0045007

W0968-QES-505

June 27, 1996

JUN 1996
RECEIVED
SDLA

Karl Pool
Buyer's Technical Representative
Westinghouse Hanford
P.O. Box 1970
2355 Stevens Drive
Richland, WA 99352

Reference: Contract MPV-SVV-239000.

Dear Mr. Pool:

Accompanying this letter are the Data Package Deliverable for chemical analysis on the following WHC samples:

SDG NUMBER	SAF NUMBER
W1021	96-016
W1022	96-013
W1025	96-N/A
W1030	96-032
W1036	96-032

AUG 1996
RECEIVED
EDMC

If you have any questions regarding this data package or require any additional information please contact me at 375-3131.

Sincerely,

Jodie Carnes
Document Control Officer

Receipt of this letter and the packages are acknowledged by:

Lou Kay Lisl 6/27/96 12:20 pm
Name Date Time

XC: Vicki Parr
Wade Price
Van Pettey File

May 16, 1996

MAY 1996
RECEIVED
SDLA

Karl Pool
Buyer's Technical Representative
Westinghouse Hanford
P.O. Box 1970
2355 Stevens Drive
Richland, WA 99352

Reference: Contract MPV-SVV-239000.

Dear Mr. Pool:

Accompanying this letter are the Data Package Deliverable for chemical analysis on the following WHC samples:

SDG NUMBER	SAF NUMBER
W0963	96-014
W0968	96-016

If you have any questions regarding this data package or require any additional information please contact me at 375-3131.

Sincerely,

Jodie Carnes
Document Control Officer

Receipt of this letter and the packages are acknowledged by:

Sandra K Wallace 5/16/96 3:50
Name Date Time

XC: Vicki Parr
Wade Price
Van Pettey File

SAMPLE DATA AND LABORATORY ADMINISTRATION

RECORD OF DISPOSITION REV 1

ROD-96-0023
Record of Disposition No.

DATE: May 17, 1996

LABORATORY: Quanterra

PROJECT TITLE/SAF #: Flush PUREX Vessels - 2/95-013
PUREX Vessels' Flush Solutions/96-016

NCR NO.: N/A

SAMPLE IDENTIFICATION NUMBERS: 95013-01.B06, 95013-02.B06, B0HNW9, B0HNX0

DESCRIPTION OF EVENT: The above listed samples were originally analyzed for Lead by method 6010. Due to regulatory concerns the detection limit was considered to high and the customer asked that the samples be reanalyzed for lead using graphite furnace method 7421 to lower the detection limit.

DISPOSITION OF SAMPLES: Quanterra is to reanalyze the above listed samples using method 7421 for Lead by graphite furnace. A duplicate is to be run for each sample and all applicable QC such as matrix spike, matrix spike duplicate, QC Blank, and QC Laboratory Control Sample are also to be run. These samples have a Priority data turnaround requirement with the clock starting 5/17/96 and the data package due by 6/3/96. Initial data results are to be sent via cc:Mail to SDLA as soon as they are available.

APPROVAL SIGNATURES:

S.M.Steele S.M. Steele 5/17/96
SDLA Project Coordinator (Print/Sign Name) Date

C.N.Villalobos 5/20/96
Technical Representative (Print/Sign Name) Date

Analytical Data Package Prepared For

Westinghouse Hanford

Chemical Analysis By

Quanterra Environmental Services
St. Louis Laboratory

Sample Delivery Group Number: W0968

MAY 1996
RECEIVED
SDLA

WHC IDENTIFICATION NUMBER	QUANTERRA ID NUMBER
B0HNW9	10772-001
B0HNX0	10772-002

RECORD COPY

Quanterra Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

April 22, 1996

Attention: Karl Pool

Project number	:	519.136
Date Received by Lab	:	April 3, 1996
Number of Samples	:	Two (2)
Sample Type	:	Liquid
SDG Number	:	W0968
Data Deliverable	:	Summary

I. Introduction

On April 3, 1996, two (2) liquid samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
10772-001	B0HNW9	60404801	Liquid	4/03/96
10772-002	B0HNX0	60404802	Liquid	4/03/96

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: pH by EPA method 9040. TOC by EPA method 9060. VOA by EPA method 8240. TAL ICP Metals by EPA method 6010. Arsenic by EPA method 7060. Selenium by EPA 7740. Mercury by EPA method 7470.

RECORD COPY

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate and/or Sample Duplicate analyses were performed per the protocol for each analyte. pH analysis uses only Sample Duplicate for matrix QC.

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

V. Comments

Shipping and Receiving
There were no comments or nonconformances associated with the shipping and receiving of these samples.

General Reporting
The results are reported in ug/L, mg/L, and mg/kg. Where sample volume would allow the samples to be analyzed as waters which gives the lowest possible detection limits, the results are reported in ug/L or mg/L. Where sample volume was insufficient to analyze as a water (Metals), the sample results are reported in mg/kg. Batch QC reports reflect the water methods used and results are in ug/L. The Density of both samples was determined to be 1.00 g/ml. This value can be used to convert each result to the desired units.

Volatiles
There were no comments or nonconformances associated with the volatiles analysis.

RECORD COPY

Metals
The sample was digested 1.0 g to 100 mls for all analyzes due to insufficient sample volume.

All the Calcium data was flagged with an " E " because the percent difference (33.7) for the serial dilution was greater then 10.

The recoveries of the Silver matrix spike (68.4%) and matrix spike duplicate (68.1%) were less than 80%, therefore all associated data was flagged with an " N".

Percent solids was not determined for the samples in SDG W0960. Due to software configuration, the CLP forms list solid sample result units as " dry weight" and % solids as " 100 ". The results on the forms are actually mg/Kg as is and are not corrected for percent solids. The figure of 100 was used as percent solids for calculation purposes only and does not represent measured solids content of the samples.

Wet Chemistry
There were no comments or nonconformances associated with the pH or TOC analyses.

I certify that this data 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:

Wade H. Price
Project Manager
Quanterra Environmental Services, Inc.
e:\\sqtlmo01\price$\abbydave\hanford\hanw0968.nar

Quanterra April 04, 1996 02:10 pm
Account: 10722 Project: 519.136 Quanterra Richland QAS No. 861 Rev 1
Master Sample Login: 10772

Project Manager: W. Price

Draft: (Final:) Entered and Reviewed by: Henry K. McLaney PM Review: Abby Vola

Sample Header Template:

Sample No. / Comments / # / Data:	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
10772-001	B0HNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED-EX	3*	R4853 001
NOTE: RICHLAND ID 60404801								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	Worksheet Numbers.% Filled
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306.99)
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223306.99)
1		ICAP/6010/Q4	S	COLD	15-APR-96	25-SEP 96	T5D	(223306.99)
1		PH/9040/Q4	S	COLD	15-APR-96	30 MAR 96	T5D	(223305.100)
1		SE/7740/Q4	S	COLD	15-APR-96	25-SEP 96	T5D	(223306.99)
1		TOC/9060/Q4	S	COLD	15-APR-96	26 APR 96	T5D	(223305.100)
1		VOA/8240/Q4	S	COLD	15-APR-96	12-APR 96	109H	(223304.100)

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
10772-001DUP	B0HNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED EX	3*	R4853 001
NOTE: RICHLAND ID 60404801								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	Worksheet Numbers.% Filled
1	VI - Vial-40ml	PH/9040/Q4	S	COLD	15-APR-96	30-MAR 96	T5D	(223305.100)
1		TOC/9060/Q4	S	COLD	15-APR-96	26 APR 96	T5D	(223305.100)

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
10772-001MS	B0HNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED EX	3*	R4853 001
NOTE: RICHLAND ID 60404801								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	Worksheet Numbers.% Filled
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306.99)
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223306.99)
1		ICAP/6010/Q4	S	COLD	15-APR-96	25 SEP 96	T5D	(223306.99)
1		SE/7740/Q4	S	COLD	15-APR-96	25 SEP 96	T5D	(223306.99)
1		TOC/9060/Q4	S	COLD	15-APR-96	26 APR 96	T5D	(223305.100)
1		VOA/8240/Q4	S	COLD	15-APR-96	12 APR-96	109H	(223304.100)

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
10772-001MSD	B0HNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED-EX	3*	R4853 001
NOTE: RICHLAND ID 60404801								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	Worksheet Numbers.% Filled
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP 96	T5D	(223306.99)
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223306.99)
1		ICAP/6010/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306.99)
1		SE/7740/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306.99)
1		VOA/8240/Q4	S	COLD	15-APR-96	12-APR-96	109H	(223304.100)

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
10772-002	B0HNX0	Liquid	29-MAR-96 09:00	03-APR-96 10:30	17-APR-96	FED-EX	1	Screening not Required
NOTE: RICHLAND ID 60404802								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	Worksheet Numbers.% Filled
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223309.99)
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223309.99)
1		ICAP/6010/Q4	S	COLD	15-APR-96	25 SEP-96	T5D	(223309.99)
1		PH/9040/Q4	S	COLD	15-APR-96	30-MAR-96	T5D	(223308.100)

3*=Sample has not been rad screened.

BEST AVAILABLE COPY

00005

Quanterra April 04, 1996 02:10 pm

Account: 10722 Project: 519.136 Quanterra Richland QAS No. 861 Rev 1

Master Sample Login: 10772

Project Manager: W. Price

Draft: Final: Entered and Reviewed by:_____ PM Review:_____

Sample Header Template: _____

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Ref Sample No
Comments								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
Data:								
1		SE/7740/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223107.99)
1		TOC/9060/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223108.100)
1		VOA/8240/Q4	S	COLD	15-APR-96	12-APR-96	109H	(223107.100)

BEST AVAILABLE COPY

00006

3**Sample has not been rad screened.

Temp 2'c Cun# 6814

To St Louis

Chain of Custody Record

Quanterra Environmental Services

QUA-4124-1

Client: Westinghouse	Project Manager: Van Pettey	Date: 4-3-96	Chain Of Custody Number: 54311
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
City / State / Zip Code	Site Contact	Lab Contact	
Project Name: SAF 96-016	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): SEE COC

Special Instructions/Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc NaOH
60404801 BOHNW9 ↓ 02 ↓ NXO	SEE COC											

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other Due 4-18-96

QC Requirements (Specify): SDG W0968

	Date	Time		Date	Time
1 Relinquished By: Heidelberg Quanterra	4-3-96	16:00	1 Received By: Fred Mitchell		
2 Relinquished By			2 Received By		
3 Relinquished By			3 Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C # 100102 Page 1 of 1

Collector HULSE, KARL	Contact/Requestor VILLALOBOS, CARMEN	Tel. No. 373-4753 MSIN S6-19 FAX
SAF Number 96-016	Sample Origin PUREX F/B cell	Purchase Order/Charge Code N/A
Project Title PUREX Vessels Flush Solutions	Logbook # WHC-N-205 #	Ice Chest # 01-95/100005 Temp. 2°C
Shipped To (Lab) Quanterra	Method of Shipment Gov Vehicle	Bill of Lading/Air Bill No. N/A
Protocol RCRA	Data Turnaround PRIORITY	Offsite Property No. N/A RSR 33692

Sample No.	Lab. ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0HNW9		L	3/29/96	0920	(1) 20 P	ACTIVITY SCAN (Lab Specific) 60404801 100%	None
B0HNW9		L	3/29/96	0920	(1) 40 aGs	ICP Metals, TAL (6010) plus, to include Lead, Arsenic (7060), Selenium (7740), Mercury (7470) 100%	Cool to 4°C
B0HNW9		L	3/29/96	0920	(1) 40 aGs	TOC (9060), pH 99040) 100%	Cool to 4°C
B0HNW9		L	3/29/96	0920	(1) 20 aGs	VOA (8240) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 20 P	ACTIVITY SCAN (Lab Specific) <100cpm 60404802	None
B0HNX0		L	3/29/96	0900	(1) 40 aGs	ICP Metals, TAL (6010) plus, to include Lead, Arsenic (7060), Selenium (7740), Mercury (7470) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 40 aGs	TOC (9060), pH (9040) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 20 aGs	VOA (8240) 100%	Cool to 4°C

SDG W0968

PRIORITY TURNAROUND

POSSIBLE SAMPLE HAZARDS/REMARKS MSDS Yes ☐ No ☒
List all known wastes.

SPECIAL INSTRUCTIONS Hold Time
Priority Turnaround Summary Data Deliverable
quantum

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	KP Hulse	KB Zahn	4-3-96 1030	Karen Ackterberg	K Ackterberg		4-3-96 1030
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		
SB = 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.

A-6001-500 (07/95)

80000

cc: Joe 4/4

Client Sample Screening Results

03-Apr-96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
WHC B0H777		4/3/96 11:00:00 AM	QUAD21A	4/3/96 2:02:05 PM	B0H777	30	37	1.16833333	318	9.65125
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	52	0.065	759	0.94875
Anl Date: 4/3/96	Tot Sa, Alq: 3.00E+00	, 1.00E+01	Alp; (Dpm/ 3.14E+00	(uCi/ 4.25E-04	(pCi/ 1.42E+02	± 3.0E+01	CAT	1.8E-01	Lab	
Ppt mg: 1	Units: L	, ml	Bet; Alq): 1.87E+01	Sa): 2.52E-03	L/g): 8.40E+02	± 5.2E+01	I	6.0E-02	Alq L/g	
WHC B0H781		4/3/96 10:00:00 AM	QUAD21B	4/3/96 2:02:05 PM	B0H781	30	38	1.21166667	1422	46.45125
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	44	0.055	759	0.94875
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 2.35E+00	(uCi/ 1.06E-04	(pCi/ 1.06E+02	± 2.8E+01	CAT	2.4E-01	Lab	
Ppt mg: 1.3	Units: L	, ml	Bet; Alq): 8.93E+01	Sa): 4.02E-03	L/g): 4.02E+03	± 1.1E+02	I	1.2E-02	Alq L/g	
WHC B0H8N1		4/3/96 11:00:00 AM	QUAD21C	4/3/96 2:02:05 PM	B0H8N1	30	22	0.68458333	277	8.2870833
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	39	0.04875	757	0.94625
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 1.79E+00	(uCi/ 8.04E-05	(pCi/ 8.04E+01	± 2.5E+01	CAT	3.1E-01	Lab	
Ppt mg: 1.6	Units: L	, ml	Bet; Alq): 1.59E+01	Sa): 7.17E-04	L/g): 7.17E+02	± 4.9E+01	I	7.0E-02	Alq L/g	
WHC B0H8N9		4/3/96 11:00:00 AM	QUAD21D	4/3/96 2:02:05 PM	B0H8N9	30	25	0.77958333	325	9.7783333
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	43	0.05375	844	1.055
Anl Date: 4/3/96	Tot Sa, Alq: 2.00E+00	, 1.00E+01	Alp; (Dpm/ 2.15E+00	(uCi/ 1.94E-04	(pCi/ 9.71E+01	± 2.8E+01	CAT	2.6E-01	Lab	
Ppt mg: 1.7	Units: L	, ml	Bet; Alq): 1.88E+01	Sa): 1.69E-03	L/g): 8.47E+02	± 5.3E+01	I	5.9E-02	Alq L/g	
WHC B0H8P1		4/3/96 11:00:00 AM	QUAD22A	4/3/96 2:08:03 PM	B0H8P1	30	36	1.14625	324	9.86125
	LIQUID		Bkg:	4/2/96 4:34:00 AM	BKG	800	43	0.05375	751	0.93875
Anl Date: 4/3/96	Tot Sa, Alq: 3.00E+00	, 1.00E+01	Alp; (Dpm/ 3.05E+00	(uCi/ 4.12E-04	(pCi/ 1.37E+02	± 2.8E+01	CAT	1.8E-01	Lab	
Ppt mg: 1.4	Units: L	, ml	Bet; Alq): 1.77E+01	Sa): 2.39E-03	L/g): 7.97E+02	± 4.9E+01	I	6.3E-02	Alq L/g	

00009

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
WHC B0H8P5		4/3/96 11:00:00 AM	QUAD22B	4/3/96 2:08.03 PM	B0H8P5	30	44	1.42041667	774	24 8575
	LIQUID		Bkg:	4/2/96 4:34:00 AM	BKG	800	37	0 04625	754	0 9425
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1 00E+01	Alp; (Dpm/ 3.66E+00	(uCi/ 1.65E-04	(pCi/ 1.65E+02	± 3.1E+01	CAT I	1.5E-01	Lab Alq I.lg	
Ppt mg: 1.5	Units: L	, ml	Bet; Alq): 4 66E+01	Sa): 2.10E-03	I.lg): 2.10E+03	± 7 9E+01		2 4E-02		
WHC B0H8P7		4/3/96 11:00:00 AM	QUAD22C	4/3/96 2:08:03 PM	B0H8P7	30	10	0.28208333	99	2 39875
	LIQUID		Bkg:	4/2/96 4:34.00 AM	BKG	800	41	0 05125	721	0 90125
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 7.68E-01	(uCi/ 3.46E-05	(pCi/ 3.46E+01	± 2 1E+01	CAT I	7 2E-01	Lab Alq I.lg	
Ppt mg: 2 1	Units: L	, ml	Bet; Alq): 4 31E+00	Sa): 1.94E-04	I.lg): 1 94E+02	± 2 8E+01		2 6E-01		
WHC B0HNW9		4/3/96 11:00:00 AM	QUAD22D	4/3/96 1:41:59 PM	B0HNW9	10	2238	223.735	163778	16376 849
	LIQUID		Bkg:	4/2/96 4:34:00 AM	BKG	800	52	0 065	761	0 95125
Anl Date: 4/3.96	Tot Sa, Alq: 1.00E-01	, 1 00E+00	Alp; (Dpm/ 1.06E+02	(uCi/ 4.77E-03	(pCi/ 4 77E+04	± 2 2E+03	CAT III	5 2E-04	Lab Alq I.lg	
Ppt mg: 0.2	Units: L	, ml	Bet; Alq): 3.05E+04	Sa): 1.38E+00	I.lg): 1 38E+07	± 3 4E+04		3 6E-06		
WHC B0HNX0		4/3/96 11:00:00 AM	QUAD23A	4/3/96 2:02:09 PM	B0HNX0	30	3	0 055	45	0 5275
	LIQUID		Bkg:	4 2 96 4:34:09 AM	BKG	800	36	0 045	778	0 9725
Anl Date: 4 3 96	Tot Sa, Alq: 1.00E-01	, 1.00E+01	Alp; (Dpm/ 1.45E-01	(uCi/ 6.53E-07	(pCi/ 6 53E+00	± 1 9E+01	CAT I	3 8E+00	Lab Alq I.lg	
Ppt mg: 0	Units: L	, ml	Bet; Alq): 9.62E-01	Sa): 4.33E-06	I.lg): 4 33E+01	± 1 9E+01		1 2E+00		

