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Memorandum

M8141-SLF-05-137

To: S. J. Trent A0-21 Date: March 18, 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. 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: REVISED NARRATIVE FOR 200-LW-1/LW-2 CHARACTERIZATION - SOIL – SAMPLE DELIVERY GROUP WSCF20042054 – SAF NUMBER F03-025

Reference:
(1) Memo, SL Fitzgerald to SJ Trent, dated November 24, 2004 (M8141-SLF-04-353), same subject

(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 revised narrative (Attachment 1) for sample delivery group WSCF20042054 formerly transmitted in Reference 1. The Analytical Methodology for Requested Analyses section was changed; Neptunium-237 is not a WDOE accredited procedure. The Comment section was modified to include Radiochemical Isotopic Results for Uranium and Plutonium and Neptunium-237 spike recoveries.

SLF/grf

Attachment 1

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M8141-SLF-05-137

ATTACHMENT 1

NARRATIVE

Consisting of 5 pages
Including cover page

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3/23/05

Sample Delivery Group	**WSCF20042054, Rev. 1**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F03-025**
Data Deliverable	**Summary Report**

Introduction

One (1) 200-LW-1/LW-2 Characterization – Soil, 216 T-28, 22.5' – 25', GRP sample (B19189) was received at the WSCF Laboratory on November 4, 2004. 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. A copy of the chain of custody and Request for Sample Analysis forms is included as Attachment 3.

Analytical Methodology for Requested Analyses

Radiochemistry

- All RadChem analyses (AEA (Plutonium, Americium and Uranium) and GEA) except Neptunium-237 were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 10 through 14 for QC details. Analytical Notes:

- Americium-241, Plutonium-239/240 and Uranium-238 - Duplicate QC samples were analyzed on sample# B19187 (SDG# 20042022, SAF# F03-025).

- Uranium-234, Urananium-235 and Plutonium-238 Additional Batch QC Data for Group 20042230:

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Radiochemical Isotopic Results					
Batch ID	Associated Samples (Customer ID)	Lab Sample ID	QC Sample	Isotope	Result
24083			Blank U ISO	U-234	1.94e-02 pCi/g
				U-235	1.48e-02 pCi/g
	B19187	W040002092	Duplicate U ISO on W040002092	U-234	3.13e+01 pCi/g (7.8%)
				U-235	1.79e+00 pCi/g (6.9%)
24085			Blank Pu ISO	Pu-238	-9.22e-03 pCi/g
	B19187	W040002092	Duplicate Pu ISO on W040002092	Pu-238	3.75e-01 pCi/g (24%)

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Pu-242	76.8
LCS		Pu-242	81.2
B19187	W040002092	Pu-242	73.0
DUPLICATE	W040002092	Pu-242	92.6
B19189	W040002150	Pu-242	79.6
BLANK		Am-243	76.2
LCS		Am-243	82.3
B19187	W040002092	Am-243	92.5
DUPLICATE	W040002092	Am-243	95.7
B19189	W040002150	Am-243	94.9
BLANK		U-232	85.2

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Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
LCS		U-232	77.0
B19187	W040002092	U-232	40.0
DUPLICATE	W040002092	U-232	38.6
B19189	W040002150	U-232	50.3

- Neptunium-237 – Spike (Np-237) recoveries for each sample are listed below. Laboratory control sample recovery was below established limits and may be attributed to a slight excess of ascorbic acid which occurs due to low iron levels in the matrix and causes retention of the Neptunium during separation. The solid matrix sample spike recoveries were within established laboratory limits. Sample result was not flagged but should be considered suspect.

Radiochemical Matrix Spike Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Matrix Spike Recovery (Percent)
LCS		Np-237	36.5
DUPLICATE	W040002150	Np-237	91.5
B19189	W040002150	Np-237	110.5

All other 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.

