Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

September 16, 1996 9654143

D. E. Ayres, Environmental Science Tech
ITH ES&E Sample Management

R. L. Weiss, Chemist
CHI ES&E Sample Management

Dear Ms. Ayres and Mr. Weiss:

ANALYTICAL REPORT FOR 200-UP-2 SOIL EXTRACTION - FT6114

Attached is the analytical report in support of this project.

If you have any questions regarding these analyses, please contact either Mr. Don Smith at 373-2482 or Ms. Joy Smith at 373-9171.

Very truly yours,

W. S. Callaway
(FOR)
L. L. Lockrem, Manager
Special Analytical Studies

sir

Attachment 1

Attachment

ANALYTICAL REPORT

for

FAST PROJECT FT6114
200-UP-2 Soil Extraction

Consisting of
19 pages

ANALYTICAL REPORT

for

FAST PROJECT FT6114
200-UP-2 Soil Extraction

prepared for

Bechtel Hanford, Inc.
P.O. Box 969
Richland, Washington 99352

September 13, 1996

Table of Contents

Project Sampling and Analysis Case Narrative

INTRODUCTION

On August 28, 1996, ERC personnel collected a soil sample from container ESFG-93-0549 or ESFG-93-0550 (back-up) located in the 200-UP-2 area. The sample was collected under SAF# B96-184 and assigned sample number B0HYX9. The soil sample was transported to the Field Assessment Services Team (FAST) facility by Sampling and Mobil Laboratories (SML) personnel.

FAST personnel carried out a Toxicity Characteristics Leaching Procedure (TCLP) extraction of the soil sample following the protocols of EPA SW-846 Method 1311. The TCLP extract was then divided into two equal aliquots.

Under SAF# B96-185, approximately 50 ml of the extract was sent to the WHC-AS 222-S facility for radiological screening on August 30, 1996. Following receipt of preliminary rad screening results on September 6, 1996, one of the TCLP extract aliquots was transferred to SML personnel for subsequent transport to Quanterra Environmental Services. Quanterra is to perform ICP Metals analysis of the extract per EPA SW-846 Method 6010A.

The TCLP extract aliquot was delivered to the Richland facilities of Quanterra Environmental Services on September 9, 1996. FAST will retain the remaining aliquot until notified by the customer that the requested Quanterra analyses have been received.

All sample transfers were conducted under Chain of Custody.

ANALYSES REQUESTED

Laboratory Sample ID	Customer Sample ID	Laboratory	Date Sampled	Analysis Requested	Procedure
FT6114-01	B0HYX9	AS-FAST	8/28/96	TCLP Extraction	WHC-IP-1128 3.48
S96-M000063	B0HYX9	AS-222-S		Gross α/β GEA	AS-222-S Lab Specific
	BOHYX9	Quanterra		ICP Metals	SW-846 6010A

PREPARATION

The sample was extracted using SAS WHC-IP-1128, 3.48 (Toxicity Characteristic Leaching Procedure). This method follows the SW-846 TCLP procedure 1311. A percent solids determination was performed following the protocol listed in 3.48. The solids determination revealed that the sample contained less than 0.5% liquids and therefore was extracted using two liters of TCLP extraction fluid. After extraction, the sample was filtered and a 50 ml aliquot was delivered to AS-222-S laboratory for radiological screening. Following the radiological screening measurements, a 500 ml aliquot of the extract was delivered to Quanterra Environmental Services for further analysis.

QUALITY CONTROL

Gross α/β analysis and GEA were performed at the 222-S laboratory and QC data is available upon request. There were no quality control samples prepared per telecon with Rich Weiss.

REFERENCES

EPA July 1992, Test Methods for Evaluating Solid Waste (SW-846), Third Edition; U.S. Environmental Protection Agency, Washington, D.C.

WHC-IP-1128, Special Analytical Studies Procedure Manual.

CHAIN-OF-CUSTODY INFORMATION

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B96-159-2	Page 1 of 1

Collector Doug Bowers/Bob Fahlberg	**Company Contact** John Ludowise	**Telephone No.** 372-9664	**Data Turnaround** 24 Hours
Project Designation Site Waste Characterization	**Sampling Location** Hanford Site	**SAF No.** ~~B96-159~~ B96-184	
Ice Chest No.	**Field Logbook No.** EFL-1133-1	**Method of Shipment** Hand delivered	
Shipped To ~~222-S Laboratory~~ FAST	**Offsite Property No.**	**Bill of Lading/Air Bill No.**	