00010

03-Apr-96

Tue, Apr 2, 1996 8:18 AM

SAMPLE INQUIRY

Company Name: PUREX Programs Westinghouse Hanford Company Project Code: MISC P

Sample #: S96P000062 Sample ID: BOHNX0

Parameter	Rep	Result	Unit	%Recov	Date
Alpha in Liquid Samples	0	< 2.49E-7	uCi/mL		03/29/9
Alpha Liq.- Rel. % Count Error	0	228.8	% Ct. Error		03/29/9
Americium-241 by GEA	0	< 7.334e-05	uCi/mL		03/30/9
Am-241 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Beta in Liquid Samples	0	< 1.06E-6	uCi/mL		03/29/9
Beta Liq.- Rel. % Count Error	0	143.6	% Ct. Error		03/29/9
Cobalt-60 by GEA	0	< 1.654e-05	uCi/mL		03/30/9
Co-60 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Cesium 137 by GEA	0	< 2.337e-05	uCi/mL		03/30/9
Cs-137 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Europium-154 by GEA	0	< 4.954e-05	uCi/mL		03/30/9
Eu-154 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9
Europium-155 by GEA	0	< 3.468e-05	uCi/mL		03/30/9
Eu-155 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9

Tue, Apr 2, 1996 8:13 AM

SAMPLE INQUIRY

Company Name: PUREX Programs Westinghouse Hanford Company Project Code: MISC P

Sample #: S96P000061 Sample ID: BOHNW9

Parameter	Rep	Result	Unit	%Recov	Date
Alpha in Liquid Samples	0	6.10E-5	uCi/mL		03/29/9
Alpha Liq.- Rel. % Count Error	0	6.6	% Ct. Error		03/29/9
Americium-241 by GEA	0	< 8.118e-05	uCi/mL		03/30/9
Am-241 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Beta in Liquid Samples	0	1.26E-2	uCi/mL		03/29/9
Beta Liq.- Rel. % Count Error	0	0.3	% Ct. Error		03/29/9
Cobalt-60 by GEA	0	< 1.823e-05	uCi/mL		03/30/9
Co-60 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Cesium-137 by GEA	0	3.360e-04	uCi/mL		03/30/9
Cs-137 GEA Rel. % Count Error	0	8.26	% Ct. Error	-	03/30/9
Europium-154 by GEA	0	< 4.796e-05	uCi/mL		03/30/9
Eu-154 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9
Europium-155 by GEA	0	< 4.079e 05	uCi/mL		03/30/9
Eu-155 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9

Alpha 61 pCi/mL

BETA 12.6 nCi/mL

Cs-137 336 pCi/mL

RADIOACTIVE SHIPMENT RECORD

3. Page 1 of 1 | 33692

1. SHIP TO
Company: QUANTERRA
Address: 2800 GEO. WASH. WAY
City, State, Zip: Richland, WA 99352
Attention: TAMI HEIDELBERG
Phone: 375-3131

2. SHIP FROM U.S. DEPT. OF ENERGY C/O
Company: WESTINGHOUSE HANFORD
Address: 6269 BLDG
City, State, Zip: 200 W
Contact: KB Hulse
Phone: 373-7002

4. Ship [X] Prepaid [ ] Collect
Via: [X] Motor-Rail [ ] Air Pagr [ ] Excl. Use [ ] Air Cargo [ ] UPS Surface [ ] Mail [ ] Site Carrier
SHIPMENT AUTHORIZATION NUMBER

5. HM Proper Shipping Name: Radioactive Material,

	excepted package - empty packaging	7	UN2910
	excepted package - instruments or articles	7	UN2910
X	excepted package - limited quantity of material	7	UN2910
	excepted package - articles manufactured from natural or depleted uranium or natural thorium	7	UN2910
	Special Form, n.o.s.	7	UN2974
	Low Specific Activity, n.o.s.	7	UN2912
	n.o.s.	7	UN2982
	Fissile, n.o.s.	7	UN2918
	(other)		

6. Markings Applied
Package Orientation [X]
Gross Weight [ ]
Radioactive - LSA [ ]
Type A [ ]
Type B [ ]

7. For Normal Form
Identify
Physical Form: [X] Liquid [ ] Gas [ ] Solid
Chemical Form: [ ] Metal [ ] Oxide [ ] Elemental [ ] Nitrate [X] Mixture
Other

8. Additional RAM Desc.
Limited Quantity Radioactive Material [X]
Highway Route Controlled Quantity [ ]

9. Placards Applied [ ] Yes [X] No
If Rail Specify Placards
Route Plan [ ] Yes [X] No

10. EMERGENCY RESPONSE
Telephone (509) 373-3800
Emergency Response Guide(s): #61

11a. TYPE PACKAGE
Strong Tight [X]
Type A [ ]
Type B [ ]
Type B(U) [ ]
Type B(M) [ ]

11b. CONSTRUCTION
Box, FB [ ]
Wood [ ]
Steel [ ]
Drum [ ]
Cask [ ]
Other: Poly Box

11c. FISSILE CLASS
Non-Fissile [X]
Fissile Exempt [ ]
Fissile I [ ]
Fissile II [ ]
Fissile III [ ]
Gms Fissile

11d. Labels Applied
Empty N/A [ ]
Radioactive White I [ ]
Radioactive Yellow II [ ]
Radioactive Yellow III [ ]
Subsidiary Hazard [ ]

Warning – Fissile Class III Shipment. Do Not Load More Than NA Packages Per Vehicle. In Loading and Storage Areas, Keep at Least 20 Feet From Other Packages Bearing Radioactive Labels.

12.

No. Pkgs.	Model Package	COC/Spec	Serial No.	Seal No.	T.I.	Isotopes	Curies/Pkg	Gr. Wt.
1	Poly Box 4H2V	N/A	10005	TAPE Applied	N/A	Cs-137 Sr-90	49 KBq	42 lbs
	(SAF 96-016	SAMPLE BOHNNA						
	COC = 100102)		BOHNYO					
(Shipper may describe package in detail on one of the unused lines above)				TOTALS	N/A		49 KBq	42 lbs

13. This is to certify that the above named materials are properly classified, described packaged, marked and labeled, and are in proper condition for transportation, acording to the applicable federal, state local and international regulations for the transportation of hazardous materials.
Certifier's Signature On behalf of DOE-RL: KB Hulse | Date: 4-3-96 | Organization: SAMPLING + MOBILE LABS | Complete Cost Code (Inc. End Function): KP50F / 8H132

14. Surface Dose Rate of Package: [X] <0.5 or _____ mrem/hr (N+β γ)
Dose Rate at 1 Meter from Surface of Package: [X] <0.5 or _____ mrem/hr (N+β γ)
Smears of Outer Container: [ ] <22 dpm β γ/cm² [ ] <2.2 dpm α/cm² [X] <Tbl. 2-2 HSRCM Limits
TRUCK LOAD OR EXCLUSIVE USE: Surface [X] <200 mrem/hr (N+β γ); @ 6 feet [X] <10 mrem/hr (N+β γ); @ Cab or sleeper [X] <2 mrem/hr (N+β γ)
Additional Data and Instructions (inc. Readings on Internal Packaging): N/A
Signature - Radiation Monitoring: CMarquez | Bldg. 6269 | Survey No. WS 250417 | Date 4/3/96

15. AIR TRANSPORT CERTIFICATION
CARGO AIRCRAFT: [ ] Cargo Aircraft Only Labels Applied
PASSENGER AIRCRAFT: [ ] 1. Ltd Qty [ ] 2. <3 T.I. [ ] 3. Research/Medical Diagnosis [ ] 4. Human Medical Research
Pkg. Dimensions: NA
Shipment has been inspected and verified to be in compliance with DOT regulations
Authorized Signature: M.A. Sams | Printed Name: M.A. SAMS | Date: 4-3-96

16. PICKUP OF SHIPMENT
Date of Shipment: 4-3-96 | Agent: KB Hulse | Driver Signature: KB Hulse | Vehicle Number: -4625

17. RECEIPT OF SHIPMENT
Shipment No.: (MAS) RMW 9925 | Date Shipped: 4-3-96 | Received in Good Order Unless Otherwise Noted | Vehicle Number
Surveyed By | Date Received | Signature | Printed Name: 00013

Karen Hektenberg Quantera 4-3-96

54-6000-088 (12/94)

Figure 1

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-3-96 1030 Client Name WHC

Project/Client # 96-016 Batch or Case # _____

Cooler ID (if noted on outside of cooler) Poly Box 4H2V

1. Condition of shipping container? O.K.
2. Custody Seals on cooler intact? Yes [X] No [ ]
3. Custody Seals dated and signed? Yes [X] No [ ]
4. Chain of Custody record is taped on inside of cooler lid? Yes [X] No [ ]
5. Vermiculite/packing material is: Wet [X] Dry [ ] _____
6. Each sample is in a plastic bag? Yes [X] No [ ] _____
7. Number of sample containers in cooler: 8
8. Samples have:
   - X tape
   - X custody seals
   - ___ hazard labels
   - ___ appropriate sample labels
9. Samples are:
   - X in good condition
   - ___ broken
   - ___ other
   - ___ leaking
   - ___ have air bubbles
10. Coolant Present? Yes [X] No [ ] Sample Temperature 20C
11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #(s) 100102 n/a
    Request for Analysis #(s) ✓
    Airbill # ✓ Carrier n/a
12. Have any anomalies been identified above? Yes [ ] No [X]
13. Memos have been initiated for all anomalies identified above? Yes [X]

Printed Name/Signature [signature] Date/Time 4-3-96 1030

Quanterra
Environmental Services

BWLWP
DATE 4-4-96
TIME: 10:45
BY: [illegible]

Login No.: 10772

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Richland
Project No: 519.136
Shipper/No: FED EX 268 3559 006

Date: 4-4-96 Time: 0930
Initiated by: [illegible]
RFA/COC Numbers: 54311

Condition/Variance (Check all that apply):

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

☑ No variances were noted during sample receipt. Cooler Temperature Upon Receipt: 2°C Vial 4's

Notes:

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____
☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is".
☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designee) [illegible] Date: 4-4-96
Project Management Review: [illegible] Date: 4-4-96

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 11/24/95

VOLATILE ORGANICS

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK96447-1	04/08/96	04/08/96	2	UG/L	J	10	1
Bromomethane	74-83-9	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
2-Butanone	78-93-3	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	96	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	91	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	94	%REC			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID: BOHNW9

Quanterra ID : 10772-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	110	%REC			1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	99	%REC			1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	103	%REC			1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	102	%REC			1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	100	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	90	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	99	%REC			1

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	116	%REC			1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	102	%REC			1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	99	%REC			1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	100	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	91	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	97	%REC			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: BOHNXO

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
2-Butanone	78-93-3	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	96	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	91	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	95	%REC			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCBLK96447-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
2-Butanone	78-93-3	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	93	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	90	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	85	%REC			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCSPK96447-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	112	%REC			1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	93	%REC			1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	97	%REC			1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	100	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	96	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	92	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	93	%REC			1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0HNW9

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: 10772-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4897

Level: (low/med) LOW Date Received: 04/03/96

% Moisture: not dec. Date Analyzed: 04/08/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	2	J
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0HNW9

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: 10772-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4897

Level: (low/med) LOW Date Received: 04/03/96

% Moisture: not dec. Date Analyzed: 04/08/96

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0HNX0

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: 10772-002

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4898

Level: (low/med) LOW Date Received: 04/03/96

% Moisture: not dec. Date Analyzed: 04/08/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0HNX0

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: 10772-002

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4898

Level: (low/med) LOW Date Received: 04/03/96

% Moisture: not dec. Date Analyzed: 04/08/96

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	B0HNW9	96	91	94	0	0
02	B0HNX0	96	91	95	0	0
03	VSPK01	96	92	93	0	0
04	B0HNW9MS	98	90	99	0	0
05	B0HNW9MSD	98	91	97	0	0
06	VBLK01	93	90	85	0	0

	QC LIMITS
S1 (TOL) = Toluene-d8	(88-110)
S2 (BFB) = Bromofluorobenzene	(86-115)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix Spike - EPA Sample No.: B0HNW9

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.0	0	54.9	110	1-234
Trichloroethene	50.0	0	49.4	99	71-157
Benzene	50.0	0	51.3	103	37-151
Toluene	50.0	0	51.0	102	47-150
Chlorobenzene	50.0	0	49.9	100	37-160

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.0	58.2	116	-5	14	1-234
Trichloroethene	50.0	49.0	98	1	14	71-157
Benzene	50.0	51.2	102	1	11	37-151
Toluene	50.0	49.6	99	3	13	47-150
Chlorobenzene	50.0	49.8	100	0	13	37-160

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0HNW9MS

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: 10772-001MS

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4899

Level: (low/med) LOW Date Received: 04/03/96

% Moisture: not dec. Date Analyzed: 04/08/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	24	
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	55	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	50	
107-06-2	1,2-Dichloroethane	55	
78-93-3	2-Butanone	84	
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	51	
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	49	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	51	
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	49	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	51	
108-90-7	Chlorobenzene	50	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0HNW9MSD

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: 10772-001MSD

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4900

Level: (low/med) LOW Date Received: 04/03/96

% Moisture: not dec. Date Analyzed: 04/08/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	25	
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	58	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	50	
107-06-2	1,2-Dichloroethane	52	
78-93-3	2-Butanone	85	
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	53	
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	49	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	51	
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	49	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	50	
108-90-7	Chlorobenzene	50	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Lab File ID: F4893 Lab Sample ID: QCBLK96447

Date Analyzed: 04/08/96 Time Analyzed: 1451

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: MSF

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	B0HNW9	10772-001	F4897	1714
02	B0HNX0	10772-002	F4898	1744
03	VSPK01	QCSPK96447	F4894	1521
04	B0HNW9MS	10772-001MS	F4899	1814
05	B0HNW9MSD	10772-001MSD	F4900	1844

COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: QCBLK96447

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4893

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 04/08/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: QCBLK96447

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4893

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 04/08/96

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9A-LCS
VOA WATER LCS RECOVERY

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SAS No.: SDG No.: W0968

EPA Sample No.: VSPK01 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	56	112	1-234
Trichloroethene	50	47	93	71-157
Benzene	50	49	98	37-151
Toluene	50	48	97	47-150
Chlorobenzene	50	50	100	37-160

\# Column to be used to flag recovery values with an asterisk.
* Values outside of QC limits.
D Detected.
NG: Not Given. Determined by QC Charting Procedures.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VSPK01

Lab Name: QUANTERRA MO Contract: 519-136

Lab Code: ITMO Case No.: V77201 SDG No.: W0968

Matrix: (soil/water) WATER Lab Sample ID: QCSPK96447

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: F4894

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 04/08/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	26	
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	56	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	48	
107-06-2	1,2-Dichloroethane	49	
78-93-3	2-Butanone	55	
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	49	
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	47	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	49	
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	48	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	50	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

METALS

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	5.3	MG/KG	U	20.0	1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	3.5	MG/KG	U	6.0	1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	0.33	MG/KG	B	20.0	1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	0.050	MG/KG	U	0.50	1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	0.24	MG/KG	U	0.50	1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	192	MG/KG	BE	500	1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	0.41	MG/KG	U	1.0	1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	0.48	MG/KG	U	5.0	1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	0.88	MG/KG	B	2.5	1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	2.6	MG/KG	B	10.0	1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	4.0	MG/KG	U	10.0	1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	39.5	MG/KG	B	500	1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	0.19	MG/KG	B	1.5	1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	0.91	MG/KG	U	4.0	1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	182	MG/KG	U	500	1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	0.59	MG/KG	UN	1.0	1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	50.4	MG/KG	B	500	1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	0.57	MG/KG	U	5.0	1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	0.65	MG/KG	U	2.0	1

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Quanterra Environmental Services

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	91	%REC			1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	91	%REC			1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	93	%REC			1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	68	%REC	N		1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	93	%REC			1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	99	%REC			1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	92	%REC			1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	93	%REC			1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	68	%REC	N		1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID: 80HNX0

Quanterra ID : 10772-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	5.3	MG/KG	U	20.0	1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	3.5	MG/KG	U	6.0	1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	0.33	MG/KG	B	20.0	1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	0.050	MG/KG	U	0.50	1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	0.24	MG/KG	U	0.50	1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	192	MG/KG	BE	500	1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	0.41	MG/KG	U	1.0	1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	0.48	MG/KG	U	5.0	1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	1.6	MG/KG	B	2.5	1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	0.81	MG/KG	U	10.0	1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	4.0	MG/KG	U	10.0	1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	39.5	MG/KG	B	500	1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	0.13	MG/KG	B	1.5	1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	0.91	MG/KG	U	4.0	1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	182	MG/KG	U	500	1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	0.59	MG/KG	UN	1.0	1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	27.6	MG/KG	B	500	1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	0.57	MG/KG	U	5.0	1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	0.65	MG/KG	U	2.0	1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCBLK96406-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	57.9	UG/L	B	200	1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	34.6	UG/L	U	60.0	1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	1.2	UG/L	U	200	1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	0.50	UG/L	U	5.0	1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	2.4	UG/L	U	5.0	1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	58.4	UG/L	B	5000	1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	4.1	UG/L	U	10.0	1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	4.8	UG/L	U	50.0	1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	5.6	UG/L	U	25.0	1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	21.0	UG/L	B	100	1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	39.8	UG/L	U	100	1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	65.1	UG/L	U	5000	1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	1.2	UG/L	U	15.0	1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	9.1	UG/L	U	40.0	1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	1820	UG/L	U	5000	1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	5.9	UG/L	U	10.0	1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	81.7	UG/L	U	5000	1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	5.7	UG/L	U	50.0	1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	6.5	UG/L	U	20.0	1

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Quanterra Environmental Services

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCLCS96406-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	99	%REC			1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	101	%REC			1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	70	%REC			1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Arsenic
Method: EPA 7060
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	0.15	MG/KG	U	1.0	1
BOHNW9	10772-001MS	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	100	%REC			1
BOHNW9	10772-001MSD	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	97	%REC			1
BOHNX0	10772-002	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	0.15	MG/KG	U	1.0	1
NA	QCBLK96412-1	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	1.5	UG/L	U	10.0	1
NA	QCLCS96412-1	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	99	%REC			1

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Quanterra Environmental Services

