



Quanterra Incorporated  
13715 Rider Trail North  
Earth City, Missouri 63045

0051620

314 298-8566 Telephone  
314 298-8757 Fax

CASE NARRATIVE

Bechtel Hanford Incorporated  
3350 George Washington Way  
Richland, Washington 99352

June 24, 1999

Attention: Joan Kessner



Project Number	:	550.202
SDG	:	W02796 2996 Dsa 6/28/99
Number of Samples	:	One (1)
Sample Matrix	:	other solid
Data Deliverable	:	Summary
Date SDG Closed	:	June 3, 1999



II. Introduction

On June 3, 1999, one (1) "solid" sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The sample was received at Quanterra, St. Louis on 06/04/99 at a temperature of 4° C. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID:

<u>St. Louis ID</u>	<u>BHI ID</u>	<u>SAF ID</u>	<u>Matrix</u>	<u>Date of Receipt</u>
21449-001	B0VLM2	B99-024	SOIL	03-JUN-99

II. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested:           Metals by ICP (TCLP) - 1311/6010A  
  Mercury (TCLP) - 1311/7470

Deviation from Request:   none

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#### IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

- QCBLK- Quality Control Blank, Method Blank
- QCLCS- Quality Control Laboratory Control Sample, Blank Spike
- MS- Matrix Spike
- MSD- Matrix Spike Duplicate.

#### V. Comments

General: The matrix for this sample is a nitric acid bound into a solid with grout.

TCLP Metals: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

Sample B0VLM2 (21449-001) and its MS/MSD were prepped 25 mls to 100 mls for the Mercury digestion and undiluted for the ICP digestion. The extraction blank PBT200820 was prepped undiluted for both digestions.

The recoveries of the matrix spike and the matrix spike duplicate for the following list of elements were less than 75%. Therefore all associated data was flagged with a "N".

	% REC MS	% REC MSD
Barium	71.1	69.5
Cadmium	72.8	72.5
Lead	73.3	72.9

The percent difference for the Barium serial dilution (15.0) was greater than the 10% acceptance criteria and was indicated on the Form 1s with the "E" flag.

Bechtel Hanford Incorporated

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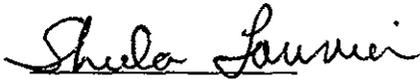
SDG: W02796 W02996 DSA 6/28/99

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I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

A handwritten signature in cursive script that reads "Shiela Louvier".

Shiela M. Louvier

St. Louis Project Manager

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W02996

Quanterra June 07, 1999 09:03 am  
Account: 10722 Project: 550.202 Quanterra-Richland QAS No. 550.202 Rev. 3  
Master Sample Login: 21449

Project Manager: S. Louvier

Reviewed By and Date: *J. Smith 6-7-99*

Sample Header Template:

Sample No.	Client ID	C-Matrix	Date Collected	Received	Due	Shipper	Rad Category	Rad Sample No
#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers: % Filled)
21449-001	BOVLM2	Solid	01-JUN-99 10:00	03-JUN-99 14:30	24-JUN-99	AIRBORNE	1	Screening not Required
SAF B99-024// Matrix is nitric acid bound into a solid with grout.								
1	PN Plastic-250ml	EXTMETAL/TCLP/Q4	S	COLD	21-JUN-99	29-JUN-99	S6B	(446143:100)
1		HG/TCLP/Q4	S	COLD	21-JUN-99	29-JUN-99	S6B	(446143:100)
1		ICAP/TCLP/Q4	S	COLD	21-JUN-99	28-NOV-99	S6B	(446143:100)
21449-001MS	BOVLM2	Solid	01-JUN-99 10:00	03-JUN-99 14:30	24-JUN-99	AIRBORNE	1	Screening not Required
SAF B99-024// Matrix is nitric acid bound into a solid with grout.								
1	PN Plastic-250ml	EXTMETAL/TCLP/Q4	S	COLD	21-JUN-99	29-JUN-99	S6B	(446143:100)
1		HG/TCLP/Q4	S	COLD	21-JUN-99	29-JUN-99	S6B	(446143:100)
1		ICAP/TCLP/Q4	S	COLD	21-JUN-99	28-NOV-99	S6B	(446143:100)
21449-001MSD	BOVLM2	Solid	01-JUN-99 10:00	03-JUN-99 14:30	24-JUN-99	AIRBORNE	1	Screening not Required
SAF B99-024// Matrix is nitric acid bound into a solid with grout.								
1	PN Plastic-250ml	EXTMETAL/TCLP/Q4	S	COLD	21-JUN-99	29-JUN-99	S6B	(446143:100)
1		HG/TCLP/Q4	S	COLD	21-JUN-99	29-JUN-99	S6B	(446143:100)
1		ICAP/TCLP/Q4	S	COLD	21-JUN-99	28-NOV-99	S6B	(446143:100)

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3\*-Sample has not been rad screened.

