W02178

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
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0049180

CASE NARRATIVE

MAY 1998 RECEIVED EDMC

FEB 1998 RECEIVED Data Log In

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

February 7, 1998

Attention: Joan Kessner

Project Number	:	550.230
Date Received by Lab	:	January 08, 1998
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W02178
Data Deliverable	:	Summary

I. Introduction

On January 08, 1998, one (1) water sample was received by Quanterra, Richland and was transferred to Quanterra, St. Louis for chemical analyses. Upon receipt, the sample was given the following laboratory ID number to correspond with the specific client ID:

St. Louis ID	BHI ID	Richland ID	Matrix	Date of Receipt
16646-001	B0MW34	80111901	Water	08-JAN-98

II. Analytical Results/ Methodology

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

Analyses requested

Total Residual Chlorine by EPA Method 330.3, pH by EPA Method 150.1, Sulfate by EPA Method 375.4, Total Dissolved Solids by EPA Method 160.1, Total Suspended Solids by EPA Method 160.2, ICP Metals by EPA Method 6010, Arsenic by EPA Method 7060, Acrylamide by EPA 8316, Volatiles by EPA Method 8260, Appendix IX Volatiles by EPA Method 8240.

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate or Sample Duplicate were performed per the protocol for each analyte in this SDG. Total Residual Chlorine, pH, Total Dissolved Solids and Total Suspended Solids analyses require only a Sample Duplicate for matrix QC.

IV. Definitions

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

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike

V. Comments

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

Wet Chemistry
There are no comments or nonconformances associated with this analysis.

Metals
There are no comments or nonconformances associated with this analysis.

Acrylamide
There are no comments or nonconformances associated with this analysis.

Volatiles 8260
There are no comments or nonconformances associated with this analysis.

Bechtel Hanford Incorporated
February 7, 1998
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Appix Volatiles 8240
Sample 16646-001MSD had low recovery (77%) for the surrogate BFB. The lower control limit is 80%. The recovery for BFB was within range in sample 16646-001 and 16646-001MSD. The spike recoveries in the MSD were all within range. The MSD was not rerun. See NCM# 2948.

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

Reviewed and approved:

Sheila Lowrie for REW
Robert E. White
Project Manager

LOG #: 3948

LABORATORY NONCONFORMANCE MEMO (NCM)

Quanterra Incorporated

W02178

Project ID/Client: 550.230

NCM Initiated by/Date: KBauer 011998 Project Manager: W Price

Sample Numbers/QC batch or lot numbers: 116046-001MSD, 1627161

Tests: VOA/6APPIX

Analytical Area (check appropriate area):

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

Nonconformance (check appropriate area): *To be completed by analyst*

Holding Time Violations (exceeded by _____ days)

Category I: Laboratory Independent

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample rec'd > 48 hrs after sampling. or ½ holding time has expired
- ☐ 3. Test added by client after expiration

Category II: Laboratory Dependent

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Log-in error
- ☐ 7. Miscommunication
- ☐ 8. Other (explanation 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 (explanation required)_____

Category V: Analysis Reruns (Dilution)

- ☐ 17. Over calibration
- ☐ 18. Under calibration
- ☐ 19. Other (explanation required)_____

Quality Assurance/Quality Control

- ☑ 20. QC data reported outside of controls
- ☐ 21. Incorrect procedure used
- ☐ 22. SOP intentionally modified with QA and tech approval
- ☐ 23. Invalid instrument calibration
- ☐ 24. Received insufficient sample for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 25. Hardcopy deliverable error
- ☐ 26. Electronic deliverable error

Reported Detection Limits Elevated Due to:

- ☐ 27. Sample matrix: Does not include high analyte content
- ☐ 28. Insufficient sample volume
- ☐ 29. Other (explanation required)

Miscellaneous

- ☐ 30. Instrument/equipment Tag-out
- ☐ 31. Other (explanation required)

Notification (check appropriate area): ☑ Required ☐ Not Required *To be completed by project manager*

Client notified by (name and date): Sheila Lowrier 2-7-98

- ☑ In writing
- ☐ By facsimile
- ☐ By telephone
- ☐ Other (explain)

Client's name and response: Joan Kessner

- ☐ Process "as is"
- ☐ Re-sample
- ☐ On hold until _____
- ☑ Other (explain)

Project manager (signature and date): Sheila Lowrier 2-7-98 Noted IN Case Narrative.

00004A

QUANTERRA LABORATORY NONCONFORMANCE MEMO

LOG #: 3948

Corrective Action: *To be completed and reviewed by all associates involved*

Problem Description/Root Cause Author's initials and date:

11d046-001MSD had surr BFB out at 77 - 80. Sample and MS were ok.

Corrective Actions (Short Term) Author's initials and date:

Report as is. MSD % recoveries were good.