Project: 519.136

Category: Selenium
Method: EPA 7000 Series
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	0.14	MG/KG	U	0.50	1
BOHNW9	10772-001MS	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	102	%REC			1
BOHNW9	10772-001MSD	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	100	%REC			1
BOHNX0	10772-002	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	0.14	MG/KG	U	0.50	1
NA	QCBLK96412-1	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	1.4	UG/L	U	5.0	1
NA	QCLCS96412-1	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	100	%REC			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Mercury
Method: EPA 7470
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	0.010	MG/KG	U	0.020	1
BOHNW9	10772-001MS	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	92	%REC			1
BOHNW9	10772-001MSD	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	94	%REC			1
BOHNX0	10772-002	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	0.010	MG/KG	U	0.020	1
NA	QCBLK96388-1	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	0.10	UG/L	U	0.20	1
NA	QCLCS96388-1	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	97	%REC			1

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0HNW9

Lab Name: QUANTERRA MO Contract: 519.136
Lab Code: ITMO Case No.: SAS No.: SDG No.: W0968
Matrix (soil/water): SOIL Lab Sample ID: 10772-001
Level (low/med): LOW Date Received: 04/03/96
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5.3	U		P
7440-36-0	Antimony	3.5	U		P
7440-38-2	Arsenic	0.15	U		F
7440-39-3	Barium	0.33	B		P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.24	U		P
7440-70-2	Calcium	192	B	E	P
7440-47-3	Chromium	0.41	U		P
7440-48-4	Cobalt	0.48	U		P
7440-50-8	Copper	0.88	B		P
7439-89-6	Iron	2.6	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	39.5	B		P
7439-96-5	Manganese	0.19	B		P
7439-97-6	Mercury	0.01	U		CV
7440-02-0	Nickel	0.91	U		P
7440-09-7	Potassium	182	U		P
7782-49-2	Selenium	0.14	U		F
7440-22-4	Silver	0.59	U	N	P
7440-23-5	Sodium	50.4	B		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	0.65	U		P

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0HNX0

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0968

Matrix (soil/water): SOIL Lab Sample ID: 10772-002

Level (low/med): LOW Date Received: 04/03/96

% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5.3	U		P
7440-36-0	Antimony	3.5	U		P
7440-38-2	Arsenic	0.15	U		F
7440-39-3	Barium	0.33	B		P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.24	U		P
7440-70-2	Calcium	192	B	E	P
7440-47-3	Chromium	0.41	U		P
7440-48-4	Cobalt	0.48	U		P
7440-50-8	Copper	1.6	B		P
7439-89-6	Iron	0.81	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	39.5	B		P
7439-96-5	Manganese	0.13	B		P
7439-97-6	Mercury	0.01	U		CV
7440-02-0	Nickel	0.91	U		P
7440-09-7	Potassium	182	U		P
7782-49-2	Selenium	0.14	U		F
7440-22-4	Silver	0.59	U	N	P
7440-23-5	Sodium	27.6	B		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	0.65	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

U.S. EPA - CLP

3
BLANKS

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0968

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	53.2	U	53.2	U	53.2	U	53.2	U	57.890	B	P
Antimony	34.6	U	34.6	U	34.6	U	34.6	U	34.600	U	P
Arsenic	1.5	U	1.5	U	1.5	U			1.500	U	F
Barium	1.2	U	1.2	U	2.9	B	1.2	B	1.200	U	P
Beryllium	0.7	B	0.9	B	1.2	B	0.8	B	0.500	U	P
Cadmium	2.4	U	2.4	U	2.6	B	2.4	U	2.400	U	P
Calcium	21.3	U	21.3	U	21.3	U	24.5	B	58.350	B	P
Chromium	4.1	U	4.1	U	4.1	U	4.1	U	4.100	U	P
Cobalt	4.8	U	4.8	U	4.8	U	4.8	U	4.800	U	P
Copper	9.0	B	11.6	B	5.6	U	14.1	B	5.600	U	P
Iron	8.1	U	8.1	U	8.1	U	8.1	U	21.040	B	P
Lead	39.8	U	39.8	U	39.8	U	39.8	U	39.800	U	P
Magnesium	65.1	U	89.8	B	65.1	U	102.2	B	65.100	U	P
Manganese	1.2	B	1.8	B	1.2	U	1.7	B	1.200	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	9.1	U	9.1	U	9.1	U	9.1	U	9.100	U	P
Potassium	1824.0	U	1824.0	U	1824.0	U	1824.0	U	1824.000	U	P
Selenium	1.4	U	1.4	U	1.4	U			1.400	U	F
Silver	5.9	U	5.9	U	5.9	U	5.9	U	5.900	U	P
Sodium	81.7	U	81.7	U	331.4	B	81.7	U	81.700	U	P
Vanadium	5.7	U	5.7	U	5.7	U	5.7	U	5.700	U	P
Zinc	6.5	U	6.5	U	6.5	U	6.5	U	6.500	U	P

FORM III - IN

SW-846

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

B0HNW9S

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0968

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	96.3130		5.3200	U	100.00	96.3		P
Antimony	80-120	96.3890		3.4600	U	100.00	96.4		P
Arsenic	80-120	3.9850		0.1500	U	4.00	99.6		F
Barium	80-120	91.3250		0.3270	B	100.00	91.0		P
Beryllium	80-120	91.4450		0.0500	U	100.00	91.4		P
Cadmium	80-120	94.1580		0.2400	U	100.00	94.2		P
Calcium									NR
Chromium	80-120	94.5350		0.4100	U	100.00	94.5		P
Cobalt	80-120	93.8760		0.4800	U	100.00	93.9		P
Copper	80-120	94.6370		0.8850	B	100.00	93.8		P
Iron	80-120	98.7110		2.6200	B	100.00	96.1		P
Lead	80-120	95.8490		3.9800	U	100.00	95.8		P
Magnesium									NR
Manganese	80-120	93.0060		0.1860	B	100.00	92.8		P
Mercury	80-120	0.0922		0.0100	U	0.10	92.2		CV
Nickel	80-120	96.2880		0.9100	U	100.00	96.3		P
Potassium									NR
Selenium	80-120	1.0250		0.1400	U	1.00	102.5		F
Silver	80-120	17.1060		0.5900	U	25.00	68.4	N	P
Sodium									NR
Vanadium	80-120	93.3440		0.5700	U	100.00	93.3		P
Zinc	80-120	95.3550		0.6500	U	100.00	95.4		P

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

B0HNW9SD

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0968

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	97.8080		5.3200	U	100.00	97.8		P
Antimony	80-120	99.3280		3.4600	U	100.00	99.3		P
Arsenic	80-120	3.8930		0.1500	U	4.00	97.3		F
Barium	80-120	92.1980		0.3270	B	100.00	91.9		P
Beryllium	80-120	92.6040		0.0500	U	100.00	92.6		P
Cadmium	80-120	94.8030		0.2400	U	100.00	94.8		P
Calcium									NR
Chromium	80-120	95.4300		0.4100	U	100.00	95.4		P
Cobalt	80-120	94.9630		0.4800	U	100.00	95.0		P
Copper	80-120	95.4840		0.8850	B	100.00	94.6		P
Iron	80-120	100.2160		2.6200	B	100.00	97.6		P
Lead	80-120	96.1330		3.9800	U	100.00	96.1		P
Magnesium									NR
Manganese	80-120	94.3590		0.1860	B	100.00	94.2		P
Mercury	80-120	0.0942		0.0100	U	0.10	94.2		CV
Nickel	80-120	98.3090		0.9100	U	100.00	98.3		P
Potassium									NR
Selenium	80-120	0.9970		0.1400	U	1.00	99.7		F
Silver	80-120	17.0340		0.5900	U	25.00	68.1	N	P
Sodium									NR
Vanadium	80-120	94.2810		0.5700	U	100.00	94.3		P
Zinc	80-120	96.5470		0.6500	U	100.00	96.5		P

Comments:

U.S. EPA - CLP

6A
MATRIX SPIKE DUPLICATES

EPA SAMPLE NO.

B0HNW9S

Lab Name: QUANTERRA MO Contract: 519.136

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0968

Matrix (soil/water): WATER Level (low/med): LOW

% Solids: 0.0

Percent recoveries:

Analyte	Control Limit	Matrix Spike (S)		Matrix Spike Duplicate (SD)		RPD	Q	M
Al	20%	96.30		97.80		1.5		P
Sb	20%	96.40		99.30		3.0		P
As	20%	99.60		97.30		2.3		F
Ba	20%	91.00		91.90		1.0		P
Be	20%	91.40		92.60		1.3		P
Cd	20%	94.20		94.80		0.6		P
Ca	20%							NR
Cr	20%	94.50		95.40		0.9		P
Co	20%	93.90		95.00		1.2		P
Cu	20%	93.80		94.60		0.8		P
Fe	20%	96.10		97.60		1.5		P
Pb	20%	95.80		96.10		0.3		P
Mg	20%							NR
Mn	20%	92.80		94.20		1.5		P
Hg	20%	92.20		94.20		2.1		CV
Ni	20%	96.30		98.30		2.1		P
K	20%							NR
Se	20%	102.50		99.70		2.8		F
Ag	20%	68.40		68.10		0.4		P
Na	20%							NR
V	20%	93.30		94.30		1.1		P
Zn	20%	95.40		96.50		1.1		P

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W0968

Solid LCS Source: _____

Aqueous LCS Source: SOL+/CHEMPUR

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	1000.0	984.75	98.5						
Antimony	1000.0	991.17	99.1						
Arsenic									
Barium	1000.0	942.62	94.3						
Beryllium	1000.0	950.85	95.1						
Cadmium	1000.0	957.19	95.7						
Calcium	20000.0	19667.66	98.3						
Chromium	1000.0	965.91	96.6						
Cobalt	1000.0	951.90	95.2						
Copper	1000.0	978.87	97.9						
Iron	1000.0	1012.05	101.2						
Lead	1000.0	950.07	95.0						
Magnesium	20000.0	19482.91	97.4						
Manganese	1000.0	955.20	95.5						
Mercury									
Nickel	1000.0	966.54	96.7						
Potassium	20000.0	19373.35	96.9						
Selenium									
Silver	250.0	174.46	69.8						
Sodium	20000.0	19270.92	96.4						
Vanadium	1000.0	958.40	95.8						
Zinc	1000.0	983.22	98.3						

FORM VII - IN

SW-846

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W0968

Solid LCS Source: _____

Aqueous LCS Source: SOL+/CHEMPUR

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury	5.0	4.84	96.8						
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Vanadium									
Zinc									

FORM VII - IN

SW-846

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0968

Solid LCS Source:

Aqueous LCS Source: SOL+/CHEMPUR

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic	40.0	39.76	99.4						
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium	40.0	40.06	100.2						
Silver									
Sodium									
Vanadium									
Zinc									

FORM VII - IN

SW-846

WET CHEMISTRY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: pH
Method: EPA 9040
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0HNW9	10772-001	pH	PH	QCBLK96309-1	04/05/96	04/05/96	9.49	PH			1
B0HNW9	10772-001DUP	pH	PH	QCBLK96309-1	04/05/96	04/05/96	9.54	PH			1
B0HNX0	10772-002	pH	PH	QCBLK96309-1	04/05/96	04/05/96	6.74	PH			1
NA	QCBLK96309-1	pH	PH	QCBLK96309-1	04/05/96	04/05/96	4.93	PH			1

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Total Organic Carbon
Method: EPA 9060
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	3.70	MG/L		1.00	1
BOHNW9	10772-001DUP	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	3.72	MG/L		1.00	1
BOHNW9	10772-001MS	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	99	%REC			1
BOHNX0	10772-002	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	1.00	MG/L	U	1.00	1
NA	QCBLK96270-1	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	1.00	MG/L	U	1.00	1
NA	QCLCS96270-1	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	98	%REC			1

Analytical Data Package Prepared For

Westinghouse Hanford

Chemical Analysis By

Quanterra Environmental Services
St. Louis Laboratory

Sample Delivery Group Number: W01021

JUN 1996
RECEIVED
SDLA

WHC IDENTIFICATION NUMBER	QUANTERRA ID NUMBER
B0HNW9	10772-001
B0HNX0	10772-002

Quanterra Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

June 10, 1996

Attention: Karl Pool

Project number	:	519.136
Date Received by Lab	:	April 3, 1996
Number of Samples	:	Two (2)
Sample Type	:	Liquid
SDG Number	:	W01021
Data Deliverable	:	Summary

I. Introduction

On April 3, 1996, two (2) liquid samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. On May 17, 1996, the client requested additional Graphite Furnace Lead analyses in order to obtain a lower detection limit. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
10772-001	B0HNW9	60404801	Liquid	4/03/96
10772-002	B0HNX0	60404802	Liquid	4/03/96

Results for the original suite of analyses were reported as SDG W0968.

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: Lead by EPA method 7421.

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate analyses were performed per the protocol for each analyte.

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

V. Comments

Shipping and Receiving
There were no comments or nonconformances associated with the shipping and receiving of these samples.

Metals
The samples were digested as a solid at 1.0 g to 100 mls for the Lead analyzes due to insufficient sample volume available for a water or volume basis analysis.

Due to the nature of the sample matrix, percent solids was not determined for the samples in SDG W01021. Due to software configuration, the CLP forms list solid sample result units as " dry weight" and % solids as " 100 ". The results on the forms are actually mg/Kg as is and are not corrected for percent solids. The figure of 100 was used as percent solids for calculation purposes only and does not represent measured solids content of the samples.

Quanterra
Environmental Services

I certify that this data 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:

Wade H. Price
Project Manager
Quanterra Environmental Services, Inc.
e:\\sqdmo01\price$\abbydave\hanford\hanw01021.nar

Quanterra May 22, 1996 02:02 pm
Account: 10722 Project: 519.136 Quanterra-Richland QAS No. 861 Rev. 1
Master Sample Login: 10772

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: PM Review:

Sample Header Template:

Sample No. / #	Client ID / Container Type	C-Matrix / Analysis	Date: Collected / Class	Received / Preservative	Due / Anal. Due Date	Shipper / Hold Date	Site	Rad Category / (Container Numbers:% Filled)	Rad Sample No.
10772-001	BOHNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED-EX		3*	R4853-001
NOTE: RICHLAND ID 60404801									
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223306:99)	
1		ICAP/6010/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		PB/7421/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		PH/9040/Q4	S	COLD	15-APR-96	30-MAR-96	T5D	(223305:100)	
1		SE/7740/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		TOC/9060/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223305:100)	
1		VOA/8240/Q4	S	COLD	15-APR-96	12-APR-96	109H	(223304:100)	
10772-001DUP	BOHNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED-EX		3*	R4853-001
NOTE: RICHLAND ID 60404801									
1	VI - Vial-40ml	PH/9040/Q4	S	COLD	15-APR-96	30-MAR-96	T5D	(223305:100)	
1		TOC/9060/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223305:100)	
10772-001MS	BOHNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED-EX		3*	R4853-001
NOTE: RICHLAND ID 60404801									
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223306:99)	
1		ICAP/6010/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		PB/7421/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		SE/7740/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		TOC/9060/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223305:100)	
1		VOA/8240/Q4	S	COLD	15-APR-96	12-APR-96	109H	(223304:100)	
10772-001MSD	BOHNW9	Liquid	29-MAR-96 09:20	03-APR-96 10:30	17-APR-96	FED-EX		3*	R4853-001
NOTE: RICHLAND ID 60404801									
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223306:99)	
1		ICAP/6010/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		PB/7421/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		SE/7740/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223306:99)	
1		VOA/8240/Q4	S	COLD	15-APR-96	12-APR-96	109H	(223304:100)	
10772-002	BOHNX0	Liquid	29-MAR-96 09:00	03-APR-96 10:30	17-APR-96	FED-EX		1	Screening not Required
NOTE: RICHLAND ID 60404802									
1	VI - Vial-40ml	AS/7060/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223309:99)	

Data:

3*=Sample has not been rad screened.

00005

Quanterra May 22, 1996 02:02 pm
Account: 10722 Project: 519.136 Quanterra-Richland QAS No. 861 Rev. 1
Master Sample Login: 10772

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: PM Review:

Sample Header Template:

Sample No. Client ID C-Matrix Date: Collected Received Due Shipper Rad Category Rad Sample No.
Comments

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
Data:								
1		HG/7470/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223309:99)
1		ICAP/6010/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223309:99)
1		PB/7421/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223309:99)
1		PH/9040/Q4	S	COLD	15-APR-96	30-MAR-96	T5D	(223308:100)
1		SE/7740/Q4	S	COLD	15-APR-96	25-SEP-96	T5D	(223309:99)
1		TOC/9060/Q4	S	COLD	15-APR-96	26-APR-96	T5D	(223308:100)
1		VOA/8240/Q4	S	COLD	15-APR-96	12-APR-96	109H	(223307:100)

00006

3*=Sample has not been rad screened.

Temp 2'c Cun# 6814

Chain of Custody Record

To St Louis

Quanterra Environmental Services

QUA-4124-1

Client	Project Manager	Date	Chain Of Custody Number
Westinghouse	Van Pettey	4-3-96	54311
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
City / State / Zip Code	Site Contact / Lab Contact		
Project Name: SAF 96-016	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): SEE COC

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	
60404801 BOHNW9	SEE COC												
↓ 02 ↓ NXO													

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other Due 4-18-96

QC Requirements (Specify): SDG W0968

Relinquished By	Date	Time	Received By	Date	Time
1. Hudelberg Quanterra	4-3-96	16:00	1. Fred Mitchell		
2.			2.		
3.			3.		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C # 100102 Page 1 of 1

Collector HULSE, KARL	Contact/Requestor VILLALOBOS, CARMEN	Tel. No. 373-4753 MSIN S6-19 FAX
SAF Number 96-016	Sample Origin PUREX F18 cell	Purchase Order/Charge Code N/A
Project Title PUREX Vessels Flush Solutions	Logbook # WHC-N-205 #	Ice Chest # 01-95/100005 Temp. 2°C
Shipped To (Lab) Quanterra	Method of Shipment Gov Vehicle	Bill of Lading/Air Bill No. N/A
Protocol RCRA	Data Turnaround PRIORITY	Offsite Property No. N/A RSR 33692

Sample No.	Lab. ID	*	Date	Time	No/Type Container	Sample Analysis	Perservative
B0HNW9		L	3/29/96	0920	(1) 20 P	ACTIVITY SCAN (Lab Specific) 60404801 100 cpm	None
B0HNW9		L	3/29/96	0920	(1) 40 aGs	ICP Metals, TAL (6010) plus, to include Lead, Arsenic (7060), Selenium (7740), Mercury (7470) 100%	Cool to 4°C
B0HNW9		L	3/29/96	0920	(1) 40 aGs	TOC (9060), pH 99040) 100%	Cool to 4°C
B0HNW9		L	3/29/96	0920	(1) 20 aGs	VOA (8240) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 20 P	ACTIVITY SCAN (Lab Specific) <100cpm 60404802	None
B0HNX0		L	3/29/96	0900	(1) 40 aGs	ICP Metals, TAL (6010) plus, to include Lead, Arsenic (7060), Selenium (7740), Mercury (7470) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 40 aGs	TOC (9060), pH (9040) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 20 aGs	VOA (8240) 100%	Cool to 4°C

SDG W0968

PRIORITY TURNAROUND

POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	MSDS Yes ☐ No ☒	SPECIAL INSTRUCTIONS Priority Turnaround Summary Data Deliverable quantum	Hold Time

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
KB Hulse		KB Hulse	4-3-96 1030	Karen Ackterberg		K. Ackterberg	4-3-96 1030
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.

