050575
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F05-009
Sample Date: 03/14/05
Receive Date:03/14/05

Lab ID: W050000994
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,2,4-Trichlorobenzene	120-82-1	1317.1	88.300	% Recov	03/22/05	46.000	107.000	
MS	1,4-Dichlorobenzene	106-46-7	1279.2	85.700	% Recov	03/22/05	30.000	96.000	
MS	2,4-Dinitrotoluene	121-14-2	1204.1	80.700	% Recov	03/22/05	59.000	106.000	
MS	2-Fluorophenol	367-12-4	1411.4	94.600	% Recov	03/22/05	42.000	105.000	
MS	Acenaphthene	83-32-9	1327.4	89.000	% Recov	03/22/05	61.000	116.000	
MS	4-Chloro-3-methylphenol	59-50-7	1956.7	87.400	% Recov	03/22/05	61.000	106.000	
MS	2-Chlorophenol	95-57-8	1895.4	84.700	% Recov	03/22/05	66.000	106.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	1328.8	89.100	% Recov	03/22/05	71.000	114.000	
MS	2-Fluorobiphenyl	321-60-8	1269.5	85.100	% Recov	03/22/05	56.000	122.000	
MS	Phenol	108-95-2	2010.7	89.900	% Recov	03/22/05	42.000	111.000	
MS	Nitrobenzene-d5	4165-60-0	1245.0	83.500	% Recov	03/22/05	64.000	111.000	
MS	4-Nitrophenol	100-02-7	1758.3	78.600	% Recov	03/22/05	32.000	118.000	
MS	Pentachlorophenol	87-86-5	1809.8	80.900	% Recov	03/22/05	62.000	114.000	
MS	Phenol-d5	4165-62-2	1262.4	84.600	% Recov	03/22/05	54.000	120.000	
MS	Pyrene	129-00-0	1281.7	85.900	% Recov	03/22/05	66.000	118.000	
MS	2,4,6-Tribromophenol	118-79-6	1193.5	80.000	% Recov	03/22/05	24.000	122.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	1172.3	78.600	% Recov	03/22/05	35.000	150.000	
MSD	1,2,4-Trichlorobenzene	120-82-1	1307.8	87.800	% Recov	03/22/05	46.000	107.000	
MSD	1,4-Dichlorobenzene	106-46-7	1262.7	84.800	% Recov	03/22/05	30.000	96.000	
MSD	2,4-Dinitrotoluene	121-14-2	1183.7	79.500	% Recov	03/22/05	59.000	106.000	
MSD	2-Fluorophenol	367-12-4	1449.0	97.300	% Recov	03/22/05	42.000	105.000	
MSD	Acenaphthene	83-32-9	1291.1	86.700	% Recov	03/22/05	61.000	116.000	
MSD	4-Chloro-3-methylphenol	59-50-7	1983.6	88.800	% Recov	03/22/05	61.000	106.000	
MSD	2-Chlorophenol	95-57-8	1913.7	85.600	% Recov	03/22/05	66.000	106.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	1348.9	90.500	% Recov	03/22/05	71.000	114.000	
MSD	2-Fluorobiphenyl	321-60-8	1249.0	83.800	% Recov	03/22/05	56.000	122.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050575
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F05-009
Sample Date: 03/14/05
Receive Date:03/14/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Phenol	108-95-2	2046.4	91.600	% Recov	03/22/05	42.000	111.000	
MSD	Nitrobenzene-d5	4165-60-0	1247.6	83.700	% Recov	03/22/05	64.000	111.000	
MSD	4-Nitrophenol	100-02-7	1813.8	81.200	% Recov	03/22/05	32.000	118.000	
MSD	Pentachlorophenol	87-86-5	1863.6	83.400	% Recov	03/22/05	62.000	114.000	
MSD	Phenol-d5	4165-62-2	1292.0	86.700	% Recov	03/22/05	54.000	120.000	
MSD	Pyrene	129-00-0	1254.6	84.200	% Recov	03/22/05	66.000	118.000	
MSD	2,4,6-Tribromophenol	118-79-6	1265.8	85.000	% Recov	03/22/05	24.000	122.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	1158.3	77.700	% Recov	03/22/05	35.000	150.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	87.800	0.568	RPD	03/21/05	0.000	20.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	84.800	1.056	RPD	03/21/05	0.000	20.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	79.500	1.498	RPD	03/21/05	0.000	20.000	
SPK-RPD	2-Fluorophenol	367-12-4	97.300	2.814	RPD	03/21/05	0.000	20.000	
SPK-RPD	Acenaphthene	83-32-9	86.700	2.618	RPD	03/21/05	0.000	20.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	88.800	1.589	RPD	03/21/05	0.000	20.000	
SPK-RPD	2-Chlorophenol	95-57-8	85.600	1.057	RPD	03/21/05	0.000	20.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	90.500	1.559	RPD	03/21/05	0.000	20.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	83.800	1.539	RPD	03/21/05	0.000	20.000	
SPK-RPD	Phenol	108-95-2	91.600	1.873	RPD	03/21/05	0.000	20.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	83.700	0.239	RPD	03/21/05	0.000	20.000	
SPK-RPD	4-Nitrophenol	100-02-7	81.200	3.254	RPD	03/21/05	0.000	20.000	
SPK-RPD	Pentachlorophenol	87-86-5	83.400	3.043	RPD	03/21/05	0.000	20.000	
