W02219

Quanterra
Environmental Services

0049193

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CASE NARRATIVE

FEB 1998 RECEIVED Data Log In

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

February 19, 1998

Attention: Joan Kessner

MAY 1998 RECEIVED EDMC

Project Number	:	550.261
Date Received by Lab	:	January 30, 1998
Number of Samples	:	One (1)
Sample Type	:	Other Liquid
SDG Number	:	W02219
Data Deliverable	:	Summary

I. Introduction

On January 30, 1998, one (1) Other liquid 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
16833-001	B0N0L3	80200401	Other Liquid	30-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

Flashpoint by EPA Method 1010, pH by EPA Method 9045, TCLP Extraction by EPA Method 1311 followed by TCLP Metals by EPA Method 6010/7470, Semivolatiles by EPA Method 8270, and Volatiles by EPA Method 8260.

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate were performed per the protocol for each analyte in this SDG. Flashpoint and pH 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.

TCLP Metals
Both the ICP and Mercury digestions were prepped 25 mls to 100 mls for all samples including the extraction blank due to limited sample volume.

The recoveries of the matrix spike and the matrix spike duplicate for the following list of elements were not within the 80%-120% range, therefore all associated data was flagged with a "N".

	% REC MS	% REC MSD
Mercury	70.8	55.0
Silver	59.0	60.9
Selenium	122	123

After the Mercury digestion, samples 16833-001, 16833-001S and 16833-001SD formed a immiscible gummy substance. Due do this change in matrix the samples required filtering before analysis.

Semivolatiles

The sample was analyzed as a waste dilution, due to the difficult matrix. It was diluted in Acetone instead of the usual Methylene Chloride. It was diluted again at the instrument, ten fold to analyze it. Surrogate and spike compounds had recoveries outside limits due to the matrix of the sample.

Volatiles 8260

Toluene-d8 was slightly above the control limit of 120% recovery in the sample -001MSD with a recovery of 122%. The sample recovered this surrogate at 114%, the MS at 117% and the dilution at 120%. Since the results all fall within 8% of each other the data is considered reproducible and no re-analysis was done. See nonconformance # 3969.

The sample was initially run with a 5000x dilution due to its appearance. Acetone was above the calibration range. The sample was re-run with a 50000x dilution. Both sets of data are included.

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:

Robert E. White

Robert E. White
Project Manager

LOG #: 3969

LABORATORY NONCONFORMANCE MEMO (NCM)

Quanterra Incorporated

Project ID/Client: 550.261 / Hanford

NCM Initiated by/Date: [illegible] 2/9/98 Project Manager: Bob White

Sample Numbers/QC batch or lot numbers: 16833-001, 001MS & 001MSD

Tests: VOA

Analytical Area (check appropriate area):

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

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): _____

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

Client's name and response: _____

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

Project manager (signature and date): _____

000005

QUANTERRA LABORATORY NONCONFORMANCE MEMO

LOG #: 3969

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

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

The sample 16833-001DL had surrogate Recovery of 120 just inside the QC limits but the MSD had % recovery of 122 for toluene-d8 outside QC limit. Since the recoveries of the surrogate demonstrated consistancy for all of the recoveries of toluene-d8 120/117% 122* for the sample & ms/msd respectively no reanalysis for the MSD was done.

Corrective Actions (Short Term) Author's initials and date: 2/9/98

NONE

Corrective Actions to Prevent Reoccurrence (Long Term)

NONE AS IS

Corrective Action approved by (Supervisor/Group Leader) and date: 2/9/98

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 Wurster Date: 2/9/98

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 Wurster Date: 2/9/98

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

000006

WO 2219

Quanterra February 03, 1998 05:13 pm
Account: 10722 Project: 550.261 Quanterra-Richland QAS No. 550.261 Rev. 0
Master Sample Login: 16833

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: Sue Mison 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.
16833-001	BONOL3	Liquid	28-JAN-98 08:22	30-JAN-98 14:45	06-FEB-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80200401								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
3	VI - Vial-40ml	VOA/8260/Q4	S	COLD	05-FEB-98	11-FEB-98	109C	(355261:99 355262:98 355263:97)
2	AN - Amber Glass-1L	BNA/8270/Q4	S	COLD	05-FEB-98	11-FEB-98	R16D	(355259:99 355260:98)
1	PN - Plastic-1L	EXTMETAL/TCLP/Q4	S	COLD	05-FEB-98	25-FEB-98	R16D	(355258:99)
1		HG/TCLP/Q4	S	COLD	05-FEB-98	25-FEB-98	R16D	(355258:99)
1		ICAP/TCLP/Q4	S	COLD	05-FEB-98	27-JUL-98	R16D	(355258:99)
1	GN - Glass Jar-500ML	FLPT/1010/Q4	S	COLD	05-FEB-98	27-JUL-98	R16D	(355257:99)
1	PN - Plastic-120ml	PH/9045/Q4	S	COLD	05-FEB-98	29-JAN-98	R16D	(355256:99)