POSSIBLE SAMPLE HAZARDS/REMARKS
Unknown

Special Handling and/or Storage

Preservation	None	none									
Type of Container	P	2 G									
No. of Container(s)	1	1									
Volume	20ml	250ml									
SAMPLE ANALYSIS	Rad Screen	TCLP METALS Extract									

Sample No.	Matrix *	Sample Date	Sample Time										
B0HYX9	S	8-28-96	1156		X								

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
Doug Bowers	8-28-96/1219	JG HOGAN JG HOGAN	8-28-96/1219
JG HOGAN JG HOGAN	8-28-96/1245	Lyg Smith	8/28/96 1245

SPECIAL INSTRUCTIONS

Matrix *

S	= Soil
SE	= Sediment
SO	= Solid
SL	= Sludge
W	= Water
O	= Oil
A	= Air
DS	= Drum Solids
DL	= Drum Liquids
T	= Tissue
WI	= Wipe
L	= Liquid
V	= Vegetation
X	= Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

9735535.1107

Field Assessment Services Team
Special Analytical Services
Hanford Technical Services
Richland, WA. 99352
(509) 373-3798 FAX (509) 373-3193

Chain-of-Custody/ Sample Analysis Request

SAS # _____

Date 8/30/96

Page 1 of 1

Project _____ Job No. _____

Client Jy Smith Telephone No. 3-7191

Project Location _____

Sampler L Lockard Telephone No. _____

Testing Parameters

Turnaround Time
- ☐ Standard
- ☒ Accelerated
- ☐ Other _____

Hold Time _____

FAST ID	Date	Time	*	No. of Containers	Gross Alpha/Beta	GEA									Observations/Comments	Customer ID
FT6114-D1T1	8-29-96		L	1	X	X									TCLP Extract	

Special Shipment/Handling or Storage Requirements

Possible Sample Hazards/ Remarks pH < 2

☐ Rad Screening
☐ Field Analysis

Relinquished By	Date/Time	Received By	Date/Time
Jy Smith	8/30/96 1255	[signature]	8/30/96 12:45

* Matrix

S =Soil	DS =Drum Solids
SE =Sediment	DL =Drum Liquids
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	Disposed By	Date/Time

Westinghouse Hanford Company

9713535.1108

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No.
		Page 1 of 1

Collector ~~L. Lockard~~ W.S. CALLAWAY	Contact/Requestor R. Weiss	Telephone No.	MSIN FAX
SAF No. B96-185	Sample Origin 200-UP-2	Purchase Order/Charge Code	
Project Title	Logbook No.	Ice Chest No.	Temp.
Shipped To (Lab) QUANTERRA	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	Data Turnaround	Offsite Property No.	N/A

Sample No.	Lab ID	•	Date	Time	No./Type Container	Sample Analysis	Preservative
BQJ0K8	FT6114-01T1	L	8/29/96		1/ ~~1L P~~ 500ml P	ICP METALS (Ag,As,Ba,Cd,Cr,Pb,Se,~~Hg~~)	Nitric Acid
BQJ0K8	FT6114-01TB	L	8/29/96		1/500ml P	TCLP BLANK	NITRIC A...

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ☐ Yes ☐ No

Radioactive

SPECIAL INSTRUCTIONS Hold Time

Relinquished By Print	Sign	Date/Time	Received By Print	Sign	Date/Time
W.S. CALLAWAY	W.S Callaway	9/6/96 1511	K.R. Hulse	K.R. Hulse	9/6/96 1511
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 Solids		
SE = Sediment	DL = Drum Liquids		
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

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

DISTRIBUTION: White - Remain with Samples Color - Customer

BC-6000-828 (12/95)

0071535 1109

222-S DATA

INTERIM RESULTS REPORT 09 Sep 1996

Customer ID: FT6114-01
Lab Sample#: S96M000063

Sample Date: 08/28/96 00:00
Recv. Date: 08/30/96 12:45

PARAMETER	RESULTS	UNITS
Alpha and Beta, Liquid Samples		
Alpha in Liquid Samples	< 2.91E-06	uCi/mL
Alpha Liq.- Rel. % Count Error	5.00E+02	% Ct. Error
Beta in Liquid Samples	7.12E-03	uCi/mL
Beta Liq.- Rel. % Count Error	4.40E-01	% Ct. Error
GEA:Cs137,Co60,Eu154-155,Am241		
Cobalt-60 by GEA	< 1.385e-05	uCi/mL
Co-60 GEA Rel. % Count Error	n/a	% Ct. Error
Cesium-137 by GEA	< 4.505e-05	uCi/mL
Cs-137 GEA Rel. % Count Error	n/a	% Ct. Error
Europium-154 by GEA	< 6.386e-05	uCi/mL
Eu-154 GEA Rel % Counting Err	n/a	% Ct. Error
Europium-155 by GEA	< 6.658e-05	uCi/mL
Eu-155 GEA Rel % Counting Err	n/a	% Ct. Error
Americium-241 by GEA	< 1.817e-04	uCi/mL
Am-241 GEA Rel. % Count Error	n/a	% Ct. Error
OTHER ANALYSIS		
Dose Rate in mrad/hour	< .5	mrad/hour

LETTER OF INSTRUCTION (LOI)

Bechtel Hanford, Inc.