Corrective Actions to Prevent Reoccurrence (Long Term)

Corrective Action approved by (Supervisor/Group Leader) and date:

Additional Comments:

Corrective Action to be completed by (if other than Supervisor/Group Leader):

Date Corrective Action is to be completed:

Quality Assurance Review *To be completed by a QA associate*

☐ Anomaly ☒ Deficiency ☐ Notified Ops/Sys Manager (Initials)

☐ Further action required:

Further action assigned to:

QA signature: M Writer Date: 1/19/98

Corrective Action Verification: *To be completed by a QA associate*

☒ Verification not required or requested

☐ Verified / CA completed on: by

☐ Cannot verify (specify reason)

Verified by: Date:

Nonconformance Memo Closure:

QA signature: M Writer Date: 1/19/98

The Office of Quality Assurance maintains a copy of this NCM indicating its final status.

000043

W02178

Quanterra January 12, 1998 04:29 pm
Account: 10722 Project: 550.230 Quanterra-Richland QAS No. 550.23 Rev. 1
Master Sample Login: 16646

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: R. Patterson PM Review: W. Price

Sample Header Template:

Sample No. / #	Client ID / Container Type	C-Matrix / Analysis	Date: Collected	Received	Due	Shipper	Rad Category / Class	Rad Sample No. / Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
16646-001	BOWJ34	Water	08-JAN-98 07:59	08-JAN-98 09:23	28-JAN-98	AIRBORNE	1	Screening not Required				
RICHLAND ID 80111901												
3	VI - Vial-40ml	HPLC/8316/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350235:99 350236:98 350237:97)
3		VOA/8260/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350232:89 350233:88 350234:87)
3		VOA/APPIX/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350229:92 350230:91 350231:90)
1	PN - Plastic-1L	CL/330.3/04					S	COLD	23-JAN-98	10-JAN-98	T7B	(350228:93)
1	PN - Plastic-500ml	AS/7060/04					S	HNO3	23-JAN-98	07-JUL-98	T7B	(350323:86)
1		ICAP/6010/04					S	HNO3	23-JAN-98	07-JUL-98	T7B	(350325:85)
1		TDS/160.1/04					S	COLD	23-JAN-98	15-JAN-98	T7B	(350226:95)
1		TSS/160.2/04					S	COLD	23-JAN-98	15-JAN-98	T7B	(350227:94)
1	PN - Plastic-250ml	SO4/375.4/04					S	COLD	23-JAN-98	05-FEB-98	T7B	(350223:98)
1	PW - Plastic-128oz	PH/150.1/04					S	COLD	23-JAN-98	09-JAN-98	T7B	(350222:99)
16646-001DUP	BOWJ34	Water	08-JAN-98 07:59	08-JAN-98 09:23	28-JAN-98	AIRBORNE	1	Screening not Required				
RICHLAND ID 80111901												
1	PN - Plastic-1L	CL/330.3/04					S	COLD	23-JAN-98	10-JAN-98	T7B	(350228:93)
1	PN - Plastic-500ml	TDS/160.1/04					S	COLD	23-JAN-98	15-JAN-98	T7B	(350226:95)
1		TSS/160.2/04					S	COLD	23-JAN-98	15-JAN-98	T7B	(350227:94)
1	PN - Plastic-250ml	SO4/375.4/04					S	COLD	23-JAN-98	05-FEB-98	T7B	(350223:98)
1	PW - Plastic-128oz	PH/150.1/04					S	COLD	23-JAN-98	09-JAN-98	T7B	(350222:99)
16646-001MS	BOWJ34	Water	08-JAN-98 07:59	08-JAN-98 09:23	28-JAN-98	AIRBORNE	1	Screening not Required				
RICHLAND ID 80111901												
3	VI - Vial-40ml	HPLC/8316/C'					S	HCL	23-JAN-98	22-JAN-98	109B	(350235:99 350236:98 350237:97)
3		VOA/8260/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350232:89 350233:88 350234:87)
3		VOA/APPIX/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350229:92 350230:91 350231:90)
1	PN - Plastic-500ml	AS/7060/04					S	HNO3	23-JAN-98	07-JUL-98	T7B	(350323:86)
1		ICAP/6010/04					S	HNO3	23-JAN-98	07-JUL-98	T7B	(350325:85)
1	PN - Plastic-250ml	SO4/375.4/04					S	COLD	23-JAN-98	05-FEB-98	T7B	(350223:98)
16646-001MSD	BOWJ34	Water	08-JAN-98 07:59	08-JAN-98 09:23	28-JAN-98	AIRBORNE	1	Screening not Required				
RICHLAND ID 80111901												
3	VI - Vial-40ml	HPLC/8316/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350235:99 350236:98 350237:97)
3		VOA/8260/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350232:89 350233:88 350234:87)
3		VOA/APPIX/04					S	HCL	23-JAN-98	22-JAN-98	109B	(350229:92 350230:91 350231:90)
1	PN - Plastic-500ml	AS/7060/04					S	HNO3	23-JAN-98	07-JUL-98	T7B	(350323:86)
1		ICAP/6010/04					S	HNO3	23-JAN-98	07-JUL-98	T7B	(350325:85)

00000

*Sample has not been rad screened.

