W02484

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

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0050093

CASE NARRATIVE

OCT 1998
RECEIVED
Data
Log In

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

September 29, 1998

Attention: Joan Kessner

Project Number	:	550.178
SDG	:	W02484
Number of Samples	:	Sixteen (16)
Sample Matrix	:	Water
Data Deliverable	:	Summary
Date SDG Closed	:	August 17, 1998

DEC 1998
RECEIVED
EDMC

II. Introduction

On August 3rd and 4th, 1998, a total of sixteen (16) "water" samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. There are no comments or nonconformances associated with the shipping and receiving of these samples. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St. Louis ID	BHI ID	SAF #	Date of Receipt
18550-001	B0PJF1	C98-052	03-AUG-98
18550-002	B0PJJ0	C98-052	03-AUG-98
18550-003	B0PJF2	C98-052	03-AUG-98
18550-004	B0PJJ1	C98-052	03-AUG-98
18550-005	B0PJF8	C98-052	03-AUG-98
18550-006	B0PJF7	C98-052	03-AUG-98
18550-007	B0PJH8	C98-052	03-AUG-98
18550-008	B0PJH9	C98-052	03-AUG-98
18550-009	B0PJF5	C98-052	03-AUG-98
18550-010	B0PJF6	C98-052	03-AUG-98
18550-011	B0PJJ8	C98-052	03-AUG-98

St. Louis ID	BHI ID	SAF #	Date of Receipt
18558-001	B0PJF3	C98-052	04-AUG-98
18558-002	B0PJH5	C98-052	04-AUG-98
18558-003	B0PJH7	C98-052	04-AUG-98
18558-004	B0PJF4	C98-052	04-AUG-98
18558-005	B0PJJ9	C98-052	04-AUG-98

III. 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:

ICP Metals by EPA method 6010 (Barium, Chromium, Lead, Tin, Vanadium, and Zinc)
Arsenic by EPA 7060
Selenium by EPA 7740
Alkalinity by EPA method 310.1
Anions (Chloride, Fluoride, Sulfate, Nitrate and Nitrite) by EPA method 300.0
Nitrate/Nitrite by EPA method 353.1
Total Dissolved Solids by EPA method 160.1
TOX by EPA method 9020
Volatiles by EPA method 8240

Deviation from Request: No Deviation from requested methods.

IV. Definitions

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

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

V. Comments

General: Richland IDs are 808033 and 808049.

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

No additional comments were noted.

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

No additional comments were noted.

Wet Chemistry: A Laboratory Control Sample, Method Blank, Duplicate and Matrix Spike were analyzed with each preparation batch per the protocol for this analysis. A sample duplicate was performed as matrix QC for Alkalinity and TDS.

Matrix spike recovery for sample 18550-003 for Nitrate was 167%, outside of QC limits of 75-125%; however, the sample concentration is greater than 4X the spike amount.

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

Reviewed and approved:

Robert E. White

Robert E. White
Project Manager

WO2484

Quanterra August 25, 1998 08:16 am
Account: 10722 Project: 550.178 Quanterra-Richland QAS No. 550.178 Rev. 0
Master Sample Login: 18550

Project Manager: R. White

Draft: (Final) Entered and Reviewed by: [signature] PM Review: Robert E. White

Sample Header Template:

Sample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
18550-001 SAFC98-052	BOPJF1	Water	03-AUG-98 10:16	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
1	PN - Plastic-500ml	ASD/7060/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)
1		ICAPD/6010/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)
1		SED/7740/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)

Sample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
18550-001MS SAFC98-052	BOPJF1	Water	03-AUG-98 10:16	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
1	PN - Plastic-500ml	ASD/7060/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)
1		ICAPD/6010/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)
1		SED/7740/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)

Sample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
18550-001MSD SAFC98-052	BOPJF1	Water	03-AUG-98 10:16	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
1	PN - Plastic-500ml	ASD/7060/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)
1		ICAPD/6010/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)
1		SED/7740/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395769:100)

Sample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
18550-002 SAFC98-052	BOPJJ0	Water	03-AUG-98 08:35	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
1	PN - Plastic-500ml	ASD/7060/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395770:100)
1		ICAPD/6010/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395770:100)
1		SED/7740/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395770:100)

Sample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
18550-003 SAFC98-052	BOPJF2	Water	03-AUG-98 10:16	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	31-AUG-98	17-AUG-98	109F	(396185:100 396186:99 396187:98)
1	AN - Amber Glass-1L	TOX/9020/Q4	S	H2SO4	26-AUG-98	31-AUG-98	R14B	(395774:100)
1	PN - Plastic-1L	AS/7060/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395773:100)
1		ICAP/6010/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395773:100)
1		SE/7740/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395773:100)
1	PN - Plastic-500ml	ALK/310.1/Q4	S	COLD	26-AUG-98	17-AUG-98	R14B	(395772:99)
		CL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
		FL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
		NO3/353.1/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395776:97)
		SO4/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
		TDS/160.1/Q4	S	COLD	26-AUG-98	10-AUG-98	R14B	(395771:100)

3*=Sample has not been rad screened.

Quanterra August 25, 1998 08:16 am
Account: 10722 Project: 550.178 Quanterra-Richland QAS No. 550.178 Rev. 0
Master Sample Login: 18550

Project Manager: R. White

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

Sample Header Template: _____

Sample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
18550-003DUP SAFC98-052	B0PJF2	Water	03-AUG-98 10:16	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
1	AN - Amber Glass-1L	TOX/9020/Q4	S	H2SO4	26-AUG-98	31-AUG-98	R14B	(395774:100)
1	PN - Plastic-500ml	ALK/310.1/Q4	S	COLD	26-AUG-98	17-AUG-98	R14B	(395772:99)
1		CL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
1		FL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
1		NO3/353.1/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395776:97)
1		SO4/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
1		TDS/160.1/Q4	S	COLD	26-AUG-98	10-AUG-98	R14B	(395771:100)

18550-003MS SAFC98-052	B0PJF2	Water	03-AUG-98 10:16	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	26-AUG-98	17-AUG-98	109F	(396185:100 396186:99 396187:98)
1	AN - Amber Glass-1L	TOX/9020/Q4	S	H2SO4	26-AUG-98	31-AUG-98	R14B	(395774:100)
1	PN - Plastic-500ml	CL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
1		FL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)
1		NO3/353.1/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395776:97)
1		SO4/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395775:98)

18550-003MSD SAFC98-052	B0PJF2	Water	03-AUG-98 10:16	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	26-AUG-98	17-AUG-98	109F	(396185:100 396186:99 396187:98)

18550-004 SAFC98-052	B0PJJ1	Water	03-AUG-98 08:35	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	26-AUG-98	17-AUG-98	109F	(396206:100 396207:99 396208:98)
1	AN - Amber Glass-1L	TOX/9020/Q4	S	H2SO4	26-AUG-98	31-AUG-98	R14B	(395780:100)
1	PN - Plastic-1L	AS/7060/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395779:100)
1		ICAP/6010/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395779:100)
1		SE/7740/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395779:100)
1	PN - Plastic-500ml	ALK/310.1/Q4	S	COLD	26-AUG-98	17-AUG-98	R14B	(395778:99)
1		CL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395781:98)
		FL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395781:98)
		NO3/353.1/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395782:97)
		SO4/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395781:98)
		TDS/160.1/Q4	S	COLD	26-AUG-98	10-AUG-98	R14B	(395777:100)

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3*=Sample has not been rad screened.

Quanterra August 25, 1998 08:16 am
Account: 10722 Project: 550.178 Quanterra-Richland QAS No. 550.178 Rev. 0
Master Sample Login: 18550

Project Manager: R. White

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.
18550-005 SAFC98-052	BOPJF8	Water	03-AUG-98 08:35	03-AUG-98 13:50	02-SEP-98	AIRBORNE		1	Screening not Required
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	26-AUG-98	17-AUG-98	109F	(396209:100 396210:99 396211:98)	
1	AN - Amber Glass-1L	TOX/9020/Q4	S	H2SO4	26-AUG-98	31-AUG-98	R14B	(395786:100)	
1	PN - Plastic-1L	AS/7060/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395785:100)	
1		ICAP/6010/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395785:100)	
1		SE/7740/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395785:100)	
1	PN - Plastic-500ml	ALK/310.1/Q4	S	COLD	26-AUG-98	17-AUG-98	R14B	(395784:99)	
1		CL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395787:98)	
1		FL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395787:98)	
1		NO3/353.1/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395788:97)	
1		SO4/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395787:98)	
1		TDS/160.1/Q4	S	COLD	26-AUG-98	10-AUG-98	R14B	(395783:100)	
18550-006 SAFC98-052	BOPJF7	Water	03-AUG-98 08:35	03-AUG-98 13:50	02-SEP-98	AIRBORNE		1	Screening not Required
1	PN - Plastic-500ml	ASD/7060/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395789:100)	
1		ICAPD/6010/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395789:100)	
1		SED/7740/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395789:100)	
18550-007 SAFC98-052	BOPJH8	Water	03-AUG-98 11:10	03-AUG-98 13:50	02-SEP-98	AIRBORNE		1	Screening not Required
1	PN - Plastic-500ml	ASD/7060/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395790:100)	
1		ICAPD/6010/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395790:100)	
1		SED/7740/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395790:100)	
18550-008 SAFC98-052	BOPJH9	Water	03-AUG-98 11:10	03-AUG-98 13:50	02-SEP-98	AIRBORNE		1	Screening not Required
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	26-AUG-98	17-AUG-98	109F	(396212:100 396213:99 396214:98)	
1	AN - Amber Glass-1L	TOX/9020/Q4	S	H2SO4	26-AUG-98	31-AUG-98	R14B	(395794:100)	
1	PN - Plastic-1L	AS/7060/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395793:100)	
1		ICAP/6010/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395793:100)	
1		SE/7740/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395793:100)	
1	PN - Plastic-500ml	ALK/310.1/Q4	S	COLD	26-AUG-98	17-AUG-98	R14B	(395792:99)	
1		CL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395795:98)	
1		FL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395795:98)	
1		NO3/353.1/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395796:97)	
1		SO4/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395795:98)	
1		TDS/160.1/Q4	S	COLD	26-AUG-98	10-AUG-98	R14B	(395791:100)	

3*=Sample has not been rad screened.

Quanterra August 25, 1998 08:16 am
Account: 10722 Project: 550.178 Quanterra-Richland QAS No. 550.178 Rev. 0
Master Sample Login: 18550

roject Manager: R. White

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

ample Header Template: _____

ample No. / Comments	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
ata:								
8550-009 SAFC98-052	B0PJF5	Water	03-AUG-98 12:21	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
1	PN - Plastic-500ml	ASD/7060/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395797:100)
1		ICAPD/6010/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395797:100)
1		SED/7740/Q4	S	COLD	26-AUG-98	30-JAN-99	R14B	(395797:100)
8550-010 SAFC98-052	B0PJF6	Water	03-AUG-98 12:21	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	26-AUG-98	17-AUG-98	109F	(396215:100 396216:99 396217:98)
1	AN - Amber Glass-1L	TOX/9020/Q4	S	H2SO4	26-AUG-98	31-AUG-98	R14B	(395801:100)
1	PN - Plastic-1L	AS/7060/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395800:100)
1		ICAP/6010/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395800:100)
1		SE/7740/Q4	S	HNO3	26-AUG-98	30-JAN-99	R14B	(395800:100)
1	PN - Plastic-500ml	ALK/310.1/Q4	S	COLD	26-AUG-98	17-AUG-98	R14B	(395799:99)
1		CL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395802:98)
1		FL/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395802:98)
1		NO3/353.1/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395803:97)
1		SO4/300.0/Q4	S	COLD	26-AUG-98	31-AUG-98	R14B	(395802:98)
1		TDS/160.1/Q4	S	COLD	26-AUG-98	10-AUG-98	R14B	(395798:100)
8550-011 SAFC98-052	B0PJJ8	Water	03-AUG-98 07:00	03-AUG-98 13:50	02-SEP-98	AIRBORNE	1	Screening not Required
3	VI - Vial-40ml	VOA/8240/Q4	S	HCL	26-AUG-98	17-AUG-98	109F	(396224:100 396225:99 396226:98)

00000

3*=Sample has not been rad screened.

temp 3°C cwt# 016058

S1 (1111)

Chain of Custody Record

Quanterra

QUA-4124 0797

Client: Battelle	Project Manager: A. Kaprwin	Date: 8-4-98	Chain of Custody Number: 09889
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
City / State / Zip Code	Site Contact	Lab Contact	
Project Name: SAF C98-052	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	Seq.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH
808038-1 BOPJF1												
2 2												
3 5												
4 6												
5 7												
6 8												
7 H8												
8 9												
9 JJ0												
10 1												
11 8												

Chemical Analysis Pending

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 _____

QC Requirements (Specify): SDL-WC2484

1. Relinquished By: Hulcelberg GES	Date: 8-4-98	Time: 16:00	1. Received By: Joe Tenin	Date: 8-5-98	Time: 0800
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-1

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM SML-H14	Ice Chest No.: SML-180 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF1 (F)		W	8-3-98	1016	~~1x500-ml G/P~~ 1000 SDW 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF2					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF2					~~1x500-ml G/P~~ 1000 SDW 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF2					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF2					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 100%	Cool 4C
B0PJF2					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF2					1x500-ml G/P	NO2/NO3 - 353.1 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJF2					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF2					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF2					1x20-ml P	Activity Scan	None
B0PJF2					2x1000-ml G/P	Carbon-14	None
B0PJF2					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RT SICKLE (RFS)			AUG 03 1998 1350				8-3-98 1350
Heidelberg			8-3-98 1600				
				Joe Tenin			8-4-99 0830

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-7

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: BRDF GW SAMPLING AUGUST 1998	Logbook No.: WM. Smith H-14	Ice Chest No.: GCS 120 1132 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ0 (F)		W	8-3-98	0835	1x500-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803309 100% PH-1	HNO3 to pH <2
B0PJJ1					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJJ1					1x500-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 100% PH-1	HNO3 to pH <2
B0PJJ1					1x500-ml G/P	TDS - 160.1 100%	Cool 4C
B0PJJ1					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803310	Cool 4C
B0PJJ1					1x500-ml G/P	Alkalinity - 310.1 100%	Cool 4C
B0PJJ1					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJJ1					1x1000-ml aGs*	TOX - 9020 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJJ1					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJJ1					1x20-ml P	Activity Scan	None
B0PJJ1					2x1000-ml G/P	Carbon-14 80803405	None
B0PJJ1					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)	[signature]	8-3-98 1350		Heidelberg	[signature]	8-3-98 1350
Relinquished By			Date/Time	Received By	1100 pm Joe Tremain		Date/Time 8-5-98 0800
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SB = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-4

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING AUGUST 1998	Logbook No.: LM-SML-H14	Ice Chest No.: GW3 120/132 Temp.: 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS: ** **

NA

SPECIAL INSTRUCTIONS: Hold Time — Total Activity Exemption: Yes ☒ No ☐

FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF7 (F)		W	8-3-98	0835	1x~~500~~-ml G/P 1000 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF8					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF8					1x~~500~~-ml G/P 1000 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF8					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF8					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 100%	Cool 4C
B0PJF8					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF8					1x500-ml G/P	NO2/NO3 - 353.1 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJF8					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF8					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF8					1x20-ml P	Activity Scan	None
B0PJF8					2x1000-ml G/P	Carbon-14	None
B0PJF8					3x1000-ml G/P	Iodine-129	None

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
RT SICKLE (RFS)	8-3-98 1350	O Heidelberg	8-3-98 1350
O Heidelberg	8-3-98 1600	Joe Tremain	8-4-98 0830

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-6

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING AUGUST 1998	Logbook No.: Lum. Smt. H14	Ice Chest No.: Smt 3gc Temp.: 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.:
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH8 (F)		W	8-3-98	1110	1x~~500~~-ml G/P 1000 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJH9					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJH9					1x~~500~~-ml G/P 1000 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJH9					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJH9					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 100%	Cool 4C
B0PJH9					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJH9					1x500-ml G/P	NO2/NO3 - 353.1 100% pH-1	H2SO4 to pH <2 Cool 4C
B0PJH9					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJH9					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJH9					1x20-ml P	Activity Scan	None
B0PJH9					2x1000-ml G/P	Carbon-14	None
B0PJH9					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)	[signature]	AUG 03 1998 1350			[signature]	8-3-98 1350
[signature]			8-3-98 1600				
				Joe Tumin			8-4-98 0830

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

C1000

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # C98-052-3
		Page 1 of 2

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: Lm. Sml. HH	Ice Chest No.: ERD Temp.: 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF5 (F)			8-3-98	1221	1x~~500~~-ml G/P 1000 dm 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF6					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF6					1x~~500~~-ml G/P 1000 dm 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF6					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF6					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate)	Cool 4C
B0PJF6					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF6					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF6					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF6					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF6					1x20-ml P	Activity Scan	None
B0PJF6					2x1000-ml G/P	Carbon-14	None
B0PJF6					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RT SICKLE (RFS)			AUG 03 1998 1322	Heidelberg			8-3-98 1350
Heidelberg			8-3-98 1600				
				Joe Tiemann			8-4-98 0830

Matrix *

S = Soil		DS = Drum Solid	
SB = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-8

Page 1 of 1

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM-SML-H14	Ice Chest No.: SML 187 Temp. 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ8		W	8-3-98	0700	3x40-ml aGs*	VOA - 8240A (TCL) 80803311	HCl or H2SO4 to pH <2 Cool 4C
B0PJJ8		W			1x20-ml P	Activity Scan	None

Relinquished By	Date/Time	Received By	Date/Time
Print: RT SICKLE (RFS) Sign: [signature]	AUG 03 1998 0750	Print: Heidelberg Sign: [signature]	8-3-98 0750
		<100 LPM	

Matrix *

S = Soil		DS = Drum Solid	
SB = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

Quanterra
Environmental Services

016059

Login No.: 18550

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: BHI
Date: 8-4-98 Time: 0830
Project No: 550.178
Initiated by: Joe Tiemann
Shipper/No: Airborne
RFA/COC Numbers: 09889

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: 3°C

Notes: Anion samples only.