Richland Corporate Center I
3350 George Washington Way
Richland, WA 99352
Telephone: (509) 375-4640 Fax: (509) 375-4644

Job No. 22192
Written Response Required? NO
Cleese CCN: N/A
OU: 200-UP-2
TSD: N/A
ERA: N/A
Subject Code: 9080

AUG 28 1996

Westinghouse Hanford Company
L. L. Lockrem, Manager
Special Analytical Studies
P.O. Box 1970, S3-90
Richland, Washington 99352

Dear Mr. Lockrem:

Subject: **LETTER OF INSTRUCTION FOR SPECIAL ANALYTICAL STUDIES - TCLP SAMPLE EXTRACTION, WORK ORDER X60545**

SCOPE

The Special Analytical Studies organization is requested to perform the following services:

- Retrieve from 200-UP-2 area, one soil sample obtained from drum ESFG-93-0549 or ESFG-95-0550. Contact D. L. Bowers (376-8498) to arrange transfer of the sample.
- Perform toxic characteristic leaching procedure (TCLP) extraction on the soil sample as per the requirements of EPA SW-846 method 1311.
- Remove screening fraction from extract, deliver to 222-S Laboratory, and request radionuclide screening analysis (to include gamma energy analysis).
- Equally divide remaining extract liquid into two containers.
- If 222-S screening results meet Quanterra Environmental Services (QES) acceptance criteria, deliver one container to the QES Richland laboratory. Copy of screening results must accompany extract material.
- Retain remaining container for a minimum of one month pending further instruction on this sample. After one month, with prior approval from the Environmental Restoration Contractor (ERC), dispose of remaining materials.
- Sample materials must be maintained under chain-of-custody control at all times.

Environmental Excellence
HANFORD

AUG 28 1996

SCHEDULE

The above activities shall be completed within 6 working days of receipt of the sample material from ERC. Any delay to this schedule shall be communicated to R. L. Weiss as soon as practicable.

REPORTS

A summary report of work performed shall be provided within 10 working days of completion of sample extraction.

COST

Work shall be charged to work order X60545. Charges shall not exceed $4,000 without prior authorization from ERC. Screening work at 222-S shall be charged to work order X60520.

Please contact Mr. R. L. Weiss at 375-9425 or the undersigned at 372-9664 if you have any questions.

Sincerely,

J. R. James, 100 Area Task Lead
Remedial Action and Waste Disposal Project

Attachment: Work Order X60545
Work Order X60520

cc: J. Y. Smith S3-90, w/a
W. S. Callaway S3-90, w/a

JRJ:mck

SAMPLING AUTHORIZATION FORM (SAF)

ERC LABORATORY MANAGEMENT SAMPLING AUTHORIZATION FORM

SAF Number: B96-184 **Rev:** 0

Program Type RCRA Waste Design **Project ID** SITE WST CHAR

Project Type RCRA Characterization **Operable Unit** N/A

Task ID 1 **Round Number** 0

SAF Title IDW Sampling for Sample Profile -- Radioactive Soil Extraction

Task Manager Ludowise, JD **Requester** Ludowise, JD

Charge Codes-

Sample Management	PA5L1	Sampling Services	PA5L1
Technical Oversight	PA5L1	Decontamination	X60521
Analytical Services (WHC)	X60545		

Sample Management Function Project Coordinator Weiss, RL

Estimated Start Date 08/28/96 **Estimated Completion Date** 08/30/96

SampleArea Hanford Site **Estimated Number of Samples** 1

Sampling Organizations

ERC Field Sampling

Laboratory/Turnaround/Data Deliverable **Matrix** Soil

Primary: Special Analytical Servic\3 Business Days\Summary

SAF Comment

** Samples to be obtained from container EFSG-93-0549 (primary) or EFSG-93-0550 (backup).

** Chain of custodics and applicable field paperwork are to be Faxed to Doris Ayres (372-9052).

COC Comments

** Samples are to be taken for TCLP metals, ICP fraction only. Extraction is to be performed by the WHC SAS Organization (as per SAF B96-184). After extraction, one-half of extract volume is to be screened for radionuclides and then sent to Quanterra for ICP analysis (as per SAF B-96-185). Remaining extract to be held by WHC.