A-6001-500 (07/95)

80000

cc: Joe 4/4

Client Sample Screening Results

03-Apr-96

(P3) 4/3/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
WHC B0H777		4/3/96 11:00:00 AM	QUAD21A	4/3/96 2:02:05 PM	B0H777	30	37	1.16833333	318	9.65125
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	52	0.065	759	0.94875
Anl Date: 4/3/96	Tot Sa, Alq: 3.00E+00	, 1.00E+01	Alp; (Dpm/ 3.14E+00	(uCi/ 4.25E-04	(pCi/ 1.42E+02	± 3.0E+01	CAT I	1.8E-01	Lab Alq L|g	
Ppt mg: 1	Units: L	, ml	Bet; Alq): 1.87E+01	Sa): 2.52E-03	L|g): 8.40E+02	± 5.2E+01		6.0E-02		
WHC B0H781		4/3/96 10:00:00 AM	QUAD21B	4/3/96 2:02:05 PM	B0H781	30	38	1.21166667	1422	46.45125
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	44	0.055	759	0.94875
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 2.35E+00	(uCi/ 1.06E-04	(pCi/ 1.06E+02	± 2.8E+01	CAT I	2.4E-01	Lab Alq L|g	
Ppt mg: 1.3	Units: L	, ml	Bet; Alq): 8.93E+01	Sa): 4.02E-03	L|g): 4.02E+03	± 1.1E+02		1.2E-02		
WHC B0H8N1		4/3/96 11:00:00 AM	QUAD21C	4/3/96 2:02:05 PM	B0H8N1	30	22	0.68458333	277	8.2870833
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	39	0.04875	757	0.94625
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 1.79E+00	(uCi/ 8.04E-05	(pCi/ 8.04E+01	± 2.5E+01	CAT I	3.1E-01	Lab Alq L|g	
Ppt mg: 1.6	Units: L	, ml	Bet; Alq): 1.59E+01	Sa): 7.17E-04	L|g): 7.17E+02	± 4.9E+01		7.0E-02		
WHC B0H8N9		4/3/96 11:00:00 AM	QUAD21D	4/3/96 2:02:05 PM	B0H8N9	30	25	0.77958333	325	9.7783333
	LIQUID		Bkg:	4/2/96 4:33:53 AM	BKG	800	43	0.05375	844	1.055
Anl Date: 4/3/96	Tot Sa, Alq: 2.00E+00	, 1.00E+01	Alp; (Dpm/ 2.15E+00	(uCi/ 1.94E-04	(pCi/ 9.71E+01	± 2.8E+01	CAT I	2.6E-01	Lab Alq L|g	
Ppt mg: 1.7	Units: L	, ml	Bet; Alq): 1.88E+01	Sa): 1.69E-03	L|g): 8.47E+02	± 5.3E+01		5.9E-02		
WHC B0H8P1		4/3/96 11:00:00 AM	QUAD22A	4/3/96 2:08:03 PM	B0H8P1	30	36	1.14625	324	9.86125
	LIQUID		Bkg:	4/2/96 4:34:00 AM	BKG	800	43	0.05375	751	0.93875
Anl Date: 4/3/96	Tot Sa, Alq: 3.00E+00	, 1.00E+01	Alp; (Dpm/ 3.05E+00	(uCi/ 4.12E-04	(pCi/ 1.37E+02	± 2.8E+01	CAT I	1.8E-01	Lab Alq L|g	
Ppt mg: 1.4	Units: L	, ml	Bet; Alq): 1.77E+01	Sa): 2.39E-03	L|g): 7.97E+02	± 4.9E+01		6.3E-02		

00009

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
WHC B0H8P5		4/3/96 11:00:00 AM	QUAD22B	4/3/96 2:08:03 PM	B0H8P5	30	44	1.42041667	774	24.8575
	LIQUID		Bkg:	4/2/96 4:34:00 AM	BKG	800	37	0.04625	754	0.9425
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 3.66E+00	(uCi/ 1.65E-04	(pCi/ 1.65E+02	± 3.1E+01	CAT I	1.5E-01	Lab	
Ppt mg: 1.5	Units: L	, ml	Bet; Alq): 4.66E+01	Sa): 2.10E-03	L/g): 2.10E+03	± 7.9E+01		2.4E-02	Alq L/g	
WHC B0H8P7		4/3/96 11:00:00 AM	QUAD22C	4/3/96 2:08:03 PM	B0H8P7	30	10	0.28208333	99	2.39875
	LIQUID		Bkg:	4/2/96 4:34:00 AM	BKG	800	41	0.05125	721	0.90125
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp; (Dpm/ 7.68E-01	(uCi/ 3.46E-05	(pCi/ 3.46E+01	± 2.1E+01	CAT I	7.2E-01	Lab	
Ppt mg: 2.1	Units: L	, ml	Bet; Alq): 4.31E+00	Sa): 1.94E-04	L/g): 1.94E+02	± 2.8E+01		2.6E-01	Alq L/g	
WHC B0HNW9		4/3/96 11:00:00 AM	QUAD22D	4/3/96 1:41:59 PM	B0HNW9	10	2238	223.735	163778	16376.849
	LIQUID		Bkg:	4/2/96 4:34:00 AM	BKG	800	52	0.065	761	0.95125
Anl Date: 4/3/96	Tot Sa, Alq: 1.00E-01	, 1.00E+00	Alp; (Dpm/ 1.06E+02	(uCi/ 4.77E-03	(pCi/ 4.77E+04	± 2.2E+03	CAT III	5.2E-04	Lab	
Ppt mg: 0.2	Units: L	, ml	Bet; Alq): 3.05E+04	Sa): 1.38E+00	L/g): 1.38E+07	± 3.4E+04		3.6E-06	Alq L/g	
WHC B0HNX0		4/3/96 11:00:00 AM	QUAD23A	4/3/96 2:02:09 PM	B0HNX0	30	3	0.055	45	0.5275
	LIQUID		Bkg:	4 2 96 4:34:09 AM	BKG	800	36	0.045	778	0.9725
Anl Date: 4 3 96	Tot Sa, Alq: 1.00E-01	, 1.00E+01	Alp; (Dpm/ 1.45E-01	(uCi/ 6.53E-07	(pCi/ 6.53E+00	± 1.9E+01	CAT I	3.8E+00	Lab	
Ppt mg: 0	Units: L	, ml	Bet; Alq): 9.62E-01	Sa): 4.33E-06	L/g): 4.33E+01	± 1.9E+01		1.2E+00	Alq L/g	

00010

Tue, Apr 2, 1996 8:18 AM

SAMPLE INQUIRY

Company Name: PUREX Programs Westinghouse Hanford Company Project Code: MISC 9

Sample #: S96P000062 Sample ID: BOHNX0

Parameter	Rep	Result	Unit	%Recov	Date
Alpha in Liquid Samples	0	< 2.49E-7	uCi/mL		03/29/9
Alpha Liq.- Rel. % Count Error	0	228.8	% Ct. Error		03/29/9
Americium-241 by GEA	0	< 7.334e-05	uCi/mL		03/30/9
Am-241 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Beta in Liquid Samples	0	< 1.06E-6	uCi/mL		03/29/9
Beta Liq.- Rel. % Count Error	0	143.6	% Ct. Error		03/29/9
Cobalt-60 by GEA	0	< 1.654e-05	uCi/mL		03/30/9
Co-60 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Cesium 137 by GEA	0	< 2.337e-05	uCi/mL		03/30/9
Cs-137 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Europium-154 by GEA	0	< 4.954e-05	uCi/mL		03/30/9
Eu-154 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9
Europium-155 by GEA	0	< 3.468e-05	uCi/mL		03/30/9
Eu-155 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9

BEST AVAILABLE COPY

Tue, Apr 2, 1996 8:18 AM

SAMPLE INQUIRY

Company Name: PUREX Programs Westinghouse Hanford Company Project Code: MISC P

Sample #: S96P000061 Sample ID: BOHNW9

Parameter	Rep	Result	Unit	%Recov	Date
Alpha in Liquid Samples	0	6.10E-5	uCi/mL		03/29/9
Alpha Liq.- Rel. % Count Error	0	6.6	% Ct. Error		03/29/9
Americium-241 by GEA	0	< 8.118e-05	uCi/mL		03/30/9
Am-241 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Beta in Liquid Samples	0	1.26E-2	uCi/mL		03/29/9
Beta Liq.- Rel. % Count Error	0	0.3	% Ct. Error		03/29/9
Cobalt-60 by GEA	0	< 1.823e-05	uCi/mL		03/30/9
Co-60 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Cesium-137 by GEA	0	3.360e-04	uCi/mL		03/30/9
Cs-137 GEA Rel. % Count Error	0	8.26	% Ct. Error		03/30/9
Europium-154 by GEA	0	< 4.796e-05	uCi/mL		03/30/9
Eu-154 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9
Europium-155 by GEA	0	< 4.079e 05	uCi/mL		03/30/9
Eu-155 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9

Alpha 61 pCi/mL

BETA 12.6 nCi/mL

Cs-137 33.6 pCi/mL

RADIOACTIVE SHIPMENT RECORD

3. Page 1 of 1 | 33692

1. SHIP TO
Company: QUANTERRA
Address: 2800 GEO. WASH. WAY
City, State, Zip: Richland, WA 99352
Attention: TAMI HEIDELBERG
Phone: 375-3131

2. SHIP FROM U.S. DEPT. OF ENERGY C/O
Company: WESTINGHOUSE HANFORD
Address: 6269 BLDG
City, State, Zip: 200 W
Contact: KB HULSE
Phone: 373-7002

4. Ship [X] Prepaid [ ] Collect
Via: [X] Motor-Rail [ ] Air Pssgr [ ] Excl. Use [ ] Air Cargo [ ] UPS Surface [ ] Mail [ ] Site Carrier
SHIPMENT AUTHORIZATION NUMBER:

5. HM Proper Shipping Name: Radioactive Material,

[ ]	excepted package - empty packaging	7	UN2910
[ ]	excepted package - instruments or articles	7	UN2910
[X]	excepted package - limited quantity of material	7	UN2910
[ ]	excepted package - articles manufactured from natural or depleted uranium or natural thorium	7	UN2910
[ ]	Special Form, n.o.s.	7	UN2974
[ ]	Low Specific Activity, n.o.s.	7	UN2912
[ ]	n.o.s.	7	UN2982
[ ]	Fissile, n.o.s.	7	UN2918
[ ]	(other)		

6. Markings Applied
Package Orientation [X]
Gross Weight [ ]
Radioactive - LSA [ ]
Type A [ ]
Type B [ ]

7. For Normal Form
Identify
Physical Form: [X] Liquid [ ] Gas [ ] Solid
Chemical Form: [ ] Metal [ ] Oxide [ ] Elemental [ ] Nitrate [X] Mixture
Other:

8. Additional RAM Desc.
Limited Quantity Radioactive Material [X]
Highway Route Controlled Quantity [ ]

9. Placards Applied [ ] Yes [X] No
If Rail Specify Placards:
Route Plan [ ] Yes [X] No

10. EMERGENCY RESPONSE
Telephone: (509) 373-3800
Emergency Response Guide(s): #61

11a. TYPE PACKAGE
Strong Tight [X]
Type A [ ]
Type B [ ]
Type B(U) [ ]
Type B(M) [ ]

11b. CONSTRUCTION
[ ] Box, FB
[ ] Wood
[ ] Steel
[ ] Drum
[ ] Cask
Other: Poly Box

11c. FISSILE CLASS
Non-Fissile [X]
Fissile Exempt [ ]
Fissile I [ ]
Fissile II [ ]
Fissile III [ ]
Gms Fissile:

11d. Labels Applied
Empty N/A [ ]
Radioactive White I [ ]
Radioactive Yellow II [ ]
Radioactive Yellow III [ ]
Subsidiary Hazard [ ]

Warning – Fissile Class III Shipment. Do Not Load More Than NA Packages Per Vehicle. In Loading and Stoarge Areas, Keep at Least 20 Feet From Other Packages Bearing Radioactive Labels.

12.

No. Pkgs.	Model Package	COC/Spec	Serial No.	Seal No.	T.I.	Isotopes	Curies/Pkg	Gr. Wt.
1	Poly Box 4H2V	N/A	10005	TAPE Applied	N/A	Cs-137 Sr-90	49 KBq	42 lbs
	(SAF 96-016		SAMPLE BOHNNA					
	COC # 100102)		BOHNNO					
(Shipper may describe package in detail on one of the unused lines above)				TOTALS	N/A		49 KBq	42 lbs

13. This is to certify that the above named materials are properly classified, described packaged, marked and labeled, and are in proper condition for transportation, acording to the applicable federal, state local and international regulations for the transportation of hazardous materials.
Certifier's Signature: KB Hulse — On behalf of DOE-RL — Date: 4-3-96 — Organization: SAMPLING + Mobile LABS — Complete Cost Code (Inc. End Function): KP50F / SH132

14. Surface Dose Rate of Package: [X] <0.5 or ____ mrem/hr (N+β γ)
Dose Rate at 1 Meter from Surface of Package: [X] <0.5 or ____ mrem/hr (N+β γ)
Smears of Outer Container: [ ] <22 dpm β γ/cm² [ ] <2.2 dpm α /cm² [X] <Tbl. 2-2 HSRCM Limits
TRUCK LOAD OR EXCLUSIVE USE: Surface [X] <200 mrem/hr (N+β γ); @ 6 feet [X] <10 mrem/hr (N+β γ); @ Cab or sleeper [X] <2 mrem/hr (N+β γ)
Additional Data and Instructions (inc. Readings on Internal Packaging): N/A
Signature - Radiation Monitoring: CMarquez — Bldg. 6269 — Survey No. WS 250417 — Date 4/3/96

15. AIR TRANSPORT CERTIFICATION
CARGO AIRCRAFT: [ ] Cargo Aircraft Only Labels Applied
PASSENGER AIRCRAFT: [ ] 1. Ltd Qty [ ] 2. <3 T.I. [ ] 3. Research/Medical Diagnosis [ ] 4. Human Medical Research
Pkg. Dimensions: NA
Shipment has been inspected and verified to be in compliance with DOT regulations
Authorized Signature: M.A. Sams — Printed Name: M.A. SAMS — Date: 4-3-96

16. PICKUP OF SHIPMENT
Date of Shipment: 4-3-96 — Agent: KB Hulse — Driver Signature: KB Hulse — Vehicle Number: -4625

17. RECEIPT OF SHIPMENT
Shipment No.: (MAS) RMW 9925 — Date Shipped: 4-3-96 — Received in Good Order Unless Otherwise Noted — Vehicle Number
Surveyed By — Date Received — Signature — Printed Name: 00013

Karen Schlenting Quanterra 4-3-96

54-6000-088 (12/94)

Figure 1

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 4-3-96 1030 Client Name WHC

Project/Client # 96-016 Batch or Case # _____

Cooler ID (if noted on outside of cooler) Poly Box 4H2V

1. Condition of shipping container? O.K.
2. Custody Seals on cooler intact? Yes [X] No [ ]
3. Custody Seals dated and signed? Yes [X] No [ ]
4. Chain of Custody record is taped on inside of cooler lid? Yes [X] No [ ]
5. Vermiculite/packing material is: Wet [X] Dry [ ] _____
6. Each sample is in a plastic bag? Yes [X] No [ ] _____
7. Number of sample containers in cooler: 8
8. Samples have:
   - X tape
   - X custody seals
   - ___ hazard labels
   - ___ appropriate sample labels
9. Samples are:
   - X in good condition
   - ___ broken
   - ___ other
   - ___ leaking
   - ___ have air bubbles
10. Coolant Present? Yes [X] No [ ] Sample Temperature 2°C
11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #(s) 100102 n/a
    Request for Analysis #(s) ✓
    Airbill # ✓ Carrier n/a
12. Have any anomalies been identified above? Yes [ ] No [X]
13. Memos have been initiated for all anomalies identified above? Yes [X]

Printed Name/Signature [signature] Date/Time 4-3-96 1030

Quanterra
Environmental Services

DATE 4-4-96
TIME: 10:45
BY: [illegible]

Login No.: 10772

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Richland
Project No: 519.136
Shipper/No: FED EX 268 3559 006

Date: 4-4-96 Time: 0930
Initiated by: [illegible]
RFA/COC Numbers: 54311

Condition/Variance (Check all that apply):

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

☑ No variances were noted during sample receipt. Cooler Temperature Upon Receipt: 2°C Vad 4°C

Notes:

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____
☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is".
☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designee) [signature] Date: 4-4-96
Project Management Review: [signature] Date: 4-4-96

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 11/24/95

METALS

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Lead
Method: EPA 7421
Matrix: Liquid

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 06/03/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	0.12	MG/KG	U	0.30	1
BOHNW9	10772-001MS	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	104	%REC			1
BOHNW9	10772-001MSD	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	104	%REC			1
BOHNX0	10772-002	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	0.12	MG/KG	U	0.30	1
NA	QCBLK96412-1	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	-2.0	MG/KG	B	0.30	1
NA	QCLCS96412-1	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	104	%REC			1

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0HNW9

Lab Name: QUANTERRA_MO Contract: 519.136
Lab Code: ITMO Case No.: SAS No.: SDG No.: W01021
Matrix (soil/water): SOIL Lab Sample ID: 10772-001
Level (low/med): LOW Date Received: 04/03/96
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	0.12	U		F

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0HNX0

Lab Name: QUANTERRA_MO Contract: 519.136
Lab Code: ITMO Case No.: SAS No.: SDG No.: W01021
Matrix (soil/water): SOIL Lab Sample ID: 10772-002
Level (low/med): LOW Date Received: 04/03/96
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	0.12	U		F

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

U.S. EPA - CLP

3
BLANKS

Lab Name: QUANTERRA_MO_____ Contract: 519.136___

Lab Code: ITMO__ Case No.: _____ SAS No.: _____ SDG No.: W01021_____

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Lead	1.2	U	-2.2	B	-1.5	B			-2.010	B	F

FORM III - IN

SW-846

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

B0HNW9S

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W01021

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Lead	80-120	2.0850		0.1200	U	2.00	104.2		F

Comments:

FORM V (Part 1) - IN SW-846

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

B0HNW9SD

Lab Name: QUANTERRA_MO Contract: 519.136

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W01021

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Lead	80-120	2.0860		0.1200	U	2.00	104.3		F

Comments:

U.S. EPA - CLP

6A
MATRIX SPIKE DUPLICATES

EPA SAMPLE NO.