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
16833-001DUP	BONOL3	Liquid	28-JAN-98 08:22	30-JAN-98 14:45	06-FEB-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80200401								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
1	GN - Glass Jar-500ML	FLPT/1010/Q4	S	COLD	05-FEB-98	27-JUL-98	R16D	(355257:99)
1	PN - Plastic-120ml	PH/9045/Q4	S	COLD	05-FEB-98	29-JAN-98	R16D	(355256:99)

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
16833-001MS	BONOL3	Liquid	28-JAN-98 08:22	30-JAN-98 14:45	06-FEB-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80200401								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
3	VI - Vial-40ml	VOA/8260/Q4	S	COLD	05-FEB-98	11-FEB-98	109C	(355261:99 355262:98 355263:97)
2	AN - Amber Glass-1L	BNA/8270/Q4	S	COLD	05-FEB-98	11-FEB-98	R16D	(355259:99 355260:98)
1	PN - Plastic-1L	EXTMETAL/TCLP/Q4	S	COLD	05-FEB-98	25-FEB-98	R16D	(355258:99)
1		HG/TCLP/Q4	S	COLD	05-FEB-98	25-FEB-98	R16D	(355258:99)
1		ICAP/TCLP/Q4	S	COLD	05-FEB-98	27-JUL-98	R16D	(355258:99)

Sample No.	Client ID	C-Matrix	Date: Collected	Received	Due	Shipper	Rad Category	Rad Sample No.
16833-001MSD	BONOL3	Liquid	28-JAN-98 08:22	30-JAN-98 14:45	06-FEB-98	AIRBORNE	1	Screening not Required
RICHLAND I.D. 80200401								

#	Container Type	Analysis	Class	Preservative	Anal. Due Date	Hold Date	Site	(Container Numbers:% Filled)
3	VI - Vial-40ml	VOA/8260/Q4	S	COLD	05-FEB-98	11-FEB-98	109C	(355261:99 355262:98 355263:97)
2	AN - Amber Glass-1L	BNA/8270/Q4	S	COLD	05-FEB-98	11-FEB-98	R16D	(355259:99 355260:98)
1	PN - Plastic-1L	EXTMETAL/TCLP/Q4	S	COLD	05-FEB-98	25-FEB-98	R16D	(355258:99)
1		HG/TCLP/Q4	S	COLD	05-FEB-98	25-FEB-98	R16D	(355258:99)
1		ICAP/TCLP/Q4	S	COLD	05-FEB-98	27-JUL-98	R16D	(355258:99)

3*=Sample has not been rad screened.

[redacted]

Chain of Custody Record

Temp 4°C cust# 14054 14046
ST 10110

Quanterra need QC

QUA-4124 0797

Client: Bechtel	Project Manager: A. Koprina	Date: 2-2-98	Chain of Custody Number: 00411
Address:	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 1 of 1
City / State / Zip Code:	Site Contact:	Lab Contact:	
Project Name: SAF B98-054	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

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

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH
8020401 B0N013	all	[illegible]										

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 2-6-98

QC Requirements (Specify): SDG-W02219

	Date	Time		Date	Time
1. Relinquished By: Heidelberg QES	2-2-98	16:00	1. Received By: [illegible]	2-3-98	8:30
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: Samples Received 1-31-98

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B98-054-01	Page 1 of 1

Collector Bob Fahlberg	**Company Contact** Tom Brown	**Telephone No.** 376-1547	**Project Coordinator** KOERNER, CC
Project Designation 221-U Canyon Legacy Waste - Other Liquid	**Sampling Location** 221-U canyon legacy waste		**SAF No.** B98-054
Ice Chest No.	**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 ~~15 Days~~ 7day TH 1/27/98

POSSIBLE SAMPLE HAZARDS/REMARKS
RAD

Special Handling and/or Storage
cool to 4C

SAMPLE ANALYSIS
80200401 SDG W02219

Preservation	None	None	None	None	Cool 4C	Cool 4C				
Type of Container	P.	P	G	P	sG	sGa*				
No. of Container(s)	1	1	1	1	2	3				
Volume	20ml	125ml	500ml	1000ml	1000ml	40ml				
	Activity Scan	pH (Soil) - 9045	Ignitability - 1010	Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)				
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
B0N0L3	Other Liquid	1-28-98	0822	X	X 100	X 100	X 100	X 2X100	X 3X100	

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

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielsen	1/30/98 1445	Karen Ackenley	1-30-98 1445
			<100 cpm

SPECIAL INSTRUCTIONS
** Close SDG upon receipt of samples.