Post-it® Fax Note 7671 | Date 08/28 | # of pages ▶ 5
To Joy Smith | From Laura
Co./Dept. | Co.
Phone # | Phone # 2-9534
Fax # 3-3193 | Fax #
SAFs B96-184 and -185

SAFStatus: Issued 8/28/96 8:30:00 AM

RLN 4-28-96

ERC Laboratory Management

Field Sampling Requirements

Laboratory Analysis

Laboratory: **Special Analytical Servic**

Matrix: **Soil**

Parameter / Analysis	Reference Method	Container / Volume	VolReq	Preservation	Holding Times
TCLP Metals Extraction – EPA1311	EPA1311	G 150 g	Full QC	None	180 Days

Key to Container Types

G = Glass
Gs = Glass w/ septum cap
Gs*= Glass w/septum cap- no head space in container
P = Plastic (Polyethylene)
aG = Amber Glass
aGs = Amber Glass w/ septum cap
aGs*= Amber Glass w/septum cap- no head space in container

FSR Comment:

SAF Number: B96-184 Page 1 SAF Status: Issued 8/28/96 8:30:00 AM

ERC LABORATORY MANAGEMENT SAMPLING AUTHORIZATION FORM

SAF Number: B96-185 **Rev:** 0

Program Type RCRA Waste Design **Project ID** SITE WST CHAR

Project Type RCRA Characterization **Operable Unit** N/A

Task ID 1 **Round Number** 0

SAF Title IDW Sampling for Sample Profile -- Extract Analysis

Task Manager Ludowise, JD **Requester** Ludowise, JD

Charge Codes-

Analytical Services	PA5L1	Sample Management	PA5L1
Sampling Services	PA5L1	Technical Oversight	PA5L1
Rad Screening (222-S)	X60520	Decontamination	X60521

Sample Management Function Project Coordinator Weiss, RL

Estimated Start Date 08/28/96 **Estimated Completion Date** 08/30/96

SampleArea Hanford Site **Estimated Number of Samples** 1

Sampling Organizations

WHC Special Analytical Services

Laboratory/Turnaround/Data Deliverable **Matrix** Other Liquid

Primary: 222-S Laboratory\24 Hours\Single Sheet Summary

Primary: Quanterra\3 Business Days\Summary

SAF Comment

** Sample Matrix -- Extraction Liquid.

** Samples to be obtained from container EFSG-93-0549 (primary) or EFSG-93-0550 (backup).

** Chain of custodies and applicable field paperwork are to be Faxed to Doris Ayres (372-9052).

COC Comments

** Samples are to be taken for TCLP metals, ICP fraction only. Extraction is to be performed by the WHC SAS organization (as per SAF B96-184). After extraction, one-half of extract volume is to be screened for radionuclides and then sent to Quanterra for ICP analysis (as per SAF B-96-185). Remaining extract to be held by WHC.

Date 08/28/96 SAFStatus: Issued 8/28/96 8:30:00 AM

RLN 8-28-96

ERC Laboratory Management

Field Sampling Requirements

Laboratory Analysis

Laboratory: 222-S Laboratory

Matrix: Other Liquid

Parameter / Analysis	Reference Method	Container / Volume	VolReq	Preservation	Holding Times
Rad Screen	RADSCREEN	G/P 20 ml	Minimum	None	ASAP

Key to Container Types

G = Glass
Gs = Glass w/ septum cap
Gs* = Glass w/septum cap- no head space in container
P = Plastic (Polyethylene)
aG = Amber Glass
aGs = Amber Glass w/ septum cap
aGs* = Amber Glass w/septum cap- no head space in container

FSR Comment:

SAF Number: B96-185

SAF Status: Issued

8/28/96 8:30:00 AM

BHI-EE-001 (12/94)

RLW 9-5-96

ERC Laboratory Management

Field Sampling Requirements

Laboratory Analysis

Laboratory: **Quanterra**

Matrix: **Other Liquid**

Parameter / Analysis	Reference Method	Container / Volume	VolReq	Preservation	Holding Times
ICP Metals - 6010A (SW-846) Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver	EPA6010A	G/P 500 ml	Minimum	None	6 Months
Activity Scan	ACTIVITYSCAN		Minimum		ASAP

Key to Container Types

G = Glass
Gs = Glass w/ septum cap
Gs* = Glass w/septum cap- no head space in container
P = Plastic (Polyethylene)
aG = Amber Glass
aGs = Amber Glass w/ septum cap
aGs* = Amber Glass w/septum cap- no head space in container

FSR Comment:

END OF PACKAGE