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 designate) Joe Tiemann Date: 8-4-98

Project Management Review: Robert E. White Date: 8-5-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

000016

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-1

Collector: HT SICKLE (RFS)	Contact/Requester: JH KUSSNER	Telephone No.: (509) 372-9538 MSIN FAX
NAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: BRDF GW SAMPLING, AUGUST 1998	Logbook No.: Lum. Smk. H14	Ice Chest No.: Smk-180 Temp.: 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS: SDG W02484

SPECIAL INSTRUCTIONS: Hold Time — Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF1 (F)		W	8-3-98	1016	1x500-ml G/P 1000 SDW 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803301 PH-1 100%	HNO3 to pH <2
B0PJF2					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF2					1x500-ml G/P 1000 SDW 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) PH-1 100%	HNO3 to pH <2
B0PJF2					1x500-ml G/P	TDS - 160.1 100%	Cool 4C
B0PJF2					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803302	Cool 4C
B0PJF2					1x500-ml G/P	Alkalinity - 310.1 100%	Cool 4C
B0PJF2					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF2					1x1000-ml aGs*	TOX - 9020 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJF2					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF2					1x20-ml P	Activity Scan 80803401	None
B0PJF2					2x1000-ml G/P	Carbon-14	None
B0PJF2					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
HT SICKLE (RFS)			AUG 03 1998 1350				8-3-98 1350
Relinquished By			Date/Time	Received By			Date/Time
				2100gm	Joe Tumin		8-5-98 0800
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-7

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM-SMC-H-14	Ice Chest No.: GLS 120 / 132 Temp.: 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.:
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ0 (F)		W	8-3-98	0835	1x500-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJJ1					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJJ1					1x500-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJJ1					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJJ1					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 100%	Cool 4C
B0PJJ1					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJJ1					1x500-ml G/P	NO2/NO3 - 353.1 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJJ1					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJJ1					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJJ1					1x20-ml P	Activity Scan	None
B0PJJ1					2x1000-ml G/P	Carbon-14	None
B0PJJ1					3x1000-ml G/P	Iodine-129	None

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
RT SICKLE (RFS)	8-3-98 1350	Heidelberg	8-3-98 1350
Heidelberg	8-3-98 1602	Received By: Joe Lemaire	8-4-98 0830
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-4

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9338 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING AUGUST 1998	Logbook No.: WM-SML-H14	Ice Chest No.: GW3 120/132 Temp. 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **
NA

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QBS log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF7 (F)		W	8-3-98	0835	1x500-ml G/P 1000 gm 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803305 100% PH-1	HNO3 to pH <2
B0PJF8					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF8					1x500-ml G/P 1000 gm 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 100% PH-1	HNO3 to pH <2
B0PJF8					1x500-ml G/P	TDS - 160.1 100%	Cool 4C
B0PJF8					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803306	Cool 4C
B0PJF8					1x500-ml G/P	Alkalinity - 310.1 100%	Cool 4C
B0PJF8					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF8					1x1000-ml aGs*	TOX - 9020 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJF8					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF8					1x20-ml P	Activity Scan	None
B0PJF8					2x1000-ml G/P	Carbon-14 80803403	None
B0PJF8					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)		8-3-98 1350				8-3-98 1350
Relinquished By			Date/Time	Received By			Date/Time
							8-5-98 0800
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-6

Page 1 of 2

Collector: RT SICKLE (RPS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING AUGUST 1998	Logbook No.: WM. SML. H14	Ice Chest No.: SML 350 Temp.: 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QBS log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH8 (F)		W	8-3-98	1110	1x500-ml G/P 1000 [illegible] 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803301 100% PH-1	HNO3 to pH <2
B0PJH9					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJH9					1x500-ml G/P 1000 [illegible] 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 100% PH-1	HNO3 to pH <2
B0PJH9					1x500-ml G/P	TDS - 160.1 100%	Cool 4C
B0PJH9					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803308	Cool 4C
B0PJH9					1x500-ml G/P	Alkalinity - 310.1 100%	Cool 4C
B0PJH9					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJH9					1x1000-ml aGs*	TOX - 9020 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJH9					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJH9					1x20-ml P	Activity Scan	None
B0PJH9					2x1000-ml G/P	Carbon-14 80803404	None
B0PJH9					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RT SICKLE (RPS)		[signature]	AUG 03 1998 1350	[signature]			8-3-98 1330
				L100CPM			
				Joe Tuma			8-5-98 0800

Matrix *

S = Soil		DS = Drum Solid	
SB = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-3

Collector: AT BICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: Lm. Smk. H14	Ice Chest No.: ERD Temp.: 4c
Shipped To (Lab): Quantera Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF5 (F)			8-3-98	1221	1x500-ml G/P 1000 cpm 3-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803303 100% PH-1	HNO3 to pH <2
B0PJF6					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF6					1x500-ml G/P 1000 cpm 3-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 100% PH-1	HNO3 to pH <2
B0PJF6					1x500-ml G/P	TDS - 160.1 100%	Cool 4C
B0PJF6					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 100% 80803304	Cool 4C
B0PJF6					1x500-ml G/P	Alkalinity - 310.1 100%	Cool 4C
B0PJF6					1x500-ml G/P	NO2/NO3 - 353.1 PH-1	H2SO4 to pH <2 Cool 4C
B0PJF6					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF6					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF6					1x20-ml P	Activity Scan 80803402	None
B0PJF6					2x1000-ml G/P	Carbon-14	None
B0PJF6					3x1000-ml G/P	Iodine-129	None

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
AT BICKLE (RFS)	AUG 03 1998 1332	Heidelberg	8-3-98 1330
		<100cpm Joe Tumann	8-5-98 0800

Matrix *

S = Soil		DS = Drum Solid	
SB = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

Screening Results

(R3) 8/4/98

ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
HX4		8/3/98 2:40:00 PM	QUAD21D	8/4/98 8:58:02 AM	B0PHX4	30	19	0.60619048	91	1.9919048
B0PHX4	LIQUID		Bkg:	8/4/98 2:29:33 AM	BKG	700	19	0.02714286	729	1.0414286

Ani Date: 8/4/98 Tot Sa, Alq: 8.50E+00 , 1.00E+01 Alp; (Dpm/ 1.85E+00 (uCi/ 7.08E-04 (pCi/ 8.33E+01 ± 2.7E+01 CAT I 3.0E-01 Lab
Ppt mg: 2 Units: L , ml Bet; Alq): 3.58E+00 Sa): 1.37E-03 L|g): 1.61E+02 ± 2.7E+01 3.1E-01 Alq L|g

PGW B0PJC8		8/3/98 1:50:00 PM	QUAD22A	8/4/98 8:58:05 AM	B0PJC8	30	22	0.68190476	111	2.5371429
	LIQUID		Bkg:	8/4/98 2:29:45 AM	BKG	700	36	0.05142857	814	1.1628571

Ani Date: 8/4/98 Tot Sa, Alq: 2.00E-02 , 1.00E+01 Alp; (Dpm/ 2.01E+00 (uCi/ 1.81E-06 (pCi/ 9.05E+01 ± 2.8E+01 CAT I 2.8E-01 Lab
Ppt mg: 4.6 Units: L , ml Bet; Alq): 4.36E+00 Sa): 3.93E-06 L|g): 1.96E+02 ± 2.9E+01 2.5E-01 Alq L|g

PGW B0PJF2		8/3/98 1:50:00 PM	QUAD22C	8/4/98 8:58:05 AM	B0PJF2	30	17	0.53666667	107	2.3866667
	LIQUID		Bkg:	8/4/98 2:29:45 AM	BKG	700	21	0.03	826	1.18

Ani Date: 8/4/98 Tot Sa, Alq: 1.05E+01 , 1.00E+01 Alp; (Dpm/ 1.57E+00 (uCi/ 7.42E-04 (pCi/ 7.07E+01 ± 2.7E+01 CAT I 3.5E-01 Lab
Ppt mg: 3.4 Units: L , ml Bet; Alq): 4.15E+00 Sa): 1.96E-03 L|g): 1.87E+02 ± 2.8E+01 2.7E-01 Alq L|g

PGW B0PJF6		8/3/98 1:50:00 PM	QUAD23A	8/4/98 8:58:09 AM	B0PJF6	30	14	0.42809524	98	2.3052381
	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	27	0.03857143	673	0.9614286

Ani Date: 8/4/98 Tot Sa, Alq: 1.05E+01 , 1.00E+01 Alp; (Dpm/ 1.28E+00 (uCi/ 6.07E-04 (pCi/ 5.78E+01 ± 2.5E+01 CAT I 4.3E-01 Lab
Ppt mg: 6 Units: L , ml Bet; Alq): 4.16E+00 Sa): 1.97E-03 L|g): 1.87E+02 ± 2.8E+01 2.7E-01 Alq L|g

PGW B0PJF8		8/3/98 1:50:00 PM	QUAD23B	8/4/98 8:58:09 AM	B0PJF8	30	23	0.72952381	107	2.4895238
	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	26	0.03714286	754	1.0771429

Ani Date: 8/4/98 Tot Sa, Alq: 1.05E+01 , 1.00E+01 Alp; (Dpm/ 2.32E+00 (uCi/ 1.10E-03 (pCi/ 1.05E+02 ± 3.0E+01 CAT I 2.4E-01 Lab
Ppt mg: 6.4 Units: L , ml Bet; Alq): 4.36E+00 Sa): 2.06E-03 L|g): 1.96E+02 ± 2.9E+01 2.5E-01 Alq L|g

PGW B0PJH9		8/3/98 1:50:00 PM	QUAD23C	8/4/98 8:58:09 AM	B0PJH9	30	5	0.13666667	52	0.7019048
	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	21	0.03	722	1.0314286

Ani Date: 8/4/98 Tot Sa, Alq: 1.05E+01 , 1.00E+01 Alp; (Dpm/ 3.71E-01 (uCi/ 1.76E-04 (pCi/ 1.67E+01 ± 2.0E+01 CAT I 1.5E+00 Lab
Ppt mg: 0 Units: L , ml Bet; Alq): 1.28E+00 Sa): 6.03E-04 L|g): 5.74E+01 ± 2.1E+01 8.7E-01 Alq L|g

000022

(R) 8/4/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PJJ1		8/3/98 1:50:00 PM	QUAD23D	8/4/98 8:58:09 AM	B0PJJ1	30	26	0.81238095	82	1.8147619
	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	38	0.05428571	643	0.9185714

Anl Date: 8/4/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp;	(Dpm/ 2.55E+00	(uCi/ 1.21E-03	(pCi/ 1.15E+02	± 2.9E+01	CAT I	2.2E-01	Lab
Ppt mg: 5.7	Units: L	, ml	Bet;	Alq): 2.99E+00	Sa): 1.42E-03	L|g): 1.35E+02	± 2.5E+01		3.7E-01	Alq L|g

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PJJ8		8/3/98 1:50:00 PM	QUAD24A	8/4/98 8:57:58 AM	B0PJJ8	30	6	0.16285714	51	0.7028571
	LIQUID		Bkg:	8/4/98 2:29:38 AM	BKG	700	26	0.03714286	698	0.9971429

Anl Date: 8/4/98	Tot Sa, Alq: 2.00E-02	, 1.00E+01	Alp;	(Dpm/ 4.84E-01	(uCi/ 4.36E-07	(pCi/ 2.18E+01	± 2.2E+01	CAT I	1.1E+00	Lab
Ppt mg: 0.2	Units: L	, ml	Bet;	Alq): 1.27E+00	Sa): 1.14E-06	L|g): 5.72E+01	± 2.1E+01		8.7E-01	Alq L|g

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PJT6		8/3/98 1:50:00 PM	QUAD24B	8/4/98 8:57:58 AM	B0PJT6	30	33	1.05428571	105	2.4071429
	LIQUID		Bkg:	8/4/98 2:29:38 AM	BKG	700	32	0.04571429	765	1.0928571

Anl Date: 8/4/98	Tot Sa, Alq: 2.00E-02	, 1.00E+01	Alp;	(Dpm/ 3.28E+00	(uCi/ 2.95E-06	(pCi/ 1.48E+02	± 3.2E+01	CAT I	1.7E-01	Lab
Ppt mg: 4.5	Units: L	, ml	Bet;	Alq): 4.09E+00	Sa): 3.69E-06	L|g): 1.84E+02	± 2.9E+01		2.7E-01	Alq L|g

000023

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: W02484

Work Order Number: 808033+034 SAF #: C98-052

Shipping Container ID: SmL390 Chain of Custody # C98-052-6

1. Custody Seals on shipping container intact? Yes [✓] No []
2. Custody Seals dated and signed? Yes [✓] No []
3. Chain-of-Custody record present? Yes [✓] No []
4. Cooler temperature 3°
5. Vermiculite/packing materials is Wet [] Dry [✓] n/a
6. Number of samples in shipping container: 22
7. Sample holding times exceeded? Yes [] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: D Hudelburg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1355 SG#: W02484

Work Order Number: 808033+034 SAF #: C98-052

Shipping Container ID: GWS 132 Chain of Custody # C98-052-4+7

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 2°
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 29
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Heidelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: W02484

Work Order Number: 808033+034 SAF #: C98-052

Shipping Container ID: GWS 120 Chain of Custody # C98-052-4+7

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°
5. Vermiculite/packing materials is Wet [ ] Dry [✓] N/A
6. Number of samples in shipping container: 15
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ___ hazard labels
   - ___ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ___ broken
   - ___ leaking
   - ___ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Heidelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: W02484

Work Order Number: 808033 + 034 SAF #: C98-052 W98-008

Shipping Container ID: ER-7 Chain of Custody # C98-052-3 W98-008-167

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 40
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 24
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Schedelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: W02484

Work Order Number: 808033+034 SAF #: C98-052 S98-008

Shipping Container ID: SML187 Chain of Custody # C98-052-8 +1 S98-008-68

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 40
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 28
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: D Heidelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Quanterra
Environmental Services

016058

Login No.: 18550

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: BHI Richland

Date: 8-5-98 Time: 0800

Project No: 550.178 ~~519.145~~ RGW 8/5/98

Initiated by: Joe Tiemann

Shipper/No: Airborne

RFA/COC Numbers: 09889

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:** 3°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 designate) Joe Tiemann Date: 8-5-98

Project Management Review: Robert E. White Date: 8-5-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

W02484

Quanterra August 06, 1998 10:20 am
Account: 10722 Project: 550.178 Quanterra-Richland QAS No. 550.178 Rev. 1
Master Sample Login: 18558

Project Manager: R. White

Draft: Final: Entered and Reviewed by: PM Review: Robert E. White

Sample Header Template:

Sample No. / Comments / # Container Type / Data:	Client ID	C-Matrix	Analysis	Class	Date: Collected	Preservative	Received / Anal. Due Date	Due / Hold Date	Shipper / Site	Rad Category	Rad Sample No. (Container Numbers:% Filled)
18558-001 SAF C98-052	BOPJF3	Water			04-AUG-98 09:22		04-AUG-98 14:00	03-SEP-98	AIRBORNE	1	Screening not Required
1 PN - Plastic-1L			ASD/7060/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395922:100)
1			ICAPD/6010/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395922:100)
1			SED/7740/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395922:100)
18558-002 SAF C98-052	BOPJH5	Water			04-AUG-98 07:00		04-AUG-98 14:00	03-SEP-98	AIRBORNE	1	Screening not Required
1 PN - Plastic-1L			ASD/7060/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395923:100)
1			ICAPD/6010/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395923:100)
1			SED/7740/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395923:100)
18558-003 SAF C98-052	BOPJH7	Water			04-AUG-98 07:00		04-AUG-98 14:00	03-SEP-98	AIRBORNE	1	Screening not Required
3 VI - Vial-40ml			VOA/8240/Q4	S		HCL	27-AUG-98	18-AUG-98	109F		(395925:100 395926:99 395927:98)
1 AN - Amber Glass-1L			TOX/9020/Q4	S		H2SO4	27-AUG-98	01-SEP-98	T6D		(395930:100)
1 PN - Plastic-1L			AS/7060/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395924:100)
1			ICAP/6010/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395924:100)
1			SE/7740/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395924:100)
1 PN - Plastic-500ml			ALK/310.1/Q4	S		COLD	27-AUG-98	18-AUG-98	T6D		(395929:99)
1			CL/300.0/Q4	S		COLD	27-AUG-98	01-SEP-98	T6D		(395931:99)
1			FL/300.0/Q4	S		COLD	27-AUG-98	01-SEP-98	T6D		(395931:99)
1			NO3/353.1/Q4	S		H2SO4	27-AUG-98	01-SEP-98	T6D		(395932:98)
1			SO4/300.0/Q4	S		COLD	27-AUG-98	01-SEP-98	T6D		(395931:99)
1			TDS/160.1/Q4	S		COLD	27-AUG-98	11-AUG-98	T6D		(395928:100)
18558-004 SAF C98-052	BOPJF4	Water			04-AUG-98 09:22		04-AUG-98 14:00	03-SEP-98	AIRBORNE	1	Screening not Required
3 VI - Vial-40ml			VOA/8240/Q4	S		HCL	27-AUG-98	18-AUG-98	109F		(395934:100 395935:99 395936:98)
1 AN - Amber Glass-1L			TOX/9020/Q4	S		H2SO4	27-AUG-98	01-SEP-98	T6D		(395939:100)
1 PN - Plastic-1L			AS/7060/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395933:100)
			ICAP/6010/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395933:100)
			SE/7740/Q4	S		HNO3	27-AUG-98	31-JAN-99	T6D		(395933:100)
PN - Plastic-500ml			ALK/310.1/Q4	S		COLD	27-AUG-98	18-AUG-98	T6D		(395940:99)
			CL/300.0/Q4	S		COLD	27-AUG-98	01-SEP-98	T6D		(395938:99)
			FL/300.0/Q4	S		COLD	27-AUG-98	01-SEP-98	T6D		(395938:99)
			NO3/353.1/Q4	S		H2SO4	27-AUG-98	01-SEP-98	T6D		(395941:98)
			SO4/300.0/Q4	S		COLD	27-AUG-98	01-SEP-98	T6D		(395938:99)
			TDS/160.1/Q4	S		COLD	27-AUG-98	11-AUG-98	T6D		(395937:100)

3*=Sample has not been rad screened.