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	B98-054-01	Page 1 of 1

Collector Bob Fahlberg	**Company Contact** Tom Brown	**Telephone No.** 376-1547	**Project Coordinator** KOERNER, CC	**Data Turnaround** 15 Days
Project Designation 221-U Canyon Legacy Waste - Other Liquid	**Sampling Location** 221-U canyon legacy waste		**SAF No.** B98-054	
Ice Chest No.	**Field Logbook No.** EL 1309-1		**Method of Shipment** Gov Vehicle	
Shipped To Quanterra Incorporated	**Offsite Property No.**		**Bill of Lading/Air Bill No.**	

POSSIBLE SAMPLE HAZARDS/REMARKS
RAD

Special Handling and/or Storage
cool to 4C

Preservation	None	None	None	None	Cool 4C	Cool 4C					
Type of Container	P	P	G	P	aG	aGs*					
No. of Container(s)	1	1	1	1	2	3					
Volume	20ml	125ml	500ml	1000ml	1000ml	40ml					
SAMPLE ANALYSIS	Activity Scan	pH (Soil) - 9045	Ignitability - 1010	Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)					
Sample No. / **Matrix *** / **Sample Date** / **Sample Time**											
B0N0L3 / Other Liquid / 1-28-98 / 0822	X	X	X	X	X	X					
		100	100	100	2X100	3X100					
		1-31	1-31	1-31	1-31	1-31					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
[illegible]	1/30/98 1445	[illegible]	1-30-98 1445
[illegible]	1-30-98 1200		

SPECIAL INSTRUCTIONS
** Close SDG upon receipt of samples.

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

Post-it® Fax Note 7671
To Rich Feldmann
Co./Dept.
Phone #
Fax # 376-8857
Date 1/30-98
From Al Davis
Co.
Phone # 373-9731
Fax #
# of pages ▶ 1

GAMMA-RAY ENERGY ANALYSIS REPORT

Thermo Hanford Inc.
Radiological Counting Facility THI - RCF

Project	221 U Canyon	Lasagny Waste	
Customer ID	B0N0L4	Liquid	
RCF ID	RCF2894		
	Sample time, date	822	1/28/98
	Analysis date		1/30/98

Isotope		Activity pCi/gm	2 s err	Ci/gm
K40	<	1.3e+02		1.3e-10
Co60	<	6.1e+00		6.1e-12
I129	<	4.5e+01		4.5e-11
Cs137	<	5.6e+00		5.6e-12
Eu152	<	2.5e+01		2.5e-11
Eu154	<	1.9e+01		1.9e-11
Eu155	<	2.5e+01		2.5e-11
Th232dau	<	3.2e+01		3.2e-11
U235	<	3.8e+01		3.8e-11
U238	<	9.1e+02		9.1e-10
U238dau	<	1.4e+01		1.4e-11
Np237	<	1.2e+01		1.2e-11
Am241	<	1.8e+01		1.8e-11
Tot Act Gam (pCi/gm)		0.0e+00	Ci/gm	0.0e+00
Y/Sr-90	<	N/R		
Gross Alpha	<	1.3e+00		1.3e-12
Gross Beta	<	3.0e+00		3.0e-12 Reported as 137-Cs Betas.
AEA total	<	N/R		

Total Activity (pCi/gm) 3.0e+00
(Ci/gm) 3.0e-12

Definitions:

All errors reported at 2 standard deviations
A Assigned as residual beta from Gamma/Beta balance.
For soils and natural samples, the following applies:
The analysis of U235 is based on the activity of Pa234m

The analysis of Np237 is based on the activity of Pa233

U238dau is the activity of Pb214 and Bi214, short lived daughter products of U238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.

Th32dau is the activity of Ac228, Pb212, and Tl208, short lived daughter products of 232Th. Equilibrium between parent and daughter products may not exist in disturbed materials.

Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.

N/R means no result or analysis not requested.

Note! 152-Eu is not a 100% Beta emitter.