Herlene S. Rich
WSCF Production Control

REVISED 3/23/05 FJ Edwards

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

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M8141-SLF-04-353

ATTACHMENT 2

ANALYTICAL RESULTS

Consisting of 13 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: _____

Client Services: _____

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

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Contract#: FH-EIS-2003-MEM-001
Report#: WSCF20042054
Report Date: 23-nov-2004
Report WGPP/ver. 1.1
Groundwater Remediation Program

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-025: F03-025

Group #: WSCF20042054

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry														
W040002150	B19189	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471		7.50	pCi/g	1.00	0.033	11/19/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 1.6	pCi/g	1.00	0.0	11/19/04	10/26/04	11/04/04
W040002150	B19189	TRENT	14234-35-6	Antimony-125	SOIL	LA-508-481	U	0.827	pCi/g	1.00	1.2	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.88	pCi/g	1.00	0.0	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481		0.670	pCi/g	1.00	0.089	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.10	pCi/g	1.00	0.0	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	13967-70-9	Cesium-134	SOIL	LA-508-481	U	0.104	pCi/g	1.00	0.27	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.16	pCi/g	1.00	0.0	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481		4.71e+03	pCi/g	1.00	0.40	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 5.8e+02	pCi/g	1.00	0.0	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481	U	0.147	pCi/g	1.00	1.1	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.64	pCi/g	1.00	0.0	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481	U	0.647	pCi/g	1.00	0.40	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.25	pCi/g	1.00	0.0	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U	0.136	pCi/g	1.00	1.1	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.64	pCi/g	1.00	0.0	11/10/04	10/26/04	11/04/04
W040002150	B19189	TRENT	13994-20-2	Neptunium-237	SOIL	LA-508-471	U	0.0120	pCi/g	1.00	0.018	11/23/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 0.12	pCi/g	1.00	0.0	11/23/04	10/26/04	11/04/04
W040002150	B19189	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471		0.590	pCi/g	1.00	0.12	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.19	pCi/g	1.00	0.0	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471		12.0	pCi/g	1.00	0.036	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 3.1	pCi/g	1.00	0.0	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471		43.0	pCi/g	1.00	0.067	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 11	pCi/g	1.00	0.0	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471		1.80	pCi/g	1.00	0.016	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.50	pCi/g	1.00	0.0	11/21/04	10/26/04	11/04/04

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: F03-025: F03-025

Group #: WSCF20042054

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002150	B19189	TRENT	U-238	Uranium-238	SOIL	LA-508-471		27.0	pCi/g	1.00	0.073	11/21/04	10/26/04	11/04/04
W040002150	B19189	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471	+-	7.0	pCi/g	1.00	0.10	11/21/04	10/26/04	11/04/04

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: WSCF20042054
Matrix: SOLID
Test: Americium by AEA

SAF Number: F03-025
Sample Date: 10/27/04
Receive Date:11/01/04

Lab ID: W040002092

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Americium-241	14596-10-2	4.1e+00	7.059	RPD	11/19/04	0.000	20.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Americium-241	14596-10-2	U1.1e-02	n/a	pCi/g	11/19/04	-10.000	1000.000	
LCS	Americium-241	14596-10-2	4.6e+01	100.000	% Recov	11/19/04	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042054
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: F03-025
Sample Date: 10/26/04
Receive Date:11/04/04

Lab ID: W040002150

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Cobalt-60	10198-40-0	6.54e-01	2.417	RPD	11/10/04	0.000	20.000	
DUP	Cesium-134	13967-70-9	U-9.41e-2	n/a	RPD	11/10/04	0.000	20.000	
DUP	Cesium-137	10045-97-3	4.71e+03	0.000	RPD	11/10/04	0.000	20.000	
DUP	Europium-152	14683-23-9	U-4.14e-1	n/a	RPD	11/10/04	0.000	20.000	
DUP	Europium-154	15585-10-1	U2.86e-01	n/a	RPD	11/10/04	0.000	20.000	
DUP	Europium-155	14391-16-3	U-2.44e-1	n/a	RPD	11/10/04	0.000	20.000	
DUP	Antimony-125	14234-35-6	U9.32e-01	n/a	RPD	11/10/04	0.000	20.000	

BATCH QC

BLANK	Cobalt-60	10198-40-0	U-9.5e-4	n/a	pCi/g	11/09/04	-10.000	1000.000	
BLANK	Cesium-134	13967-70-9	U2.20e-3	n/a	pCi/g	11/09/04	-10.000	1000.000	
BLANK	Cesium-137	10045-97-3	U-2.1e-3	n/a	pCi/g	11/09/04	-10.000	1000.000	
BLANK	Europium-152	14683-23-9	U4.80e-4	n/a	pCi/g	11/09/04	-10.000	1000.000	
BLANK	Europium-154	15585-10-1	U7.74e-4	n/a	pCi/g	11/09/04	-10.000	1000.000	
BLANK	Europium-155	14391-16-3	U5.40e-3	n/a	pCi/g	11/09/04	-10.000	1000.000	
BLANK	Antimony-125	14234-35-6	U3.60e-3	n/a	pCi/g	11/09/04	-10.000	1000.000	
LCS	Cobalt-60	10198-40-0	4.43e+03	105.728	% Recov	11/10/04	80.000	120.000	
LCS	Cesium-137	10045-97-3	3.88e+03	108.380	% Recov	11/10/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042054
Matrix: SOLID
Test: Neptunium by AEA

