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

## Memorandum

M8141-SLF-06-082

To: D. L. Klages H8-40 Date: April 28, 2006

From: S. L. Fitzgerald, Manager *[Signature]*  
 WSCF Analytical Chemistry

cc: S. J. Trent (FH) A0-21  
 T. F. Dale S3-30  
 H. K. Meznarich S3-30  
 P. D. Mix S3-30  
 J. E. Trechter S3-30  
 File/LB  
 (Above w/attachments)

Subject: FINAL RESULTS FOR 200-UW-1 OPERABLE UNIT TRENCH – SAMPLE DELIVERY GROUP WSCF20060179 – SAF NUMBER R06-019

Reference: (1) Memo, SL Fitzgerald to DL Klages, same subject (M8141-SLF-06-079), dated April 24, 2006  
 (2) 200-UW-1 Operable Unit Support Activities Sampling – Letter of Instruction, D&D-27876, Rev. 0, dated December 14, 2005  
 (3) HNF-SD-CD-QAPP-017, Rev. 7, Waste Sampling & Characterization Facility Quality Assurance Plan



We were informed that a few pages (14 and 15) of Reference 1 were illegible. Therefore, this letter contains 2 replacement pages 14 and 15 for sample delivery group WSCF20060179, Attachment 3 (sample receipt information).

Please contact John Trechter, telephone 373-7046, if there are additional questions.

SLF/grf

Attachments  
 as noted

**RECEIVED**  
 JUN 26 2008  
**EDMC**

**REVISED**  
*[Signature]*  
 5/29/06

M8141-SLF-06-079

ATTACHMENT 1

**NARRATIVE**

Consisting of 3 pages  
Including cover page

<b>Sample Delivery Group</b>	<b>WSCF20060179</b>
<b>Sample Matrix</b>	<b>SOLID</b>
<b>Sample Visual</b>	<b>N/A</b>
<b>SAF Number</b>	<b>R06-019</b>
<b>Data Deliverable</b>	<b>Summary Report</b>

**Introduction**

One (1) soil sample (B1HVN5) from the 200-UW-1 Operable Unit Clean Soil was received at the WSCF Laboratory on March 14, 2006. The sample was received in a cool condition with ice present in the coolers. The sample was analyzed for the analyte indicated on the attached copy of the chain of custody (COC) form in accordance with the *200-UW-1 Operable Unit Letter of Instruction*, referenced in the cover letter.

The sample was taken using the Multi-Increment Sampling Program, which requires the entire sample submitted to be analyzed. This does not allow for laboratory sample duplicates or matrix spikes.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical method. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, 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**

Refer to *WSCF Method References Report*, page 10, for a complete listing of approved analytical methods used.

**Radiochemistry Comments**

– There are no holding times associated with WSCF radiochemical methods.

**Tecnicium-99** - A Blank, Laboratory Control Sample, Post Digestion Spike and Post Digestion Duplicate were analyzed with this delivery group of less than 20 samples. See page 11 for QC details. 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.



John E. Trechter  
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

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ATTACHMENT 2

**ANALYTICAL RESULTS**

Consisting of 8 pages  
Including cover page

**WSCF**  
**ANALYTICAL RESULTS REPORT**

for

**PROJECT HANFORD MANAGEMENT COMPANY**  
**RICHLAND, WA 99354**

**Attention: Deanna Klages H8-40**

Analytical:

*A. J. Fitzgerald*  
S. Fitzgerald

Client Services:

*John Trechter*  
John Trechter

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

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Report#: 20060179  
Report Date: 24-apr-2006  
Report W005/ver. 1.2

PROJECT HANFORD MANAGEMENT COMPANY

Page 1

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Deanna Klages H8-40

**Group #:** 20060179

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF		Result	Unit	DF	MDL	Analyze	Sample	Receive	
					Method	RQ								
<b>Radiochemistry</b>														
W080000458	B1HVN5	K	14133-76-7	Tc-99 by Liquid Scin.	SOLID	LA-508-421	U	-0.600	pCi/g	1.00	0.50	03/18/08	03/14/08	03/14/08
W080000458	B1HVN5	K	E,T,C	Tc-99 Counting Error	SOLID	LA-508-421		100	%	1.00	0.0	03/18/08	03/14/08	03/14/08

**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

Report W005/ver. 1.2

PROJECT HANFORD MANAGEMENT COMPANY

**WSCF  
ANALYTICAL COMMENT REPORT**

**Attention:  
Project Number**

**Group #: 20060179**

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Sample #	Client ID	Lab Area	Test	Comment
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**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 #:** 20060179

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

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# 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-508-421</b>	<b>LA-508-421: OPERATION OF THE TRI-CARB MODEL 2500TR LIQUID SCINTILLATION ANALYZER</b>
None	No reference to any industry method.