B0HNW9S

Lab Name: QUANTERRA MO Contract: 519.136

Lab Code: ITMO Case No.: SAS No.: SDG No.: W01021

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids: 100.0

Percent recoveries:

Analyte	Control Limit	Matrix Spike (S)		Matrix Spike Duplicate (SD)		RPD	Q	M
Pb	20%	104.20		104.30		0.1		F

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: QUANTERRA_MO_____ Contract: 519.136___

Lab Code: ITMO__ Case No.: _____ SAS No.: _____ SDG No.: W01021_____

Solid LCS Source: _____

Aqueous LCS Source: SOL+/CHEMPUR

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Lead	40.0	41.61	104.0						

FORM VII - IN

SW-846

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

June 11, 1996 9652598

J. E. Mecca, Director
Transition Programs Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Mecca:

TRANSMITTAL OF ADDITIONAL LEAD ANALYTICAL RESULTS OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18)

Attachments 1 and 2 provide the additional lead analyses data on the final flush for the Plutonium Uranium Extraction (PUREX) Plant U Cell Vessels and the F11 System Vessels, Part II (Tank F18). Graphite Furnace Lead analyses, U.S. Environmental Protection Agency (EPA) method 7421, was requested in order to obtain a detection limit of less than 5.0 mg/L. These results should further support that the final flush solutions for these systems are non-dangerous.

Attachment 3 is a letter for your transmittal of these results to the State of Washington, Department of Ecology, and the EPA.

If you have any questions, please contact Mr. G. J. LeBaron (373-1792) of my staff.

Very truly yours,

D. G. Hamrick, Director
PUREX Transition Project
Transition Projects Division

cla

Attachments 3

DOE-HQ - J. E. Newson (w/o attachments)

RL - w/o attachments

G. M. Bell	L. E. Rogers
B. F. Burton, Jr.	L. D. Romine
J. B. George	S. J. Weitenheimer
B. E. Hill	A. H. Wirkkala

9652598

ATTACHMENT 1

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS
GRAPHITE FURNACE LEAD ANALYSES

Consisting of 5 pages
including cover page

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

June 3, 1996

Attention: Karl Pool

JUN 1996 RECEIVED SDLA

JUN 1996 RECEIVED Data Log In

Project number	:	519.136
Date Received by Lab	:	February 16, 1996
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W01022
Data Deliverable	:	Summary

PRIORITY

I. Introduction

On February 16, 1996, two (2) water samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. On May 17, 1996, the client requested additional Graphite Furnace Lead analyses in order to obtain a lower detection limit. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
10366-001	95013-01.B06	60223601	Water	2/16/96 U-CELL RCRA
10366-002	95013-02.B06	60223602	Water	2/16/96 U-CELL FIELD Blank

Results for the original suite of analyses were reported as SDG W0902.

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: Lead by EPA method 7421.

Quanterra
Environmental Services

Westinghouse Hanford Company
June 3, 1996
Project Number: 519.136
SDG: W01022
Page 2

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate analyses were performed per the protocol for each analyte.

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

V. Comments

PRIORITY

General Reporting
Samples arrived at laboratory noted as waters on chain of custody, yet they were all improperly preserved. The saf 95-013 states the samples are an "other" or liquid mixed waste. Therefore, the samples were analyzed and reported as "others", using the water methods described on the Chain of Custody. See ROD-96-0011 which supercedes the comments noted on the St. Louis Condition Upon Receipt form.

Metals
The samples were digested as a solid at 1.0 g to 100 mls for the Lead analyzes due to insufficient sample volume available for a water or volume basis analysis.

Due to the nature of the sample matrix, percent solids was not determined for the samples in SDG W01022. Due to software configuration, the CLP forms list solid sample result units as " dry weight" and % solids as " 100 ". The results on the forms are actually mg/Kg as is and are not corrected for percent solids. The figure of 100 was used as percent solids for calculation purposes only and does not represent measured solids content of the samples.

Quanterra
Environmental Services

Westinghouse Hanford Company
June 3, 1996
Project Number: 519.136
SDG: W01022
Page 3

I certify that this Certificate of Analysis 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 hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Wade H. Price
Project Manager
e:\sqdmo01\price$\abbydave\hanford\hanw01022.coa

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Lead
Method: EPA 7421
Matrix: Liquid

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 06/03/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil
95013-01.B06	10366-001	Lead	7439-92-1	QCBLK92213-1	02/22/96	05/28/96	0.13	MG/KG	U	0.30	1
95013-01.B06	10366-001MS	Lead	7439-92-1	QCBLK92213-1	02/22/96	05/28/96	101	%REC			1
95013-01.B06	10366-001MSD	Lead	7439-92-1	QCBLK92213-1	02/22/96	05/28/96	103	%REC			1
95013-02.B06	10366-002	Lead	7439-92-1	QCBLK92213-1	02/22/96	05/28/96	0.13	MG/KG	U	0.30	1
NA	QCBLK92213-1	Lead	7439-92-1	QCBLK92213-1	02/22/96	05/28/96	-2.1	MG/KG	B	0.30	1
NA	QCLCS92213-1	Lead	7439-92-1	QCBLK92213-1	02/22/96	05/28/96	111	%REC			1

PRIORITY

9652598

ATTACHMENT 2

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT F11 SYSTEM VESSELS (TANK F18) GRAPHITE FURNACE LEAD ANALYSES

Consisting of 5 pages
including cover page

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

JUN 1996 RECEIVED SDLA

JUN 1996 RECEIVED Data Log In

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

June 3, 1996

Attention: Karl Pool

Project number	:	519.136
Date Received by Lab	:	April 3, 1996
Number of Samples	:	Two (2)
Sample Type	:	Liquid
SDG Number	:	W01021
Data Deliverable	:	Summary

PRIORITY

I. Introduction

On April 3, 1996, two (2) liquid samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. On May 17, 1996, the client requested additional Graphite Furnace Lead analyses in order to obtain a lower detection limit. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
10772-001	B0HNW9	60404801	Liquid	4/03/96 TK-F18 RCRA
10772-002	B0HNX0	60404802	Liquid	4/03/96 TK-F18 Field Blank

Results for the original suite of analyses were reported as SDG W0968.

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: Lead by EPA method 7421.

Quanterra
Environmental Services

Westinghouse Hanford Company
June 3, 1996
Project Number: 519.136
SDG: W01021
Page 2

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate analyses were performed per the protocol for each analyte.

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

V. Comments

PRIORITY

Shipping and Receiving
There were no comments or nonconformances associated with the shipping and receiving of these samples.

Metals
The samples were digested as a solid at 1.0 g to 100 mls for the Lead analyzes due to insufficient sample volume available for a water or volume basis analysis.

Due to the nature of the sample matrix, percent solids was not determined for the samples in SDG W01021. Due to software configuration, the CLP forms list solid sample result units as " dry weight" and % solids as " 100 ". The results on the forms are actually mg/Kg as is and are not corrected for percent solids. The figure of 100 was used as percent solids for calculation purposes only and does not represent measured solids content of the samples.

Quanterra
Environmental Services

Westinghouse Hanford Company
June 3, 1996
Project Number: 519.136
SDG: W01021
Page 3

I certify that this Certificate of Analysis 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 hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Wade H. Price
Project Manager
Quanterra Environmental Services, Inc.
e:\\sqlmo01\price$\labbydave\hanford\hanw01021.coa

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Lead
Method: EPA 7421
Matrix: Liquid

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 06/03/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	0.12	MG/KG	U	0.30	1
BOHNW9	10772-001MS	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	104	%REC			1
BOHNW9	10772-001MSD	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	104	%REC			1
BOHNX0	10772-002	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	0.12	MG/KG	U	0.30	1
NA	QCBLK96412-1	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	-2.0	MG/KG	B	0.30	1
NA	QCLCS96412-1	Lead	7439-92-1	QCBLK96412-1	04/08/96	05/14/96	104	%REC			1

PRIORITY

9652598

ATTACHMENT 3

LETTER FOR TRANSMITTAL TO ECOLOGY AND EPA - TRANSMITTAL OF ADDITIONAL LEAD ANALYSES FOR THE PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F18)

Consisting of 2 pages
including cover page

Mr. Michael A. Wilson
Program Manager
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336

Dear Mr. Wilson:

TRANSMITTAL OF ADDITIONAL LEAD ANALYTICAL RESULTS OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18)

Attachments 1 and 2 provide the additional lead analyses data on the final flush for the Plutonium Uranium Extraction (PUREX) Plant U Cell Vessels and the F11 System Vessels, Part II (Tank F18). Graphite Furnace Lead analyses, EPA method 7421, was requested in order to obtain a detection limit of less than
5.0 mg/L. These results should further support that the final flush solutions for these systems are non-dangerous.

If you have any questions, please contact L. D. Romine (376-4747) of my staff.

Sincerely,

J. E. Mecca, Director
Transition Programs Division

Enclosure:
Analytical Data

cc: J. Bartz, Ecology
D. Duncan, EPA
D. Hamrick, WHC, w/o encl.
M. Jaraysi, Ecology
R. Jim, YIN
G. LeBaron, WHC, w/o encl.
D. Powaukee, NPT
J. Wilkinson, CTUIR

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

JUN 28 1996

RECEIVED
JUL 03 1996
G.J. LeBARON

96-TPD-088

Mr. Michael A. Wilson, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Mr. Wilson:

TRANSMITTAL OF ADDITIONAL LEAD ANALYTICAL RESULTS OF PLUTONIUM URANIUM EXTRACTION (PUREX) PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18)

Enclosures 1 (Transmittal of PUREX Plant U Cell Vessels Graphite Furnace Lead Analyses) and 2 (Transmittal of PUREX Plant F11 System Vessels (Tank F18) Graphite Furnace Lead Analyses) provide additional lead data on the final flush for the PUREX Plant U cell vessels and the F11 system vessels Part II (Tank F18). Graphite furnace lead analyses, EPA method 7421, was requested in order to obtain a detection limit of less than 5.0 milligrams per liter. These results confirm that the final flush solutions for these systems are non-dangerous.

If you have any questions, please contact Larry D. Romine, PUREX Program Manager, on (509) 376-4747.

Sincerely,

George H. Sanders, Administrator
Hanford Tri-Party Agreement

TPD:LDR

Enclosures

cc w/encl:
J. Bartz, Ecology
M. Jaraysi, Ecology
R. Jim, Yakama Indian Nation
D. Powaukee, Nez Perce Tribe
J. Wilkinson, Confederated Tribes
of the Umatilla Reservation

cc w/o encl:
D. G. Hamrick, WHC
G. J. LeBaron, WHC

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
C. N. Villalobos, 373-4753	J. E. Mecca, RL	9652598

Subject: TRANSMITTAL OF ADDITIONAL LEAD ANALYTICAL RESULTS OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18)

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		R. W. Bailey	S6-15	
		R. J. Bliss	B3-04	
		D. G. Hamrick	S6-15	X
		D. G. Harlow	S6-19	
		J. P. Hayfield	S6-18	
	11 JUN'96	G. J. LeBaron	S6-19	X
	6-11-96	W. A. Peiffer	S6-19	
		M. J. Stephenson	H6-22	
	6/11/96	C. N. Villalobos	S6-19	X
		DGH File/LB		

A-6001-538 (01/95) WEF008

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

MAY 1 1996

96-TPD-046

Mr. Michael A. Wilson
Program Manager
State of Washington
Department of Ecology
P. O. Box 47600
Olympia, Washington 98504-7600

Dear Mr. Wilson:

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION (PUREX) PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18) LOOP FLUSH ANALYTICAL RESULTS

Laboratory analytical results conducted on the final flush for the PUREX Plant U Cell Vessels and F11 System Vessels, Part II (Tank F18) are enclosed. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with the State of Washington Department of Ecology and the U.S. Environmental Protection Agency.

This is the last of the analytical results from vessel flushes as agreed upon in support of PUREX deactivation. However, Tank U3 will be used in support of tunnel decontamination required for receipt of the 324 Building waste. While Tank U3 is open, wastes from deactivation activities (e.g., draining headers) will be transferred to Tank U3. Therefore, Tank U3 will be reflushed and a Resource Conservation and Recovery Act of 1976 protocol sample again taken to demonstrate that the remaining heel does not designate as dangerous waste.

A copy of the Predetermination Reports, designating the final flush solutions based on the analytical results, are also included in the enclosure. The final flushes for these vessels were designated as a non-dangerous waste.

If you have any questions, please contact Larry D. Romine, PUREX Program Manager, on (509) 376-4747.

Sincerely,

Larry Romine

for J. E. Mecca, Director
Transition Program Division

TPD:LDR

Enclosure

cc: See attached distribution list

Distribution list for letter 96-TPD-046, dated MAY 1 1996

cc w/encl:
R. J. Julian, Ecology
J. K. Bartz, Ecology
M. N. Jaraysi, Ecology

cc w/o encl:
D. G. Hamrick, WHC
G. J. LeBaron, WHC

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. E. Mecca, RL (D. G. Hamrick, WHC)	M. A. Wilson, Ecology	Incoming 9601119 XRef 9651701

Subject: TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION (PUREX) PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18) LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	
		R. W. Bailey	S6-15	
		R. J. Bliss (Sr. Staff)	B3-04	
		D. G. Hamrick	S6-15	
		D. G. Harlow	S6-19	
		J. P. Hayfield	S6-18	
		G. J. LeBaron	S6-19	
		W. A. Peiffer	S6-19	
		M. J. Stephenson	H6-20	
		C. N. Villalobos	S6-19	

RECEIVED
MAY 07 1996
G.J. LeBARON

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

April 25, 1996 9651701

J. E. Mecca, Director
Transition Programs Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Mecca:

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18) LOOP FLUSH ANALYTICAL RESULTS

Attachments 1 and 2 are laboratory analytical results conducted on the final flush for the Plutonium Uranium Extraction (PUREX) Plant U Cell Vessels and the F11 System Vessels, Part II (Tank F18). These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA).

This is the last of the analytical results from vessel flushes as agreed upon in support of PUREX Deactivation. However, Tank U3 will be used in support of tunnel decontamination required for receipt of the 324 Building waste. While Tank U3 is open, wastes from deactivation activities (e.g., draining headers) will be transferred to Tank U3. Therefore, Tank U3 will be reflushed and a Resource Conservation and Recovery Act of 1976 protocol sample again taken to demonstrate that the remaining heel does not designate as dangerous waste.

A copy of the Predetermination Reports, designating the final flush solution based on the analytical results, are also included in Attachments 1 and 2. The final flushes for these vessels were designated as non-dangerous waste.

9651701

ATTACHMENT 1

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS
LOOP FLUSH ANALYTICAL RESULTS

PUREX U CELL VESSELS RCRA ANALYTICAL DATA
TABLE OF CONTENTS

PAGE

DESCRIPTION
RCRA Analytical Data Summary 1

PROCESS SCREENING DATA
Process Screening Sample 2
Chain of Custody 4

RAD SCREENING SAMPLE
RAD Screening Sample by 222-S lab 5

RCRA PROTOCOL SAMPLE
Certificate of Analysis 6

Analytical Data Summary: Metals
- ICAP Metals for RCRA Protocol Sample 9
- ICAP Metals Matrix Spike 10
- ICAP Metals Matrix Spike Duplicate 11
- ICAP Metals Field Sample Blank 12
- ICAP Metals Quality Control Blank 13
- ICAP Metals Quality Laboratory Control Blank 14
- Arsenic Analysis (incl. all spikes/QC blanks) 15
- Selenium Analysis (incl. all spikes/QC blanks) 16
- Mercury Analysis (incl. all spikes/QC blanks) 17

Analytical Data Summary: Wet Chemistry
- pH Analysis for RCRA Protocol Sample (incl. QC blanks) 18
- Total Organic Carbon (TOC) Analysis (incl. all spikes/QC blanks) . . 19

Analytical Data Summary: Volatile Organics
- VOA for RCRA Sample 20
- VOA Matrix Spike 21
- VOA Matrix Spike Duplicate 22
- VOA Field Sample Blank 23
- VOA Quality Control Blank 24
- VOA Quality Laboratory Control Blank 25

Predetermination Report 26

RCRA ANALYTICAL DATA SUMMARY
PUREX U-Cell Vessels
SAMPLE LOCATION: TANK U4
SAMPLE ID# 95013-01.B06

Analyte	Dangerous Waste Designation Threshold (mg/L)	RCRA Sample Results (mg/L)
Cadmium	1.0	0.34 (U)
Chromium	5.0	0.73 (B)
Lead	5.0	3.4 (U)
Barium	100.0	0.39 (B)
Silver	5.0	0.50 (U)
Arsenic	5.0	0.10 (U)
Selenium	1.0	0.10 (U)
Mercury	0.2	0.05 (U)
pH	pH<2 or pH>12.5	2.94
Total Organic Carbon (TOC)	100,000 (10wt% based upon designation limits for tri-butyl phosphate)	undetect (U)
Benzene	0.5	undetect (U)
Carbon Tetrachloride	0.5	undetect (U)
Chlorobenzene	100	undetect (U)
Chloroform	6.0	undetect (U)
1,2-Dichloroethane	0.5	undetect (U)
1,1 Dichloroethylene	0.7	undetect (U)
2-Butanone	200	undetect (U)
Tetrachloroethylene	0.7	undetect (U)
Trichloroethylene	0.5	undetect (U)
Vinyl Chloride	0.2	undetect (U)

Definitions:
U = compound not detected
B = compound was found in the blank

PROCESS SCREENING DATA

TK-U4 Screening sample #1

SAMPLE STATUS REPORT FOR P 3611. P-BLANK TIME: 1/30/96 11:26
DATCHED: 1/23/96 9:47 SAMPLE HAS NOT BEEN SLURPED PAGE 1
RECEIVED: 1/24/96 13:24