Quanterra August 06, 1998 10:20 am
Account: 10722 Project: 550.178 Quanterra-Richland QAS No. 550.178 Rev. 1
Master Sample Login: 18558

roject Manager: R. White

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

ample Header Template: _____

ample 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)	
ata:								
8558-005	BOPJJ9	Water	04-AUG-98 07:00	04-AUG-98 14:00	03-SEP-98	AIRBORNE	1	Screening not Required
SAF C98-052								
3 VI - Vial-40ml	VOA/8240/Q4	S	HCL	27-AUG-98	18-AUG-98	109F	(395943:100 395944:99 395945:98)	

000033

3*=Sample has not been rad screened.

Chain of Custody Record

St Louis temp 4°c cu # 016075

Quanterra

QUA-4124 0797

Client: Bichel	Project Manager: A. Kopicki	Date: 8-5-98	Chain of Custody Number: 03890
Address:	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 1 of 1
City / State / Zip Code:	Site Contact:	Lab Contact:	
Project Name: SAF CG8 052	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	HNOS	HCl	NaOH	ZnAc/ NaOH	
SCS1491 PP013	Chemical	Chemical	Bottles										
2	4												
3	H5												
4	1												
5	J59												

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 ____

QC Requirements (Specify): SIX-W02484

1. Relinquished By: Middlebrg QES	Date: 8-5-98	Time: 16:00	1. Received By: Joe Tiemann	Date: 8-6-98	Time: 0830
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-5

Collector: RT SICKLE (HFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: LM-SML-114	Ice Chest No.: SML-262 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH5 (F)		W	8-4-98	0700	1x500-ml G/P 1000 ml 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJH7					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJH7					1x500-ml G/P 7-30-98 1000 ml	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJH7					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJH7					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 100%	Cool 4C
B0PJH7					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJH7					1x500-ml G/P	NO2/NO3 - 353.1 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJH7					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJH7					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJH7					1x20-ml P	Activity Scan	None
B0PJH7					2x1000-ml G/P	Carbon-14	None
B0PJH7					3x1000-ml G/P	Iodine-129	None

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
RT SICKLE (RFS)	8-4-98 1400	Karen Aldridge	8-4-98 1400
Karen Aldridge	8-4-98 1400	Joe Temin	8-5-98 0800

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-2

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code: NA
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WMS002-H04	Ice Chest No.: ER-7 Temp.: 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.: NA
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF3 (F)		W	8-4-98	0922	1x~~500~~-ml G/P 1000 JMD 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF4					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF4					1x~~500~~-ml G/P 1000 JMD 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF4					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF4					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 100%	Cool 4C
B0PJF4					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF4					1x500-ml G/P	NO2/NO3 - 353.1 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJF4					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF4					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF4					1x20-ml P	Activity Scan	None
B0PJF4					2x1000-ml G/P	Carbon-14	None
B0PJF4					3x1000-ml G/P	Iodine-129	None

Relinquished By	Date/Time	Received By	Date/Time
Print: RT SICKLE (RFS) Sign: [signature]	AUG 04 1998 1400	Print: Karen A. Hinley Sign: [signature]	8-4-98 1400
Karen A. Hinley	8-4-98 1400	Joe Temin	8-5-98 0800

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

Quanterra Environmental Services

016062

Login No.: 18558

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: BHI

Project No: 550.178

Shipper/No: Airborne

Date: 9-5-98 Time: 0800

Initiated by: JOE TIEMANN

RFA/COC Numbers: 09890

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: 3°C

Notes: Anion only

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 designate) Joe Tiemann Date: 8-5-98

Project Management Review: Robert E. White Date: 8-6-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-2

Collector RT SICKLE (HFS)	**Contact/Requester** JH KESSNER	**Telephone No.** (509) 372-9538 **MSIN** **FAX**
SAF No. C98-052	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code** NA
Project Title ERDF GW SAMPLING, AUGUST 1998	**Logbook No.** WMS-SMC-HDY	**Ice Chest No.** ER-7 **Temp.** 4C
Shipped To (Lab) Quanterra Incorporated	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.** NA
Protocol CERCLA	**Data Turnaround** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SDL
W02484

SPECIAL INSTRUCTIONS **Hold Time** **Total Activity Exemption:** Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF3 (F)		W	8-4-98	0922	1x~~500~~-ml G/P 1000 JMD 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80804901 100% PH-1	HNO3 to pH <2
B0PJF4					3x40-ml aGs*	VOA - 8240A (TCL) 100% x3	HCl or H2SO4 to pH <2 Cool 4C
B0PJF4					1x~~500~~-ml G/P 1000 JMD 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 100% PH-1	HNO3 to pH <2
B0PJF4					1x500-ml G/P	TDS - 160.1 100%	Cool 4C
B0PJF4					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80804902	Cool 4C
B0PJF4					1x500-ml G/P	Alkalinity - 310.1 100%	Cool 4C
B0PJF4					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF4					1x1000-ml aGs*	TOX - 9020 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJF4					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF4					1x20-ml P	Activity Scan 80805001	None
B0PJF4					2x1000-ml G/P	Carbon-14	None
B0PJF4					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RT SICKLE (RFS)			AUG 04 1998 1400	Karen A. Hanley			8-4-98 1400
Relinquished By			Date/Time	Received By			Date/Time
				Joe Tuminna			8-6-98 0330 1100 PM
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-5

Collector: RT SICKLE (HFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: LM-SML-H14	Ice Chest No.: SML-262 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH5 (F)		W	8-4-98	0200	1x500-ml G/P 1000 ml 7-30-98	ICP Metals - 6010A (SW-846) {Barium, Chromium, Lead, Tin, Vanadium, Zinc}; Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80804903 100% PH-1	HNO3 to pH <2
B0PJH7					3x40-ml aGs*	VOA - 8240A (TCL) 100% x3	HCl or H2SO4 to pH <2 Cool 4C
B0PJH7					1x500-ml G/P 7-30-98 1000 ml	ICP Metals - 6010A (SW-846) {Barium, Chromium, Lead, Tin, Vanadium, Zinc}; Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 100% PH-1	HNO3 to pH <2
B0PJH7					1x500-ml G/P	TDS - 160.1 100%	Cool 4C
B0PJH7					1x500-ml G/P	IC Anions - 300.0 {Chloride, Fluoride, Sulfate} 80804904	Cool 4C
B0PJH7					1x500-ml G/P	Alkalinity - 310.1 100%	Cool 4C
B0PJH7					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJH7					1x1000-ml aGs*	TOX - 9020 100% PH-1	H2SO4 to pH <2 Cool 4C
B0PJH7					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH<2
B0PJH7					1x20-ml P	Activity Scan	None
B0PJH7					2x1000-ml G/P	Carbon-14 80805002	None
B0PJH7					2x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)		8-4-98 1400		Karen Schlenker		8-4-98 1400
					Joe Temin		8-6-98 0830

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-9

Page 1 of 1

Collector RT SICKLE (RFS)	**Contact/Requester** JH KESSNER	**Telephone No.** (509) 372-9538 **MSIN** **FAX**
SAF No. C98-052	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title ERDF GW SAMPLING, AUGUST 1998	**Logbook No.** LM-SML-H14	**Ice Chest No.** SM<252 **Temp.**
Shipped To (Lab) Quanterra Incorporated	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Data Turnaround** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ9		W	8-4-98	0700	3x40-ml aGs*	VOA - 8240A (TCL) 80804905 100% x3	HCl or H2SO4 to pH <2 Cool 4C
B0PJJ9		W	8-4-98	0700	1x20-ml P	Activity Scan	None

Relinquished By	Received By
Print: RT SICKLE (RFS) Sign: [signature] Date/Time: 1400 AUG 04 1998	Print: Lauren Ashenbury Sign: [signature] Date/Time: 1400 8-4-98
Relinquished By Date/Time	Received By Joe Tuman Date/Time: 8-6-98 0830
Relinquished By Date/Time	Received By Date/Time
Relinquished By Date/Time	Received By Date/Time

Matrix *

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
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

(B) 8/5/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PHX2		8/4/98 2:30:00 PM	QUAD23C	8/5/98 9:15:12 AM	B0PHX2	30	28	0.89761905	352	10.619048
	LIQUID		Bkg:	8/5/98 1:41:23 AM	BKG	700	25	0.03571429	780	1.1142857

Anl Date: 8/5/98 Tot Sa, Alq: 8.50E+00 , 1.00E+01 Alp; (Dpm/ 2.42E+00 (uCi/ 9.25E-04 (pCi/ 1.09E+02 ± 2.8E+01 CAT I 2.3E-01 Lab
Ppt mg: 3.4 Units: L , ml Bet; Alq): 2.01E+01 Sa): 7.71E-03 L|g): 9.07E+02 ± 5.4E+01 5.5E-02 Alq L|g

PGW B0PHX6		8/4/98 2:30:00 PM	QUAD24A	8/5/98 9:15:01 AM	B0PHX6	30	24	0.75571429	86	1.9138095
	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	31	0.04428571	667	0.9528571

Anl Date: 8/5/98 Tot Sa, Alq: 8.50E+00 , 1.00E+01 Alp; (Dpm/ 2.35E+00 (uCi/ 8.99E-04 (pCi/ 1.06E+02 ± 2.8E+01 CAT I 2.4E-01 Lab
Ppt mg: 2 Units: L , ml Bet; Alq): 3.29E+00 Sa): 1.26E-03 L|g): 1.48E+02 ± 2.6E+01 3.4E-01 Alq L|g

PGW B0PHX8		8/4/98 2:30:00 PM	QUAD24B	8/5/98 9:15:01 AM	B0PHX8	30	57	1.85714286	949	30.670476
	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	30	0.04285714	674	0.9628571

Anl Date: 8/5/98 Tot Sa, Alq: 8.50E+00 , 1.00E+01 Alp; (Dpm/ 5.00E+00 (uCi/ 1.91E-03 (pCi/ 2.25E+02 ± 3.6E+01 CAT I 1.1E-01 Lab
Ppt mg: 5.4 Units: L , ml Bet; Alq): 5.90E+01 Sa): 2.26E-02 L|g): 2.66E+03 ± 8.9E+01 1.9E-02 Alq L|g

PGW B0PHY2		8/4/98 2:30:00 PM	QUAD24C	8/5/98 9:15:01 AM	B0PHY2	30	29	0.93238095	349	10.644762
	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	24	0.03428571	692	0.9885714

Anl Date: 8/5/98 Tot Sa, Alq: 8.50E+00 , 1.00E+01 Alp; (Dpm/ 2.51E+00 (uCi/ 9.63E-04 (pCi/ 1.13E+02 ± 2.8E+01 CAT I 2.2E-01 Lab
Ppt mg: 2.9 Units: L , ml Bet; Alq): 1.96E+01 Sa): 7.52E-03 L|g): 8.84E+02 ± 5.2E+01 5.7E-02 Alq L|g

PGW B0PJF4		8/4/98 2:30:00 PM	QUAD24D	8/5/98 9:15:01 AM	B0PJF4	30	13	0.38761905	86	1.7166667
	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	32	0.04571429	805	1.15

Anl Date: 8/5/98 Tot Sa, Alq: 1.05E+01 , 1.00E+01 Alp; (Dpm/ 1.14E+00 (uCi/ 5.39E-04 (pCi/ 5.14E+01 ± 2.6E+01 CAT I 4.9E-01 Lab
Ppt mg: 4.6 Units: L , ml Bet; Alq): 3.13E+00 Sa): 1.48E-03 L|g): 1.41E+02 ± 2.7E+01 3.5E-01 Alq L|g

PGW B0PJH7		8/4/98 2:30:00 PM	QUAD21A	8/5/98 10:00:05 AM	B0PJH7	30	7	0.16619048	52	0.6576190
	LIQUID		Bkg:	8/5/98 1:41:08 AM	BKG	700	47	0.06714286	753	1.0757143

Anl Date: 8/5/98 Tot Sa, Alq: 1.05E+01 , 1.00E+01 Alp; (Dpm/ 4.67E-01 (uCi/ 2.21E-04 (pCi/ 2.10E+01 ± 2.3E+01 CAT I 1.2E+00 Lab
Ppt mg: 0.4 Units: L , ml Bet; Alq): 1.22E+00 Sa): 5.79E-04 L|g): 5.52E+01 ± 2.2E+01 9.1E-01 Alq L|g

PGW B0PJJ9		8/4/98 2:30:00 PM	QUAD21B	8/5/98 10:00:05 AM	B0PJJ9	30	0	-0.0328571	29	-0.043333
	LIQUID		Bkg:	8/5/98 1:41:08 AM	BKG	700	23	0.03285714	707	1.01

Anl Date: 8/5/98 Tot Sa, Alq: 2.00E-02 , 1.00E+01 Alp; (Dpm/ -1.01E-01 (uCi/ -9.12E-08 (pCi/ -4.56E+00 ± 2.1E+01 CAT I 2.0E-02 Lab
Ppt mg: 0.1 Units: L , ml Bet; Alq): -6.35E-02 Sa): -5.72E-08 L|g): -2.86E+00 ± 1.7E+01 2.0E-02 Alq L|g

000033

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8-4-98 1400 SG#: WC2484

Work Order Number: 808049 + 50 SAF #: C98-052

Shipping Container ID: SMC262 Chain of Custody # C98-052-5+9

1. Custody Seals on shipping container intact? Yes [] ~~No~~ []
2. Custody Seals dated and signed? Yes [✓] No []
3. Chain-of-Custody record present? Yes [✓] No []
4. Cooler temperature 4° C
5. Vermiculite/packing materials is Wet [] Dry [✓]
6. Number of samples in shipping container: 26
7. Sample holding times exceeded? Yes [] No [] ____

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [] No [✓]
11. Description of anomalies (include sample numbers): ____

Sample Custodian/Laboratory: [signature] Date: 8-4-98

Telephoned To: ____ On ____ By ____

000039

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8-4-98 1400 SG#: W02484

Work Order Number: 808049 + 50 SAF #: C98-052

Shipping Container ID: ER-7 Chain of Custody # C98-052-2

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 4°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 22
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [signature] Date: 8-4-98

Telephoned To: _____ On _____ By _____

000040

Quanterra Environmental Services

016075

Login No.: 18558

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: BHI

Date: 8-6-98 Time: 0830

Project No: 550.178

Initiated by: Joe Tiemann

Shipper/No: Airborne

RFA/COC Numbers: 09890

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: 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 designate) Joe Tiemann Date: 8-6-98

Project Management Review: Robert E. White Date: 8-6-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJJ9

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Quanterra ID : 18558-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181712-1	08/18/98	08/18/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181712-1	08/18/98	08/18/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181712-1	08/18/98	08/18/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181712-1	08/18/98	08/18/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181712-1	08/18/98	08/18/98	3	UG/L	BJ	5	1
Acetone	67-64-1	QCBLK181712-1	08/18/98	08/18/98	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181712-1	08/18/98	08/18/98	1	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181712-1	08/18/98	08/18/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181712-1	08/18/98	08/18/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181712-1	08/18/98	08/18/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181712-1	08/18/98	08/18/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181712-1	08/18/98	08/18/98	90	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181712-1	08/18/98	08/18/98	94	%REC			1
Toluene-d8	2037-26-5	QCBLK181712-1	08/18/98	08/18/98	95	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJJ1

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181549-1	08/17/98	08/17/98	4	UG/L	BJ	5	1
Acetone	67-64-1	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	BJ	20	1
Carbon Disulfide	75-15-0	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181549-1	08/17/98	08/17/98	1	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181549-1	08/17/98	08/17/98	3	UG/L	J	5	1
Bromodichloromethane	75-27-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181549-1	08/17/98	08/17/98	3	UG/L	J	5	1
EthylBenzene	100-41-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,4-Dichlorobenzene	106-46-7	QCBLK181549-1	08/17/98	08/17/98	6	UG/L	JN		1
Bromofluorobenzene	460-00-4	QCBLK181549-1	08/17/98	08/17/98	88	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181549-1	08/17/98	08/17/98	105	%REC			1
Toluene-d8	2037-26-5	QCBLK181549-1	08/17/98	08/17/98	95	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJF8

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181549-1	08/17/98	08/17/98	4	UG/L	BJ	5	1
Acetone	67-64-1	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	BJ	20	1
Carbon Disulfide	75-15-0	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181549-1	08/17/98	08/17/98	1	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181549-1	08/17/98	08/17/98	3	UG/L	J	5	1
Bromodichloromethane	75-27-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181549-1	08/17/98	08/17/98	88	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181549-1	08/17/98	08/17/98	103	%REC			1
Toluene-d8	2037-26-5	QCBLK181549-1	08/17/98	08/17/98	98	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJH7

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Quanterra ID : 18558-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181549-1	08/17/98	08/17/98	3	UG/L	BJ	5	1
Acetone	67-64-1	QCBLK181549-1	08/17/98	08/17/98	11	UG/L	BJ	20	1
Carbon Disulfide	75-15-0	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181549-1	08/17/98	08/17/98	88	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181549-1	08/17/98	08/17/98	104	%REC			1
Toluene-d8	2037-26-5	QCBLK181549-1	08/17/98	08/17/98	97	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJF4

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Quanterra ID : 18558-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181549-1	08/17/98	08/17/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181549-1	08/17/98	08/17/98	1	UG/L	BJ	5	1
Acetone	67-64-1	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181549-1	08/17/98	08/17/98	1	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181549-1	08/17/98	08/17/98	6	UG/L		5	1
Bromodichloromethane	75-27-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181549-1	08/17/98	08/17/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181549-1	08/17/98	08/17/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181549-1	08/17/98	08/17/98	93	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181549-1	08/17/98	08/17/98	106	%REC			1
Toluene-d8	2037-26-5	QCBLK181549-1	08/17/98	08/17/98	107	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJF2