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Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at <\\vap006\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: 24-apr-2008

Report #: 20080179

Report W\_005M/1

Page 1

## WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: 20060179  
 Matrix: SOLID  
 Test: TC99 by Liquid Scin.

SAF Number: R06-019  
 Sample Date: 03/14/06  
 Receive Date: 03/14/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>Lab ID: W060000452</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
DUP	Tc-99 by Liquid Scin.	14133-76-7	U-0.7	n/a	RPD	03/18/06	0.000	20.000	
MS	Tc-99 by Liquid Scin.	14133-78-7	88.0	88.000	% Recov	03/18/06	75.000	125.000	
<b>BATCH QC</b>									
BLANK	Tc-99 by Liquid Scin.	14133-76-7	-0.2	-0.200	pCi/g	03/18/06	-10.000	1000.000	
LCS	Tc-99 by Liquid Scin.	14133-78-7	10.1	89.381	% Recov	03/18/06	75.000	125.000	

w13qlog v1 24-apr-2006 10:38:33

W13q Worklist/Batch/QC Report for Group# 20060179

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
28263	1	28637	32478	BLANK		TC99 by Liquid Scin.
28263	2	28637	32478	LCS		TC99 by Liquid Scin.
28263	4	28637	32478	DUP	W060000452	TC99 by Liquid Scin.
28263	3	28637	32478	MS	W060000452	TC99 by Liquid Scin.
28263	8	28637	32478	SAMPLE	W060000458	TC99 by Liquid Scin.

M8141-SLF-06-079

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

File  
03/29/06  
*td*

ACKNOWLEDGMENT OF SAMPLES RECEIVED

PROJECT HANFORD MANAGEMENT COMPANY

RICHLAND, WA 99354  
Attn: Danna Klages H8-40

Customer Code: PHMC-MISC  
PO#: 121595/ES20  
Group#: 20060179

The following samples were received from you on 03/14/06. 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
W060000458	B1HVN5	@TC99-30	KLAGES Solid, or handle as if solid	03/14/06

Test Acronym Description	
Test Acronym	Description
@TC99-30	TC99 by Liquid Scin.

**REVISED**  
*D. Dyer*  
5/2/06

*[Signature]*  
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COLLECTOR <i>KB Hulse 03/29/02</i>		COMPANY CONTACT TRECHTER, JE		TELEPHONE NO.	PROJECT COORDINATOR TRECHTER, JE	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION Spoils Pile		PROJECT DESIGNATION 200-UW-1 Operable Unit, Clean Soil from Trench between 216-U-8 and 21			SAF NO. R06-019	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>SESP</i>		FIELD LOGBOOK NO. DTS-SAWS-H100	COA 121595ES20		METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A			BILL OF LADING/AIR BILL NO. N/A		

MATRIX* OL = OTHER LIQUID OS = OTHER SOLID S = SOIL W = WATER	SPECIAL HANDLING AND/OR STORAGE				POSSIBLE SAMPLE HAZARDS/ REMARKS			
	SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
	B1HVNS	<i>W060000458</i>	S	<i>3/14/02</i>	<i>1050</i>	<i>1X60mL G/P</i> <i>20.6 grams</i>	Technetium-99 (Tc-99)	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>K. B. HULSE</i>	DATE/TIME <i>3-14-06 1335</i>	RECEIVED BY/STORED IN <i>JA FRAZIER</i>	DATE/TIME <i>3-14-06 1335</i>	Sample will be taken using the multiple-increment sampling program. This requires the entire sample provided in each bottle to be used in analysis. Reporting format the same as GPP, including QC.
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	

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

**REVISED**  
*15 Days*  
*5/2/06*

15  
01  
16

### GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number 106 013 000 000 CACN/COA 121-571210 Customer Identification Number \_\_\_\_\_

2. List generator knowledge or description of process that produced sample. Or list description of sample source:  
 Samples were generated from W42 trench and the spoils pile from the same excavation.

MSDS Available?  No  Yes Hanford MSDS No. n/a

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?  
 By checking "unknown" the customer understands that no knowledge is available following a careful search.

List Federal Waste Code(s):	List Constituent(s):			
P Codes: _____	_____	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
U Codes: _____	_____	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
K Codes: _____	_____	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
F Codes: _____	_____	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001: <input type="checkbox"/> FP <100°F	<input type="checkbox"/> FP ≥100 <140°F	<input type="checkbox"/> DOT Oxidizer	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
D002: <input type="checkbox"/> pH ≤	<input type="checkbox"/> pH ≥12.5	<input type="checkbox"/> Solid Corrosive (WSC2)	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
D003: <input type="checkbox"/> Cyanide	<input type="checkbox"/> Sulfide	<input type="checkbox"/> Water Reactive	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
D004-D043 (Identify applicable waste codes and concentrations):	<input type="checkbox"/> Other _____ (i.e., peroxide former, explosive, air reactive)		<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown

None

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):

None

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):

None

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated) (\*State mixture rule for Ignitability)

WT01: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	WP01: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
WT02: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	WP02: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
W001: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	WP03: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
List constituents and concentrations:	F003: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown

4. Is this material TSCA regulated for PCBs?  Yes  No  Unknown  Analysis Requested

List concentration if applicable: n/a

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

<input type="checkbox"/> PCB Liquid Waste	<input type="checkbox"/> PCB Bulk Product Waste	<input type="checkbox"/> PCB Transformer ≥500 ppm	<input type="checkbox"/> Unknown
<input type="checkbox"/> PCB Remediation Waste	<input type="checkbox"/> PCB R&D Waste	<input type="checkbox"/> PCB contaminated electrical equipment (capacitor/ballast) <500 ppm	
<input type="checkbox"/> PCB Spill Material	<input type="checkbox"/> PCB Item	<input type="checkbox"/> Other PCB Waste (list) _____	

5. Is this material TRU?  Yes  No  Unknown

6. ACCURACY OF INFORMATION

Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign John Hasson / John Hasson Date 3-14-06