SAF Number: F03-025
Sample Date: 10/26/04
Receive Date:11/04/04

Lab ID: W040002150

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Neptunium-237	13994-20-2	1.2e-02	0.000	RPD	11/23/04	0.000	25.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Neptunium-237	13994-20-2	4.7e-03	0.005	pCi/g	11/23/04	-10.000	1000.000	
LCS	Neptunium-237	13994-20-2	36.5	36.500	% Recov	11/23/04	75.000	125.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042054
Matrix: SOLID
Test: Plutonium Isotopics by AEA

SAF Number: F03-025
Sample Date: 10/27/04
Receive Date:11/01/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002092									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Pu-239/240 by AEA	PU-239/240	5.8e+00	0.000	RPD	11/21/04	0.000	20.000	
BATCH QC									
BLANK	Plutonium-238	13981-16-3	U-9.2e-03	n/a	PCT	11/21/04	0.000	1000.000	
BLANK	Pu-239/240 by AEA	PU-239/240	U4.6e-03	n/a	pCi/g	11/21/04	-10.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	4.7e+01	97.713	% Recov	11/21/04	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042054
Matrix: SOLID
Test: Uranium Isotopics by AEA

SAF Number: F03-025
Sample Date: 10/27/04
Receive Date:11/01/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002092									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Uranium-238	U-238	2.4e+01	0.000	RPD	11/21/04	0.000	20.000	
BATCH QC									
BLANK	Uranium-238	24678-82-8	U9.7e-03	n/a	pCi/g	11/21/04	-10.000	1000.000	
LCS	Uranium-238	24678-82-8	8.3e+01	109.470	% Recov	11/21/04	75.000	125.000	

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F03-025

Group #: WSCF20042054

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W040002150 GEA Am-241 detected at 2.8 pCi/g. Np237 LCS is low so the sample result is an estimated value.

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: Steve Trent
Project Number F03-025 :F03-025

Group #: WSCF20042054

Sample #	Client ID		Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				12	%
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	SN-126 Count Error				16	%
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	AM-241 Count Error				35	%
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	PB-212 Count Error				42	%
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	PB-212				0.95	pCi/g
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	AM-241				2.8	pCi/g
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	SN-126				4.9	pCi/g
W040002150	B19189	TRENT	Gamma Energy Analysis-grd H2O	K-40				8.6	pCi/g

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-508-471	LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP	
	None	No reference to any industry method.
LA-508-481	LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE	
	None	No reference to any industry method.

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 23-nov-2004 11:16:08

W13q Worklist/Batch/QC Report for Group# WSCF20042054

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
23967	1	24324	27651	BLANK		Gamma Energy Analysis-grd H2O
23967	2	24324	27651	LCS		Gamma Energy Analysis-grd H2O
23967	3	24324	27651	DUP	W040002150	Gamma Energy Analysis-grd H2O
23967	4	24324	27651	SAMPLE	W040002150	Gamma Energy Analysis-grd H2O
24083	1	24442	27782	BLANK		Uranium Isotopics by AEA
24083	2	24442	27782	LCS		Uranium Isotopics by AEA
24083	3	24442	27782	DUP	W040002092	Uranium Isotopics by AEA
24083	8	24442	27782	SAMPLE	W040002150	Uranium Isotopics by AEA
24085	1	24440	27784	BLANK		Plutonium Isotopics by AEA
24085	2	24440	27784	LCS		Plutonium Isotopics by AEA
24085	3	24440	27784	DUP	W040002092	Plutonium Isotopics by AEA
24085	8	24440	27784	SAMPLE	W040002150	Plutonium Isotopics by AEA
24086	1	24439	27785	BLANK		Americium by AEA
24086	2	24439	27785	LCS		Americium by AEA
24086	3	24439	27785	DUP	W040002092	Americium by AEA
24086	8	24439	27785	SAMPLE	W040002150	Americium by AEA
24084	1	24441	27804	BLANK		Neptunium by AEA
24084	2	24441	27804	LCS		Neptunium by AEA
24084	3	24441	27804	DUP	W040002150	Neptunium by AEA
24084	4	24441	27804	SAMPLE	W040002150	Neptunium by AEA