Collector <i>Cliff Elledge</i>	Company Contact Dave Encke	Telephone No. 373-3461	Project Coordinator Trent, SJ	Price Code IV/FE	Data Turnaround 21 Days
Project Designation 233-S Plutonium Concentration Facility Process Areas - Ot	Sampling Location 233-S 200 west	SAF No. B99-024			
Ice Chest No. ERC 99-005	Field Logbook No. EFL 1133-7	Method of Shipment Gov vehicle			
Shipped To Quanterra Incorporated	Offsite Property No. <i>RSR # 107951</i> <i>878 6-3-99</i>	Bill of Lading/Air Bill No. <i>N/A</i>			

COA R233ST2 FOC

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None										
	Special Handling and/or Storage	Type of Container	<i>G/P 800</i>	<i>P</i>									
	No. of Container(s)	<i>5</i>	<i>1</i>										
	Volume	<i>20g</i>	<i>250mL</i>										

SAMPLE ANALYSIS				Activity Scan	Metals by ICP (Pb, Cd, Cu, Ni, Cr, Mn, Fe, Zn, Al, Co, Ni, Mo, V, Ti, W, Bi, Se, Sb, Sn, Si, S, P, B, As, Br, I, K, Li, Na, Rb, Cs, Sr, Ba, Ca, Mg, Be, Sc, Y, Zr, Hf, Ta, Nb, Bi, Pb, Sn, Sb, Te, Se, Mo, W, Re, Os, Ir, Pt, Au, Ag, Hg, Tl, Bi, Po, At, Rn, Fr, Ac, Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr)									
Sample No.	Matrix *	Sample Date	Sample Time	<i>NOT RECEIVED</i>	<i>100%</i>									
BOVLM2	Other Solid	<i>6-1-99</i>	<i>1000</i>	<i>X</i>	<i>X</i>									

CHAIN OF POSSESSION	Sign/Print Names			SPECIAL INSTRUCTIONS <i>R233ST2 acc sampling</i>				Matrix * Soil Water Vapor Other Solid Other Liquid	
	Relinquished By <i>Cliff Elledge</i>	Date/Time <i>6-3-99 14:20</i>	Received By <i>Doug Bowers</i>	Date/Time <i>6-3-99/1420</i>					
	Relinquished By <i>Doug Bowers</i>	Date/Time <i>6-3-99/1430</i>	Received By <i>Mike Parnell</i>	Date/Time <i>6-3-99-1430</i>					
	Relinquished By <i>Mike Parnell</i>	Date/Time <i>6-3-99 1620</i>	Received By <i>Cliff Elledge</i>	Date/Time <i>6/4/99 0830</i>					

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

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Login No. 21449-0  
W02996

**Condition Upon Receipt Variance Report  
St. Louis Laboratory**

Client: Bechtel Hanford Inc.  
Project No: 550-202  
Shipper/No: AIRBORNE

Date: 6-4-99 Time: 0830  
Initiated by: [Signature]  
RFA/COC Numbers: B99-024-06 MS 6-7-99

**Condition/Variance (Check all that apply):**

1. <input type="checkbox"/> Sample received broken/leaking.	8. <input type="checkbox"/> Sample ID on container does not match sample ID on paperwork. Explain: _____
2. <input type="checkbox"/> Sample received without proper preservative. <input type="checkbox"/> Cooler temperature not within $4-C \pm 2-C$ Record temperature: _____	9. <input type="checkbox"/> All coolers on airbill not received with shipment.
<input type="checkbox"/> pH _____	10. <input type="checkbox"/> Other (explain below): _____
<input type="checkbox"/> other: _____	
3. <input type="checkbox"/> Sample received in improper container.	
4. <input type="checkbox"/> Sample received without proper paperwork. Explain: _____	
5. <input type="checkbox"/> Paperwork received without sample.	
6. <input type="checkbox"/> No sample ID on sample container.	
7. <input type="checkbox"/> Custody tape disturbed/broken/missing.	