T7B Temp 4°C Cuft 1.3823
St Louis

Chain of Custody Record

Quanterra

QUA-4124 0797

Client: Bechtel	Project Manager: A Kopriva	Date: 1-9-98	Chain of Custody Number: 00357
Address:	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 1 of 1
City / State / Zip Code:	Site Contact:	Lab Contact:	
Project Name: SAF B98-009	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

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

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH
80111901 BOMW34	all	dates										

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

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

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Due 2-22-98

QC Requirements (Specify): SDG W02178

1. Relinquished By: Heidelberg QES	Date: 1-9-98	Time: 16:00	1. Received By: 2nd Mitchell	Date: 1-10-98	Time: 10:00
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

+QC

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-009-07	Page 1 of 2

Collector: Renee Nielson	Company Contact: Joe Zoric	Telephone No.: 373-4315	Project Coordinator: KOERNER, CC
Project Designation: 183N Backwash Discharge Pond -- Permit Monitoring 1998	Sampling Location: 100N		SAF No.: B98-009
Ice Chest No.: ERC96-048	Field Logbook No.: EL-1309-1		Method of Shipment: Gov Vehicle
Shipped To: Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: cool to 4C

SAMPLE ANALYSIS: 80111901 SDG W02178

Sample No.	Matrix *	Sample Date	Sample Time	Activity Scan	pH - 150.1	Sulfate -- 375.4	TDS - 160.1	TSS - 160.2	Arsenic - 7060 - (GFAA)	ICP Metals - 6010A (TAL)	Chlorine (Total residual) - 330.3	Acrylamide - 8316	VOA - 8240A (Append IX)
Preservation				None	None	Cool 4C	Cool 4C	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None	Cool 4C	HCl or H2SO4 to pH <2 Cool
Type of Container				P	P	P	P	P	P	P	P	aGs*	aGs*
No. of Container(s)				1	1	1	1	1	1	1	1	3	3
Volume				20ml	125ml	250ml	500ml	500ml	500ml	500ml	1000ml	40ml	40ml
					✓	✓	✓	✓	✓	✓	✓	✓	✓
B0MW34	Water	1-8-98	0759	X	X 1 100	X 1 100	X 1 100	X 1 100	X 1 100	X 1 100	X 1 100	X 1 3x100	X 1 3x100

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielson	1/8 0923	[signature]	1-8-98 0923
			2100pm

SPECIAL INSTRUCTIONS

** Close SDG upon receipt of samples.

** EPA330.3 - The ERC Contractor acknowledges the specified holding time is not likely achievable.

Matrix *

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-009-07	Page 1 of 1

Collector Renee Nielson	Company Contact Joe Zovic	Telephone No. 373-4315	Project Coordinator KOERNER, CC
Project Designation 183N Backwash Discharge Pond -- Permit Monitoring 1998	Sampling Location 100N		SAF No. B98-009
Ice Chest No. ERC96-048	Field Logbook No. EL-1309-1		Method of Shipment Gov Vehicle
Shipped To Quanterra Incorporated	Offsite Property No.		Bill of Lading/Air Bill No.

Data Turnaround: **45 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage: cool to 4C

SAMPLE ANALYSIS: 80111901

Preservation	HCl or H2SO4 to pH < 2 Cool											
Type of Container	aGs*											
No. of Container(s)	3 ✓✓✓											
Volume	40ml											
	VOA - 8260A (TCL)											
Sample No.	Matrix *	Sample Date	Sample Time									
B0MW34	Water	1-8-98	0759	1 x								
				3 x (40)								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielson	1-8-98 0923	[signature]	1-8-98 0923
		Rebonded By: <100ppm	

SPECIAL INSTRUCTIONS
** Close SDG upon receipt of samples.
** EPA330.3 - The ERC Contractor acknowledges the specified holding time is not likely achievable.

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

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

80009

FROM THE DESK OF: ALLEN NELLESEN
ERC TEAM RAD-CON SUPPORT
375-[illegible]-23

TO: R.T.Fahlberg N1-28 DATE: August 15, 1996

SUBJECT: WATER SAMPLES FROM 183N POTABLE WATER PLANT

Water samples are routinely collected and sent off-site for analysis to assure compliance with Washington State Department of Health drinking water requirements. The history of 183-N which provides treated water to support the operation of the N-Reactor shows that a radiological survey of the water samples is not warranted.

If you need further help or have any questions, please call me at the phone number displayed above.

cc: D. D. Blankenship X7-75
T. A. Edwards X0-23
J. E. Parsons X0-23
R. K. Stafford X1-86
J. P. Zoric X5-57

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1-8-98 0925 SG#: W02178

Work Order Number: 801119 SAF #: B98-009

Shipping Container ID: 96-048 Chain of Custody #: B98-009-07

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: 17
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: 1-8-98

Telephoned To: _____ On _____ By _____

00010

Client Sample Screening Results

09-Jan-98

(R) 1/9/98

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI	B0MW34		1/8/1998	QUAD23B	1/8/1998 1:48:41 PM	B0MW34	30	6	0.165	42	0.4766667
		LIQUID		Bkg:	1/8/1998 12:12:15 AM	BKG	600	21	0.035	554	0.9233333

