

Fluor Hanford  
 WSCF Analytical Chemistry  
 P.O. Box 1000  
 Richland, WA 99352  
 Telephone 373-7495  
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# FLUOR

## Memorandum

M8141-SLF-05-163

To: S. J. Trent A0-21 Date: March 31, 2005

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

cc: w/Attachments w/o Attachments

T. F. Dale	S3-28	D. J. Hart	S3-30
H. K. Mezmarich	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: CORRECTED NARRATIVE FOR U PLANT CLOSURE CONTAMINANT PLUME  
 REFINEMENT - QC - SAMPLE DELIVERY GROUP (WSCF20050457) SAF NUMBER F05-011

Reference: (1) Memo, SL Fitzgerald to SJ Trent, same subject (M8141-SLF-05-159), dated March 30, 2005

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

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

This letter contains a corrected narrative sheet 1 to Reference (1). The first bullet under VOA (Toluene) included 2 sentences, but information in the second sentence was not correct and has been deleted. Please replace the original page 3 with the attachment.

SLF/grf

Attachment 1

**RECEIVED**  
 AUG 22 2005

**EDMC**  
**REVISED**  
*Waves*

4/4/05



**M8141-SLF-05-159**

**ATTACHMENT 1**

**NARRATIVE**

**Consisting of 3 pages  
Including cover page**

<b>Sample Delivery Group</b>	<b>WSCF20050457, R1</b>
<b>Sample Matrix</b>	<b>WATER</b>
<b>Sample Visual</b>	<b>N/A</b>
<b>SAF Number</b>	<b>F05-011</b>
<b>Data Deliverable</b>	<b>Summary Report</b>

**Introduction**

One (1) U Plant Closure Contaminant Plume Refinement – QC sample (B1CD82) was received at the WSCF Laboratory on February 24, 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**

**Organic**

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

**Organic Comments**

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 GPP Letter of Instruction. See pages 8 through 9 for QC details. Analytical Notes:

- Toluene - Spike Relative Percent Difference exceeded the established laboratory limits.
- Toluene – The Blank and Laboratory Control QC sample results exceeded established laboratory limits. Contamination detected in the associated QC samples was evaluated and it was determined that the contamination was attributed to an artifact from a waste sample that was run previously. Sample result was BX flagged.
- Tetrachloroethene – The Blank QC sample result exceeded established laboratory limits. Contamination detected in the associated Blank QC sample was evaluated and there was

**REVISED**  
R. [Signature]  
4/14/05

no significant affect on the sample result. Sample result was below the detection limit and U-flagged.

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-05-159

ATTACHMENT 2

**ANALYTICAL RESULTS**

Consisting of 9 pages  
Including cover page

**WSCF  
ANALYTICAL RESULTS REPORT**

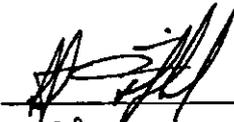
for

**Groundwater Remediation Program**

**Richland, WA 99354**

**Attention: Steve Trent**

Analytical:

 S. Fitzgerald

Client Services:

P.D. Mix 3/30/2005

*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#: WSCF20050457  
Report Date: 29-mar-2005  
Report WGPP/ver. 1.1  
Groundwater Remediation Program

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:  
Project:**

Steve Trent  
F05-011: F05-011

**Group #:** WSCF20050457

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive	
<b>Organic</b>														
W050000764	B1CD82	GRP	TRENT	75-35-4	1,1-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	79-01-6	Trichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	71-43-2	Benzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	108-88-3	Toluene	WATER	LA-523-455	BX		13.0	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	108-90-7	Chlorobenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	127-18-4	Tetrachloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	67-64-1	Acetone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	74-83-9	Bromomethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	74-87-3	Chloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05
W050000764	B1CD82	GRP	TRENT	75-09-2	Methylenechloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	03/09/05 02/24/05 02/24/05

**MDL=Minimum Detection Limit**  
**RQ=Result Qualifier**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)  
X - Other flags and notes described in the comments/narrative.

U - Analyzed for but not detected above limiting criteria.