EXT.	DETER.	RESULTS OR STATUS			OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********			***	***	******
1003	APPR/OTR	CLEAR COLORLESS AQUEOUS < 1% SOLIDS					R43B1
3201	pH	3.04000E 00	NONE		N	Y	KP42J
3410	Pu/AEA	2.63000E-05	G/L	PU239/240	N	Y	KP42J
4419	U	2.93000E-02	G/L		N	Y	KP42J
5750	ICP-LIQ	2.97000E 01	uG/ML	Zr	N	Y	KP42J
5750	ICP-LIQ	2.44000E-01	uG/ML	Sr	N	Y	KP42J
5750	ICP-LIQ	8.65000E 00	uG/ML	Si	N	Y	KP42J
5750	ICP-LIQ	2.61000E 00	uG/ML	Al	N	Y	KP42J
5750	ICP-LIQ	2.30000E-02	uG/ML	Cu	N	Y	KP42J
5750	ICP-LIQ	8.20000E-02	uG/ML	Zn	N	Y	KP42J
5750	ICP-LIQ	7.23000E-01	uG/ML	Ni	N	Y	KP42J
5750	ICP-LIQ	6.90000E-02	uG/ML	La	N	Y	KP42J

PRESS ANY KEY TO CONTINUE

SAMPLE STATUS REPORT FOR P 3611. P-BLANK TIME: 1/30/96 11:27
DATCHED: 1/23/96 9:47 SAMPLE HAS NOT BEEN SLURPED PAGE 2

EXT.	DETER.	RESULTS OR STATUS			OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********			***	***	******
5750	ICP-LIQ	6.14000E 00	uG/ML	Fe	N	Y	KP42J
5750	ICP-LIQ	5.34000E 01	uG/ML	Ca	N	Y	KP42J
5750	ICP-LIQ	7.19000E-01	uG/ML	Cr	N	Y	KP42J
5750	ICP-LIQ	3.60000E 01	uG/ML	U	N	Y	KP42J
5750	ICP-LIQ	5.01000E 00	uG/ML	P	N	Y	KP42J
5750	ICP-LIQ	7.07000E 00	uG/ML	S	N	Y	KP42J
5750	ICP-LIQ	1.03000E 01	uG/ML	Mg	N	Y	KP42J
5750	ICP-LIQ	1.71400E 02	uG/ML	Na	N	Y	KP42J
5750	ICP-LIQ	3.65000E-01	uG/ML	Ag	N	Y	KP42J
5750	ICP-LIQ	9.20000E-02	uG/ML	Ti	N	Y	KP42J
5750	ICP-LIQ	5.00000E-03	uG/ML	Cd	N	Y	KP42J
5750	ICP-LIQ	7.57000E 00	uG/ML	K	N	Y	KP42J

PRESS ANY KEY TO CONTINUE

SAMPLE STATUS REPORT FOR P 3611. P-BLANK TIME: 1/30/96 11:27
DATCHED: 1/23/96 9:47 SAMPLE HAS NOT BEEN SLURPED PAGE 3

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	2.16000E-01 uG/ML	Mn	N	Y	KP42J
5750	ICP-LIQ	1.36000E-01 uG/ML	V	N	Y	KP42J
5750	ICP-LIQ	9.00000E-03 uG/ML	Be	N	Y	KP42J

END OF REPORT

PRESS ANY KEY TO CONTINUE

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C # 009767 Page 1 of 1

Collector D.E. RICHARDS	Contact/Requestor VILLALOBOS, CARMEN	Tel. No. 373-4753 MSIN S6-19 FAX
SAF Number 95-013	Sample Origin U Cell / PUREX	Purchase Order/Charge Code KPS1T
Project Title Flush PUREX Vessels - 2	Logbook # ~~205~~ PER 2-6-96 WHC-N-205	Ice Chest # N/A Temp. N/A
Shipped To (Lab) Quanterra	Method of Shipment Government Vehicle	Bill of Lading/Air Bill No. N/A
Protocol RCRA 602236	Data Turnaround PRIORITY	~~Offsite Property No.~~ RSR # 33690 # Sample T5017-01.B06 ONLY #

Sample No.	Lab. ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
95013-01.B06	01	W	2/6/96	1040	(1) 40 aGs	ACTIVITY SCAN (Lab Specific)	NONE
95013-01.B06		W	2/6/96	1040	(1) 1000 aG	ICP METALS TAL (6010): to include lead. As (7060), Se (7740), Hg (7470).	4 deg. C
95013-01.B06		W	2/6/96	1040	(1) 40 aGs	pH (9040)	None
95013-01.B06		W	2/6/96	1040	(1) 40 aGs	TOC (9060) 100%	COOL TO 4 C
95013-01.B06		W	2/6/96	1040	(1) 40 aGs	VOA (8240)	4 deg. C
95013-01.B06		W	2/6/96	1040	(1) 40 aGs	VOA (8240)	4 deg. C
95013-02.B06	02	W	2/6/96	1024	(1) 40 aGs	ACTIVITY SCAN (Lab Specific)	NONE
95013-02.B06		W	2/6/96	1024	(1) 1000 aG	ICP METALS TAL (6010): to include lead. As (7060), Se (7740), Hg (7470).	4 deg. C
95013-02.B06		W	2/6/96	1024	(1) 40 aGs	pH (9040)	NONE
95013-02.B06		W	2/6/96	1024	(1) 40 aGs	TOC (9060) 100%	4 deg. C
95013-02.B06		W	2/6/96	1024	(1) 40 aGs	VOA (8240)	4 deg. C
95013-02.B06		W	2/6/96	1024	(1) 40 aGs	VOA (8240) <100	4 deg. C

POSSIBLE SAMPLE HAZARDS/REMARKS MSDS Yes ☐ No ☑
List all known wastes.
Sample 95013-01.B06 contains Radioactive Material.

SPECIAL INSTRUCTIONS
SDG W0902

Hold Time
PRIORITY TURNAROUND
950130 1 - 20,000 cpm

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
DERichards			2/16/96 1035	R Boyd	R. Boyd		2-16-96 1035
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

PRIORITY

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.

A-6001-500 (07/95)

03/05/96 09:17 ☎509 3721546 ☑028

RAD SCREENING DATA

VALIDATED RESULTS SHORT REPORT 12 Feb 1996

Customer ID: 95013-01.B06
Lab Sample#: S96E000078

Sample Date:
Recv. Date: 02/06/96 14:38

PARAMETER	RESULTS	UNITS
ENV GEA for Co,Cs,Eu		
Cesium-134 by GEA	9.280e-05	uCi/mL
Cesium-137 by GEA	4.280e-02	uCi/mL
Co-60 GEA Rel. % Count Error	13.3	% Ct. Error
Cobalt-60 by GEA	2.170e-05	uCi/mL
Cs-134 GEA Rel. % Count Error	7.59	% Ct. Error
Cs-137 GEA Rel. % Count Error	0.230	% Ct. Error
Eu-152 GEA Rel % Counting Err	n/a	% Ct. Error
Eu-154 GEA Rel % Counting Err	3.92	% Ct. Error
Eu-155 GEA Rel % Counting Err	14.4	% Ct. Error
Europium-152 by GEA	< 1.067e-05	uCi/mL
Europium-154 by GEA	3.720e-04	uCi/mL
Europium-155 by GEA	3.330e-04	uCi/mL
Env Alpha/Beta		
Alpha Env: Liq Rel % Cnt Err	2.4	% Ct. Error
Alpha Env: Liquid/Filters	4.34e-3	uCi/mL
Beta Env: Liq Rel % Cnt Err	0.3	% Ct. Error
Beta Env: Liquid/Filters	1.46e-1	uCi/mL

Quanterra Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

MAR 1996 RECEIVED SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

February 29, 1996

Attention: Karl Pool

Project number	:	519.136
Date Received by Lab	:	February 16, 1996
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W0902
Data Deliverable	:	Summary

PRIORITY

I. Introduction

On February 16, 1996, two (2) water samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
10366-001	95013-01.B06	60223601	Water	2/16/96 RCRA Sample
10366-002	95013-02.B06	60223602	Water	2/16/96 Field Blank

W 3/18/96

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: pH by EPA method 9040. TOC by EPA method 9060. VOA by EPA method 8240. TAL ICP Metals by EPA method 6010. Arsenic by EPA method 7060. Selenium by EPA 7740. Mercury by EPA method 7470.

6

PRIORITY

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate and/or Sample Duplicate analyses were performed per the protocol for each analyte. pH analysis uses only Sample Duplicate for matrix QC.

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

V. Comments

General Reporting
Samples arrived at laboratory noted as waters on chain of custody, yet they were all improperly preserved. The saf 95-013 states the samples are an "other" or liquid mixed waste. Therefore, the samples were analyzed and reported as "others", using the water methods described on the Chain of Custody. See ROD-96-0011 which supercedes the comments noted on the St. Louis Condition Upon Receipt form.

Samples received with one (1) day remaining on VOA holding time.

Volatiles
Samples 10366-001 and -002 were aqueous samples and therefore were analyzed as waters using a water calibration. Per the client's request, the results are reported as a soil in soil units, using a density of 1-g/ml.

Quanterra
Environmental Services

Westinghouse Hanford Company
February 29, 1996
Project Number: 519.136
SDG: W0902
Page 3

PRIORITY

Metals
In accordance with the project managers instructions, a 1.00g aliquot for ICAP and 0.2g aliquot for mercury were digested using method 3010A and 7470A respectively. The sample results were then reported in mg/Kg with the exception of the Method Blank which reflects the units determined by use of the requested water methods.

The silver result in the QC blank is reported as a negative value. The software used to produce this datum follows the CLP protocol where all absolute values greater than the detection limit are reported, however, SW846 protocol requires that the number only be below the detection limit, regardless of sign, to be reported as undetected.

Wet Chemistry
The Relative Percent Difference between the sample and sample duplicate results for the TOC analysis could not be calculated due to values below the detection limit.

I certify that this Certificate of Analysis 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 hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Wade H. Price
Project Manager
e:\\sqdmo01\price$\abbydave\hanford\hanw0902.coa

METALS ANALYSIS

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: 95013-01.B06

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Quanterra ID : 10366-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK92210-1	02/22/96	02/23/96	2.7	MG/KG	U	20.0	1
Antimony	7440-36-0	QCBLK92210-1	02/22/96	02/23/96	3.2	MG/KG	U	6.0	1
Barium	7440-39-3	QCBLK92210-1	02/22/96	02/23/96	0.39	MG/KG	B	20.0	1
Beryllium	7440-41-7	QCBLK92210-1	02/22/96	02/23/96	0.06	MG/KG	U	0.50	1
Cadmium	7440-43-9	QCBLK92210-1	02/22/96	02/23/96	0.34	MG/KG	U	0.50	1
Calcium	7440-70-2	QCBLK92210-1	02/22/96	02/23/96	375	MG/KG	B	500	1
Chromium	7440-47-3	QCBLK92210-1	02/22/96	02/23/96	0.73	MG/KG	B	1.0	1
Cobalt	7440-48-4	QCBLK92210-1	02/22/96	02/23/96	0.36	MG/KG	U	5.0	1
Copper	7440-50-8	QCBLK92210-1	02/22/96	02/23/96	0.62	MG/KG	U	2.5	1
Iron	7439-89-6	QCBLK92210-1	02/22/96	02/23/96	9.4	MG/KG	B	10.0	1
Lead	7439-92-1	QCBLK92210-1	02/22/96	02/23/96	3.4	MG/KG	U	10.0	1
Magnesium	7439-95-4	QCBLK92210-1	02/22/96	02/23/96	45.7	MG/KG	B	500	1
Manganese	7439-96-5	QCBLK92210-1	02/22/96	02/23/96	0.19	MG/KG	B	1.5	1
Nickel	7440-02-0	QCBLK92210-1	02/22/96	02/23/96	1.6	MG/KG	U	4.0	1
Potassium	7440-09-7	QCBLK92210-1	02/22/96	02/23/96	201	MG/KG	U	500	1
Silver	7440-22-4	QCBLK92210-1	02/22/96	02/23/96	0.50	MG/KG	U	1.0	1
Sodium	7440-23-5	QCBLK92210-1	02/22/96	02/23/96	73.9	MG/KG	B	500	1
Vanadium	7440-62-2	QCBLK92210-1	02/22/96	02/23/96	0.62	MG/KG	U	5.0	1
Zinc	7440-66-6	QCBLK92210-1	02/22/96	02/23/96	1.5	MG/KG	B	2.0	1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project:. 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID: 95013-01.B06

Quanterra ID : 10366-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Antimony	7440-36-0	QCBLK92210-1	02/22/96	02/23/96	100	%REC			1
Barium	7440-39-3	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Beryllium	7440-41-7	QCBLK92210-1	02/22/96	02/23/96	100	%REC			1
Cadmium	7440-43-9	QCBLK92210-1	02/22/96	02/23/96	96	%REC			1
Chromium	7440-47-3	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Cobalt	7440-48-4	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Copper	7440-50-8	QCBLK92210-1	02/22/96	02/23/96	100	%REC			1
Lead	7439-92-1	QCBLK92210-1	02/22/96	02/23/96	103	%REC			1
Manganese	7439-96-5	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Nickel	7440-02-0	QCBLK92210-1	02/22/96	02/23/96	101	%REC			1
Silver	7440-22-4	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Vanadium	7440-62-2	QCBLK92210-1	02/22/96	02/23/96	97	%REC			1
Zinc	7440-66-6	QCBLK92210-1	02/22/96	02/23/96	97	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID: 95013-01.B06

Quanterra ID : 10366-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Antimony	7440-36-0	QCBLK92210-1	02/22/96	02/23/96	102	%REC			1
Barium	7440-39-3	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Beryllium	7440-41-7	QCBLK92210-1	02/22/96	02/23/96	101	%REC			1
Cadmium	7440-43-9	QCBLK92210-1	02/22/96	02/23/96	94	%REC			1
Chromium	7440-47-3	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Cobalt	7440-48-4	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Copper	7440-50-8	QCBLK92210-1	02/22/96	02/23/96	102	%REC			1
Lead	7439-92-1	QCBLK92210-1	02/22/96	02/23/96	101	%REC			1
Manganese	7439-96-5	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Nickel	7440-02-0	QCBLK92210-1	02/22/96	02/23/96	102	%REC			1
Silver	7440-22-4	QCBLK92210-1	02/22/96	02/23/96	91	%REC			1
Vanadium	7440-62-2	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Zinc	7440-66-6	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID: 95013-02.B06

Quanterra ID : 10366-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK92210-1	02/22/96	02/23/96	2.7	MG/KG	U	20.0	1
Antimony	7440-36-0	QCBLK92210-1	02/22/96	02/23/96	3.2	MG/KG	U	6.0	1
Barium	7440-39-3	QCBLK92210-1	02/22/96	02/23/96	0.36	MG/KG	B	20.0	1
Beryllium	7440-41-7	QCBLK92210-1	02/22/96	02/23/96	0.06	MG/KG	U	0.50	1
Cadmium	7440-43-9	QCBLK92210-1	02/22/96	02/23/96	0.34	MG/KG	U	0.50	1
Calcium	7440-70-2	QCBLK92210-1	02/22/96	02/23/96	335	MG/KG	B	500	1
Chromium	7440-47-3	QCBLK92210-1	02/22/96	02/23/96	0.44	MG/KG	U	1.0	1
Cobalt	7440-48-4	QCBLK92210-1	02/22/96	02/23/96	0.36	MG/KG	U	5.0	1
Copper	7440-50-8	QCBLK92210-1	02/22/96	02/23/96	1.0	MG/KG	B	2.5	1
Iron	7439-89-6	QCBLK92210-1	02/22/96	02/23/96	3.5	MG/KG	B	10.0	1
Lead	7439-92-1	QCBLK92210-1	02/22/96	02/23/96	3.4	MG/KG	U	10.0	1
Magnesium	7439-95-4	QCBLK92210-1	02/22/96	02/23/96	45.2	MG/KG	B	500	1
Manganese	7439-96-5	QCBLK92210-1	02/22/96	02/23/96	0.11	MG/KG	U	1.5	1
Nickel	7440-02-0	QCBLK92210-1	02/22/96	02/23/96	1.6	MG/KG	U	4.0	1
Potassium	7440-09-7	QCBLK92210-1	02/22/96	02/23/96	201	MG/KG	U	500	1
Silver	7440-22-4	QCBLK92210-1	02/22/96	02/23/96	0.50	MG/KG	U	1.0	1
Sodium	7440-23-5	QCBLK92210-1	02/22/96	02/23/96	40.6	MG/KG	B	500	1
Vanadium	7440-62-2	QCBLK92210-1	02/22/96	02/23/96	0.62	MG/KG	U	5.0	1
Zinc	7440-66-6	QCBLK92210-1	02/22/96	02/23/96	1.1	MG/KG	B	2.0	1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 02/29/96

Quanterra ID : QCBLK92210-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK92210-1	02/22/96	02/23/96	44.1	UG/L	B	200	1
Antimony	7440-36-0	QCBLK92210-1	02/22/96	02/23/96	31.7	UG/L	U	60.0	1
Barium	7440-39-3	QCBLK92210-1	02/22/96	02/23/96	0.50	UG/L	U	200	1
Beryllium	7440-41-7	QCBLK92210-1	02/22/96	02/23/96	0.60	UG/L	U	5.0	1
Cadmium	7440-43-9	QCBLK92210-1	02/22/96	02/23/96	3.4	UG/L	U	5.0	1
Calcium	7440-70-2	QCBLK92210-1	02/22/96	02/23/96	73.3	UG/L	B	5000	1
Chromium	7440-47-3	QCBLK92210-1	02/22/96	02/23/96	4.4	UG/L	U	10.0	1
Cobalt	7440-48-4	QCBLK92210-1	02/22/96	02/23/96	3.6	UG/L	U	50.0	1
Copper	7440-50-8	QCBLK92210-1	02/22/96	02/23/96	11.9	UG/L	B	25.0	1
Iron	7439-89-6	QCBLK92210-1	02/22/96	02/23/96	37.6	UG/L	B	100	1
Lead	7439-92-1	QCBLK92210-1	02/22/96	02/23/96	34.3	UG/L	U	100	1
Magnesium	7439-95-4	QCBLK92210-1	02/22/96	02/23/96	97.5	UG/L	U	5000	1
Manganese	7439-96-5	QCBLK92210-1	02/22/96	02/23/96	1.1	UG/L	U	15.0	1
Nickel	7440-02-0	QCBLK92210-1	02/22/96	02/23/96	16.1	UG/L	U	40.0	1
Potassium	7440-09-7	QCBLK92210-1	02/22/96	02/23/96	2010	UG/L	U	5000	1
Silver	7440-22-4	QCBLK92210-1	02/22/96	02/23/96	-5.8	UG/L	B	10.0	1
Sodium	7440-23-5	QCBLK92210-1	02/22/96	02/23/96	57.2	UG/L	U	5000	1
Vanadium	7440-62-2	QCBLK92210-1	02/22/96	02/23/96	6.2	UG/L	U	50.0	1
Zinc	7440-66-6	QCBLK92210-1	02/22/96	02/23/96	4.5	UG/L	B	20.0	1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project:- 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 02/29/96