J L Duff by Cold 1-30-98
Radiological analyst Date

Albert I. Davis 1/30/98
Radiological Manager Date

Post-it® Fax Note 7671 Date 1/30-98 pages ▶ 1
To Rob Fullmer From Al Davis
Co./Dept. Co.
Phone # Phone # 373-9731
Fax # 376-8851 Fax #

GAMMA-RAY ENERGY ANALYSIS REPORT

Thermo Hanford Inc.
Radiological Counting Facility THI - RCF

Project	221 U Canyon	Lagoon Waste	
Customer ID	80N0L4	Liquid	80N0L3
RCF ID	RCF2694		
	Sample time, date	822	1/28/98
	Analysis date		1/30/98

Liquid 1 Liter

Isotope		Activity pCi/gm	2 s err	Ci/gm
K40	<	1.3e+02		1.3e-10
Co60	<	6.1e+00		6.1e-12
I129	<	4.5e+01		4.5e-11
Cs137	<	5.6e+00		5.6e-12
Eu152	<	2.5e+01		2.5e-11
Eu154	<	1.9e+01		1.9e-11
Eu155	<	2.5e+01		2.5e-11
Th232dau	<	3.2e+01		3.2e-11
U235	<	3.8e+01		3.8e-11
U238	<	9.1e+02		9.1e-10
U238dau	<	1.4e+01		1.4e-11
Np237	<	1.2e+01		1.2e-11
Am241	<	1.6e+01		1.6e-11
Tot Act Gam (pCi/gm)		0.0e+00	Ci/gm	0.0e+00
Y/Sr-90	<	N/R		
Gross Alpha	<	1.3e+00		1.3e-12
Gross Beta	<	3.0e+00		3.0e-12
AEA total	<	N/R		

CAT I 2/2/98

< 10K pCi

Reported as 137-Cs Betas. < 100 K pCi

Total Activity (pCi/gm) 3.0e+00 < 2K pCi/g 2/2/98 nd
(Ci/gm) 3.0e-12

Definitions:

All errors reported at 2 standard deviations
A Assigned as residual beta from Gamma/Beta balance.
For soils and natural samples, the following applies:
The analysis of U238 is based on the activity of Pa234m

The analysis of Np237 is based on the activity of Pa233

U238dau is the activity of Pb214 and Bi214, short lived daughter products of U238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.

Th232dau is the activity of Ac228, Pb212, and Tl208, short lived daughter products of 232Th. Equilibrium between parent and daughter products may not exist in disturbed materials.

Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analyses.

N/R means no result or analysis not requested.

Note! 152-Eu is not a 100% Beta emitter.

J L Duff / L Cold 1-30-98
Radiological analyst Date

Albert I. Davis 1/30/98
Albert I. Davis Date
Radiological Manager

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 1-30-98 SG#: W02219

Work Order Number: 802004 SAF #: B98-054 B98-055

Shipping Container ID: SML-55 S Chain of Custody #: B98-054-1 B98-055-01

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: 1-30-98

Telephoned To: _____ On _____ By _____

000013

Quanterra Environmental Services

BWS ~~of~~ SL

014054

Login No.: 16833

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Richland

Date: 2-3-98 Time: 0830

Project No: 550-261

Initiated by: [illegible]

Shipper/No: Airborne

RFA/COC Numbers: 411

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:** _____

Notes: Samples Recv'ed 1-31-98
QAS Rec. 2-3-98. [illegible]

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) [illegible] Date: 2-3-98

Project Management Review: Robert E. White Date: 2-4-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

Quanterra Environmental Services

BW & WP

014046

Login No.: 16833

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Richland

Date: 1-31-98 Time: 0915

Project No: 550.261

Initiated by: [illegible]

Shipper/No: A/B 5999730 811

RFA/COC Numbers: NJ Rich COC B98-054

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) [illegible] Date: 2-2-98

Project Management Review: Robert E. White Date: 2-4-98

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

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

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category : TCLP Metals
Matrix : LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/10/98