**DF = Dilution Factor**

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

Report WGPP/ver. 1.1  
Groundwater Remediation Program

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## WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050457  
 Matrix: WATER  
 Test: VOA Ground Water Protection

SAF Number: F05-011  
 Sample Date: 02/24/05  
 Receive Date: 02/24/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000764									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	1,1-Dichloroethene	75-35-4	24.260	97.000	% Recov	03/09/05	63.000	117.000	
MS	Benzene	71-43-2	24.730	98.900	% Recov	03/09/05	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	50.310	101.000	% Recov	03/09/05	84.000	116.000	
MS	Chlorobenzene	108-90-7	25.260	101.000	% Recov	03/09/05	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	49.150	98.300	% Recov	03/09/05	82.000	136.000	
MS	Toluene-d8	2037-26-5	51.020	102.000	% Recov	03/09/05	89.000	119.000	
MS	Toluene	108-88-3	25.960	104.000	% Recov	03/09/05	78.000	120.000	
MS	Trichloroethene	79-01-6	25.320	101.000	% Recov	03/09/05	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	24.910	99.600	% Recov	03/09/05	63.000	117.000	
MSD	Benzene	71-43-2	24.280	97.100	% Recov	03/09/05	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	49.950	99.900	% Recov	03/09/05	84.000	116.000	
MSD	Chlorobenzene	108-90-7	25.320	101.000	% Recov	03/09/05	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	50.850	102.000	% Recov	03/09/05	82.000	136.000	
MSD	Toluene-d8	2037-26-5	51.390	103.000	% Recov	03/09/05	89.000	119.000	
MSD	Toluene	108-88-3	20.700	82.800	% Recov	03/09/05	78.000	120.000	
MSD	Trichloroethene	79-01-6	24.480	97.900	% Recov	03/09/05	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	99.600	2.645	RPD	03/09/05	0.000	10.000	
SPK-RPD	Benzene	71-43-2	97.100	1.837	RPD	03/09/05	0.000	10.000	
SPK-RPD	Chlorobenzene	108-90-7	101.000	0.000	RPD	03/09/05	0.000	10.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	102.000	3.694	RPD	03/09/05	0.000	25.000	
SPK-RPD	Toluene-d8	2037-26-5	103.000	0.976	RPD	03/09/05	0.000	25.000	
SPK-RPD	Toluene	108-88-3	82.800	22.698	RPD	03/09/05	0.000	10.000	
SPK-RPD	Trichloroethene	79-01-6	97.900	3.117	RPD	03/09/05	0.000	10.000	
SURR	4-Bromofluorobenzene	460-00-4	51.880	103.000	% Recov	03/09/05	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	48.930	97.900	% Recov	03/09/05	82.000	136.000	
SURR	Toluene-d8	2037-26-5	50.820	102.000	% Recov	03/09/05	89.000	119.000	

## WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050457  
 Matrix: WATER  
 Test: VOA Ground Water Protection

SAF Number: F05-011  
 Sample Date: 02/24/05  
 Receive Date: 02/24/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>BATCH QC</b>									
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L	03/09/05			U
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L	03/09/05			U
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L	03/09/05			U
BLANK	4-Bromofluorobenzene	460-00-4	51.160	102.000	% Recov	03/09/05	84.000	116.000	
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L	03/09/05			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	48.110	96.200	% Recov	03/09/05	82.000	136.000	
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L	03/09/05			U
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L	03/09/05			U
BLANK	Methylenechloride	75-08-2	< 1.0	n/a	ug/L	03/09/05			U
BLANK	Tetrachloroethene	127-18-4	3.5	3.500	ug/L	03/09/05			
BLANK	Toluene-d8	2037-28-5	50.440	101.000	% Recov	03/09/05	89.000	119.000	
BLANK	Toluene	108-88-3	16	16.000	ug/L	03/09/05			
BLANK	Trichloroethene	79-01-8	< 1.0	n/a	ug/L	03/09/05			U
LCS	1,1-Dichloroethene	75-35-4	23.530	94.100	% Recov	03/09/05	70.000	130.000	
LCS	Benzene	71-43-2	24.870	99.500	% Recov	03/09/05	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	52.900	106.000	% Recov	03/09/05	84.000	116.000	
LCS	Chlorobenzene	108-90-7	25.270	101.000	% Recov	03/09/05	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	49.160	98.300	% Recov	03/09/05	82.000	136.000	
LCS	Toluene-d8	2037-28-5	51.910	104.000	% Recov	03/09/05	89.000	119.000	
LCS	Toluene	108-88-3	59.860	239.000	% Recov	03/09/05	70.000	130.000	
LCS	Trichloroethene	79-01-8	25.420	102.000	% Recov	03/09/05	70.000	130.000	