No variances were noted during sample receipt. Cooler Temperature Upon Receipt: 4°  
Temperature Variance Does Not Affect the Following Analyses: \_\_\_\_\_

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Corrective Action:**

- Client's Name: \_\_\_\_\_ Informed verbally on: \_\_\_\_\_ By: \_\_\_\_\_
- Client's Name: \_\_\_\_\_ Informed in writing on: \_\_\_\_\_ By: \_\_\_\_\_
- Sample(s) processed "as is".
- Comments: \_\_\_\_\_  
Sample(s) on hold until: \_\_\_\_\_ If released, notify: \_\_\_\_\_

Sample Control Supervisor Review: [Signature] Date: 6-4-99  
Project Management Review: Jennifer Smith Date: 6-7-99

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

Bechtel Hanford Incorporated  
3350 George Washington Way  
Richland, WA 99352

Project: 550.202

Sample Date : 06/01/99  
Receipt Date : 06/03/99  
Report Date : 06/17/99

Category : TCLP Mercury EPA 7470  
Matrix : SOLID

Client ID: BOVLM2

Quanterra ID : 21449-001

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	06/10/99	06/15/99	06/15/99	0.00040	MG/L	U	0.00080	0.20	4
Arsenic	EPA 6010	06/10/99	06/14/99	06/14/99	0.0018	MG/L	U	0.30	5.0	1
Barium	EPA 6010	06/10/99	06/14/99	06/14/99	8.7	MG/L	EN	0.20	100	1
Cadmium	EPA 6010	06/10/99	06/14/99	06/14/99	0.00090	MG/L	BN	0.005	1.0	1
Chromium	EPA 6010	06/10/99	06/14/99	06/14/99	0.050	MG/L		0.010	5.0	1
Lead	EPA 6010	06/10/99	06/14/99	06/14/99	0.0090	MG/L	BN	0.10	5.0	1
Selenium	EPA 6010	06/10/99	06/14/99	06/14/99	0.0024	MG/L	U	0.25	1.0	1
Silver	EPA 6010	06/10/99	06/14/99	06/14/99	0.00090	MG/L	U	0.010	5.0	1

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Bechtel Hanford Incorporated  
3350 George Washington Way  
Richland, WA 99352

Project: 550.202

Sample Date : 06/01/99  
Receipt Date : 06/03/99  
Report Date : 06/17/99

Category : TCLP Mercury EPA 7470  
Matrix : SOLID

Client ID: BOVLM2

Quanterra ID : 21449-001MS

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	06/10/99	06/15/99	06/15/99	100	%REC				4
Arsenic	EPA 6010	06/10/99	06/14/99	06/14/99	90	%REC				1
Barium	EPA 6010	06/10/99	06/14/99	06/14/99	71	%REC	N			1
Cadmium	EPA 6010	06/10/99	06/14/99	06/14/99	73	%REC	N			1
Chromium	EPA 6010	06/10/99	06/14/99	06/14/99	77	%RBC				1
Lead	EPA 6010	06/10/99	06/14/99	06/14/99	73	%REC	N			1
Selenium	EPA 6010	06/10/99	06/14/99	06/14/99	86	%REC				1
Silver	EPA 6010	06/10/99	06/14/99	06/14/99	94	%REC				1

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Bechtel Hanford Incorporated  
3350 George Washington Way  
Richland, WA 99352

Project: 550.202

Sample Date : 06/01/99  
Receipt Date : 06/03/99  
Report Date : 06/17/99

Category : TCLP Mercury EPA 7470  
Matrix : SOLID

Client ID: BOVLM2

Quanterra ID : 21449-001MSD

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	06/10/99	06/15/99	06/15/99	99	%REC				4
Arsenic	EPA 6010	06/10/99	06/14/99	06/14/99	90	%REC				1
Barium	EPA 6010	06/10/99	06/14/99	06/14/99	70	%REC	N			1
Cadmium	EPA 6010	06/10/99	06/14/99	06/14/99	72	%REC	N			1
Chromium	EPA 6010	06/10/99	06/14/99	06/14/99	76	%REC				1
Lead	EPA 6010	06/10/99	06/14/99	06/14/99	73	%REC	N			1
Selenium	EPA 6010	06/10/99	06/14/99	06/14/99	85	%REC				1
Silver	EPA 6010	06/10/99	06/14/99	06/14/99	94	%REC				1

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U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: QUANTERRA MO Contract: 550.202
Lab Code: ITMO Case No.: SAS No.: SDG No.: W02796
SOW No.: SW846.

Table with 2 columns: EPA Sample No. and Lab Sample ID. Rows include BOVLM2, BOVLM2SD, BOVLM2S, PBT200820 and their corresponding Lab Sample IDs.

Were ICP interelement corrections applied ? Yes/No YES
Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name:
Date: Title:

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TCLP



Analytical Data Package Prepared For

Bechtel Hanford

Chemical Analysis By

Quanterra Environmental Services  
St. Louis Laboratory

Sample Delivery Group Number: ~~W02796~~ <sup>9 DEA</sup> 6/28/99

W02796 Reyes 7/16/99 per  
Joan Kessner

BHI Identification Number  
BOVLM2

Quanterra Identification Number  
21449-001