Quanterra ID : QCLCS92210-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK92210-1	02/22/96	02/23/96	103	%REC			1
Antimony	7440-36-0	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Barium	7440-39-3	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Beryllium	7440-41-7	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Cadmium	7440-43-9	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Calcium	7440-70-2	QCBLK92210-1	02/22/96	02/23/96	101	%REC			1
Chromium	7440-47-3	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Cobalt	7440-48-4	QCBLK92210-1	02/22/96	02/23/96	97	%REC			1
Copper	7440-50-8	QCBLK92210-1	02/22/96	02/23/96	100	%REC			1
Iron	7439-89-6	QCBLK92210-1	02/22/96	02/23/96	105	%REC			1
Lead	7439-92-1	QCBLK92210-1	02/22/96	02/23/96	101	%REC			1
Magnesium	7439-95-4	QCBLK92210-1	02/22/96	02/23/96	100	%REC			1
Manganese	7439-96-5	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Nickel	7440-02-0	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Potassium	7440-09-7	QCBLK92210-1	02/22/96	02/23/96	99	%REC			1
Silver	7440-22-4	QCBLK92210-1	02/22/96	02/23/96	72	%REC			1
Sodium	7440-23-5	QCBLK92210-1	02/22/96	02/23/96	100	%REC			1
Vanadium	7440-62-2	QCBLK92210-1	02/22/96	02/23/96	98	%REC			1
Zinc	7440-66-6	QCBLK92210-1	02/22/96	02/23/96	100	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project:. 519.136

Category: Arsenic
Method: EPA 7060
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
95013-01.B06	10366-001	Arsenic	7440-38-2	QCBLK92213-1	02/22/96	02/23/96	0.10	MG/KG	U	1.0	1
95013-01.B06	10366-001MS	Arsenic	7440-38-2	QCBLK92213-1	02/22/96	02/23/96	98	%REC			1
95013-01.B06	10366-001MSD	Arsenic	7440-38-2	QCBLK92213-1	02/22/96	02/23/96	99	%REC			1
95013-02.B06	10366-002	Arsenic	7440-38-2	QCBLK92213-1	02/22/96	02/23/96	0.10	MG/KG	U	1.0	1
NA	QCBLK92213-1	Arsenic	7440-38-2	QCBLK92213-1	02/22/96	02/23/96	1.0	UG/L	U	10.0	1
NA	QCLCS92213-1	Arsenic	7440-38-2	QCBLK92213-1	02/22/96	02/23/96	101	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Selenium
Method: EPA 7000 Series
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
95013-01.B06	10366-001	Selenium	7782-49-2	QCBLK92213-1	02/22/96	02/23/96	0.10	MG/KG	U	0.50	1
95013-01.B06	10366-001MS	Selenium	7782-49-2	QCBLK92213-1	02/22/96	02/23/96	92	%REC			1
95013-01.B06	10366-001MSD	Selenium	7782-49-2	QCBLK92213-1	02/22/96	02/23/96	93	%REC			1
95013-02.B06	10366-002	Selenium	7782-49-2	QCBLK92213-1	02/22/96	02/23/96	0.10	MG/KG	U	0.50	1
NA	QCBLK92213-1	Selenium	7782-49-2	QCBLK92213-1	02/22/96	02/23/96	1.0	UG/L	U	5.0	1
NA	QCLCS92213-1	Selenium	7782-49-2	QCBLK92213-1	02/22/96	02/23/96	102	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Mercury
Method: EPA 7470
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
95013-01.B06	10366-001	Mercury	7439-97-6	QCBLK92318-1	02/23/96	02/23/96	0.05	MG/KG	U	0.10	1
95013-01.B06	10366-001MS	Mercury	7439-97-6	QCBLK92318-1	02/23/96	02/23/96	105	%REC			1
95013-01.B06	10366-001MSD	Mercury	7439-97-6	QCBLK92318-1	02/23/96	02/23/96	108	%REC			1
95013-02.B06	10366-002	Mercury	7439-97-6	QCBLK92318-1	02/23/96	02/23/96	0.05	MG/KG	U	0.10	1
NA	QCBLK92318-1	Mercury	7439-97-6	QCBLK92318-1	02/23/96	02/23/96	0.10	UG/L	U	0.20	1
NA	QCLCS92318-1	Mercury	7439-97-6	QCBLK92318-1	02/23/96	02/23/96	107	%REC			1

PRIORITY

WET CHEMISTRY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: pH
Method: EPA 9040
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
013-01.B06	10366-001	pH	PH	QCBLK91924-1	02/20/96	02/20/96	2.94	PH			1
013-01.B06	10366-001DUP	pH	PH	QCBLK91924-1	02/20/96	02/20/96	2.94	PH			1
95013-02.B06	10366-002	pH	PH	QCBLK91924-1	02/20/96	02/20/96	8.53	PH			1
NA	QCBLK91924-1	pH	PH	QCBLK91924-1	02/20/96	02/20/96	6.11	PH			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Total Organic Carbon
Method: EPA 9060
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
95013-01.B06	10366-001	Total Organic C	TOC	QCBLK92191-1	02/22/96	02/22/96	25.2	UG/G	U	25.2	1
95013-01.B06	10366-001DUP	Total Organic C	TOC	QCBLK92191-1	02/22/96	02/22/96	25.2	UG/G	U	25.2	1
95013-01.B06	10366-001MS	Total Organic C	TOC	QCBLK92191-1	02/22/96	02/22/96	100	%REC			1
95013-02.B06	10366-002	Total Organic C	TOC	QCBLK92191-1	02/22/96	02/22/96	25.2	UG/G	U	25.2	1
NA	QCBLK92191-1	Total Organic C	TOC	QCBLK92191-1	02/22/96	02/22/96	25.0	UG/G	U	25.0	1
NA	QCLCS92191-1	Total Organic C	TOC	QCBLK92191-1	02/22/96	02/22/96	99	%REC			1

PRIORITY

VOLATILE ORGANICS

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID: 95013-01.B06

Quanterra ID : 10366-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
Carbon Disulfide	75-15-0	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
2-Butanone	78-93-3	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
2-Hexanone	591-78-6	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
Tetrachloroethene	127-18-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK91942-1	02/20/96	02/20/96	106	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK91942-1	02/20/96	02/20/96	96	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK91942-1	02/20/96	02/20/96	105	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: 95013-01.B06

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Quanterra ID : 10366-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK91942-1	02/20/96	02/20/96	135	%REC			1
Trichloroethene	79-01-6	QCBLK91942-1	02/20/96	02/20/96	105	%REC			1
Benzene	71-43-2	QCBLK91942-1	02/20/96	02/20/96	105	%REC			1
Toluene	108-88-3	QCBLK91942-1	02/20/96	02/20/96	104	%REC			1
Chlorobenzene	108-90-7	QCBLK91942-1	02/20/96	02/20/96	100	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK91942-1	02/20/96	02/20/96	110	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK91942-1	02/20/96	02/20/96	94	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK91942-1	02/20/96	02/20/96	109	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID: 95013-01.B06

Quanterra ID : 10366-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK91942-1	02/20/96	02/20/96	144	%REC			1
Trichloroethene	79-01-6	QCBLK91942-1	02/20/96	02/20/96	105	%REC			1
Benzene	71-43-2	QCBLK91942-1	02/20/96	02/20/96	104	%REC			1
Toluene	108-88-3	QCBLK91942-1	02/20/96	02/20/96	100	%REC			1
Chlorobenzene	108-90-7	QCBLK91942-1	02/20/96	02/20/96	97	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK91942-1	02/20/96	02/20/96	104	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK91942-1	02/20/96	02/20/96	90	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK91942-1	02/20/96	02/20/96	104	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Sample Date : 02/06/96
Receipt Date : 02/16/96
Report Date : 02/29/96

Client ID: 95013-02.B06

Quanterra ID : 10366-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK91942-1	02/20/96	02/20/96	21	UG/KG		20	1
Carbon Disulfide	75-15-0	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
2-Butanone	78-93-3	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
2-Hexanone	591-78-6	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
Tetrachloroethene	127-18-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK91942-1	02/20/96	02/20/96	1	UG/KG	J	5	1
Chlorobenzene	108-90-7	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK91942-1	02/20/96	02/20/96	4	UG/KG	J	5	1
Xylene (total)	1330-20-7	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK91942-1	02/20/96	02/20/96	103	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK91942-1	02/20/96	02/20/96	91	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK91942-1	02/20/96	02/20/96	109	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 02/29/96

Quanterra ID : QCBLK91942-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Bromomethane	74-83-9	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Vinyl Chloride	75-01-4	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Chloroethane	75-00-3	QCBLK91942-1	02/20/96	02/20/96	10	UG/KG	U	10	1
Methylene Chloride	75-09-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Acetone	67-64-1	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
Carbon Disulfide	75-15-0	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Chloroform	67-66-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
2-Butanone	78-93-3	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Bromodichloromethane	75-27-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Trichloroethene	79-01-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Dibromochloromethane	124-48-1	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Benzene	71-43-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Bromoform	75-25-2	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
2-Hexanone	591-78-6	QCBLK91942-1	02/20/96	02/20/96	20	UG/KG	U	20	1
Tetrachloroethene	127-18-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Toluene	108-88-3	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Chlorobenzene	108-90-7	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
EthylBenzene	100-41-4	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Styrene	100-42-5	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Xylene (total)	1330-20-7	QCBLK91942-1	02/20/96	02/20/96	5	UG/KG	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK91942-1	02/20/96	02/20/96	106	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK91942-1	02/20/96	02/20/96	96	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK91942-1	02/20/96	02/20/96	110	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 02/29/96

Quanterra ID : QCSPK91942-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK91942-1	02/20/96	02/20/96	134	%REC			1
Trichloroethene	79-01-6	QCBLK91942-1	02/20/96	02/20/96	98	%REC			1
Benzene	71-43-2	QCBLK91942-1	02/20/96	02/20/96	102	%REC			1
Toluene	108-88-3	QCBLK91942-1	02/20/96	02/20/96	97	%REC			1
Chlorobenzene	108-90-7	QCBLK91942-1	02/20/96	02/20/96	94	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK91942-1	02/20/96	02/20/96	100	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK91942-1	02/20/96	02/20/96	90	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK91942-1	02/20/96	02/20/96	103	%REC			1

PRIORITY

WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES

PREDETERMINATION REPORT

REQUEST #: 27466 DATE: March 13, 1996

SUBJECT	PRODUCT PREDETERMINATION

TO	C. N. Villalobos	COMPANY	WHC
PHONE	373-4753	ADDRESS	
FACILITY	PUREX/200E	MSIN	S6-19

ANALYST	Judith A. Nielsen	MSIN	T3-05	PHONE	376-4393
REVIEWER	3-13-96				
cc	File				

This waste predetermination is based on the MSDS information for products/materials listed in the predetermination request and was performed according to current state and Federal law (WAC 173-303 and 40 CFR 261). For questions or comments, please contact the Generator & Waste Acceptance Services analyst above and reference the request #. Thank you for your interest in waste predetermination.

			REGULATED ?				
Item #	MSDS #	Product/Material	Unused Product	Used Product	Empty Container	Rags with 10% Product	Possible Waste Codes
1	Analytical Data	PUREX U-CELL VESSELS FLUSH SOLUTION, LAB ANALYSIS	N	N	N	N	NONE

Comments: Based on the lab analysis for this waste, the flush solution does not designate as a Washington dangerous or extremely hazardous waste.

DISCLAIMER

This predetermination is believed accurate based on the information provided. Predeterminations are performed to assist generators in selecting less hazardous products. Since solid waste regulations are subject to constant revision, waste status may change without notice. *Waste designations must be performed on all wastes* by Generator & Waste Acceptance Services to assure proper disposal in the event products are spilled or contained within a waste matrix.

9651701

ATTACHMENT 2

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT F11 SYSTEM VESSELS, PART II (TANK F18)

PUREX F11 SYSTEM VESSELS, PART II
(TANK F18) RCRA ANALYTICAL DATA
TABLE OF CONTENTS

PAGE

DESCRIPTION
RCRA Analytical Data Summary 1

PROCESS SCREENING DATA
Process Screening Sample 2
Chain of Custody 3

RAD SCREENING SAMPLE
RAD Screening Sample by 222-S lab 4

RCRA PROTOCOL SAMPLE
Certificate of Analysis 6

Analytical Data Summary: Metals
- ICAP Metals for RCRA Protocol Sample 9
- ICAP Metals Matrix Spike 10
- ICAP Metals Matrix Spike Duplicate 11
- ICAP Metals Field Sample Blank 12
- ICAP Metals Quality Control Blank 13
- ICAP Metals Quality Laboratory Control Blank 14
- Arsenic Analysis (incl. all spikes/QC blanks) 15
- Selenium Analysis (incl. all spikes/QC blanks) 16
- Mercury Analysis (incl. all spikes/QC blanks) 17

Analytical Data Summary: Wet Chemistry
- pH Analysis for RCRA Protocol Sample (incl. QC blanks) 18
- Total Organic Carbon (TOC) Analysis (incl. all spikes/QC blanks) . . 19

Analytical Data Summary: Volatile Organics
- VOA for RCRA Sample 20
- VOA Matrix Spike 21
- VOA Matrix Spike Duplicate 22
- VOA Field Sample Blank 23
- VOA Quality Control Blank 24
- VOA Quality Laboratory Control Blank 25

Predetermination Report 26

RCRA ANALYTICAL DATA SUMMARY
PUREX Tank F18
SAMPLE LOCATION: TANK F18
SAMPLE ID# BOHNW9

Analyte	Dangerous Waste Designation Threshold (mg/L)	RCRA Sample Results (mg/L)
Cadmium	1.0	0.24 (U)
Chromium	5.0	0.41 (U)
Lead	5.0	4.0 (U)
Barium	100.0	0.33 (B)
Silver	5.0	0.59 (UN)
Arsenic	5.0	0.15 (U)
Selenium	1.0	0.14 (U)
Mercury	0.2	0.010 (U)
pH	pH<2 or pH>12.5	9.49
Total Organic Carbon (TOC)	100,000 (10wt% based upon designation limits for tri-butyl phosphate)	3.7
Benzene	0.5	undetect (U)
Carbon Tetrachloride	0.5	undetect (U)
Chlorobenzene	100	undetect (U)
Chloroform	6.0	undetect (U)
1,2-Dichloroethane	0.5	undetect (U)
1,1 Dichloroethylene	0.7	undetect (U)
2-Butanone	200	undetect (U)
Tetrachloroethylene	0.7	undetect (U)
Trichloroethylene	0.5	undetect (U)
Vinyl Chloride	0.2	undetect (U)

Definitions:
U = compound not detected
B = compound was found in the blank
N = interference present in matrix

PROCESS SCREENING DATA

Author: Linda Conlin at ~WHC56
Date: 4/9/96 10:50 AM

.INTERIM RESULTS REPORT 09 Apr 1996

Customer ID: SCREENING
Lab Sample#: S96P000060

Sample Date:
Recv. Date: 03/29/96 15:09

PARAMETER	RESULTS	UNITS
Pu239/240,Pu238 by TTA Extr.		
PU239/240 -TTA Extr. wi Tracer	< 8.77E-5	uCi/mL
PU239/240-TTAExtr Tracer Recov	17.5	% Recovery
PU239/240-TTAExtr %Count Error	13.0	% Ct. Error
PU-238 by TTA Extr. wi Tracer	< 8.77E-5	uCi/mL
PU-238-TTA Extr. % Count Error	100.0	% Ct. Error
OTHER ANALYSIS		
pH Direct	9.43	pH

2

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C # 100102 Page 1 of 1

Collector HULSE, KARL	Contact/Requestor VILLALOBOS, CARMEN	Tel. No. 373-4753 MSIN S6-19 FAX
SAF Number 96-016	Sample Origin PUREX F18 cell	Purchase Order/Charge Code N/A
Project Title PUREX Vessels Flush Solutions	Logbook # WHC-N-205 #	Ice Chest # 01-95/100005 Temp. 2°C
Shipped To (Lab) Quanterra	Method of Shipment Gov Vehicle	Bill of Lading/Air Bill No. N/A
Protocol RCRA	Data Turnaround PRIORITY	Offsite Property No. N/A RSR 33692

Sample No.	Lab. ID	*	Date	Time	No/Type Container	Sample Analysis	Perservative
B0HNW9		L	3/29/96	0920	(1) 20 P	ACTIVITY SCAN (Lab Specific) 60404801 100%	None
B0HNW9		L	3/29/96	0920	(1) 40 aGs	ICP Metals, TAL (6010) plus, to include Lead, Arsenic (7060), Selenium (7740), Mercury (7470) 100%	Cool to 4°C
B0HNW9		L	3/29/96	0920	(1) 40 aGs	TOC (9060), pH 99040) 100%	Cool to 4°C
B0HNW9		L	3/29/96	0920	(1) 20 aGs	VOA (8240) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 20 P	ACTIVITY SCAN (Lab Specific) <100cpm 60404802	None
B0HNX0		L	3/29/96	0900	(1) 40 aGs	ICP Metals, TAL (6010) plus, to include Lead, Arsenic (7060), Selenium (7740), Mercury (7470) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 40 aGs	TOC (9060), pH (9040) 100%	Cool to 4°C
B0HNX0		L	3/29/96	0900	(1) 20 aGs	VOA (8240) 100%	Cool to 4°C

SDG W0968

PRIORITY

PRIORITY TURNAROUND

POSSIBLE SAMPLE HAZARDS/REMARKS MSDS Yes ☐ No ☒
List all known wastes.

SPECIAL INSTRUCTIONS Hold Time
Priority Turnaround Summary Data Deliverable
quantum

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
KA Hulse		KB Hulse	4-3-96 1030	Karen Ostenberg	K. Ostenberg		4-3-96 1030
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.