Anl Date:	1/8/1998	Tot Sa, Alq:	1.00E+00	,	1.00E+01	Alp:	(Dpm/	4.90E-01	(uCi/	2.21E-05	(pCi/	2.21E+01	± 2.1E+01	CAT I	1.1E+00 Lab Alq
Ppt mg:	1.1	Units:	L	,	ml	Bet:	Alq):	8.02E-01	Sa):	3.61E-05	Lig):	3.61E+01	± 1.9E+01		1.4E+00 Lab Lig

00011

Quanterra Environmental Services

013823

:BW&WP

Login No.: _____

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: _____

Date: 1-10-98 Time: 1000

Project No: 550.230

Initiated by: [illegible]

Shipper No: AB 599 9716 310

RFA/COC Number: 357

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 seal disturbed/broken/missing.
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on circuit not received with temperature.
10. ☐ Other explain below:

☑ No variance 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: [illegible] Date: 1-10-98

Project Management Review: [illegible] Date: 1/16/98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

27-341

00012

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Acrylamide
Method: SW-846 8316
Matrix: LIQUID

Client ID: BOMW34

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/29/98

Quanterra ID : 16646-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Acrylamide	79-06-1	QCBLK162212-1	01/28/98	01/28/98	100	UG/L	U	100	1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Acrylamide
Method: SW-846 8316
Matrix: LIQUID

Client ID: BOMW34

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/29/98

Quanterra ID : 16646-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Acrylamide	79-06-1	QCBLK162212-1	01/28/98	01/28/98	96	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: Acrylamide
Method: SW-846 8316
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/29/98

Client ID: BOMW34

Quanterra ID : 16646-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Acrylamide	79-06-1	QCBLK162212-1	01/28/98	01/28/98	90	%REC			1

1D
ACRYLAMIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.
B0MW34

Lab Name: QUANTERRA MO Contract: 550.230

Lab Code: ITMO Case No.: _____ SAS No.: _____ SDG No.: W02178

Matrix : (soil/water) WATER Lab Sample ID: 16646-001

Sample wt/vol: 1000 (g/ml) ML Lab File ID: _____

Level: (low/med) LOW Date Sampled: 01-08-98

% Moisture: not dec._____ dec._____ Date Extracted: _____

Extraction:(SepF/Cont/Sonc/Shak)_____ Date Analyzed: 01-28-98

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CAS NO.	Compound	CONCENTRATION UNITS: (mg/L or mg/Kg) UG/L	Q
79-06-1	ACRYLAMIDE	100	U

U: Concentration of analyte is less than the value given.

FORM I HBH

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

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

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID: BOWW34

Quanterra ID : 16646-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162985-1	01/21/98	01/21/98	112	UG/L	B	200	1
Antimony	7440-36-0	QCBLK162985-1	01/21/98	01/21/98	42.5	UG/L	U	60.0	1
Barium	7440-39-3	QCBLK162985-1	01/21/98	01/21/98	25.8	UG/L	B	200	1
Beryllium	7440-41-7	QCBLK162985-1	01/21/98	01/21/98	0.46	UG/L	B	5.0	1
Cadmium	7440-43-9	QCBLK162985-1	01/21/98	01/21/98	3.3	UG/L	U	5.0	1
Calcium	7440-70-2	QCBLK162985-1	01/21/98	01/21/98	26600	UG/L		5000	1
Chromium	7440-47-3	QCBLK162985-1	01/21/98	01/21/98	2.7	UG/L	U	10.0	1
Cobalt	7440-48-4	QCBLK162985-1	01/21/98	01/21/98	4.3	UG/L	U	50.0	1
Copper	7440-50-8	QCBLK162985-1	01/21/98	01/21/98	4.1	UG/L	U	25.0	1
Iron	7439-89-6	QCBLK162985-1	01/21/98	01/21/98	282	UG/L		100	1
Magnesium	7439-95-4	QCBLK162985-1	01/21/98	01/21/98	4350	UG/L	B	5000	1
Manganese	7439-96-5	QCBLK162985-1	01/21/98	01/21/98	7.8	UG/L	B	15.0	1
Nickel	7440-02-0	QCBLK162985-1	01/21/98	01/21/98	14.6	UG/L	U	40.0	1
Potassium	7440-09-7	QCBLK162985-1	01/21/98	01/21/98	2180	UG/L	U	5000	1
Silver	7440-22-4	QCBLK162985-1	01/21/98	01/21/98	6.0	UG/L	U	10.0	1
Sodium	7440-23-5	QCBLK162985-1	01/21/98	01/21/98	4690	UG/L	B	5000	1
Vanadium	7440-62-2	QCBLK162985-1	01/21/98	01/21/98	12.7	UG/L	B	50.0	1
Zinc	7440-66-6	QCBLK162985-1	01/21/98	01/21/98	8.2	UG/L	B	20.0	1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