SPK-RPD	Phenol-d5	4165-62-2	86.700	2.452	RPD	03/21/05	0.000	20.000	
SPK-RPD	Pyrene	129-00-0	84.200	1.999	RPD	03/21/05	0.000	20.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	85.000	6.061	RPD	03/21/05	0.000	20.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	77.700	1.152	RPD	03/21/05	0.000	20.000	
SURR	2-Fluorophenol	367-12-4	1411.3	94.400	% Recov	03/21/05	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	1281.0	85.700	% Recov	03/21/05	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	1309.4	87.600	% Recov	03/21/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	1373.1	91.800	% Recov	03/21/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	1344.6	89.900	% Recov	03/21/05	24.000	122.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050575
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F05-009
Sample Date: 03/14/05
Receive Date:03/14/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Terphenyl-d14 (7Cl)	98904-43-9	1159.5	77.500	% Recov	03/21/05	35.000	150.000	
BATCH QC									
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 91	n/a	ug/Kg	03/21/05			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 130	n/a	ug/Kg	03/21/05			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 54	n/a	ug/Kg	03/21/05			U
BLANK	2-Fluorophenol	367-12-4	1193.7	89.500	% Recov	03/21/05	42.000	105.000	
BLANK	Acenaphthene	83-32-9	< 69	n/a	ug/Kg	03/21/05			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 47	n/a	ug/Kg	03/21/05			U
BLANK	2-Chlorophenol	95-57-8	< 76	n/a	ug/Kg	03/21/05			U
BLANK	Di-n-butylphthalate	84-74-2	< 160	n/a	ug/Kg	03/21/05			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 75	n/a	ug/Kg	03/21/05			U
BLANK	2-Fluorobiphenyl	321-60-8	1131.1	84.800	% Recov	03/21/05	56.000	122.000	
BLANK	Phenol	108-95-2	< 69	n/a	ug/Kg	03/21/05			U
BLANK	Nitrobenzene-d5	4165-60-0	1142.5	85.700	% Recov	03/21/05	64.000	111.000	
BLANK	4-Nitrophenol	100-02-7	< 86	n/a	ug/Kg	03/21/05			U
BLANK	Pentachlorophenol	87-86-5	< 73	n/a	ug/Kg	03/21/05			U
BLANK	Phenol-d5	4165-62-2	1165.3	87.400	% Recov	03/21/05	54.000	120.000	
BLANK	Pyrene	129-00-0	< 78	n/a	ug/Kg	03/21/05			U
BLANK	2,4,6-Tribromophenol	118-79-6	896.14	67.200	% Recov	03/21/05	24.000	122.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	1089.2	81.700	% Recov	03/21/05	35.000	150.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	1180.2	88.500	% Recov	03/21/05	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	1131.8	84.900	% Recov	03/21/05	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	1047.3	78.500	% Recov	03/21/05	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	1244.4	93.300	% Recov	03/21/05	50.000	110.000	
LCS	Acenaphthene	83-32-9	1162.0	87.200	% Recov	03/21/05	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	1758.9	87.900	% Recov	03/21/05	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	1726.3	86.300	% Recov	03/21/05	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	1239.8	93.000	% Recov	03/21/05	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	1134.0	85.100	% Recov	03/21/05	58.000	109.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050575
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F05-009
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Phenol	108-95-2	1833.7	91.700	% Recov	03/21/05	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	1142.7	85.700	% Recov	03/21/05	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	1639.2	82.000	% Recov	03/21/05	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	1633.1	81.700	% Recov	03/21/05	62.000	114.000	
LCS	Phenol-d5	4165-62-2	1182.4	88.700	% Recov	03/21/05	59.000	116.000	
LCS	Pyrene	129-00-0	1145.3	85.900	% Recov	03/21/05	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	1047.4	78.600	% Recov	03/21/05	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	1079.9	81.000	% Recov	03/21/05	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050575
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F05-009
Sample Date: 03/14/05
Receive Date:03/14/05