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181259-1	08/13/98	08/13/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181259-1	08/13/98	08/13/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181259-1	08/13/98	08/13/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181259-1	08/13/98	08/13/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK181259-1	08/13/98	08/13/98	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181259-1	08/13/98	08/13/98	1	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181259-1	08/13/98	08/13/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181259-1	08/13/98	08/13/98	2	UG/L	J	5	1
Bromodichloromethane	75-27-4	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181259-1	08/13/98	08/13/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181259-1	08/13/98	08/13/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181259-1	08/13/98	08/13/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181259-1	08/13/98	08/13/98	89	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181259-1	08/13/98	08/13/98	102	%REC			1
Toluene-d8	2037-26-5	QCBLK181259-1	08/13/98	08/13/98	100	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJF2

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-003MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK181259-1	08/13/98	08/13/98	128	%REC			1
Trichloroethene	79-01-6	QCBLK181259-1	08/13/98	08/13/98	113	%REC			1
Benzene	71-43-2	QCBLK181259-1	08/13/98	08/13/98	117	%REC			1
Toluene	108-88-3	QCBLK181259-1	08/13/98	08/13/98	93	%REC			1
Chlorobenzene	108-90-7	QCBLK181259-1	08/13/98	08/13/98	86	%REC			1
Bromofluorobenzene	460-00-4	QCBLK181259-1	08/13/98	08/13/98	88	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181259-1	08/13/98	08/13/98	125	%REC			1
Toluene-d8	2037-26-5	QCBLK181259-1	08/13/98	08/13/98	94	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJF2

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-003MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK181259-1	08/13/98	08/13/98	131	%REC			1
Trichloroethene	79-01-6	QCBLK181259-1	08/13/98	08/13/98	109	%REC			1
Benzene	71-43-2	QCBLK181259-1	08/13/98	08/13/98	113	%REC			1
Toluene	108-88-3	QCBLK181259-1	08/13/98	08/13/98	96	%REC			1
Chlorobenzene	108-90-7	QCBLK181259-1	08/13/98	08/13/98	90	%REC			1
Bromofluorobenzene	460-00-4	QCBLK181259-1	08/13/98	08/13/98	85	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181259-1	08/13/98	08/13/98	120	%REC			1
Toluene-d8	2037-26-5	QCBLK181259-1	08/13/98	08/13/98	99	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJH9

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181259-1	08/14/98	08/14/98	1	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181259-1	08/14/98	08/14/98	4	UG/L	J	5	1
Bromodichloromethane	75-27-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181259-1	08/14/98	08/14/98	89	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181259-1	08/14/98	08/14/98	108	%REC			1
Toluene-d8	2037-26-5	QCBLK181259-1	08/14/98	08/14/98	100	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJF6

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-010

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181259-1	08/14/98	08/14/98	2	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	[illegible]	1
1,1,2-Trichloroethane	79-00-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	[illegible]	1
Benzene	71-43-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181259-1	08/14/98	08/14/98	89	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181259-1	08/14/98	08/14/98	115	%REC			1
Toluene-d8	2037-26-5	QCBLK181259-1	08/14/98	08/14/98	99	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: VOA-8240 (TCL)
Method: EPA 8240
Matrix: LIQUID

Client ID: B0PJJ8

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-011

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK181259-1	08/14/98	08/14/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Carbon Disulfide	75-15-0	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK181259-1	08/14/98	08/14/98	1	UG/L	J	5	1
1,2-Dichloroethane	107-06-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Carbon Tetrachloride	56-23-5	QCBLK181259-1	08/14/98	08/14/98	10	UG/L		5	1
Bromodichloromethane	75-27-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK181259-1	08/14/98	08/14/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK181259-1	08/14/98	08/14/98	5	UG/L	U	5	1
Bromofluorobenzene	460-00-4	QCBLK181259-1	08/14/98	08/14/98	86	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK181259-1	08/14/98	08/14/98	109	%REC			1
Toluene-d8	2037-26-5	QCBLK181259-1	08/14/98	08/14/98	98	%REC			1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJF2

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5104

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/13/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
56-23-5	Carbon Tetrachloride	2	J
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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJF2

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5104

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/13/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJJ1

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5182

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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	4	JB
67-64-1	Acetone	10	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
56-23-5	Carbon Tetrachloride	3	J
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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	3	J
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJJ1

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5182

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 106-46-7	BENZENE, 1,4-DICHLORO-	22.19	5.562	NJ
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJF8

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5183

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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	4	JB
67-64-1	Acetone	10	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
56-23-5	Carbon Tetrachloride	3	J
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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJF8

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5183

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJH9

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5111

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/14/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
56-23-5	Carbon Tetrachloride	4	J
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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJH9

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5111

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/14/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJF6

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5112

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/14/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJF6

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5112

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/14/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJJ8

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5113

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/14/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
56-23-5	Carbon Tetrachloride	10	
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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJJ8

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18550-011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5113

Level: (low/med) LOW Date Received: 08/03/98

% Moisture: not dec. _____ Date Analyzed: 08/14/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJH7

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18558-003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5184

Level: (low/med) LOW Date Received: 08/04/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

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	3	JB
67-64-1	Acetone	11	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJH7

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18558-003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5184

Level: (low/med) LOW Date Received: 08/04/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJF4

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18558-004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5185

Level: (low/med) LOW Date Received: 08/04/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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	1	JB
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
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
56-23-5	Carbon Tetrachloride	6	
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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJF4

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18558-004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5185

Level: (low/med) LOW Date Received: 08/04/98

% Moisture: not dec. _____ Date Analyzed: 08/17/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0PJJ9

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18558-005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5205

Level: (low/med) LOW Date Received: 08/04/98

% Moisture: not dec. _____ Date Analyzed: 08/18/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

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	3	JB
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
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	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
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
108-88-3	Toluene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0PJJ9

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix: (soil/water) WATER Lab Sample ID: 18558-005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP5205

Level: (low/med) LOW Date Received: 08/04/98

% Moisture: not dec. _____ Date Analyzed: 08/18/98

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Arsenic-7060-(GFAA)
Method: EPA 7000 Series
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0PJF2	18550-003	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	2.6	UG/L	B	10.0	1
B0PJJ1	18550-004	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
B0PJF8	18550-005	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.4	UG/L	B	10.0	1
B0PJH9	18550-008	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
B0PJF6	18550-010	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.2	UG/L	B	10.0	1
B0PJH7	18558-003	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
B0PJF4	18558-004	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
B0PJF1	18550-001	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	2.8	UG/L	B	10.0	1
B0PJF1	18550-001MS	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	103	%REC			1
B0PJF1	18550-001MSD	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	103	%REC			1
B0PJJ0	18550-002	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.4	UG/L	B	10.0	1
B0PJF7	18550-006	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
B0PJH8	18550-007	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
B0PJF5	18550-009	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.2	UG/L	B	10.0	1
B0PJF3	18558-001	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
B0PJH5	18558-002	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1
NA	QCLCS181706-1	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	104	%REC			1
NA	QCBLK181706-1	Arsenic	7440-38-2	QCBLK181706-1	08/19/98	08/19/98	1.0	UG/L	U	10.0	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Selenium-7740-(GFAA)
Method: EPA 7000 Series
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0PJF2	18550-003	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	4.1	UG/L	B	5.0	1
B0PJJ1	18550-004	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	5.9	UG/L		5.0	1
B0PJF8	18550-005	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	5.8	UG/L		5.0	1
B0PJH9	18550-008	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	1.0	UG/L	U	5.0	1
B0PJF6	18550-010	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	6.1	UG/L		5.0	1
B0PJH7	18558-003	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	1.0	UG/L	U	5.0	1
B0PJF4	18558-004	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	4.1	UG/L	B	5.0	1
B0PJF1	18550-001	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	3.2	UG/L	B	5.0	1
B0PJF1	18550-001MS	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	117	%REC			1
B0PJF1	18550-001MSD	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	115	%REC			1
B0PJJ0	18550-002	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	5.8	UG/L		5.0	1
B0PJF7	18550-006	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	5.5	UG/L		5.0	1
B0PJH8	18550-007	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	1.0	UG/L	U	5.0	1
B0PJF5	18550-009	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	5.8	UG/L		5.0	1
B0PJF3	18558-001	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	4.5	UG/L	B	5.0	1
B0PJH5	18558-002	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	1.0	UG/L	U	5.0	1
NA	QCBLK181706-1	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	1.0	UG/L	U	5.0	1
NA	QCLCS181706-1	Selenium	7782-49-2	QCBLK181706-1	08/19/98	08/21/98	96	%REC			1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID: B0PJF1

Quanterra ID : 18550-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	39.8	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	13.5	UG/L		10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	39.5	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	10.3	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

Bechtel Hanford Incorporated
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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID: B0PJF1

Quanterra ID : 18550-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	93	%REC			1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	91	%REC			1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	97	%REC			1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	97	%REC			1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	97	%REC			1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	90	%REC			1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJF1

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	96	%REC			1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	95	%REC			1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	95	%REC			1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	99	%REC			1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	99	%REC			1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	94	%REC			1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJJ0

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	69.0	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.2	UG/L	U	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	33.9	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	629	UG/L		20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJF2

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	40.0	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	13.9	UG/L		10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	41.0	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	10.3	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJJ1

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	69.8	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	6.4	UG/L	B	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	35.8	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	664	UG/L		20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID: B0PJF8

Quanterra ID : 18550-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	69.9	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	5.7	UG/L	B	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	36.7	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	633	UG/L		20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJF7

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-006

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	71.1	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.2	UG/L	U	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	36.0	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	663	UG/L		20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID: B0PJH8

Quanterra ID : 18550-007

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	0.90	UG/L	U	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.2	UG/L	U	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	7.7	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	11.5	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	30.6	UG/L	B	100	1

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Project: 550.178

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJH9

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	0.90	UG/L	U	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	6.7	UG/L	B	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	7.7	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	7.4	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID: B0PJF5

Quanterra ID : 18550-009

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	74.1	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.2	UG/L	U	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	39.5	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	4.7	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJF6

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-010

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	72.5	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	96.1	UG/L		10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	40.3	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	7.0	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Client ID: B0PJF3

Quanterra ID : 18558-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	58.2	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.2	UG/L	U	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	30.1	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	241	UG/L		20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICAP Metals - Dissolved
Method: EPA 6010
Matrix: LIQUID

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Client ID: B0PJH5

Quanterra ID : 18558-002

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	0.93	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.2	UG/L	U	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	7.4	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	6.3	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJH7

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Quanterra ID : 18558-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	0.90	UG/L	U	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.2	UG/L	U	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	7.6	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	7.7	UG/L	B	20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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Project: 550.178

Category: ICP Metals-6010A (TAL)
Method: EPA 6010
Matrix: LIQUID

Client ID: B0PJF4

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Quanterra ID : 18558-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK181609-1	08/18/98	08/19/98	60.1	UG/L	B	200	1
Chromium	7440-47-3	QCBLK181609-1	08/18/98	08/19/98	4.3	UG/L	B	10.0	1
Lead	7439-92-1	QCBLK181609-1	08/18/98	08/19/98	30.2	UG/L	U	100	1
Vanadium	7440-62-2	QCBLK181609-1	08/18/98	08/19/98	36.1	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK181609-1	08/18/98	08/19/98	446	UG/L		20.0	1
Tin	7440-31-5	QCBLK181609-1	08/18/98	08/19/98	28.0	UG/L	U	100	1

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: QUANTERRA_MO_____ Contract: 550.178___

Lab Code: ITMO__ Case No.: _____ SAS No.: _____ SDG No.: W02484_____

SOW No.: SW846

EPA Sample No.	Lab Sample ID
B0PJF1	18550-001
B0PJF1SD	18550-001SD
B0PJF1S	18550-001S
B0PJF2	18550-003
B0PJF3	18558-001
B0PJF4	18558-004
B0PJF5	18550-009
B0PJF6	18550-010
B0PJF7	18550-006
B0PJF8	18550-005
B0PJH5	18558-002
B0PJH7	18558-003
B0PJH8	18550-007
B0PJH9	18550-008
B0PJJ0	18550-002
B0PJJ1	18550-004

Were ICP interelement corrections applied ? Yes/No YES

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

Comments:

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

Signature: _____ Name: _____

Date: _____ Title: _____

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF1

Lab Name: QUANTERRA_MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18550-001

Level (low/med): LOW Date Received: 08/03/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	2.8	B		F
7440-39-3	Barium	39.8	B		P
7440-47-3	Chromium	13.5			P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	3.2	B		F
7440-62-2	Vanadium	39.5	B		P
7440-66-6	Zinc	10.3	B		P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF2

Lab Name: QUANTERRA_MO Contract: 550.178
Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484
Matrix (soil/water): WATER Lab Sample ID: 18550-003
Level (low/med): LOW Date Received: 08/03/98
% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	2.6	B		F
7440-39-3	Barium	40.0	B		P
7440-47-3	Chromium	13.9			P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	4.1	B		F
7440-62-2	Vanadium	41.0	B		P
7440-66-6	Zinc	10.3	B		P
7440-31-5	Tin	28.0	U		P

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

Comments:

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF3

Lab Name: QUANTERRA_MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18558-001

Level (low/med): LOW Date Received: 08/04/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	58.2	B		P
7440-47-3	Chromium	4.2	U		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	4.5	B		F
7440-62-2	Vanadium	30.1	B		P
7440-66-6	Zinc	241			P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF4

Lab Name: QUANTERRA_MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18558-004

Level (low/med): LOW Date Received: 08/04/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	60.1	B		P
7440-47-3	Chromium	4.3	B		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	4.1	B		F
7440-62-2	Vanadium	36.1	B		P
7440-66-6	Zinc	446			P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF5

Lab Name: QUANTERRA_MO Contract: 550.178
Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484
Matrix (soil/water): WATER Lab Sample ID: 18550-009
Level (low/med): LOW Date Received: 08/03/98
% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.2	B		F
7440-39-3	Barium	74.1	B		P
7440-47-3	Chromium	4.2	U		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	5.8			F
7440-62-2	Vanadium	39.5	B		P
7440-66-6	Zinc	4.7	B		P
7440-31-5	Tin	28.0	U		P

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

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF6

Lab Name: QUANTERRA_MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18550-010

Level (low/med): LOW Date Received: 08/03/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.2	B		F
7440-39-3	Barium	72.5	B		P
7440-47-3	Chromium	96.1			P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	6.1			F
7440-62-2	Vanadium	40.3	B		P
7440-66-6	Zinc	7.0	B		P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF7

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18550-006

Level (low/med): LOW Date Received: 08/03/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	71.1	B		P
7440-47-3	Chromium	4.2	U		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	5.5			F
7440-62-2	Vanadium	36.0	B		P
7440-66-6	Zinc	663			P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

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Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJF8

Lab Name: QUANTERRA MO Contract: 550.178
Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484
Matrix (soil/water): WATER Lab Sample ID: 18550-005
Level (low/med): LOW Date Received: 08/03/98
% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.4	B		F
7440-39-3	Barium	69.9	B		P
7440-47-3	Chromium	5.7	B		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	5.8			F
7440-62-2	Vanadium	36.7	B		P
7440-66-6	Zinc	633			P
7440-31-5	Tin	28.0	U		P

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

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJH5

Lab Name: QUANTERRA_MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18558-002

Level (low/med): LOW Date Received: 08/04/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	0.93	B		P
7440-47-3	Chromium	4.2	U		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	1.0	U		F
7440-62-2	Vanadium	7.4	B		P
7440-66-6	Zinc	6.3	B		P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJH7

Lab Name: QUANTERRA_MO Contract: 550.178
Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484
Matrix (soil/water): WATER Lab Sample ID: 18558-003
Level (low/med): LOW Date Received: 08/04/98
% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	0.90	U		P
7440-47-3	Chromium	4.2	U		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	1.0	U		F
7440-62-2	Vanadium	7.6	B		P
7440-66-6	Zinc	7.7	B		P
7440-31-5	Tin	28.0	U		P

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

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJH8

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18550-007

Level (low/med): LOW Date Received: 08/03/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	0.90	U		P
7440-47-3	Chromium	4.2	U		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	1.0	U		F
7440-62-2	Vanadium	7.7	B		P
7440-66-6	Zinc	11.5	B		P
7440-31-5	Tin	30.6	B		P

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJH9

Lab Name: QUANTERRA MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18550-008

Level (low/med): LOW Date Received: 08/03/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	0.90	U		P
7440-47-3	Chromium	6.7	B		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	1.0	U		F
7440-62-2	Vanadium	7.7	B		P
7440-66-6	Zinc	7.4	B		P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJJ0

Lab Name: QUANTERRA_MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18550-002

Level (low/med): LOW Date Received: 08/03/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.4	B		F
7440-39-3	Barium	69.0	B		P
7440-47-3	Chromium	4.2	U		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	5.8			F
7440-62-2	Vanadium	33.9	B		P
7440-66-6	Zinc	629			P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0PJJ1

Lab Name: QUANTERRA_MO Contract: 550.178

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02484

Matrix (soil/water): WATER Lab Sample ID: 18550-004

Level (low/med): LOW Date Received: 08/03/98

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	69.8	B		P
7440-47-3	Chromium	6.4	B		P
7439-92-1	Lead	30.2	U		P
7782-49-2	Selenium	5.9			F
7440-62-2	Vanadium	35.8	B		P
7440-66-6	Zinc	664			P
7440-31-5	Tin	28.0	U		P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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SW-846

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: NO2/NO3-353.1
Method: EPA 353.1
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0PJF2	18550-003	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	4180	UG/L		500	10
B0PJF2	18550-003DUP	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	4450	UG/L		500	10
B0PJF2	18550-003MS	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	167	%REC			10
B0PJJ1	18550-004	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	35200	UG/L		6250	125
B0PJF8	18550-005	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	34500	UG/L		6250	125
B0PJH9	18550-008	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	50.0	UG/L	U	50.0	1
B0PJF6	18550-010	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	26300	UG/L		2500	50
NA	QCBLK180429-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	50.0	UG/L	U	50.0	1
NA	QCLCS180429-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK180429-1	08/06/98	08/06/98	100	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: NO2/NO3-353.1
Method: EPA 353.1
Matrix: LIQUID