A-6001-500 (07/95)

04/19/96 07:01 ☎509 3721546 009

RAD SCREENING DATA

Tue, Apr 2, 1996 8:18 AM

SAMPLE INQUIRY

Company Name: PUREX Programs Westinghouse Hanford Company Project Code: MISC P

Sample #: S96P000061 Sample ID: BOHNW9

Parameter	Rep	Result	Unit	%Recov	Date
Alpha in Liquid Samples	0	6.10E-5	uCi/mL		03/29/9
Alpha Liq.- Rel. % Count Error	0	6.6	% Ct. Error		03/29/9
Americium-241 by GEA	0	< 8.118e-05	uCi/mL		03/30/9
Am-241 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Beta in Liquid Samples	0	1.26E-2	uCi/mL		03/29/9
Beta Liq.- Rel. % Count Error	0	0.3	% Ct. Error		03/29/9
Cobalt-60 by GEA	0	< 1.823e-05	uCi/mL		03/30/9
Co-60 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Cesium-137 by GEA	0	3.360e-04	uCi/mL		03/30/9
Cs-137 GEA Rel. % Count Error	0	8.26	% Ct. Error		03/30/9
Europium-154 by GEA	0	< 4.796e-05	uCi/mL		03/30/9
Eu-154 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9
Europium-155 by GEA	0	< 4.079e 05	uCi/mL		03/30/9
Eu-155 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9

Alpha 61 pCi/mL

BETA 12.6 nCi/mL

Cs-137 33.6 pCi/mL

PRIORITY

Tue, Apr 2, 1996 8:18 AM

SAMPLE INQUIRY

Company Name: PUREX Programs Westinghouse Hanford Company Project Code: MISC P

Sample #: S96P000062 Sample ID: BOHNX0

Parameter	Rep	Result	Unit	%Recov	Date
Alpha in Liquid Samples	0	< 2.49E-7	uCi/mL		03/29/9
Alpha Liq.- Rel. % Count Error	0	228.8	% Ct. Error		03/29/9
Americium-241 by GEA	0	< 7.334e-05	uCi/mL		03/30/9
Am-241 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Beta in Liquid Samples	0	< 1.06E-6	uCi/mL		03/29/9
Beta Liq.- Rel. % Count Error	0	143.6	% Ct. Error		03/29/9
Cobalt-60 by GEA	0	< 1.654e-05	uCi/mL		03/30/9
Co-60 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Cesium 137 by GEA	0	< 2.337e-05	uCi/mL		03/30/9
Cs-137 GEA Rel. % Count Error	0	n/a	% Ct. Error		03/30/9
Europium-154 by GEA	0	< 4.954e-05	uCi/mL		03/30/9
Eu-154 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9
Europium-155 by GEA	0	< 3.468e-05	uCi/mL		03/30/9
Eu-155 GEA Rel % Counting Err	0	n/a	% Ct. Error		03/30/9

PRIORITY

5

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

APR 1996
RECEIVED
SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

April 17, 1996

Attention: Karl Pool

Project number	:	519.136
Date Received by Lab	:	April 3, 1996
Number of Samples	:	Two (2)
Sample Type	:	Liquid
SDG Number	:	W0968
Data Deliverable	:	Summary

PRIORITY

I. Introduction

On April 3, 1996, two (2) liquid samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
10772-001	B0HNW9	60404801	Liquid	4/03/96 RCRA Sample
10772-002	B0HNX0	60404802	Liquid	4/03/96 Field Blank 4/19/96 CW

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: pH by EPA method 9040. TOC by EPA method 9060. VOA by EPA method 8240. TAL ICP Metals by EPA method 6010. Arsenic by EPA method 7060. Selenium by EPA 7740. Mercury by EPA method 7470.

Quanterra
Environmental Services

Westinghouse Hanford Company
April 17, 1996
Project Number: 519.136
SDG: W0968
Page 2

PRIORITY

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate and/or Sample Duplicate analyses were performed per the protocol for each analyte. pH analysis uses only Sample Duplicate for matrix QC.

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

V. Comments

Shipping and Receiving
There were no comments or nonconformances associated with the shipping and receiving of these samples.

General Reporting
The results are reported in ug/L, mg/L, and mg/kg. Where sample volume would allow the samples to be analyzed as waters which gives the lowest possible detection limits, the results are reported in ug/L or mg/L. Where sample volume was insufficient to analyze as a water (Metals), the sample results are reported in mg/kg. Batch QC reports reflect the water methods used and results are in ug/L. The Density of both samples was determined to be 1.00 g/ml. This value can be used to convert each result to the desired units.

Volatiles
There were no comments or nonconformances associated with the volatiles analysis.

Quanterra
Environmental Services

Westinghouse Hanford Company
April 17, 1996
Project Number: 519.136
SDG: W0968
Page 3

PRIORITY

Metals
The sample was digested 1.0 g to 100 mls for all analyzes due to insufficient sample volume.

All the Calcium data was flagged with an " E " because the percent difference (33.7) for the serial dilution was greater then 10.

The recoveries of the Silver matrix spike (68.4%) and matrix spike duplicate (68.1%) were less than 80%, therefore all associated data was flagged with an " N".

Percent solids was not determined for the samples in SDG W0960. Due to software configuration, the CLP forms list solid sample result units as " dry weight" and % solids as " 100 ". The results on the forms are actually mg/Kg as is and are not corrected for percent solids. The figure of 100 was used as percent solids for calculation purposes only and does not represent measured solids content of the samples.

Wet Chemistry
There were no comments or nonconformances associated with the pH or TOC analyses.

I certify that this Certificate of Analysis 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 hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Wade H. Price
Project Manager
Quanterra Environmental Services, Inc.
e:\\sqtlmo01\price$\abbydave\hanford\hanw0968.coa

METALS ANALYSIS

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	5.3	MG/KG	U	20.0	1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	3.5	MG/KG	U	6.0	1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	0.33	MG/KG	B	20.0	1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	0.050	MG/KG	U	0.50	1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	0.24	MG/KG	U	0.50	1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	192	MG/KG	BE	500	1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	0.41	MG/KG	U	1.0	1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	0.48	MG/KG	U	5.0	1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	0.88	MG/KG	B	2.5	1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	2.6	MG/KG	B	10.0	1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	4.0	MG/KG	U	10.0	1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	39.5	MG/KG	B	500	1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	0.19	MG/KG	B	1.5	1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	0.91	MG/KG	U	4.0	1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	182	MG/KG	U	500	1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	0.59	MG/KG	UN	1.0	1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	50.4	MG/KG	B	500	1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	0.57	MG/KG	U	5.0	1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	0.65	MG/KG	U	2.0	1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	91	%REC			1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	91	%REC			1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	93	%REC			1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	68	%REC	N		1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	93	%REC			1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	99	%REC			1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	92	%REC			1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	93	%REC			1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	68	%REC	N		1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID: B0HNX0

Quanterra ID : 10772-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	5.3	MG/KG	U	20.0	1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	3.5	MG/KG	U	6.0	1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	0.33	MG/KG	B	20.0	1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	0.050	MG/KG	U	0.50	1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	0.24	MG/KG	U	0.50	1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	192	MG/KG	BE	500	1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	0.41	MG/KG	U	1.0	1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	0.48	MG/KG	U	5.0	1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	1.6	MG/KG	B	2.5	1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	0.81	MG/KG	U	10.0	1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	4.0	MG/KG	U	10.0	1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	39.5	MG/KG	B	500	1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	0.13	MG/KG	B	1.5	1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	0.91	MG/KG	U	4.0	1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	182	MG/KG	U	500	1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	0.59	MG/KG	UN	1.0	1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	27.6	MG/KG	B	500	1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	0.57	MG/KG	U	5.0	1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	0.65	MG/KG	U	2.0	1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCBLK96406-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	57.9	UG/L	B	200	1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	34.6	UG/L	U	60.0	1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	1.2	UG/L	U	200	1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	0.50	UG/L	U	5.0	1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	2.4	UG/L	U	5.0	1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	58.4	UG/L	B	5000	1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	4.1	UG/L	U	10.0	1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	4.8	UG/L	U	50.0	1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	5.6	UG/L	U	25.0	1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	21.0	UG/L	B	100	1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	39.8	UG/L	U	100	1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	65.1	UG/L	U	5000	1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	1.2	UG/L	U	15.0	1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	9.1	UG/L	U	40.0	1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	1820	UG/L	U	5000	1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	5.9	UG/L	U	10.0	1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	81.7	UG/L	U	5000	1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	5.7	UG/L	U	50.0	1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	6.5	UG/L	U	20.0	1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: ICAP Metals
Method: EPA 6010
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCLCS96406-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Antimony	7440-36-0	QCBLK96406-1	04/08/96	04/09/96	99	%REC			1
Barium	7440-39-3	QCBLK96406-1	04/08/96	04/09/96	94	%REC			1
Beryllium	7440-41-7	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Cadmium	7440-43-9	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Calcium	7440-70-2	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Chromium	7440-47-3	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Cobalt	7440-48-4	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Copper	7440-50-8	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1
Iron	7439-89-6	QCBLK96406-1	04/08/96	04/09/96	101	%REC			1
Lead	7439-92-1	QCBLK96406-1	04/08/96	04/09/96	95	%REC			1
Magnesium	7439-95-4	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Manganese	7439-96-5	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Nickel	7440-02-0	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Potassium	7440-09-7	QCBLK96406-1	04/08/96	04/09/96	97	%REC			1
Silver	7440-22-4	QCBLK96406-1	04/08/96	04/09/96	70	%REC			1
Sodium	7440-23-5	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Vanadium	7440-62-2	QCBLK96406-1	04/08/96	04/09/96	96	%REC			1
Zinc	7440-66-6	QCBLK96406-1	04/08/96	04/09/96	98	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Arsenic
Method: EPA 7060
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	0.15	MG/KG	U	1.0	1
BOHNW9	10772-001MS	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	100	%REC			1
BOHNW9	10772-001MSD	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	97	%REC			1
BOHNX0	10772-002	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	0.15	MG/KG	U	1.0	1
NA	QCBLK96412-1	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	1.5	UG/L	U	10.0	1
NA	QCLCS96412-1	Arsenic	7440-38-2	QCBLK96412-1	04/08/96	04/08/96	99	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Selenium
Method: EPA 7000 Series
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	0.14	MG/KG	U	0.50	1
BOHNW9	10772-001MS	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	102	%REC			1
BOHNW9	10772-001MSD	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	100	%REC			1
BOHNX0	10772-002	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	0.14	MG/KG	U	0.50	1
NA	QCBLK96412-1	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	1.4	UG/L	U	5.0	1
NA	QCLCS96412-1	Selenium	7782-49-2	QCBLK96412-1	04/08/96	04/08/96	100	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Mercury
Method: EPA 7470
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	0.010	MG/KG	U	0.020	1
BOHNW9	10772-001MS	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	92	%REC			1
BOHNW9	10772-001MSD	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	94	%REC			1
BOHNX0	10772-002	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	0.010	MG/KG	U	0.020	1
NA	QCBLK96388-1	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	0.10	UG/L	U	0.20	1
NA	QCLCS96388-1	Mercury	7439-97-6	QCBLK96388-1	04/08/96	04/08/96	97	%REC			1

PRIORITY

WET CHEMISTRY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: pH
Method: EPA 9040
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0HNW9	10772-001	pH	PH	QCBLK96309-1	04/05/96	04/05/96	9.49	PH			1
B0HNW9	10772-001DUP	pH	PH	QCBLK96309-1	04/05/96	04/05/96	9.54	PH			1
B0HNX0	10772-002	pH	PH	QCBLK96309-1	04/05/96	04/05/96	6.74	PH			1
NA	QCBLK96309-1	pH	PH	QCBLK96309-1	04/05/96	04/05/96	4.93	PH			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Total Organic Carbon
Method: EPA 9060
Matrix: LIQUID

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOHNW9	10772-001	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	3.70	MG/L		1.00	1
BOHNW9	10772-001DUP	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	3.72	MG/L		1.00	1
BOHNW9	10772-001MS	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	99	%REC			1
BOHNX0	10772-002	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	1.00	MG/L	U	1.00	1
NA	QCBLK96270-1	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	1.00	MG/L	U	1.00	1
NA	QCLCS96270-1	Total Organic C	TOC	QCBLK96270-1	04/05/96	04/05/96	98	%REC			1

PRIORITY

VOLATILE ORGANICS

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK96447-1	04/08/96	04/08/96	2	UG/L	J	10	1
Bromomethane	74-83-9	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
2-Butanone	78-93-3	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	96	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	91	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	94	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: B0HNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	110	%REC			1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	99	%REC			1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	103	%REC			1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	102	%REC			1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	100	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	90	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	99	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: BOHNW9

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	116	%REC			1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	102	%REC			1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	99	%REC			1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	100	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	91	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	97	%REC			1

PRIORITY

Quanterra Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: BOHNXO

Sample Date : 03/29/96
Receipt Date : 04/03/96
Report Date : 04/16/96

Quanterra ID : 10772-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
2-Butanone	78-93-3	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	96	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	91	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	95	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCBLK96447-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK96447-1	04/08/96	04/08/96	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
2-Butanone	78-93-3	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
4-Methyl-2-Pentanone	108-10-1	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK96447-1	04/08/96	04/08/96	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK96447-1	04/08/96	04/08/96	5	UG/L	U	5	1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	93	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	90	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	85	%REC			1

PRIORITY

Quanterra
Environmental Services

Quanterra-Richland
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 519.136

Category: Volatiles
Method: EPA 8240
Matrix: LIQUID

Client ID: NA

Sample Date : NA
Receipt Date : NA
Report Date : 04/16/96

Quanterra ID : QCSPK96447-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK96447-1	04/08/96	04/08/96	112	%REC			1
Trichloroethene	79-01-6	QCBLK96447-1	04/08/96	04/08/96	93	%REC			1
Benzene	71-43-2	QCBLK96447-1	04/08/96	04/08/96	98	%REC			1
Toluene	108-88-3	QCBLK96447-1	04/08/96	04/08/96	97	%REC			1
Chlorobenzene	108-90-7	QCBLK96447-1	04/08/96	04/08/96	100	%REC			1
Toluene-d8 (SURR)	2037-26-5	QCBLK96447-1	04/08/96	04/08/96	96	%REC			1
Bromofluorobenzene (SURR)	460-00-4	QCBLK96447-1	04/08/96	04/08/96	92	%REC			1
1,2-Dichloroethane-d4 (SURR)	17070-07-0	QCBLK96447-1	04/08/96	04/08/96	93	%REC			1

PRIORITY

WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES

PREDETERMINATION REPORT

REQUEST #: 27670 *DATE:* April 24, 1996

PRODUCT	PREDETERMINATION OF PUREX TANK F18 FLUSH SOLUTION				
TO	Carmen N. Villalobos	*COMPANY*	S6-19		
PHONE	373-4753 (FAX #373-4539)	*ADDRESS*	200E		
FACILITY	PUREX/200E	*MSIN*	S6-19		
ANALYST	K. W. (Katie) Chang K.W. Chang	*MSIN*	T3-05	*PHONE*	372-0679
REVIEWER	Richard L. Austin 4/24/96	*MSIN*	T3-05	*PHONE*	
cc	File				

Based on the information of lab analysis, PUREX Tank F18 flush solution is determined to be non-regulated waste according to current state and Federal laws (WAC 173-303 and 40 CFR 261). **The solution does not designate as a Washington dangerous or extremely dangerous waste.** If you have any questions regarding this analysis, please call Acceptance Services' analyst above and refer the request number.

			REGULATED ?				
Item #	MSDS #	Product/Material	Unused Product	Used Product	Empty Container	Rags with 10% Product	Possible Waste Codes
1	Sample # BOHNW9	PUREX TANK F18 FLUSH SOLUTION	No	No	No	No	None

Comments: Waste analysis worksheet is attached for your record keeping.

********** *DISCLAIMER* **********

This predetermination is believed accurate based on the information provided. Predeterminations are performed to assist generators in selecting less hazardous products. Since solid waste regulations are subject to constant revision, waste status may change without notice. *Waste designations must be performed on all wastes* by Generator & Waste Acceptance Services to assure proper disposal in the event products are spilled or contained within a waste matrix.

9651701

ATTACHMENT 3

LETTER FOR TRANSMITTAL TO ECOLOGY AND EPA - TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F18) LOOP FLUSH ANALYTICAL RESULTS

Mr. Michael A. Wilson
Program Manager
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336

Dear Mr. Wilson:

TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18) LOOP FLUSH ANALYTICAL RESULTS

Enclosed are laboratory analytical results conducted on the final flush for the Plutonium Uranium Extraction (PUREX) Plant U Cell Vessels and F11 System Vessels, Part II (Tank F18). These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology and the U. S. Environmental Protection Agency.

This is the last of the analytical results from vessel flushes as agreed upon in support of PUREX Deactivation. However, Tank U3 will be used in support of tunnel decontamination required for receipt of the 324 Building waste. While Tank U3 is open, wastes from deactivation activities (e.g., draining headers) will be transferred to Tank U3. Therefore, Tank U3 will be reflushed and a Resource Conservation and Recovery Act of 1976 protocol sample again taken to demonstrate that the remaining heel does not designate as dangerous waste.

A copy of the Predetermination Reports, designating the final flush solutions based on the analytical results, are also included in the enclosure. The final flushes for these vessels were designated as non-dangerous waste.

If you have any questions, please contact L. D. Romine (376-4747) of my staff.

Sincerely,

J. E. Mecca, Director
Transition Programs Division

Enclosure:
Predetermination Report

cc: J. K. Bartz, Ecology
D. L. Duncan, EPA
D. G. Hamrick, WHC, w/o encl.
M. N. Jaraysi, Ecology
G. J. LeBaron, WHC, w/o encl.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
C. N. Villalobos, 373-4753	J. E. Mecca, RL	9651701

Subject: TRANSMITTAL OF PLUTONIUM URANIUM EXTRACTION PLANT U CELL VESSELS AND F11 SYSTEM VESSELS, PART II (TANK F-18) LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	W/att
		Correspondence Control	A3-01	X
		R. W. Bailey	S6-15	
		R. J. Bliss	B3-04	
		D. G. Hamrick	S6-15	X
		D. G. Harlow	S6-19	
		J. P. Hayfield	S6-18	
	25 Apr '96	G. J. LeBaron	S6-19	X
	4/26/96	W. A. Peiffer	S6-19	
		M. J. Stephenson	H6-20	
		C. N. Villalobos	S6-19	X
		DGH File/LB		

A-6001-538 (01/95) WEF008