Lab ID: W050000994
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,1-Dichloroethene	75-35-4	51.760	92.100	% Recov	03/24/05	63.000	117.000	
MS	Benzene	71-43-2	54.560	97.100	% Recov	03/24/05	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	113.00	101.000	% Recov	03/24/05	84.000	116.000	
MS	Chlorobenzene	108-90-7	57.230	102.000	% Recov	03/24/05	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	118.90	106.000	% Recov	03/24/05	82.000	136.000	
MS	Toluene-d8	2037-26-5	115.10	102.000	% Recov	03/24/05	89.000	119.000	
MS	Toluene	108-88-3	57.980	103.000	% Recov	03/24/05	76.000	120.000	
MS	Trichloroethene	79-01-6	54.800	97.500	% Recov	03/24/05	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	51.650	91.900	% Recov	03/24/05	63.000	117.000	
MSD	Benzene	71-43-2	55.800	99.300	% Recov	03/24/05	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	110.60	98.400	% Recov	03/24/05	84.000	116.000	
MSD	Chlorobenzene	108-90-7	56.470	101.000	% Recov	03/24/05	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	123.80	110.000	% Recov	03/24/05	82.000	136.000	
MSD	Toluene-d8	2037-26-5	117.30	104.000	% Recov	03/24/05	89.000	119.000	
MSD	Toluene	108-88-3	58.750	105.000	% Recov	03/24/05	76.000	120.000	
MSD	Trichloroethene	79-01-6	54.040	96.200	% Recov	03/24/05	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	91.900	0.217	RPD	03/24/05	0.000	25.000	
SPK-RPD	Benzene	71-43-2	99.300	2.240	RPD	03/24/05	0.000	25.000	
SPK-RPD	4-Bromofluorobenzene	460-00-4	98.400	2.608	RPD	03/24/05	0.000	25.000	
SPK-RPD	Chlorobenzene	108-90-7	101.000	0.985	RPD	03/24/05	0.000	25.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	110.000	3.704	RPD	03/24/05	0.000	25.000	
SPK-RPD	Toluene-d8	2037-26-5	104.000	1.942	RPD	03/24/05	0.000	25.000	
SPK-RPD	Toluene	108-88-3	105.000	1.923	RPD	03/24/05	0.000	25.000	
SPK-RPD	Trichloroethene	79-01-6	96.200	1.342	RPD	03/24/05	0.000	25.000	
SURR	4-Bromofluorobenzene	460-00-4	114.30	102.000	% Recov	03/24/05	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	117.20	104.000	% Recov	03/24/05	80.000	134.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050575
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F05-009
Sample Date: 03/14/05
Receive Date:03/14/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Toluene-d8	2037-26-5	118.60	106.000	% Recov	03/24/05	80.000	126.000	
BATCH QC									
BLANK	1,1-Dichloroethene	75-35-4	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	Acetone	67-64-1	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	Benzene	71-43-2	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	4-Bromofluorobenzene	460-00-4	98.300	98.300	% Recov	03/24/05	71.000	125.000	
BLANK	Chlorobenzene	108-90-7	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	102.90	103.000	% Recov	03/24/05	80.000	134.000	
BLANK	Bromomethane	74-83-9	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	Chloromethane	74-87-3	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	Methylenechloride	75-09-2	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	Tetrachloroethene	127-18-4	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	Toluene-d8	2037-26-5	103.30	103.000	% Recov	03/24/05	80.000	126.000	
BLANK	Toluene	108-88-3	< 2.0	n/a	ug/Kg	03/24/05			U
BLANK	Trichloroethene	79-01-6	< 2.0	n/a	ug/Kg	03/24/05			U
LCS	1,1-Dichloroethene	75-35-4	43.430	86.900	% Recov	03/24/05	70.000	130.000	
LCS	Benzene	71-43-2	49.580	99.200	% Recov	03/24/05	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	99.840	99.800	% Recov	03/24/05	71.000	125.000	
LCS	Chlorobenzene	108-90-7	50.950	102.000	% Recov	03/24/05	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	106.70	107.000	% Recov	03/24/05	80.000	134.000	
LCS	Toluene-d8	2037-26-5	106.70	107.000	% Recov	03/24/05	80.000	126.000	
LCS	Toluene	108-88-3	52.640	105.000	% Recov	03/24/05	70.000	130.000	
LCS	Trichloroethene	79-01-6	49.070	98.100	% Recov	03/24/05	70.000	130.000	