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0PJH7	18558-003	Nitrate/Nitrite	NO2+NO3-N	QCBLK182976-1	09/01/98	09/01/98	50.0	UG/L	U	50.0	1
B0PJF4	18558-004	Nitrate/Nitrite	NO2+NO3-N	QCBLK182976-1	09/01/98	09/01/98	24000	UG/L		2000	40
NA	QCBLK182976-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK182976-1	09/01/98	09/01/98	50.0	UG/L	U	50.0	1
NA	QCLCS182976-1	Nitrate/Nitrite	NO2+NO3-N	QCBLK182976-1	09/01/98	09/01/98	101	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: TDS-160.1
Method: EPA 160.1
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0PJF2	18550-003	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	296	MG/L		5.00	1
B0PJF2	18550-003DUP	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	263	MG/L		5.00	1
B0PJJ1	18550-004	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	507	MG/L		5.00	1
B0PJF8	18550-005	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	491	MG/L		5.00	1
B0PJH9	18550-008	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	5.00	MG/L	U	5.00	1
B0PJF6	18550-010	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	422	MG/L		5.00	1
NA	QCBLK180486-1	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	5.00	MG/L	U	5.00	1
NA	QCLCS180486-1	Total Dissolved TDS		QCBLK180486-1	08/06/98	08/06/98	94	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: TDS-160.1
Method: EPA 160.1
Matrix: LIQUID

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0PJH7	18558-003	Total Dissolved TDS		QCBLK180486-1	08/10/98	08/10/98	56.0	MG/L		5.00	1
B0PJF4	18558-004	Total Dissolved TDS		QCBLK180486-1	08/10/98	08/10/98	406	MG/L		5.00	1
NA	QCBLK180955-1	Total Dissolved TDS		QCBLK180486-1	08/10/98	08/10/98	5.00	MG/L	U	5.00	1
NA	QCLCS180955-1	Total Dissolved TDS		QCBLK180486-1	08/10/98	08/10/98	102	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID: B0PJF6

Quanterra ID : 18550-010

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180774-1	08/06/98	08/06/98	0.362	MG/L		0.10	1
Chloride	16887-00-6	QCBLK180774-1	08/06/98	08/06/98	21.4	MG/L		1.00	5
Sulfate	14808-79-8	QCBLK180774-1	08/06/98	08/06/98	35.4	MG/L		1.00	2

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Client ID: B0PJF2

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180345-1	08/04/98	08/04/98	0.342	MG/L		0.10	1
Chloride	16887-00-6	QCBLK180345-1	08/04/98	08/04/98	18.3	MG/L		1.00	5
Sulfate	14808-79-8	QCBLK180345-1	08/04/98	08/04/98	26.0	MG/L		1.00	2

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Client ID: B0PJF2

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-003DUP

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180345-1	08/04/98	08/04/98	0.312	MG/L		0.10	1
Chloride	16887-00-6	QCBLK180345-1	08/04/98	08/04/98	18.0	MG/L		1.00	5
Sulfate	14808-79-8	QCBLK180345-1	08/04/98	08/04/98	25.7	MG/L		1.00	2

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID: B0PJF2

Quanterra ID : 18550-003MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180345-1	08/04/98	08/04/98	103	%REC			1
Chloride	16887-00-6	QCBLK180345-1	08/04/98	08/04/98	100	%REC			10
Sulfate	14808-79-8	QCBLK180345-1	08/04/98	08/04/98	94	%REC			10

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Client ID: B0PJJ1

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180345-1	08/04/98	08/04/98	0.343	MG/L		0.10	1
Chloride	16887-00-6	QCBLK180345-1	08/04/98	08/04/98	20.7	MG/L		1.00	5
Sulfate	14808-79-8	QCBLK180345-1	08/04/98	08/04/98	31.8	MG/L		1.00	2

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Client ID: B0PJF8

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Quanterra ID : 18550-005

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180345-1	08/04/98	08/04/98	0.340	MG/L		0.10	1
Chloride	16887-00-6	QCBLK180345-1	08/04/98	08/04/98	21.0	MG/L		1.00	5
Sulfate	14808-79-8	QCBLK180345-1	08/04/98	08/04/98	31.5	MG/L		1.00	2

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Client ID: B0PJH9

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/28/98

Quanterra ID : 18550-008

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180345-1	08/04/98	08/04/98	0.10	MG/L	U	0.10	1
Chloride	16887-00-6	QCBLK180345-1	08/04/98	08/04/98	0.20	MG/L	U	0.20	1
Sulfate	14808-79-8	QCBLK180345-1	08/04/98	08/04/98	0.50	MG/L	U	0.50	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Client ID: B0PJH7

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Quanterra ID : 18558-003

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180662-1	08/05/98	08/05/98	0.10	MG/L	U	0.10	1
Chloride	16887-00-6	QCBLK180662-1	08/05/98	08/05/98	0.20	MG/L	U	0.20	1
Sulfate	14808-79-8	QCBLK180662-1	08/05/98	08/05/98	0.50	MG/L	U	0.50	1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Anions
Method: EPA 300.0
Matrix: LIQUID

Client ID: B0PJF4

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Quanterra ID : 18558-004

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Fluoride	16984-48-8	QCBLK180662-1	08/05/98	08/05/98	0.355	MG/L		0.10	1
Chloride	16887-00-6	QCBLK180662-1	08/05/98	08/05/98	23.7	MG/L		2.00	10
Sulfate	14808-79-8	QCBLK180662-1	08/05/98	08/05/98	30.7	MG/L		1.00	2

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Alkalinity-310.1
Method: EPA 310.1
Matrix: LIQUID

Sample Date : 08/04/98
Receipt Date : 08/04/98
Report Date : 09/17/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil
B0PJH7	18558-003	Alkalinity, Tot	ALKALINITY	QCBLK181393-1	08/15/98	08/15/98	5.00	MG/L	U	5.00	1
B0PJF4	18558-004	Alkalinity, Tot	ALKALINITY	QCBLK181393-1	08/15/98	08/15/98	124	MG/L		5.00	1
NA	QCBLK181393-1	Alkalinity, Tot	ALKALINITY	QCBLK181393-1	08/15/98	08/15/98	5.00	MG/L	U	5.00	1
NA	QCLCS181393-1	Alkalinity, Tot	ALKALINITY	QCBLK181393-1	08/15/98	08/15/98	93	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: Alkalinity-310.1
Method: EPA 310.1
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil
B0PJF2	18550-003	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	143	MG/L		5.00	1
B0PJF2	18550-003DUP	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	144	MG/L		5.00	1
B0PJJ1	18550-004	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	131	MG/L		5.00	1
B0PJF8	18550-005	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	131	MG/L		5.00	1
B0PJH9	18550-008	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	5.00	MG/L	U	5.00	1
B0PJF6	18550-010	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	124	MG/L		5.00	1
NA	QCBLK180939-1	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	5.00	MG/L	U	5.00	1
NA	QCLCS180939-1	Alkalinity, Tot	ALKALINITY	QCBLK180939-1	08/10/98	08/10/98	88	%REC			1

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, WA 99352

Project: 550.178

Category: TOX-9020
Method: EPA 9020
Matrix: LIQUID

Sample Date : 08/03/98
Receipt Date : 08/03/98
Report Date : 09/17/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0PJF2	18550-003	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	5.9	UG/L		5.00	1
B0PJF2	18550-003DUP	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	6.8	UG/L		5.00	1
B0PJF2	18550-003MS	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	86	%REC			1
B0PJJ1	18550-004	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	5.00	UG/L	U	5.00	1
B0PJF8	18550-005	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	5.00	UG/L	U	5.00	1
B0PJH9	18550-008	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	5.00	UG/L	U	5.00	1
B0PJF6	18550-010	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	6.7	UG/L		5.00	1
B0PJH7	18558-003	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	5.00	UG/L	U	5.00	1
B0PJF4	18558-004	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	5.85	UG/L		5.00	1
NA	QCBLK182584-1	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	5.00	UG/L	U	5.00	1
NA	QCLCS182584-1	TOX	59473-04-0	QCBLK182584-1	08/26/98	08/26/98	94	%REC			1

W02484

Quanterra R

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

OCT RECEIVED Data Log In

October 10, 1998

Attention: Joan Kessner

SAF Number	:	C98-052
Number of Samples	:	Seven
Sample Type	:	Water
SDG Number	:	W02484
Data Deliverable	:	45-Day Summary

I. Introduction

Between August 3 and August 4, 1998, seven water samples were received by the Quanterra Environmental Services Richland Laboratory (QTESRL) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford (BHI) specific IDs:

QTESRL ID#	BHI ID#	MATRIX	DATE OF RECEIPT
80803401	B0PJF2	WATER	8/3/98
80803402	B0PJF6	WATER	8/3/98
80803403	B0PJF8	WATER	8/3/98
80803404	B0PJH9	WATER	8/3/98
80803405	B0PJJ1	WATER	8/3/98
80805001	B0PJF4	WATER	8/4/98
80805002	B0PJH7	WATER	8/4/98

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gamma Spectroscopy
Iodine-129 by method RICH-RC-5017
Gas Proportional Counting
Gross Alpha by method RICH-RC-5014
Gross Beta by method RICH-RC-5014
Total Radium Alpha by method ITAS-RD-3231
Liquid Scintillation Counting
Carbon-14 by method RICH-RC-5022
Technetium-99 by method RICH-RC-5078
Total Uranium
Total Uranium by method RICH-RC-5058

III. Quality Control

The analytical results for each analysis performed under SDG W02484 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in the same units as sample results.

IV. Comments

Gamma Spectroscopy
Iodine-129 by method RICH-RC-5017
The yield recovery for duplicate sample B0PJF2 did not meet the first level evaluation criteria of 30-105% recovery at 127.7%. The yield recovery for sample B0PJF2 did meet the second level evaluation criteria of within 15-140% recovery. Rich Weiss was informed of the yield recovery for the duplicate and he instructed the laboratory to report the result. The LCS, batch blank, sample and sample duplicate (B0PJF2) results are within contractual requirements.

Gas Proportional Counting
Gross Alpha by method RICH-RC-5014
The LCS, batch blank, sample and sample duplicate (B0PJF4) results are within contractual requirements.

Gross Beta by method RICH-RC-5014
The LCS, batch blank, sample and sample duplicate (B0PJH7) results are within contractual requirements.

Total Radium Alpha by method ITAS-RD-3231
The LCS, batch blank, sample and sample duplicate (B0PJF2) results are within contractual requirements.

Liquid Scintillation Counting

Carbon-14 by method RICH-RC-5022
The LCS, batch blank, sample and sample duplicate (B0PJF2) results are within contractual requirements.

Technetium-99 by method RICH-RC-5078
The LCS, MS (B0PJF6) batch blank, matrix spike, sample and sample duplicate (B0PJF2) results are within contractual requirements.

Total Uranium

Total Uranium by method RICH-RC-5058
The batch blank result from the original analysis exceeded the RDL, therefore, the sample batch was reanalyzed. The LCS, MS (B0PJH7) batch blank, matrix spike, sample and sample duplicate (B0PJF4) results from the reanalysis are within contractual requirements.

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

Reviewed and approved:

Andy Kopriva
Project Manager

Quanterra

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	80803401	MATRIX:	WATER
CLIENT ID:	B0PJF2	DATE RECEIVED:	8/3/98 1:50:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	2.94E+01		5.8E+00	1.8E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	9.60E+00		8.3E-01	1.3E+00	N/A	pCi/L	86.00%	RICHRC5025
ALPHA	4.31E-01	U	7.6E-01	7.6E-01	1.61E+00	pCi/L	100.00%	RICHRC5014
BETA	1.71E+01		2.4E+00	2.8E+00	2.77E+00	pCi/L	100.00%	RICHRC5014-B
TOTAL RA	3.91E-02	U	8.5E-02	8.5E-02	1.88E-01	pCi/L	100.00%	ITASRD3231
C-14	1.85E+01	J	3.8E+00	5.6E+00	7.52E+00	pCi/L	100.00%	RICHRC5022
TOTAL-URANIUM	2.59E+00		N/A	5.7E-01	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

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Quanterra

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	80803402	MATRIX:	WATER
CLIENT ID:	B0PJF6	DATE RECEIVED:	8/3/98 1:50:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	7.74E+01		6.8E+00	2.2E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	1.52E+01		1.0E+00	1.8E+00	N/A	pCi/L	82.80%	RICHRC5025
ALPHA	2.89E+00	J	1.4E+00	1.5E+00	1.63E+00	pCi/L	100.00%	RICHRC5014
BETA	2.51E+01		2.8E+00	3.6E+00	2.90E+00	pCi/L	100.00%	RICHRC5014-B
TOTAL RA	1.40E-01	U	1.1E-01	1.1E-01	1.43E-01	pCi/L	100.00%	ITASRD3231
C-14	2.07E+00	U	3.2E+00	5.0E+00	7.52E+00	pCi/L	100.00%	RICHRC5022
TOTAL-URANIUM	3.34E+00		N/A	4.5E-01	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	80803403	MATRIX:	WATER
CLIENT ID:	B0PJF8	DATE RECEIVED:	8/3/98 1:50:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	1.65E+01		5.5E+00	1.7E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	2.78E+00		4.1E-01	4.9E-01	N/A	pCi/L	82.50%	RICHRC5025
ALPHA	2.45E+00	J	1.6E+00	1.6E+00	2.02E+00	pCi/L	100.00%	RICHRC5014
BETA	1.91E+01		2.5E+00	3.1E+00	2.98E+00	pCi/L	100.00%	RICHRC5014-5
TOTAL RA	1.35E-01	U	1.1E-01	1.1E-01	1.64E-01	pCi/L	100.00%	ITASRD3231
C-14	6.46E+00	U	3.4E+00	5.1E+00	7.52E+00	pCi/L	100.00%	RICHRC5022
TOTAL-URANIUM	2.34E+00		N/A	5.1E-01	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

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Quanterra

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	80803404	MATRIX:	WATER
CLIENT ID:	B0PJH9	DATE RECEIVED:	8/3/98 1:50:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	1.02E+01	U	5.3E+00	1.7E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	2.49E-01	U	1.8E-01	1.8E-01	3.67E-01	pCi/L	79.30%	RICHRC5025
ALPHA	-1.56E-02	U	1.4E-01	1.4E-01	3.57E-01	pCi/L	100.00%	RICHRC5014
BETA	7.95E-01	U	1.2E+00	1.2E+00	2.56E+00	pCi/L	100.00%	RICHRC5014-B
TOTAL RA	-3.04E-02	U	4.2E-02	4.3E-02	1.77E-01	pCi/L	100.00%	ITASRD3231
C-14	9.68E-01	U	3.2E+00	4.9E+00	7.52E+00	pCi/L	100.00%	RICHRC5022
TOTAL-URANIUM	1.03E-02	U	N/A	2.9E-03	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

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Quanterra

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	80803405	MATRIX:	WATER
CLIENT ID:	B0PJJ1	DATE RECEIVED:	8/3/98 1:50:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	3.65E+01		5.9E+00	1.9E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	2.57E+00		4.6E-01	5.3E-01	N/A	pCi/L	87.60%	RICHRC5025
ALPHA	3.37E+00		1.4E+00	1.4E+00	1.46E+00	pCi/L	100.00%	RICHRC5014
BETA	1.34E+01		2.3E+00	2.5E+00	3.13E+00	pCi/L	100.00%	RICHRC5014-E
TOTAL RA	5.44E-02	U	8.7E-02	8.8E-02	1.78E-01	pCi/L	100.00%	ITASRD3231
C-14	6.40E+00	U	3.4E+00	5.1E+00	7.52E+00	pCi/L	100.00%	RICHRC5022
TOTAL-URANIUM	2.36E+00		N/A	3.2E-01	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
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SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	80805001	MATRIX:	WATER
CLIENT ID:	B0PJF4	DATE RECEIVED:	8/4/98 2:00:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	7.49E+01		6.7E+00	2.2E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	1.22E+01		8.5E-01	1.5E+00	N/A	pCi/L	77.20%	RICHRC5025
ALPHA	2.30E+00	J	1.4E+00	1.5E+00	1.98E+00	pCi/L	100.00%	RICHRC5014
BETA	2.74E+01		2.9E+00	3.8E+00	2.95E+00	pCi/L	100.00%	RICHRC5014-E
TOTAL RA	8.64E-02	U	1.0E-01	1.0E-01	1.85E-01	pCi/L	100.00%	ITASRD3231
C-14	8.63E+00	J	3.5E+00	5.2E+00	7.52E+00	pCi/L	100.00%	RICHRC5022
TOTAL-URANIUM	2.48E+00		N/A	3.3E-01	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	80805002	MATRIX:	WATER
CLIENT ID:	B0PJH7	DATE RECEIVED:	8/4/98 2:00:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	1.25E+01	J	5.4E+00	1.7E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	-8.24E-02	U	1.9E-01	1.9E-01	3.14E-01	pCi/L	85.50%	RICHRC5025
ALPHA	2.66E-01	U	2.9E-01	2.9E-01	4.94E-01	pCi/L	100.00%	RICHRC5014
BETA	7.06E-01	U	1.2E+00	1.2E+00	2.66E+00	pCi/L	100.00%	RICHRC5014-E
TOTAL RA	-3.10E-02	U	4.3E-02	4.3E-02	1.80E-01	pCi/L	100.00%	ITASRD3231
C-14	3.45E+00	U	3.3E+00	5.0E+00	7.52E+00	pCi/L	100.00%	RICHRC5022
TOTAL-URANIUM	2.55E-02	U	N/A	5.6E-03	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra

DUPLICATE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	D0803401	MATRIX:	WATER
CLIENT ID:	B0PJF2	DATE RECEIVED	8/3/98 1:50:00 PM
ORIG LAB SAMPLE ID:	80803401		