# WSCF ANALYTICAL COMMENT REPORT

Attention:  
Project Number

Steve Trent  
F05-011

Group #: WSCF20050457

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		VOA: Toluene marked with 'B' and 'X' flag to show that it was in the blank at a higher level than in the sample. Hence, it is most likely to be an artifact with this analysis. Carryover artifacts in Blank due to (concentrated) waste sample analyzed previously. Toluene, Xylenes, Tetrachloroethene, Ethylbenzene, and Styrene were all in the Blank. No target compounds were found above those found in the Blank. The Spike RPD for Toluene was out high at 22.7%. gar

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 #:** 20050457

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<b>Sample #</b>	<b>Client ID</b>	<b>Test Name</b>	<b>Peak Name</b>	<b>CAS#</b>	<b>RT</b>	<b>RQ</b>	<b>Result</b>	<b>Units</b>
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**RQ=Result Qualifier**

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WGPE v 1.1 Report#: 20050457

Report Date: 28-mar-2005

Page 1

# WSCF

## METHOD REFERENCES REPORT

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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.

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<b>LA-523-455</b>	<b>LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846</b>
<b>EPA SW-846 8000B</b>	<b>DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS</b>
<b>EPA SW-846 8260B</b>	<b>VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)</b>

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Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at <\\lap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf>. This document includes on-line links to full-text versions of the procedures and methods, where available.

Report Date: 29-mar-2005  
Report#: WSCF20050457  
Report WGPPM/O

w13qlog v1 29-mar-2005 14:41:17

W13q Worklist/Batch/QC Report for Group# WSCF20050457

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			29296	BLANK		VOA Ground Water Protection
			29296	LCS		VOA Ground Water Protection
			29296	MS	W050000764	VOA Ground Water Protection
			29296	MSD	W050000764	VOA Ground Water Protection
			29296	SAMPLE	W050000764	VOA Ground Water Protection
			29296	SPK-RPD	W050000764	VOA Ground Water Protection
			29296	SURR	W050000764	VOA Ground Water Protection

M8141-SLF-05-159

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  
YB  
3/24/05

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354  
Attn: Steve Trent

Customer Code: GPP  
PO#: 119141/ES10  
Group#: 20050457  
Project#: F05-011  
Proj Mgr: Steve Trent A0-21  
Phone: 373-5869

The following samples were received from you on 02/24/05. 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
W050000764	B1CD82	GRP @VOA-GPP	TRENT Water	02/24/05

Test Acronym Description

Test Acronym	Description
@VOA-GPP	VOA Ground Water Protection

Fiber Handed Inc.

5/2/05

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

REG-011-003

PAGE 1 OF 1

COLLECTOR

POPE/PISTER/TYRANKOWER

COMPANY CONTACT

JACSON, RL

TELEPHONE NO.

372-9004

PROJECT COORDINATOR

TRENT, SJ

POLICE CODE

7N

DATA TURNAROUND

45 Days / 45 Days

SAMPLING LOCATION

MO-026

PROJECT DESIGNATION

U Park Closure Construction Flume Retirement - QC

SAP NO.

R05-011

AIR QUALITY

ICE CHECK NO.

FIELD LOGBOOK NO.

COA

METHOD OF SHIPMENT

GOVERNMENT VEHICLE

SHIPPED TO

Waste Sampling & Characterization

OPPOSITE PROPERTY NO.

N/A

BILL OF LADING/AIR BILL NO.

N/A

MATRIX\*

- OC-Drum
- Liquid
- OC-Drum
- Solids
- L-Liquid
- O-Gel
- S-Sol
- SE-Sediment
- T-Tissue
- V-Vegetation
- W-Water
- WI-Wipe
- X-Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

PRESERVATION

NO or H2SO4 to pH <2/cool

TYPE OF CONTAINER

16oz\*

NO. OF CONTAINER(S)

3

VOLUME

40ml

SPECIAL HANDLING AND/OR STORAGE

SAMPLE ANALYSIS

SEE ITEM (1) IN SPECIAL INSTRUCTIONS

20050457

SAMPLE NO.

MATRIX\*

SAMPLE DATE

2/25/05 1020 X

BIC082 U05030976 WATER

CHAIN OF POSSESSION

SIGN/PRINT NAMES

SPECIAL INSTRUCTIONS

(1)VOC - 82608 (TCL) (Acetone, Bromoform, Chloroform, Methylene Chloride, Tetrachloroethene, Toluene)

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

LABORATORY SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

A-6003-616(02/03)