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F05-009

Group #: WSCF20050575

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Organics: Sample concentrations have been corrected for moisture and are reported on a dry weight basis. den

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
TENTATIVELY IDENTIFIED PEAK REPORT

Attention:
Project Number :

Group #: 20050575

Sample #	Client ID	Test Name	Peak Name	CAS#	RT	RQ	Result	Units

RQ=Result Qualifier

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WSCF
METHOD REFERENCES REPORT

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-519-412	LA-519-412: TOTAL RESIDUE/% SOLIDS DRIED AT 103 - 105 C	
	EPA-600/4-79-020 160.3	RESIDUE, TOTAL
	Standard Methods 2540B	Total Solids Dried at 103-105 C
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)
LA-523-456	LA-523-456: SEMIVOLATILE SAMPLE ANALYSIS BY SW-846, METHOD 8270C	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at \\ap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

w13qlog v1 12-apr-2005 12:37:45

W13q Worklist/Batch/QC Report for Group# WSCF20050575

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
				SAMPLE	W050000994	Percent Solids
			29280	BLANK		SW-846 8270B Semi-Vols
			29280	LCS		SW-846 8270B Semi-Vols
			29280	MS	W050000994	SW-846 8270B Semi-Vols
			29280	MSD	W050000994	SW-846 8270B Semi-Vols
			29280	SAMPLE	W050000994	SW-846 8270B Semi-Vols
			29280	SPK-RPD	W050000994	SW-846 8270B Semi-Vols
			29280	SURR	W050000994	SW-846 8270B Semi-Vols
			29457	BLANK		VOA Ground Water Protection
			29457	LCS		VOA Ground Water Protection
			29457	MS	W050000994	VOA Ground Water Protection
			29457	MSD	W050000994	VOA Ground Water Protection
			29457	SAMPLE	W050000994	VOA Ground Water Protection
			29457	SPK-RPD	W050000994	VOA Ground Water Protection
			29457	SURR	W050000994	VOA Ground Water Protection

M8141-SLF-05-178

ATTACHMENT 3

SAMPLE RECEIPT INFORMATION

Consisting of 3 pages
Including cover page

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

File

04/13/05

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program
Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 119141/ES10
Group#: 20050575
Project#: F05-009
Proj Mgr: Steve Trent A0-21
Phone: 373-5869

The following samples were received from you on 03/14/05. 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
W050000994	B1CFC2	GRP TRENT @SVOCGPP @VOA-GPP	Solid, or handle as if solid	03/14/05

Test Acronym Description

Test Acronym	Description
@SVOCGPP	SW-846 8270B Semi-Vols
@VOA-GPP	VOA Ground Water Protection

04/13/05

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F05-009-124	PAGE 1 OF 1
COLLECTOR POPE/PFISTER/MOKLER/TYRA	COMPANY CONTACT JACKSON, RL	TELEPHONE NO. 372-9004	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8B AIR QUALITY ☐	DATA TURNAROUND ~~7 Days / 15 Days~~ 45 days 10 5-14-05
SAMPLING LOCATION 216-U-12 C4726 44ft-46ft	PROJECT DESIGNATION U Plant Closure Contaminant Plume Refinement		SAF NO. F05-009		
ICE CHEST NO. 20050575	FIELD LOGBOOK NO. HNF-N-4391	COA 119141E510	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool 4C	Cool 4C	
TYPE OF CONTAINER	G	G	
NO. OF CONTAINER(S)	3	1	
VOLUME	40mL	120mL	
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME								
B1CFC2 W050000994	SOIL	3-14-05	1045	X	X						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM JS Hoff 3-14-05	DATE/TIME 13:35	RECEIVED BY/STORED IN TA FRAZIER Tara Frazier 3/14/05	DATE/TIME 13:35
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL) {Acetone, Bromomethane, Chloromethane, Methylene chloride, Tetrachloroethene, Toluene}
(2)Semi-VOA - 8270B (TCL) {Di-n-butylphthalate, Pentachlorophenol}

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

A-6003-618(03/03)