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

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID: BOMW34

Quanterra ID : 16646-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162985-1	01/21/98	01/21/98	98	%REC			1
Antimony	7440-36-0	QCBLK162985-1	01/21/98	01/21/98	102	%REC			1
Barium	7440-39-3	QCBLK162985-1	01/21/98	01/21/98	92	%REC			1
Beryllium	7440-41-7	QCBLK162985-1	01/21/98	01/21/98	99	%REC			1
Cadmium	7440-43-9	QCBLK162985-1	01/21/98	01/21/98	95	%REC			1
Calcium	7440-70-2	QCBLK162985-1	01/21/98	01/21/98	101	%REC			1
Chromium	7440-47-3	QCBLK162985-1	01/21/98	01/21/98	93	%REC			1
Cobalt	7440-48-4	QCBLK162985-1	01/21/98	01/21/98	94	%REC			1
Copper	7440-50-8	QCBLK162985-1	01/21/98	01/21/98	100	%REC			1
Iron	7439-89-6	QCBLK162985-1	01/21/98	01/21/98	91	%REC			1
Magnesium	7439-95-4	QCBLK162985-1	01/21/98	01/21/98	102	%REC			1
Manganese	7439-96-5	QCBLK162985-1	01/21/98	01/21/98	93	%REC			1
Nickel	7440-02-0	QCBLK162985-1	01/21/98	01/21/98	98	%REC			1
Potassium	7440-09-7	QCBLK162985-1	01/21/98	01/21/98	98	%REC			1
Silver	7440-22-4	QCBLK162985-1	01/21/98	01/21/98	94	%REC			1
Sodium	7440-23-5	QCBLK162985-1	01/21/98	01/21/98	96	%REC			1
Vanadium	7440-62-2	QCBLK162985-1	01/21/98	01/21/98	96	%REC			1
Zinc	7440-66-6	QCBLK162985-1	01/21/98	01/21/98	96	%REC			1

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Richland, WA 99352

Project: 550.230

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

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID: BOMW34

Quanterra ID : 16646-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Aluminum	7429-90-5	QCBLK162985-1	01/21/98	01/21/98	97	%REC			1
Antimony	7440-36-0	QCBLK162985-1	01/21/98	01/21/98	90	%REC			1
Barium	7440-39-3	QCBLK162985-1	01/21/98	01/21/98	93	%REC			1
Beryllium	7440-41-7	QCBLK162985-1	01/21/98	01/21/98	98	%REC			1
Cadmium	7440-43-9	QCBLK162985-1	01/21/98	01/21/98	98	%REC			1
Calcium	7440-70-2	QCBLK162985-1	01/21/98	01/21/98	100	%REC			1
Chromium	7440-47-3	QCBLK162985-1	01/21/98	01/21/98	93	%REC			1
Cobalt	7440-48-4	QCBLK162985-1	01/21/98	01/21/98	94	%REC			1
Copper	7440-50-8	QCBLK162985-1	01/21/98	01/21/98	100	%REC			1
Iron	7439-89-6	QCBLK162985-1	01/21/98	01/21/98	93	%REC			1
Magnesium	7439-95-4	QCBLK162985-1	01/21/98	01/21/98	102	%REC			1
Manganese	7439-96-5	QCBLK162985-1	01/21/98	01/21/98	93	%REC			1
Nickel	7440-02-0	QCBLK162985-1	01/21/98	01/21/98	99	%REC			1
Potassium	7440-09-7	QCBLK162985-1	01/21/98	01/21/98	95	%REC			1
Silver	7440-22-4	QCBLK162985-1	01/21/98	01/21/98	86	%REC			1
Sodium	7440-23-5	QCBLK162985-1	01/21/98	01/21/98	96	%REC			1
Vanadium	7440-62-2	QCBLK162985-1	01/21/98	01/21/98	96	%REC			1
Zinc	7440-66-6	QCBLK162985-1	01/21/98	01/21/98	96	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

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

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0MW34	16646-001	Arsenic	7440-38-2	QCBLK162863-1	01/20/98	01/23/98	1.8	UG/L	U	10.0	1
B0MW34	16646-001MS	Arsenic	7440-38-2	QCBLK162863-1	01/20/98	01/23/98	100	%REC			1
B0MW34	16646-001MSD	Arsenic	7440-38-2	QCBLK162863-1	01/20/98	01/23/98	95	%REC			1

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: QUANTERRA_MO_____ Contract: 550.230___

Lab Code: ITMO__ Case No.: _____ SAS No.: _____ SDG No.: W02178_____

SOW No.: SW846

EPA Sample No.	Lab Sample ID
_B0MW34_____	_16646-001____
_B0MW34SD_____	_16646-001SD__
_B0MW34S_____	_16646-001S___

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: _____

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0MW34

Lab Name: QUANTERRA_MO
Lab Code: ITMO Case No.:
Matrix (soil/water): WATER
Level (low/med): LOW
% Solids: 0.0

Contract: 550.230
SAS No.:
SDG No.: W02178
Lab Sample ID: 16646-001
Date Received: 01/08/98