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TC-99	3.87E+01		6.0E+00	1.9E+01	1.18E+01	pCi/L	95.10%	RICHRC5078	2.94E+01	27.04%
I129	6.19E+00		6.0E-01	8.6E-01	N/A	pCi/L	127.70	RICHRC5025	9.60E+00	43.23%
TOTAL RA	3.47E-03	U	6.6E-02	6.6E-02	1.82E-01	pCi/L	100.00	ITASRD3231	3.91E-02	167.38%
C-14	1.56E+01	J	3.7E+00	5.5E+00	7.52E+00	pCi/L	100.00	RICHRC5022	1.85E+01	17.03%

Number of Results: 4

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc

rptChemRadDup; v3.41

Quanterra

DUPLICATE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	D0805001	MATRIX:	WATER
CLIENT ID:	B0PJF4	DATE RECEIVED	8/4/98 2:00:00 PM
ORIG LAB SAMPLE ID:	80805001		

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
ALPHA	1.86E+00	J	1.3E+00	1.3E+00	1.65E+00	pCi/L	100.00	RICHRC5014	2.30E+00	21.47%
TOTAL-URANIUM	2.68E+00		N/A	3.6E-01	7.29E-02	ug/L	N/A	RICHRC5058	2.48E+00	7.66%

Number of Results: 2

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc

rptChemRadDup; v3.41

Quanterra

DUPLICATE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	D0805002	MATRIX:	WATER
CLIENT ID:	B0PJH7	DATE RECEIVED	8/4/98 2:00:00 PM
ORIG LAB SAMPLE ID:	80805002		

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
BETA	8.69E-01	U	1.2E+00	1.2E+00	2.54E+00	pCi/L	100.00	RICHRC5014-B	7.06E-01	20.65%

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc

rptChemRadDup; v3.41

Quanterra

BLANK RESULTS

LAB NAME:	QUANTERRA, Richland	SDG /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	J080341B	MATRIX:	WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	1.48E+00	U	5.1E+00	1.6E+01	1.18E+01	pCi/L	95.10%	RICHRC5078
I129	1.14E-01	U	1.6E-01	1.6E-01	2.99E-01	pCi/L	88.40%	RICHRC5025
ALPHA	-3.17E-02	U	1.3E-01	1.3E-01	3.51E-01	pCi/L	100.00%	RICHRC5014
BETA	1.24E+00	U	1.2E+00	1.2E+00	2.49E+00	pCi/L	100.00%	RICHRC5014-B
TOTAL RA	1.19E-01	U	9.8E-02	1.0E-01	1.38E-01	pCi/L	100.00%	ITASRD3231
TOTAL-URANIUM	0.00E+00		N/A	0.0E+00	N/A	ug/L	N/A	RICHRC5058

Number of Results: 6

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra

BLANK RESULTS

LAB NAME:	QUANTERRA, Richland	SDG /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	J080341X	MATRIX:	WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
C-14	-9.01E-02	U	3.2E+00	4.9E+00	7.52E+00	pCi/L	100.00%	RICHRC5022

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

BLANK RESULTS

LAB NAME:	QUANTERRA, Richland	SDG /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	J080342B	MATRIX:	WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TOTAL-URANIUM	4.41E-03	U	N/A	1.2E-03	7.29E-02	ug/L	N/A	RICHRC5058

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

LABORATORY CONTROL SAMPLE

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	J080341S	MATRIX:	WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVER'
TC-99	4.77E+02		1.2E+01	6.4E+01	1.18E+01	pCi/L	95.10%	5.42E+02	88.07%
I129	1.81E+01		2.0E+00	9.2E-01	N/A	pCi/L	87.30%	1.93E+01	93.66%
ALPHA	2.18E+01		1.5E+00	3.1E+00	3.24E-01	pCi/L	100.00%	2.27E+01	95.94%
BETA	2.69E+01		2.6E+00	3.6E+00	2.66E+00	pCi/L	100.00%	2.28E+01	118.10%
TOTAL RA	3.18E+00		4.5E-01	7.6E-01	1.58E-01	pCi/L	100.00%	3.64E+00	87.61%
C-14	1.69E+03		1.8E+02	2.6E+02	7.52E+00	pCi/L	100.00%	1.81E+03	93.07%
TOTAL-URANIUM	0.00E+00		N/A	0.0E+00	N/A	ug/L	N/A	0.00E+00	#Num!

Number of Results: 7

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra

LABORATORY CONTROL SAMPLE

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484 / 6168
LAB SAMPLE ID:	J080342S	MATRIX:	WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVER
TOTAL-URANIUM	9.25E-01		N/A	1.2E-01	7.29E-02	ug/L	N/A	9.04E-01	102.41%

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

MATRIX SPIKE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484	/ 6168
LAB SAMPLE ID:	W0803402	MATRIX:	WATER	

ANALYTE	SPIKE RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TC-99	3.18E+03		3.0E+01	3.7E+02	1.18E+01	pCi/L	7.74E+01	3.63E+03	87.53%

Number of Results: 1

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadMatrixSpike; v3.41

Quanterra

MATRIX SPIKE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG: /RPT GRP:	W02484	/ 6168
LAB SAMPLE ID:	W0805002	MATRIX:	WATER	

ANALYTE	SPIKE RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TOTAL-URANIUM	6.01E+01		N/A	8.1E+00	7.29E-02	ug/L	2.55E-02	6.03E+01	99.78%

Number of Results: 1

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadMatrixSpike; v3.41

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	808034, 808050
Client ID:	BNI
Due Date:	10/1/98
Lab Sample Number or SDG:	4302484
Method Test Parameters:	L-129
Matrix:	Water

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			—	
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	—			✓
2. Were all sample holding times met?	—			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	—			✓
C. QC Samples				
1. Is the blank yield within acceptance criteria	—			✓
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	—			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	—			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			—	
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			—	
6. Is the LCS result within acceptance criteria?	—			✓
7. Is the LCS yield within acceptance criteria	—			✓
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	—			✓
9. MS/MSD results and yield meet acceptance criteria?			—	
10. Duplicate sample results and yield meet acceptance criteria?	—	—		
D. Other				
1. Are all Nonconformances included and noted?			—	
2. Are all required forms filed out?	—			✓
3. Correct methodology used?	—			✓
4. Transcription checked? JLL 10/1/98	—			
5. Were all calculations checked at a minimum frequency?	—			
6. Units checked?	—			✓

Comments on any "No" response: Duplicate yield 127.7% due to gamma particles on filter, note comment on COC. Contacted client who accepted results

First Level Review: [signature] Date: 10-2-98

Second Level Review: [signature] Date: 10/8/98

Form #: LS-038.2 /96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	808050, 808034
Client ID:	BNI
Due Date:	10/1/98
Lab Sample Number or SDG:	W02484
Method Test Parameters:	Alpha
Matrix:	Water

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?	✓			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C. QC Samples				
1. Is the blank yield within acceptance criteria			✓	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			✓
7. Is the LCS yield within acceptance criteria			✓	
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9. MS/MSD results and yield meet acceptance criteria?			✓	
10. Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. Other				
1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? JKL 10/1/98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: Joel Thengsma Date: 10-1-98

Second Level Review: [illegible] Date: 10/8/98

Form #: LS-038.2/96, Rev. 4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	808034, 808050
Client ID:	BNI
Due Date:	10/1/98
Lab Sample Number or SDG:	W02484
Method Test Parameters:	Beta
Matrix:	Water

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration 1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?	✓			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C. QC Samples 1. Is the blank yield within acceptance criteria	AR		✓	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			✓
7. Is the LCS yield within acceptance criteria			✓	
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9. MS/MSD results and yield meet acceptance criteria?			✓	
10. Duplicate sample results and yield meet acceptance criteria?	✓		AR	
D. Other 1. Are all Nonconformances included and noted?	AR		✓	
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? JHL 9/29/98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 10-1-98

Second Level Review: [signature] Date: 10/8/98

Form #: LS-038.2/96, Rev 4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	808034, 808050
Client ID:	BHI
Due Date:	9/17/98
Lab Sample Number or SDG:	W02484
Method Test Parameters:	TRA
Matrix:	Water

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	✓		NA	✓
2. Were all sample holding times met?	✓			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C. QC Samples				
1. Is the blank yield within acceptance criteria	✓			✓
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			✓
7. Is the LCS yield within acceptance criteria	✓			✓
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9. MS/MSD results and yield meet acceptance criteria?			✓	
10. Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. Other				
1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? JB	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: Joel Dengsens Date: 8-25-98

Second Level Review: [illegible] Date: 10/8/98

Form #: LS-038.2 /96, Rev.4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	808034, 808050
Client ID:	BNI
Due Date:	10/1/98
Lab Sample Number or SDG:	LY02484,
Method Test Parameters:	TC-99
Matrix:	Water

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?	✓			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C. QC Samples				
1. Is the blank yield within acceptance criteria			✓	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			✓
7. Is the LCS yield within acceptance criteria			✓	
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9. MS/MSD results and yield meet acceptance criteria?	✓		N/A	✓
10. Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. Other				
1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? SW 9/30/98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 10-1-98

Second Level Review: [signature] Date: 10/8/98

Form #: LS-038.2 /96/ Rev. 4

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s): 808034, 808050

Client ID: BHI

Due Date: 10-1-98

Lab Sample Number or SDG: WØ2484

Method Test Parameters: C-14

Matrix: Water

Review Item	Yes (✓)	No (✓)	NA (✓)	2nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?	✓			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C. QC Samples				
1. Is the blank yield within acceptance criteria			✓	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			✓
7. Is the LCS yield within acceptance criteria			✓	
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9. MS/MSD results and yield meet acceptance criteria?			✓	
10. Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. Other				
1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked? UM 8-26-98	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [signature] Date: 8-28-98

Second Level Review: [signature] Date: 10/8/98

Form #: LS-038.2 /96, Rev 4

Quanterra Data Review Checklist
RADIOCHEMISTRY

PK 10-7-98

Work Order number (s):	808034, 808050
Client ID:	BHI
Due Date:	10-1-98
Lab Sample Number or SDG:	W02484
Method Test Parameters:	uranium
Matrix:	water

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration 1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?	✓			✓
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?			✓	
C. QC Samples 1. Is the blank yield within acceptance criteria			✓	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3. Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4. Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			✓
7. Is the LCS yield within acceptance criteria			✓	
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?			✓	
9. MS/MSD results and yield meet acceptance criteria?	✓			✓
10. Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. Other 1. Are all Nonconformances included and noted?	✓			✓
2. Are all required forms filed out?	✓			✓
3. Correct methodology used?	✓			✓
4. Transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Units checked?	✓			✓

Comments on any "No" response: reanalysis – because blank cont NCM 19-7-98 PK

First Level Review: Pam Kenetzy Date: 10-7-98

Second Level Review: [signature] Date: 10/8/98

Form #: LS-038.2 /96, Rev.4

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG #: RD-98-

Project ID: BHI

NCM Initiated by: PKenitzer 10-7-98

Sample Numbers: 808050 808034

Tests: uranium

Matrix: water

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☐ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Login error
- ☐ 7. Miscommunication
- ☐ 8. Other (complete description required)

Category III: Analysis Reruns (QA/QC)

- ☐ 9. Surrogates
- ☐ 10. Internal Standards
- ☐ 11. Spike Recoveries
- ☒ 12. Blank Contamination

Category IV: Analysis Reruns (Confirmation)

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17. QC data reported outside of controls
- ☐ 18. Incorrect procedure used
- ☐ 19. SOP intentionally modified with QA and Tech. approval
- ☐ 20. Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23. Electronic deliverable error

Reported detection limits elevated due to:

- ☐ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☐ 27. *Other (specify):* _____

Comments/Explanation: contamination source unknown

Notification (check appropriate area):

Client notified by (name and date): _____

- ☒ in writing CN
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 10/8/98

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG#: RD-98-

Corrective Action

Root Cause: Initial and date:

Unknown

Corrective Action: Initial and Date: PK 10-7-98

reanalysis OK data

Responsibility for performing CA assigned to:

Actions to prevent recurrence: Initial and Date:

N/A

First Level Supervisor: Pam Kenzy Date: 10-7-98

Responsible Manager: Jacqueline Waddell Date: 10/12/98

Quality Assurance Review

- ☐ Anomaly
- ☐ Deficiency
- ☒ Rerun
- ☐ Further action required:

Assigned to:

QA signature: Jodie Cor Date: 10/12/98

Corrective Action Verification

- ☐ Verified
- ☐ Cannot Verify (specify reason): N/A

Nonconformance Memo Closure

QA signature/date: Jodie Cor 10/12/98

CHAIN OF

CUSTODY FORMS

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-1

Collector: HT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM SML-H14	Ice Chest No.: SML-187 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **
SDL
W02484

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF1 (F)		W	8-3-98	1016	~~1x500~~-ml G/P 1000 SDW 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803301	HNO3 to pH <2
B0PJF2					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF2					~~1x500~~-ml G/P 1000 SDW 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF2					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF2					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803302	Cool 4C
B0PJF2					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF2					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF2					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF2					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF2					1x20-ml P	Activity Scan 80803401	None
B0PJF2					2x1000-ml G/P	Carbon-14	None
B0PJF2					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
HT SICKLE (RFS)			AUG 03 1998 1350				8-3-98 1350
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 Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

0020

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-1

SAF No. C98-052

Contact/Requestor JH KESSNER

Telephone No. (509) 372-9538

MSIN

FAX

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF2		W	8-3-98	1016	1x1000-ml G/P	Total Radium	HNO3 to pH <2
B0PJF2		↓	↓	↓	3x1000-ml G/P	Technetium-99	HCl to pH <2
B0PJF2		↓	↓	↓	1x500-ml G/P	Total Uranium	HNO3 to pH <2

80802401

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	R.T. Sikes		AUG 03 1998 330		Heidelberg		8-3-98 1350
Relinquished By			Date/Time	Received By	Liddelpm		Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

0033

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # C98-052-3
		Page 1 of 2

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING AUGUST 1998	Logbook No.: Um. Smk. H14	Ice Chest No.: ERD Temp.: 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.:
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.:

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF5 (F)		L	8-3-98	1221	1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803303	HNO3 to pH <2
B0PJF6					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF6					1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF6					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF6					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803304	Cool 4C
B0PJF6					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF6					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF6					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF6					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF6					1x20-ml P	Activity Scan 80803402	None
B0PJF6					2x1000-ml G/P	Carbon-14	None
B0PJF6					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RT SICKLE (RFS)		AUG 03 1998	1332	Heidelberg			8-3-98 530
				1100pm			

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-3

SAF No.	Contact/Requestor	Telephone No.	MSIN	FAX
C98-052	JH KESSNER	(509) 372-9538		

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF6		u	8358	1221	1x1000-ml G/P	Total Radium	HNO3 to pH <2
B0PJF6					3x1000-ml G/P	Technetium-99 80803403	HCl to pH <2
B0PJF6					1x500-ml G/P	Total Uranium	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)		1330 AUG 03 1998				8-3-98 1330
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 Solid	
SE	= Sediment		DL	= Drum Liqui	
SO	= Solid		T	= Tissue	
SL	= Sludge		WI	= Wine	
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

0035

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # C98-052-4
		Page 1 of 2

Collector: AT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: LM-SML-H14	Ice Chest No.: GLS 120/132 Temp.: 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

NA

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF7 (F)		W	8-3-98	0835	1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803305	HNO3 to pH <2
B0PJF8					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF8					1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF8					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF8					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803306	Cool 4C
B0PJF8					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF8					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF8					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF8					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF8					1x20-ml P	Activity Scan	None
B0PJF8					2x1000-ml G/P	Carbon-14 80803403	None
B0PJF8					3x1000-ml G/P	Iodine-129	None

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
AT SICKLE (RFS)	8-3-98 1350	Heidelberg	8-3-98 1350
		2100 PM	

Matrix *

S = Soil		DS = Drum Solid	
SB = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

0036

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-4

SAF No. C98-052

Contact/Requestor JH KESSNER

Telephone No. (509) 372-9538

MSIN

FAX

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF8		W	8-3-98	0825	1x1000-ml G/P	Total Radium	HNO3 to pH <2
B0PJF8		↓	〃	〃	3x1000-ml G/P	Technetium-99 / 80803403	HCl to pH <2
B0PJF8		↓	〃	〃	1x500-ml G/P	Total Uranium	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	AT SICKLE (RFS)	[signature]	8-3-98 1530	[signature]			8-3-98 1530
Relinquished By			Date/Time	Received By			Date/Time
				2100 pm			
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-6

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM. SML. 414	Ice Chest No.: SML 350 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH8 (F)		W	8-3-98	1110	1x~~500~~-ml G/P 1000 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803307	HNO3 to pH <2
B0PJH9					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJH9					1x~~500~~-ml G/P 1000 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJH9					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJH9					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803308	Cool 4C
B0PJH9					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJH9					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJH9					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJH9					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJH9					1x20-ml P	Activity Scan	None
B0PJH9					2x1000-ml G/P	Carbon-14 80803404	None
B0PJH9					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)	[signature]	AUG 03 1998 1350		[signature]	[signature]	8-3-98 1350
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 Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-6

SAF No. C98-052

Contact/Requestor JH KESSNER

Telephone No. (509) 372-9538 MSIN FAX

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH9		✓	8-3-98	1110	1x1000-ml G/P	Total Radium	HNO3 to pH <2
B0PJH9		↓	↓	↓	3x1000-ml G/P	Technetium-99 > 80803404	HCl to pH <2
B0PJH9		↓	↓	↓	1x500-ml G/P	Total Uranium	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RT SICKLE (RFS)			AUG 03 1998 1350	Heidelberg			8-3-98 1350
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 Solid	
SE = Sediment		DL = Drum Liqui	
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SL = Sludge		WI = Wine	
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-7

Collector: HT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM-SML-H-14	Ice Chest No.: GLS 120 / 132 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ0 (F)		W	8-3-98	0835	1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80803309	HNO3 to pH <2
B0PJJ1					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJJ1					1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJJ1					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJJ1					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80803310	Cool 4C
B0PJJ1					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJJ1					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJJ1					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJJ1					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJJ1					1x20-ml P	Activity Scan	None
B0PJJ1					2x1000-ml G/P	Carbon-14 80803405	None
B0PJJ1					3x1000-ml G/P	Iodine-129	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	HT SICKLE (RFS)		8-3-98 1350				8-3-98 1350
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 Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
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