Client ID: 80N0L3

Quanterra ID : 16833-001

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	02/04/98	02/05/98	02/05/98	0.0054	MG/L	U	0.0008	0.20	4
Arsenic	EPA 6010	02/04/98	02/05/98	02/05/98	0.32	MG/L	B	1.2	5.0	4
Barium	EPA 6010	02/04/98	02/05/98	02/05/98	0.23	MG/L	B	0.80	100	4
Cadmium	EPA 6010	02/04/98	02/05/98	02/05/98	0.037	MG/L		0.020	1.0	4
Chromium	EPA 6010	02/04/98	02/05/98	02/05/98	0.014	MG/L	B	0.040	5.0	4
Lead	EPA 6010	02/04/98	02/05/98	02/05/98	0.089	MG/L	B	0.40	5.0	4
Selenium	EPA 6010	02/04/98	02/05/98	02/05/98	0.094	MG/L	BN	1.0	1.0	4
Silver	EPA 6010	02/04/98	02/05/98	02/05/98	0.016	MG/L	BN	0.040	5.0	4

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category : TCLP Metals
Matrix : LIQUID

Client ID: BONOL3

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/10/98

Quanterra ID : 16833-001MS

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	02/04/98	02/05/98	02/05/98	71	%REC	N			4
Arsenic	EPA 6010	02/04/98	02/05/98	02/05/98	105	%REC				4
Barium	EPA 6010	02/04/98	02/05/98	02/05/98	104	%REC				4
Cadmium	EPA 6010	02/04/98	02/05/98	02/05/98	98	%REC				4
Chromium	EPA 6010	02/04/98	02/05/98	02/05/98	97	%REC				4
Lead	EPA 6010	02/04/98	02/05/98	02/05/98	95	%REC				4
Selenium	EPA 6010	02/04/98	02/05/98	02/05/98	122	%REC	N			4
Silver	EPA 6010	02/04/98	02/05/98	02/05/98	59	%REC	N			4

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category : TCLP Metals
Matrix : LIQUID

Client ID: BONOL3

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/10/98

Quanterra ID : 16833-001MSD

Analyte	Method	Extract Date	Prep Date	Analyses Date	Result	Units	Qual.	Detection Limit	Regulatory Level	Dilution
Mercury	EPA 7470	02/04/98	02/05/98	02/05/98	55	%REC	N			4
Arsenic	EPA 6010	02/04/98	02/05/98	02/05/98	105	%REC				4
Barium	EPA 6010	02/04/98	02/05/98	02/05/98	105	%REC				4
Cadmium	EPA 6010	02/04/98	02/05/98	02/05/98	96	%REC				4
Chromium	EPA 6010	02/04/98	02/05/98	02/05/98	97	%REC				4
Lead	EPA 6010	02/04/98	02/05/98	02/05/98	93	%REC				4
Selenium	EPA 6010	02/04/98	02/05/98	02/05/98	123	%REC	N			4
Silver	EPA 6010	02/04/98	02/05/98	02/05/98	61	%REC	N			4

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: QUANTERRA_MO_____ Contract: 550.261___

Lab Code: ITMO__ Case No.: _____ SAS No.: _____ SDG No.: W02219_____

SOW No.: SW846

EPA Sample No.	Lab Sample ID
B0N0L3	P16833-001
B0N0L3SD	P16833-001SD
B0N0L3S	P16833-001S
PBT164339	PBT164339

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: _____

COVER PAGE - IN TCLP

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0N0L3

Lab Name: QUANTERRA_MO Contract: 550.261

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02219

Matrix (soil/water): WATER Lab Sample ID: P16833-001

Level (low/med): LOW Date Received: 01/30/98

% 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	315	B		P
7440-39-3	Barium	229	B		P
7440-43-9	Cadmium	37.3			P
7440-47-3	Chromium	13.9	B		P
7439-92-1	Lead	88.8	B		P
7439-97-6	Mercury	5.4		N	CV
7782-49-2	Selenium	94.0	B	N	P
7440-22-4	Silver	15.5	B	N	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

TCLP

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Semivolatile
Method: EPA 8270
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/19/98