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	112	B		P
7440-36-0	Antimony	42.5	U		P
7440-38-2	Arsenic	1.8	U		F
7440-39-3	Barium	25.8	B		P
7440-41-7	Beryllium	0.46	B		P
7440-43-9	Cadmium	3.3	U		P
7440-70-2	Calcium	26600			P
7440-47-3	Chromium	2.7	U		P
7440-48-4	Cobalt	4.3	U		P
7440-50-8	Copper	4.1	U		P
7439-89-6	Iron	282			P
7439-95-4	Magnesium	4350	B		P
7439-96-5	Manganese	7.8	B		P
7440-02-0	Nickel	14.6	U		P
7440-09-7	Potassium	2180	U		P
7440-22-4	Silver	6.0	U		P
7440-23-5	Sodium	4690	B		P
7440-62-2	Vanadium	12.7	B		P
7440-66-6	Zinc	8.2	B		P

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

Comments:

FORM I - IN

SW-846

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: VOA-8240A (Appendix IX)
Method: EPA 8240
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 02/04/98

Client ID: BOMW34

Quanterra ID : 16646-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Dichlorodifluoromethane	75-71-8	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Chloromethane	74-87-3	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Acrolein	107-02-8	QCBLK162761-1	01/16/98	01/16/98	100	UG/L	U	100	1
Methylene Chloride	75-09-2	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	BJ	20	1
Trichlorofluoromethane	75-69-4	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Allyl chloride	107-05-1	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Carbon Disulfide	75-15-0	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Acetonitrile	75-05-8	QCBLK162761-1	01/16/98	01/16/98	100	UG/L	U	100	1
Acrylonitrile	107-13-1	QCBLK162761-1	01/16/98	01/16/98	100	UG/L	U	100	1
Propionitrile	107-12-0	QCBLK162761-1	01/16/98	01/16/98	20	UG/L	U	20	1
1,1-Dichloroethane	75-34-3	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
trans-1,2-Dichloroethene	156-60-5	QCBLK162761-1	01/16/98	01/16/98	2	UG/L	U	2	1
Iodomethane	74-88-4	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK162761-1	01/16/98	01/16/98	43	UG/L		5	1
1,2-Dichloroethane	107-06-2	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
2-Chloro-1,3-butadiene	126-99-8	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Methacrylonitrile	126-98-7	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162761-1	01/16/98	01/16/98	20	UG/L	U	20	1
Isobutyl alcohol	78-83-1	QCBLK162761-1	01/16/98	01/16/98	200	UG/L	U	200	1
1,1,1-Trichloroethane	71-55-6	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Vinyl Acetate	108-05-4	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
Bromodichloromethane	75-27-4	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Methyl methacrylate	80-62-6	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Ethyl methacrylate	97-63-2	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Dibromomethane	74-95-3	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,2-Dibromoethane	106-93-4	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,4-Dioxane	123-91-1	QCBLK162761-1	01/16/98	01/16/98	500	UG/L	U	500	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162761-1	01/16/98	01/16/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK162761-1	01/16/98	01/16/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,1,1,2-Tetrachloroethane	630-20-6	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
trans,1,4-Dichloro-2-butene	110-57-6	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
Pentachloroethane	76-01-7	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
1,2,3-Trichloropropane	96-18-4	QCBLK162761-1	01/16/98	01/16/98	5	UG/L	U	5	1
1,2-Dibromo-3-chloropropane	96-12-8	QCBLK162761-1	01/16/98	01/16/98	10	UG/L	U	10	1
1,2,3-Trichlorobenzene	87-61-6	QCBLK162761-1	01/16/98	01/16/98	6	UG/L	JN		1
Toluene-d8	2037-26-5	QCBLK162761-1	01/16/98	01/16/98	95	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162761-1	01/16/98	01/16/98	88	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK162761-1	01/16/98	01/16/98	98	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: VOA-8240A (Appendix IX)
Method: EPA 8240
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID: BOMW34

Quanterra ID : 16646-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK162761-1	01/16/98	01/16/98	117	%REC			1
Trichloroethene	79-01-6	QCBLK162761-1	01/16/98	01/16/98	92	%REC			1
Benzene	71-43-2	QCBLK162761-1	01/16/98	01/16/98	91	%REC			1
Toluene	108-88-3	QCBLK162761-1	01/16/98	01/16/98	84	%REC			1
Chlorobenzene	108-90-7	QCBLK162761-1	01/16/98	01/16/98	94	%REC			1
Toluene-d8	2037-26-5	QCBLK162761-1	01/16/98	01/16/98	95	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162761-1	01/16/98	01/16/98	88	%REC			1
1,2-Dichloroethane-d4	17070-07-0	QCBLK162761-1	01/16/98	01/16/98	89	%REC			1

Bechtel Hanford Incoporated
3350 George Washington Way
Richland, WA 99352

Project: 550.230

Category: VOA-8240A (Appendix IX)
Method: EPA 8240
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID: BOMW34

Quanterra ID : 16646-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK162761-1	01/16/98	01/16/98	107	%REC			1
Trichloroethene	79-01-6	QCBLK162761-1	01/16/98	01/16/98	90	%REC			1
Benzene	71-43-2	QCBLK162761-1	01/16/98	01/16/98	89	%REC			1
Toluene	108-88-3	QCBLK162761-1	01/16/98	01/16/98	83	%REC			1
Chlorobenzene	108-90-7	QCBLK162761-1	01/16/98	01/16/98	89	%REC			1
Toluene-d8	2037-26-5	QCBLK162761-1	01/16/98	01/16/98	86	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162761-1	01/16/98	01/16/98	77	%REC	*		1
1,2-Dichloroethane-d4	17070-07-0	QCBLK162761-1	01/16/98	01/16/98	91	%REC			1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MW34