0010

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-7

SAF No. C98-052

Contact/Requestor JH KESSNER

Telephone No. (509) 372-9538 MSIN FAX

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ1		L	8-3-98	0857	1x1000-ml G/P	Total Radium	HNO3 to pH <2
B0PJJ1					3x1000-ml G/P	Technetium-99	HCl to pH <2
B0PJJ1					1x500-ml G/P	Total Uranium	HNO3 to pH <2

80803405

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	AT SICKLE (RFS)		8-3-98 1350				8-3-98 1350
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

2100 cpm

Matrix *

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-8

Page 1 of 1

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM SML-H14	Ice Chest No.: SML 187 Temp. 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ8		W	8-3-98	0700	3x40-ml aGs*	VOA - 8240A (TCL) 80803311	HCl or H2SO4 to pH <2 Cool 4C
B0PJJ8		W	7	7	1x20-ml P	Activity Scan	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)		AUG 03 1998 1352				8-3-98 1352
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 Solid	
SE = Sediment		DL = Drum Liqui	
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

0042

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: W02484

Work Order Number: 808033+034 SAF #: C98-052

Shipping Container ID: SmL390 Chain of Custody # C98-052-6

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°
5. Vermiculite/packing materials is Wet [ ] Dry [✓] na
6. Number of samples in shipping container: 22
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: D Hudelburg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1355 SG#: W02484

Work Order Number: 808033+034 SAF #: C98-052

Shipping Container ID: GWS 132 Chain of Custody # C98-052-4 +7

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 2°
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 29
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Heidelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: W02484

Work Order Number: 808033+034 SAF #: C98-052

Shipping Container ID: GWS 120 Chain of Custody # C98-052-4+7

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 15
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Heidelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: W02484

Work Order Number: 808033 + 034 SAF #: C98-052 W98-008

Shipping Container ID: ER-7 Chain of Custody # C98-052-3 W98-008-167

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 40
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 24
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Schedelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

0046

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8/3 1350 SG#: WC2484

Work Order Number: S8C033+C34 SAF #: C98-052 S98-008

Shipping Container ID: SMC187 Chain of Custody # C98-052-8 +1 S98-008-68

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 40
5. Vermiculite/packing materials is Wet [ ] Dry [✓] n/a
6. Number of samples in shipping container: 28
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Hedelberg Date: 8/3/98

Telephoned To: _____ On _____ By _____

808033 Chem 808034 Rad.

Screening Results

(R3) 8/4/98

ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
HX4		8/3/98 2:40:00 PM	QUAD21D	8/4/98 8:58:02 AM	B0PHX4	30	19	0.60619048	91	1.9919048
B0PHX4	LIQUID		Bkg:	8/4/98 2:29:33 AM	BKG	700	19	0.02714286	729	1.0414286
Anl Date: 8/4/98	Tot Sa, Alq: 8.50E+00	, 1.00E+01	Alp; (Dpm/ 1.85E+00	(uCi/ 7.08E-04	(pCi/ 8.33E+01	± 2.7E+01	CAT I	3.0E-01	Lab	
Ppt mg: 2	Units: L	, ml	Bet; Alq): 3.58E+00	Sa): 1.37E-03	L|g): 1.61E+02	± 2.7E+01		3.1E-01	Alq L|g	
PGW B0PJC8		8/3/98 1:50:00 PM	QUAD22A	8/4/98 8:58:05 AM	B0PJC8	30	22	0.68190476	111	2.5371429
	LIQUID		Bkg:	8/4/98 2:29:45 AM	BKG	700	36	0.05142857	814	1.1628571
Anl Date: 8/4/98	Tot Sa, Alq: 2.00E-02	, 1.00E+01	Alp; (Dpm/ 2.01E+00	(uCi/ 1.81E-06	(pCi/ 9.05E+01	± 2.8E+01	CAT I	2.8E-01	Lab	
Ppt mg: 4.6	Units: L	, ml	Bet; Alq): 4.36E+00	Sa): 3.93E-06	L|g): 1.96E+02	± 2.9E+01		2.5E-01	Alq L|g	
PGW B0PJF2 (01)		8/3/98 1:50:00 PM	QUAD22C	8/4/98 8:58:05 AM	B0PJF2	30	17	0.53666667	107	2.3866667
01 + 02	LIQUID		Bkg:	8/4/98 2:29:45 AM	BKG	700	21	0.03	826	1.18
Anl Date: 8/4/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp; (Dpm/ 1.57E+00	(uCi/ 7.42E-04	(pCi/ 7.07E+01	± 2.7E+01	CAT I	3.5E-01	Lab	
Ppt mg: 3.4	Units: L	, ml	Bet; Alq): 4.15E+00	Sa): 1.96E-03	L|g): 1.87E+02	± 2.8E+01		2.7E-01	Alq L|g	
PGW B0PJF6 (02)		8/3/98 1:50:00 PM	QUAD23A	8/4/98 8:58:09 AM	B0PJF6	30	14	0.42809524	98	2.3052381
03 + 04	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	27	0.03857143	673	0.9614286
Anl Date: 8/4/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp; (Dpm/ 1.28E+00	(uCi/ 6.07E-04	(pCi/ 5.78E+01	± 2.5E+01	CAT I	4.3E-01	Lab	
Ppt mg: 6	Units: L	, ml	Bet; Alq): 4.16E+00	Sa): 1.97E-03	L|g): 1.87E+02	± 2.8E+01		2.7E-01	Alq L|g	
PGW B0PJF8 (03)		8/3/98 1:50:00 PM	QUAD23B	8/4/98 8:58:09 AM	B0PJF8	30	23	0.72952381	107	2.4895238
05 + 06	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	26	0.03714286	754	1.0771429
Anl Date: 8/4/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp; (Dpm/ 2.32E+00	(uCi/ 1.10E-03	(pCi/ 1.05E+02	± 3.0E+01	CAT I	2.4E-01	Lab	
Ppt mg: 6.4	Units: L	, ml	Bet; Alq): 4.36E+00	Sa): 2.06E-03	L|g): 1.96E+02	± 2.9E+01		2.5E-01	Alq L|g	
PGW B0PJH9 (04)		8/3/98 1:50:00 PM	QUAD23C	8/4/98 8:58:09 AM	B0PJH9	30	5	0.13666667	52	0.7019048
07 + 08	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	21	0.03	722	1.0314286
Anl Date: 8/4/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp; (Dpm/ 3.71E-01	(uCi/ 1.76E-04	(pCi/ 1.67E+01	± 2.0E+01	CAT I	1.5E+00	Lab	
Ppt mg: 0	Units: L	, ml	Bet; Alq): 1.28E+00	Sa): 6.03E-04	L|g): 5.74E+01	± 2.1E+01		8.7E-01	Alq L|g	

0043

8/4/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PJJ1	(05)	8/3/98 1:50:00 PM	QUAD23D	8/4/98 8:58:09 AM	B0PJJ1	30	26	0.81238095	82	1.8147619
09+10	LIQUID		Bkg:	8/4/98 2:29:53 AM	BKG	700	38	0.05428571	643	0.9185714

Anl Date: 8/4/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp;	(Dpm/ 2.55E+00	(uCi/ 1.21E-03	(pCi/ 1.15E+02	± 2.9E+01	CAT	2.2E-01	Lab
Ppt mg: 5.7	Units: L	, ml	Bet;	Alq): 2.99E+00	Sa): 1.42E-03	L|g): 1.35E+02	± 2.5E+01	I	3.7E-01	Alq L|g

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PJJ8		8/3/98 1:50:00 PM	QUAD24A	8/4/98 8:57:58 AM	B0PJJ8	30	6	0.16285714	51	0.7028571
11	LIQUID		Bkg:	8/4/98 2:29:38 AM	BKG	700	26	0.03714286	698	0.9971429

Anl Date: 8/4/98	Tot Sa, Alq: 2.00E-02	, 1.00E+01	Alp;	(Dpm/ 4.84E-01	(uCi/ 4.36E-07	(pCi/ 2.18E+01	± 2.2E+01	CAT	1.1E+00	Lab
Ppt mg: 0.2	Units: L	, ml	Bet;	Alq): 1.27E+00	Sa): 1.14E-06	L|g): 5.72E+01	± 2.1E+01	I	8.7E-01	Alq L|g

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PJT6		8/3/98 1:50:00 PM	QUAD24B	8/4/98 8:57:58 AM	B0PJT6	30	33	1.05428571	105	2.4071429
	LIQUID		Bkg:	8/4/98 2:29:38 AM	BKG	700	32	0.04571429	765	1.0928571

Anl Date: 8/4/98	Tot Sa, Alq: 2.00E-02	, 1.00E+01	Alp;	(Dpm/ 3.28E+00	(uCi/ 2.95E-06	(pCi/ 1.48E+02	± 3.2E+01	CAT	1.7E-01	Lab
Ppt mg: 4.5	Units: L	, ml	Bet;	Alq): 4.09E+00	Sa): 3.69E-06	L|g): 1.84E+02	± 2.9E+01	I	2.7E-01	Alq L|g

0049

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # C98-052-2
		Page 1 of 2

Collector: RT SICKLE (HFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code: NA
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WMS-ML-N24	Ice Chest No.: ER-7 Temp.: 4c
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.: NA
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SDL
W02484

SPECIAL INSTRUCTIONS **Hold Time** **Total Activity Exemption:** Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF3 (F)		W	8-4-98	0922	1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80804901	HNO3 to pH <2
B0PJF4		↓	↓	↓	3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJF4					1x~~500~~-ml G/P 1000 JM 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJF4					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJF4					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80804902	Cool 4C
B0PJF4					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJF4					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJF4					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJF4					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJF4					1x20-ml P	Activity Scan 80805001	None
B0PJF4					2x1000-ml G/P	Carbon-14	None
B0PJF4		↓	↓	↓	3x1000-ml G/P	Iodine-129	None

Relinquished By	Received By
Print: RT SICKLE (RFS) Sign: [signature] Date/Time: 1400 AUG 04 1998	Print: Sign: [signature] Date/Time: 1400 8-4-98
Relinquished By Date/Time	Received By Date/Time: 2100 CPM
Relinquished By Date/Time	Received By Date/Time
Relinquished By Date/Time	Received By Date/Time

Matrix *

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
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

0050

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-2

SAF No. C98-052

Contact/Requestor JH KESSNER

Telephone No. (509) 372-9538 MSIN FAX

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJF4		L	8-4-98	0922	1x1000-ml G/P	Total Radium	HNO3 to pH <2
B0PJF4		↓	↓	↓	3x1000-ml G/P	Technetium-99 / 80805001	HCl to pH <2
B0PJF4		↓	↓	↓	1x500-ml G/P	Total Uranium	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)	[signature]	AUG 04 1998 1400	[signature]			8-4-98 1400
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 Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

0051

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-5

Collector: RT SICKLE (HFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: LM-SML-H14	Ice Chest No.: SML-262 Temp. 4C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH5 (F)		W	8-4-98	0700	1x~~500~~-ml G/P 1000 ml 7-30-98	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA) 80804903	HNO3 to pH <2
B0PJH7					3x40-ml aGs*	VOA - 8240A (TCL)	HCl or H2SO4 to pH <2 Cool 4C
B0PJH7					1x~~500~~-ml G/P 7-30-98 1000 ml	ICP Metals - 6010A (SW-846) (Barium, Chromium, Lead, Tin, Vanadium, Zinc); Selenium - 7740 - (GFAA); Arsenic - 7060 - (GFAA)	HNO3 to pH <2
B0PJH7					1x500-ml G/P	TDS - 160.1	Cool 4C
B0PJH7					1x500-ml G/P	IC Anions - 300.0 (Chloride, Fluoride, Sulfate) 80804904	Cool 4C
B0PJH7					1x500-ml G/P	Alkalinity - 310.1	Cool 4C
B0PJH7					1x500-ml G/P	NO2/NO3 - 353.1	H2SO4 to pH <2 Cool 4C
B0PJH7					1x1000-ml aGs*	TOX - 9020	H2SO4 to pH <2 Cool 4C
B0PJH7					1x1000-ml G/P	Gross Alpha & Gross Beta	HNO3 to pH <2
B0PJH7					1x20-ml P	Activity Scan	None
B0PJH7					2x1000-ml G/P	Carbon-14 80805002	None
B0PJH7					3x1000-ml G/P	Iodine-129	None

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
RT SICKLE (RFS)	8-4-98 1400	Karen Schindler	8-4-98 1400
			1400 PM

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

0052

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-5

SAF No. C98-052

Contact/Requestor JH KESSNER

Telephone No. (509) 372-9538 MSIN FAX

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJH7		W	8-4-98	0700	1x1000-ml G/P	Total Radium	HNO3 to pH <2
B0PJH7		↓	↓	↓	3x1000-ml G/P	Technetium-99	HCl to pH <2
B0PJH7		↓	↓	↓	1x500-ml G/P	Total Uranium	HNO3 to pH <2

80805002

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	RT SICKLE (RFS)		8-4-98 1400				8-4-98 1400
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 Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
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

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C98-052-9

Page 1 of 1

Collector: RT SICKLE (RFS)	Contact/Requester: JH KESSNER	Telephone No.: (509) 372-9538 MSIN FAX
SAF No.: C98-052	Sampling Origin: HANFORD SITE	Purchase Order/Charge Code
Project Title: ERDF GW SAMPLING, AUGUST 1998	Logbook No.: WM-SML-H14	Ice Chest No.: SM-252 Temp. °C
Shipped To (Lab): Quanterra Incorporated	Method of Shipment: GOVT. VEHICLE	Bill of Lading/Air Bill No.: N/A
Protocol: CERCLA	Data Turnaround: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☒ No ☐
FAX copies of QES log-in to DL Stewart (372-1707) & JM Duncan (372-9052)

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0PJJ9		W	8-4-98	0700	3x40-ml aGs*	VOA - 8240A (TCL) 80804905	HCl or H2SO4 to pH <2 Cool 4C
B0PJJ9		W	8-4-98	0700	1x20-ml P	Activity Scan	None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
RT SICKLE (RFS)			AUG 04 1998 1400				8-4-98 1400
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 Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
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

C054

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8-4-98 1400 SG#: W02484

Work Order Number: 808049 + 50 SAF #: C98-052

Shipping Container ID: SMC262 Chain of Custody # C98-052-5 + 9

1. Custody Seals on shipping container intact? Yes [] ~~No~~ []
2. Custody Seals dated and signed? Yes [✓] No []
3. Chain-of-Custody record present? Yes [] ~~No~~ []
4. Cooler temperature 4° C
5. Vermiculite/packing materials is Wet [] Dry [✓]
6. Number of samples in shipping container: 26
7. Sample holding times exceeded? Yes [] No [] ____

8. Samples have:
   - ____ tape
   - ____ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [] No [✓]
11. Description of anomalies (include sample numbers): ____

Sample Custodian/Laboratory: [signature] Date: 8-4-98

Telephoned To: ____ On ____ By ____

0055

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 8-4-98 1400 SG#: W02484

Work Order Number: 808049 + 50 SAF #: C98-052

Shipping Container ID: ER-7 Chain of Custody # C98-052-2

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 4°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 22
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

10. Where any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [signature] Date: 8-4-98

Telephoned To: _____ On _____ By _____

0056

808049 Chem (808050 Rad) (B) 8/5/98

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
PGW B0PHX2		8/4/98 2:30:00 PM	QUAD23C	8/5/98 9:15:12 AM	B0PHX2	30	28	0.89761905	352	10.619048
	LIQUID		Bkg:	8/5/98 1:41:23 AM	BKG	700	25	0.03571429	780	1.1142857
Anl Date: 8/5/98	Tot Sa, Alq: 8.50E+00	, 1.00E+01	Alp; (Dpm/ 2.42E+00	(uCi/ 9.25E-04	(pCi/ 1.09E+02	± 2.8E+01	CAT I	2.3E-01	Lab Alq L|g	
Ppt mg: 3.4	Units: L	, ml	Bet; Alq): 2.01E+01	Sa): 7.71E-03	L|g): 9.07E+02	± 5.4E+01		5.5E-02		
PGW B0PHX6		8/4/98 2:30:00 PM	QUAD24A	8/5/98 9:15:01 AM	B0PHX6	30	24	0.75571429	86	1.9138095
	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	31	0.04428571	667	0.9528571
Anl Date: 8/5/98	Tot Sa, Alq: 8.50E+00	, 1.00E+01	Alp; (Dpm/ 2.35E+00	(uCi/ 8.99E-04	(pCi/ 1.06E+02	± 2.8E+01	CAT I	2.4E-01	Lab Alq L|g	
Ppt mg: 2	Units: L	, ml	Bet; Alq): 3.29E+00	Sa): 1.26E-03	L|g): 1.48E+02	± 2.6E+01		3.4E-01		
PGW B0PHX8		8/4/98 2:30:00 PM	QUAD24B	8/5/98 9:15:01 AM	B0PHX8	30	57	1.85714286	949	30.670476
	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	30	0.04285714	674	0.9628571
Anl Date: 8/5/98	Tot Sa, Alq: 8.50E+00	, 1.00E+01	Alp; (Dpm/ 5.00E+00	(uCi/ 1.91E-03	(pCi/ 2.25E+02	± 3.6E+01	CAT I	1.1E-01	Lab Alq L|g	
Ppt mg: 5.4	Units: L	, ml	Bet; Alq): 5.90E+01	Sa): 2.26E-02	L|g): 2.66E+03	± 8.9E+01		1.9E-02		
PGW B0PHY2		8/4/98 2:30:00 PM	QUAD24C	8/5/98 9:15:01 AM	B0PHY2	30	29	0.93238095	349	10.644762
	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	24	0.03428571	692	0.9885714
Anl Date: 8/5/98	Tot Sa, Alq: 8.50E+00	, 1.00E+01	Alp; (Dpm/ 2.51E+00	(uCi/ 9.63E-04	(pCi/ 1.13E+02	± 2.8E+01	CAT I	2.2E-01	Lab Alq L|g	
Ppt mg: 2.9	Units: L	, ml	Bet; Alq): 1.96E+01	Sa): 7.52E-03	L|g): 8.84E+02	± 5.2E+01		5.7E-02		
PGW B0PJF4 (01)		8/4/98 2:30:00 PM	QUAD24D	8/5/98 9:15:01 AM	B0PJF4	30	13	0.38761905	86	1.7166667
01 + 02	LIQUID		Bkg:	8/5/98 1:41:03 AM	BKG	700	32	0.04571429	805	1.15
Anl Date: 8/5/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp; (Dpm/ 1.14E+00	(uCi/ 5.39E-04	(pCi/ 5.14E+01	± 2.6E+01	CAT I	4.9E-01	Lab Alq L|g	
Ppt mg: 4.6	Units: L	, ml	Bet; Alq): 3.13E+00	Sa): 1.48E-03	L|g): 1.41E+02	± 2.7E+01		3.5E-01		
PGW B0PJH7 (02)		8/4/98 2:30:00 PM	QUAD21A	8/5/98 10:00:05 AM	B0PJH7	30	7	0.16619048	52	0.6576190
03 + 04	LIQUID		Bkg:	8/5/98 1:41:08 AM	BKG	700	47	0.06714286	753	1.0757143
Anl Date: 8/5/98	Tot Sa, Alq: 1.05E+01	, 1.00E+01	Alp; (Dpm/ 4.67E-01	(uCi/ 2.21E-04	(pCi/ 2.10E+01	± 2.3E+01	CAT I	1.2E+00	Lab Alq L|g	
Ppt mg: 0.4	Units: L	, ml	Bet; Alq): 1.22E+00	Sa): 5.79E-04	L|g): 5.52E+01	± 2.2E+01		9.1E-01		
PGW B0PJJ9		8/4/98 2:30:00 PM	QUAD21B	8/5/98 10:00:05 AM	B0PJJ9	30	0	-0.0328571	29	-0.043333
05	LIQUID		Bkg:	8/5/98 1:41:08 AM	BKG	700	23	0.03285714	707	1.01
Anl Date: 8/5/98	Tot Sa, Alq: 2.00E-02	, 1.00E+01	Alp; (Dpm/ -1.01E-01	(uCi/ -9.12E-08	(pCi/ -4.56E+00	± 2.1E+01	CAT I	2.0E-02	Lab Alq L|g	
Ppt mg: 0.1	Units: L	, ml	Bet; Alq): -6.35E-02	Sa): -5.72E-08	L|g): -2.86E+00	± 1.7E+01		2.0E-02		