M8141-SLF-04-353

ATTACHMENT 3

SAMPLE RECEIPT INFORMATION

Consisting of 4 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

12/6/04
Filer KB

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program
Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 119143/ES20
Group#: 20042054
Project#: F03-025
Proj Mgr: Steve Trent A0-21
Phone: 373-5869

The following samples were received from you on 11/04/04. 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
W040002150	B19189	TRENT @AEA-30 @AEA-31 @AEA-32 @AEA-33 @GEA-GPP	Solid, or handle as if solid	10/26/04

Test Acronym Description

Test Acronym	Description
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA
@AEA-32	Uranium Isotopics by AEA
@AEA-33	Neptunium by AEA
@GEA-GPP	Gamma Energy Analysis-grd H2O

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F03-025-057	PAGE 1 OF 2
COLLECTOR Pope/Pfister/Wiberg/Tyra 12/v	COMPANY CONTACT TRENT, STEVE	TELEPHONE NO. 373-5689	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N	DATA TURNAROUND
SAMPLING LOCATION 216-T-28; 22.5ft-25ft	PROJECT DESIGNATION 200-LW-1/LW-2 Characterization - Soil		SAF NO. F03-025	AIR QUALITY ☐	45 Days / 45 Days
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-356-1	COA 119143E510	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: N/A

20042054

SPECIAL HANDLING AND/OR STORAGE: Radioactive trc to: B191C7

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None			
TYPE OF CONTAINER	Gr*	uG	uG	Gr*	P	uG	uG			
NO. OF CONTAINER(S)	3	1	1	3	1	1	1			
VOLUME	40mL	120mL	120mL	40mL	500mL	250mL	120mL			
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	SEE ITEM (6) IN SPECIAL INSTRUCTIONS			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B19180	SOIL	10-26-04	0941	X	X	X	X	X	X	X			
1195400002150													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
T.S. Pfister/[illegible]	10-26-04 1230	Site Fridge	10-26-04 1230
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Site Fridge	11/04/04 0950	Greg Thomas [illegible]	11/04/04 0950
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Greg Thomas [illegible]	11/04/04 1100	[illegible]	11/4/04 11[illegible]
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F03-025-057	PAGE 2 OF 2
COLLECTOR Popa/Pfister/Wiberg/Tyra	COMPANY CONTACT TRENT, STEVE	TELEPHONE NO. 373-5609	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 2A AIR QUALITY ☐	DATA TURNAROUND 24 Hours
SAMPLING LOCATION 216-T-28; 22.5ft-25ft	PROJECT DESIGNATION 200-LW-1/LW-2 Characterization - Soil		SAF NO. F03-025		
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-356-1	COA 119143E510	METHOD OF SHIPMENT Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene range organics from the WTPH-D analysis.

(1)MOA--8260A (TCL) VOA - 8260A (Add-On) (1,3-Butadiene) --*K
(2)Semi-VOA - 8270A (TCL) (Phenol) Semi-VOA -- 8270A (Add-On) (Tributyl phosphate) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range) TPH-Gasoline Range - WTPH-G; *K
(3)Alcohols, Glycols, & Ketones - 8015 (Ethylene glycol)*K
(4)Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) Gamma Spec - Add-on (Antimony-125, Cesium-134) Isotopic Plutonium; Isotopic Uranium; Neptunium-237; Americium-241;
(5)ICP/MS - 200.8 (TAL) (Antimony, Barium, Cadmium, Chromium, Copper, Nickel, Silver) ICP/MS - 200.8 (Add-on) (Arsenic, Beryllium, Lead, Mercury, Selenium, Uranium) ICP Metals - 6010A (Add-on) (Bismuth) *K
(6)IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate) Cations (IC) - 300.7 (Nitrogen in Ammonium) Cyanide (Total) - 335.2; pH (Soil) - 9045; *K

*KJT 11/04/04