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V64601 SAS No.: SDG No.: W02178

Matrix: (soil/water) WATER Lab Sample ID: 16646-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G0552

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. Date Analyzed: 01/16/98

GC Column: RTX-502.2 ID: 0.530 (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
75-71-8	Dichlorodifluoromethane	10	U
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
107-02-8	Acrolein	100	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	5	BJ
75-69-4	Trichlorofluoromethane	10	U
107-05-1	Allyl chloride	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-05-8	Acetonitrile	100	U
107-13-1	Acrylonitrile	100	U
107-12-0	Propionitrile	20	U
75-34-3	1,1-Dichloroethane	5	U
156-60-5	Trans-1,2-Dichloroethene	2	U
74-88-4	Iodomethane	5	U
67-66-3	Chloroform	43	
107-06-2	1,2-Dichloroethane	5	U
126-99-8	2-Chlor-1,3-Butadiene	5	U
126-98-7	Methacrylonitrile	5	U
78-93-3	2-Butanone	20	U
78-83-1	Isobutyl alcohol	200	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0MW34

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V64601 SAS No.: SDG No.: W02178

Matrix: (soil/water) WATER Lab Sample ID: 16646-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G0552

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. Date Analyzed: 01/16/98

GC Column: RTX-502.2 ID: 0.530 (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
10061-01-5	cis-1,3-Dichloropropene	5	U
80-62-6	Methyl methacrylate	5	U
79-01-6	Trichloroethene	5	U
97-63-2	Ethyl methacrylate	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
74-95-3	Dibromomethane	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
106-93-4	1,2-Dibromoethane	5	U
123-91-1	1,4-Dioxane	500	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
124-48-1	Dibromochloromethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
630-20-6	1,1,1,2-Tetrachloroethane	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
110-57-6	trans-1,4-Dichloro-2-butene	5	U
1330-20-7	Xylene (total)	5	U
76-01-7	Pentachloroethane	10	U
96-18-4	1,2,3-Trichloropropane	5.	U
96-12-8	1,2-Dibromo-3-Chloropropane	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0MW34

Lab Name: QUANTERRA MO Contract: 550-230

Lab Code: ITMO Case No.: V64601 SAS No.: SDG No.: W02178

Matrix: (soil/water) WATER Lab Sample ID: 16646-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G0552

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. Date Analyzed: 01/16/98

GC Column: RTX-502.2 ID: 0.530 (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. 87616	Benzene, 1,2,3-trichloro-	25.92	6	JN

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Project: 550.230

Category: Volatiles 8260 (TCL)
Method: EPA 8260
Matrix: LIQUID

Client ID: BOMW34

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Quanterra ID : 16646-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK162755-1	01/15/98	01/15/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK162755-1	01/15/98	01/15/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK162755-1	01/15/98	01/15/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK162755-1	01/15/98	01/15/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Acetone	67-64-1	QCBLK162755-1	01/15/98	01/15/98	17	UG/L	BJ	20	1
Carbon Disulfide	75-15-0	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK162755-1	01/15/98	01/15/98	44	UG/L		5	1
1,2-Dichloroethane	107-06-2	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK162755-1	01/15/98	01/15/98	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK162755-1	01/15/98	01/15/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK162755-1	01/15/98	01/15/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK162755-1	01/15/98	01/15/98	5	UG/L	U	5	1
Silanol, trimethyl-	1066-40-6	QCBLK162755-1	01/15/98	01/15/98	17	UG/L	JN		1
Toluene-d8	2037-26-5	QCBLK162755-1	01/15/98	01/15/98	95	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162755-1	01/15/98	01/15/98	88	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162755-1	01/15/98	01/15/98	105	%REC			1

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Project: 550.230

Category: Volatiles 8260 (TCL)
Method: EPA 8260
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID: 80MW34

Quanterra ID : 16646-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK162755-1	01/15/98	01/15/98	112	%REC			1
Trichloroethene	79-01-6	QCBLK162755-1	01/15/98	01/15/98	93	%REC			1
Benzene	71-43-2	QCBLK162755-1	01/15/98	01/15/98	98	%REC			1
Toluene	108-88-3	QCBLK162755-1	01/15/98	01/15/98	91	%REC			1
Chlorobenzene	108-90-7	QCBLK162755-1	01/15/98	01/15/98	99	%REC			1
Toluene-d8	2037-26-5	QCBLK162755-1	01/15/98	01/15/98	93	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162755-1	01/15/98	01/15/98	87	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162755-1	01/15/98	01/15/98	105	%REC			1

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Project: 550.230

Category: Volatiles 8260 (TCL)
Method: EPA 8260
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID: BOMW34