0057

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS I129 MATRIX Water DUE DATE 10/1/98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 08034	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 08034	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 0803401	-		Duplicate of Sample #
808034	-01-05		
808050	-01-02		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by RB on 9/1/98
DM 9/14/98
Rec'd in Prep Lab by RB on 9/1/98 Sop# RICHRC 5025 Rev# 0

Rec'd in Sep Lab by [illegible] on 9.29.98 Sop# RICHRC5025 Rev# 0

Rec'd in Sep lab by _____ on _____ Sop# _____ Rev# _____

ED/CPPT by _____ on _____ Sop# _____ Rev# _____

Rec'd in C.R. by [illegible] on 9/28/98 Sop# RICHRC0002 Rev# 1

Data Reviewed by [illegible] on 10-2-98 Sop# RICHRC0002 Rev# 2

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

*** I-129 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Aug-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02484

MATRIX : WATER C98-052

BATCH NUMBER 08-050

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80805001		BHI	BOPJF4	
2)	80805002		BHI	BOPJH7	

ACTIONS (Initial & Date)

) INITIATED JH 8/5/98

SOP(S) # RD8U0

) PREP LAB RECEIVED 9/17/98 DM

SOP(S) # PICHRC 5025 R0

) SAMPLE REMAINDER STORED 9/17/98 DM

SOP(S) # NA

) SEPARATION LAB RECEIVED 9.29 98

SOP(S) # PICHRC5025/0

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** I-129 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Aug-1998
Page 1

CUSTOMER: BHI C98-052 SAMPLE DELIVERY GROUP W02484

MATRIX : WATER BATCH NUMBER 08-034

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80803401	D80803401	BHI	BOPJF2	sand particles came through sep.
2)	80803402	7/29-29-98	BHI	BOPJF6	
3)	80803403		BHI	BOPJF8	
4)	80803404		BHI	BOPJH9	
5)	80803405		BHI	BOPJJ1	

ACTIONS (Initial & Date)

) INITIATED JH 8/4/98

SOP(S) # RD 88UD

) PREP LAB RECEIVED 9/17/98 DM

SOP(S) # RICHRC 5025 RO

) SAMPLE REMAINDER STORED 9/17/98 DM

SOP(S) # NA

) SEPARATION LAB RECEIVED 7/29-2998

SOP(S) # RICHRC5025/1 7/29-2998

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS α MATRIX H_2O DUE DATE 10-1-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 08034	-IB	BHI	QC BATCH REAGENT BLANK
J	-IX		QC BATCH MATRIX BLANK
J 08034	-IM or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 08005001			Duplicate of Sample # 80805001
80805001	02		
80803401	05		

Batched and QC updated by TMA on 9/22/98

Rec'd in Prep Lab by ↓ on ↓ Sop# RICHRC5014 Rev# 0

Rec'd in Sep Lab by n/a on Sop# n/a Rev#

Rec'd in Sep lab by on Sop# Rev#

ED/CPPT by on Sop# Rev#

Rec'd in C.R. by on 9/28/98 Sop# RICHRC0003 Rev# 1

Data Reviewed by on 10-1-98 Sop# RICHRC0002 Rev# 2

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

10-1-98

*** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Aug-1998
Page 1

CUSTOMER: BHI C98-052 SAMPLE DELIVERY GROUP W02484

MATRIX : WATER BATCH NUMBER 08-050

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80805001	D080500 1	BHI	BOPJF4	
2)	80805002		BHI	BOPJH7	

ACTIONS (Initial & Date)

) INITIATED JH 8/5/98

SOP(S) # RD8802

) PREP LAB RECEIVED mx 9/22/98

SOP(S) # RICHRC5014.0

) SAMPLE REMAINDER STORED ~~9/24/98 mx~~ mx 9/24/98 mx 9/28/98

SOP(S) # n/a

) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

10-1-98

*** ALPHA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Aug-1998
Page 1

CUSTOMER: BHI

MATRIX : WATER

C98-052

SAMPLE DELIVERY GROUP W02484

BATCH NUMBER 08-034

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80803401		BHI	BOPJF2	
2)	80803402		BHI	BOPJF6	
3)	80803403		BHI	BOPJF8	
4)	80803404		BHI	BOPJH9	
5)	80803405		BHI	BOPJJ1	
	J0803418				
	15				

ACTIONS (Initial & Date)

) INITIATED JH 8/4/98

SOP(S) # RD8800

) PREP LAB RECEIVED MM 9/22/98

SOP(S) # RICHRC5014.0

) SAMPLE REMAINDER STORED 9/24/98

SOP(S) # O/A

) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS B MATRIX H_2O DUE DATE 10-1-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 08034	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 08034	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 0805002			Duplicate of Sample # 80805002
80805001	02		
80803401	05		

Batched and QC updated by MM on 9/22/98.

Rec'd in Prep Lab by ↓ on ↓ Sop# RICHRC5014 Rev# 0

Rec'd in Sep Lab by n/a on Sop# n/a Rev#

Rec'd in Sep lab by on Sop# Rev#

ED/CPPT by on Sop# Rev#

Rec'd in C.R. by on 9/28/98 Sop# RICHRC0003 Rev# 1

Data Reviewed by JK on 10-1-98 Sop# RICHRC0002 Rev# 2

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

-1-98

*** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Aug-1998
Page 1

CUSTOMER: BHI

MATRIX : WATER

C98-052

SAMPLE DELIVERY GROUP W002484

BATCH NUMBER 08-050

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80805001		BHI	BOPJF4	
2)	80805002		BHI	BOPJH7	
	D0805002				

ACTIONS (Initial & Date)

) INITIATED JH 8/5/98

SOP(S) # RD8800

:) PREP LAB RECEIVED MMZ 9/22/98

SOP(S) # RICHRC5014.0

3) SAMPLE REMAINDER STORED ~~MMZ 9/24/98~~ 9/24/98 MMZ 9/28/98

SOP(S) # n/a

.) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

10-1-98

*** BETA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Aug-1998
Page 1

CUSTOMER: BHI

MATRIX : WATER

C98-052

SAMPLE DELIVERY GROUP W02484

BATCH NUMBER 08-034

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80803401		BHI	BOPJF2	
2)	80803402		BHI	BOPJF6	
3)	80803403		BHI	BOPJF8	
4)	80803404		BHI	BOPJH9	
5)	80803405		BHI	BOPJJ1	
	J080341B				
	↓ IS				

ACTIONS (Initial & Date)

) INITIATED JH 8/4/98

SOP(S) # RO88U0

) PREP LAB RECEIVED 9/22/98

SOP(S) # RICHRC5014.0

) SAMPLE REMAINDER STORED 9/29/98

SOP(S) # n/a

) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS Total-RA MATRIX WATER DUE DATE 9-17-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 08034	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 08034	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE IQQL197 4.0353±0.05125
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 0803401	-		Duplicate of Sample #
8-034	01-5		WO 2484
8-050	01-2		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by DM on 8-20-98

Rec'd in Prep Lab by ↓ on ↓ Sop# RD3231 ~~RKHRES605~~ Rev# 0

Rec'd in Sep Lab by [signature] on 8-21-98 Sop# RD3231 [signature] 8-21-98 ~~RCHRES~~ Rev# 0

Rec'd in Sep lab by ____ on ____ Sop# ____ Rev# ____

ED/CPPT by ____ on ____ Sop# ____ Rev# ____

Rec'd in C.R. by [signature] on 8/21/98 Sop# RICHRO3003 Rev# 0

Data Reviewed by ____ on ____ Sop# ____ Rev# ____

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

*** TOTAL RA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Aug-1998
Page 1

CUSTOMER: BHI

MATRIX : WATER C98-052

SAMPLE DELIVERY GROUP W02484

BATCH NUMBER 08-034

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80803401		BHI	BOPJF2	
2)	80803402		BHI	BOPJF6	
3)	80803403		BHI	BOPJF8	
4)	80803404		BHI	BOPJH9	
5)	80803405		BHI	BOPJJ1	

ACTIONS (Initial & Date)

1) INITIATED JH 8/4/98

SOP(S) # RO8W

2) PREP LAB RECEIVED pm 8-20-98

SOP(S) # AICHRC5005

3) SAMPLE REMAINDER STORED _____

SOP(S) # _____

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** TOTAL RA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Aug-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02484

MATRIX : WATER C98-052

BATCH NUMBER 08-050

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80805001		BHI	BOPJF4	
2)	80805002		BHI	BOPJH7	

ACTIONS (Initial & Date)

) INITIATED JH 8/5/98

SOP(S) # RD8802

:) PREP LAB RECEIVED pm 8-20-98

SOP(S) # RCARC 5205

:) SAMPLE REMAINDER STORED _____

SOP(S) # _____

:) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS TC99 MATRIX water DUE DATE 10/1/98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 08034	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 08034	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 0803401 W 0803402	-		Duplicate of Sample #
808034	01-05		
808050	01-02		
	-		
	-		
	-		
	-		
	-		

Batched and QC updated by RB on 8/28/98

Rec'd in Prep Lab by RB on 8/28/98 Sop# RICHRC5078 Rev#

Rec'd in Sep Lab by RB on 9/29/98 Sop# RichRC5078 Rev#

Rec'd in Sep lab by N/A on Sop# Rev#

ED/CPPT by N/A on Sop# Rev#

Rec'd in C.R. by on 9/29/98 Sop# RICHRD0001 Rev# 0

Data Reviewed by on 10-1-98 Sop# RICHRC0002 Rev# 2

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

*** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Aug-1998
Page 1

CUSTOMER: BHI

MATRIX : WATER

C98-052

SAMPLE DELIVERY GROUP W02484

BATCH NUMBER 08-034

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80803401		BHI	BOPJF2	D
2)	80803402		BHI	BOPJF6	W
3)	80803403		BHI	BOPJF8	
4)	80803404		BHI	BOPJH9	
5)	80803405		BHI	BOPJJ1	

ACTIONS (Initial & Date)

) INITIATED JH 8/4/98

SOP(S) # RD88W

) PREP LAB RECEIVED _____

SOP(S) # _____

) SAMPLE REMAINDER STORED _____

SOP(S) # _____

) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Aug-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02484

MATRIX : WATER C98-052

BATCH NUMBER 08-050

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80805001		BHI	BOPJF4	
2)	80805002		BHI	BOPJH7	

ACTIONS (Initial & Date)

) INITIATED JH 8/5/98

SOP(S) # RD8802

:) PREP LAB RECEIVED _____

SOP(S) # _____

3) SAMPLE REMAINDER STORED _____

SOP(S) # _____

:) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

Quanterra Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS C-14 MATRIX WATER DUE DATE 10-1-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 08034	-1W, 2W	BHI	QC BATCH REAGENT BLANK
J 08034	-1X		QC BATCH MATRIX BLANK
J 08034	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 0803401	-		Duplicate of Sample #
8-034	01-5		WO 2484
8-050	01-2		
	-		
	-		
	-		
	-		AM 8-24-98
	-		

Batched and QC updated by AM on 8-24-98

Rec'd in Prep Lab by _____ on _____ Sop# RKHRC5022 Rev# 2

Rec'd in Sep Lab by _____ on _____ Sop# _____ Rev# _____

Rec'd in Sep lab by _____ on _____ Sop# _____ Rev# _____

ED/CPPT by _____ on _____ Sop# _____ Rev# _____

Rec'd in C.R. by _____ on 8/25/98 Sop# RICHRD0001 Rev# 0

Data Reviewed by MK on 8-28-98 Sop# RICHRC0002 Rev# 2

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8

*** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Aug-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02484

MATRIX : WATER C98-052

BATCH NUMBER 08-034

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	J080341W,2N				
	J080341X				
	J080341S				
1)	80803401		BHI	BOPJF2	
	D080340 1				
2)	80803402		BHI	BOPJF6	
3)	80803403		BHI	BOPJF8	
4)	80803404		BHI	BOPJH9	
5)	80803405		BHI	BOPJJ1	

ACTIONS (Initial & Date)

) INITIATED JH 8/4/98

SOP(S) # RO 8800

) PREP LAB RECEIVED am 8-20-98

SOP(S) # RCHRC5022

) SAMPLE REMAINDER STORED _____

SOP(S) # _____

) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

*** C-14 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Aug-1998
Page 1

CUSTOMER: BHI

MATRIX : WATER

C98-052

SAMPLE DELIVERY GROUP W02484

BATCH NUMBER 08-050

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80805001		BHI	BOPJF4	
2)	80805002		BHI	BOPJH7	

ACTIONS (Initial & Date)

1) INITIATED JH 8/5/98

SOP(S) # RD8510

2) PREP LAB RECEIVED am RL 8-20-98

SOP(S) # RCHAC 5022

3) SAMPLE REMAINDER STORED _____

SOP(S) # _____

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB _____

SOP(S) # _____

6) DATA REVIEWED AND ANALYTICAL PREP STORED _____

SOP(S) # _____

10-1-98

*** URANIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

4-Aug-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP W02484

MATRIX : WATER C98-052

BATCH NUMBER 08-034

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80803401		BHI	BOPJF2	
2)	80803402		BHI	BOPJF6	
3)	80803403		BHI	BOPJF8	
4)	80803404		BHI	BOPJH9	
5)	80803405		BHI	BOPJJ1	
	J0803418 IS				

ACTIONS (Initial & Date)

) INITIATED JH 8/4/98

SOP(S) # RD8UU

) PREP LAB RECEIVED MM 9/22/98

SOP(S) # RD3215.1

) SAMPLE REMAINDER STORED MM 9/25/98

SOP(S) # n/a

) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

10-1-98

*** URANIUM ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

5-Aug-1998
Page 1

CUSTOMER: BHI

SAMPLE DELIVERY GROUP WO2484

MATRIX : WATER C98-052

BATCH NUMBER 08-050

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	80805001 D080500 1		BHI	BOPJF4	
2)	80805002 WC80500 2		BHI	BOPJH7	

ACTIONS (Initial & Date)

) INITIATED JH 8/5/98

SOP(S) # RD3802

2) PREP LAB RECEIVED MMK 9/22/98

SOP(S) # RD3215 r 1

3) SAMPLE REMAINDER STORED MMK 9/25/98

SOP(S) # n/a

) SEPARATION LAB RECEIVED

SOP(S) #

5) COUNTING/MEASUREMENT LAB

SOP(S) #

6) DATA REVIEWED AND ANALYTICAL PREP STORED

SOP(S) #

Environmental Services

BATCH SUMMARY/CHAIN OF CUSTODY

ANALYSIS Unat MATRIX H_2O DUE DATE 10-1-98

WORK ORDER	SEQUENCE #	CLIENT	COMMENTS
J 08034	-1B	BHI	QC BATCH REAGENT BLANK
J	-1X		QC BATCH MATRIX BLANK
J 08034	-1M or 1S (circle)		QC BATCH MATRIX/REAGENT SPIKE
J	-2M or 2S (circle)		QC BATCH MATRIX/REAGENT SPIKE
D 08050001			Duplicate of Sample # 80805001
80805001	02		
W08050002	—		
80803401	05		

Batched and QC updated by [illegible] on 9/22/98

Rec'd in Prep Lab by ↓ on ↓ Sop# RD3215 Rev# 1

Rec'd in Sep Lab by n/A on Sop# n/A Rev#

Rec'd in Sep lab by ↓ on Sop# ↓ Rev#

ED/CPPT by ↓ on Sop# ↓ Rev#

Rec'd in C.R. by R3 on 9/29/98 Sop# RICHRC5058 Rev# 1

Data Reviewed by [illegible] on 10-1-98 Sop# RICHRC0002 Rev# 2

Original batch sheet and complete calculation file to be filed with the FIRST listed work order number.

FORM NO.: RC-52, 1/98, Rev. 8