Quanterra ID : 16646-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK162755-1	01/15/98	01/15/98	108	%REC			1
Trichloroethene	79-01-6	QCBLK162755-1	01/15/98	01/15/98	92	%REC			1
Benzene	71-43-2	QCBLK162755-1	01/15/98	01/15/98	97	%REC			1
Toluene	108-88-3	QCBLK162755-1	01/15/98	01/15/98	89	%REC			1
Chlorobenzene	108-90-7	QCBLK162755-1	01/15/98	01/15/98	97	%REC			1
Toluene-d8	2037-26-5	QCBLK162755-1	01/15/98	01/15/98	95	%REC			1
Bromofluorobenzene	460-00-4	QCBLK162755-1	01/15/98	01/15/98	88	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK162755-1	01/15/98	01/15/98	105	%REC			1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOMW34

Lab Name: QUANTERRA MO Contract: 550.230

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02178

Matrix: (soil/water) WATER Lab Sample ID: 16646-001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: ESMP0578

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. _____ Date Analyzed: 01/15/98

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	17	JB
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	44	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Chlorodibromomethane	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.

BOMW34

Lab Name: QUANTERRA MO Contract: 550.230

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02178

Matrix: (soil/water) WATER Lab Sample ID: 16646-001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: ESMP0578

Level: (low/med) LOW Date Received: 01/08/98

% Moisture: not dec. _____ Date Analyzed: 01/15/98

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1066-40-6	Silanol, trimethyl-	4.125	17	NJ
2.				
3.				
4.				
5.				
6.				
7.				
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16.				
17.				
18.				
19.				
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22.				
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28.				
29.				
30.				

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Project: 550.230

Category: pH EPA 150.1
Method: EPA 150.1
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMW34	16646-001	pH	PH	QCBLK162424-1	01/14/98	01/14/98	7.10	PH			1
BOMW34	16646-0010UP	pH	PH	QCBLK162424-1	01/14/98	01/14/98	7.08	PH			1
NA	QCBLK162424-1	pH	PH	QCBLK162424-1	01/14/98	01/14/98	4.61	PH			1

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Project: 550.230

Category: Sulfate
Method: EPA 375.4
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMW34	16646-001	Sulfate	14808-79-8	QCBLK163403-1	01/26/98	01/26/98	30.1	MG/L		5.00	1
BOMW34	16646-001DUP	Sulfate	14808-79-8	QCBLK163403-1	01/26/98	01/26/98	30.4	MG/L		5.00	1
BOMW34	16646-001MS	Sulfate	14808-79-8	QCBLK163403-1	01/26/98	01/26/98	83	%REC			1
NA	QCBLK163403-1	Sulfate	14808-79-8	QCBLK163403-1	01/26/98	01/26/98	5.00	MG/L	U	5.00	1
NA	QCLCS163403-1	Sulfate	14808-79-8	QCBLK163403-1	01/26/98	01/26/98	96	%REC			1

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Project: 550.230

Category: TDS
Method: EPA 160.1
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMW34	16646-001	Total Dissolved	TDS	QCBLK162314-1	01/13/98	01/13/98	116	MG/L		5.00	1
BOMW34	16646-001DUP	Total Dissolved	TDS	QCBLK162314-1	01/13/98	01/13/98	127	MG/L		5.00	1
NA	QCBLK162314-1	Total Dissolved	TDS	QCBLK162314-1	01/13/98	01/13/98	5.00	MG/L	U	5.00	1
NA	QCLCS162314-1	Total Dissolved	TDS	QCBLK162314-1	01/13/98	01/13/98	97	%REC			1

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Project: 550.230

Category: Total Residual Chlorine
Method: EPA 330.3
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOMW34	16646-001	Residual Chlori	7782-50-5a	QCBLK162422-1	01/14/98	01/14/98	0.16	MG/L		0.10	1
BOMW34	16646-001DUP	Residual Chlori	7782-50-5a	QCBLK162422-1	01/14/98	01/14/98	0.14	MG/L		0.10	1
NA	QCBLK162422-1	Residual Chlori	7782-50-5a	QCBLK162422-1	01/14/98	01/14/98	0.10	MG/L	U	0.10	1
NA	QCLCS162422-1	Residual Chlori	7782-50-5a	QCBLK162422-1	01/14/98	01/14/98	103	%REC			1

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Project: 550.230

Category: Total Suspended Solids (160.2)
Method: EPA 160.2
Matrix: LIQUID

Sample Date : 01/08/98
Receipt Date : 01/08/98
Report Date : 01/28/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
B0MW34	16646-001	Total Suspended	TSS	QCBLK162313-1	01/13/98	01/13/98	1.00	MG/L	U	1.00	1
B0MW34	16646-001DUP	Total Suspended	TSS	QCBLK162313-1	01/13/98	01/13/98	1.00	MG/L	U	1.00	1
NA	QCBLK162313-1	Total Suspended	TSS	QCBLK162313-1	01/13/98	01/13/98	1.00	MG/L	U	1.00	1
NA	QCLCS162313-1	Total Suspended	TSS	QCBLK162313-1	01/13/98	01/13/98	99	%REC			1