Client ID: BONOL3

Quanterra ID : 16833-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
bis(2-Chloroethyl)Ether	111-44-4	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2-Chlorophenol	95-57-8	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
1,3-Dichlorobenzene	541-73-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
1,4-Dichlorobenzene	106-46-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
1,2-Dichlorobenzene	95-50-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2-Methylphenol	95-48-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2,2'-oxybis (1-Chloropropane)	108-60-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
4-Methylphenol	106-44-5	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
N-nitroso-di-n-propylamine	621-64-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Hexachloroethane	67-72-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Nitrobenzene	98-95-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Isophorone	78-59-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2-Nitrophenol	88-75-5	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2,4-Dimethylphenol	105-67-9	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
bis(2-Chloroethoxy)Methane	111-91-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2,4-Dichlorophenol	120-83-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
1,2,4-Trichlorobenzene	120-82-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Naphthalene	91-20-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
4-Chloroaniline	106-47-8	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Hexachlorobutadiene	87-68-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
4-Chloro-3-Methylphenol	59-50-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2-Methylnaphthalene	91-57-6	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Hexachlorocyclopentadiene	77-47-4	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
2,4,6-Trichlorophenol	88-06-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2,4,5-Trichlorophenol	95-95-4	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2-Chloronaphthalene	91-58-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2-Nitroaniline	88-74-4	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
DimethylPhthalate	131-11-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Acenaphthylene	208-96-8	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2,6-Dinitrotoluene	606-20-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
3-Nitroaniline	99-09-2	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
Acenaphthene	83-32-9	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2,4-Dinitrophenol	51-28-5	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
4-Nitrophenol	100-02-7	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
Dibenzofuran	132-64-9	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
2,4-Dinitrotoluene	121-14-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Diethylphthalate	84-66-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
4-Chlorophenyl-PhenylEther	7005-72-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Fluorene	86-73-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
4-Nitroaniline	100-01-6	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
4,6-Dinitro-2-Methylphenol	534-52-1	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
n-Nitrosodiphenylamine	86-30-6	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
4-Bromophenyl-Phenyl Ether	101-55-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Hexachlorobenzene	118-74-1	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Pentachlorophenol	87-86-5	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
Phenanthrene	85-01-8	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Anthracene	120-12-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Carbazole	86-74-8	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Di-N-Butylphthalate	84-74-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Fluoranthene	206-44-0	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Pyrene	129-00-0	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
ButylBenzylPhthalate	85-68-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
3,3'-Dichlorobenzidine	91-94-1	QCBLK164289-1	02/04/98	02/04/98	4900000	UG/L	U	4900000	10
Benzo(a)Anthracene	56-55-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Chrysene	218-01-9	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
bis(2-Ethylhexyl)Phthalate	117-81-7	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
di-N-OctylPhthalate	117-84-0	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Benzo(b)Fluoranthene	205-99-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Benzo(k)Fluoranthene	207-08-9	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Benzo(a)Pyrene	50-32-8	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Semivolatile
Method: EPA 8270
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/19/98

Client ID: BONOL3

Quanterra ID : 16833-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Indeno(1,2,3-CD)Pyrene	193-39-5	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Dibenz(a,h)Anthracene	53-70-3	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Benzo(g,h,i)Perylene	191-24-2	QCBLK164289-1	02/04/98	02/04/98	980000	UG/L	U	980000	10
Aldol Condensation	TIC-4	QCBLK164289-1	02/04/98	02/04/98	1200000	UG/L	BJN		10
Unknown-1	TIC-32	QCBLK164289-1	02/04/98	02/04/98	210000	UG/L	J		10
Unknown-2	TIC-33	QCBLK164289-1	02/04/98	02/04/98	440000	UG/L	J		10
Nitrobenzene-d5	4165-60-0	QCBLK164289-1	02/04/98	02/04/98	114	%REC			10
2-Fluorobiphenyl	321-60-8	QCBLK164289-1	02/04/98	02/04/98	146	%REC	*		10
Terphenyl-d14	1718-51-0	QCBLK164289-1	02/04/98	02/04/98	223	%REC	*		10
Phenol-d5	4165-62-2	QCBLK164289-1	02/04/98	02/04/98	67	%REC			10
2-Fluorophenol	367-12-4	QCBLK164289-1	02/04/98	02/04/98	57	%REC			10
2,4,6-Tribromophenol	118-79-6	QCBLK164289-1	02/04/98	02/04/98	57	%REC			10

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Semivolatile
Method: EPA 8270
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/19/98

Client ID: BOW0L3

Quanterra ID : 16833-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK164289-1	02/04/98	02/04/98	67	%REC			10
2-Chlorophenol	95-57-8	QCBLK164289-1	02/04/98	02/04/98	89	%REC			10
1,4-Dichlorobenzene	106-46-7	QCBLK164289-1	02/04/98	02/04/98	82	%REC			10
N-nitroso-di-n-propylamine	621-64-7	QCBLK164289-1	02/04/98	02/04/98	0	%REC	*		10
1,2,4-Trichlorobenzene	120-82-1	QCBLK164289-1	02/04/98	02/04/98	77	%REC			10
4-Chloro-3-Methylphenol	59-50-7	QCBLK164289-1	02/04/98	02/04/98	43	%REC			10
Acenaphthene	83-32-9	QCBLK164289-1	02/04/98	02/04/98	166	%REC	*		10
4-Nitrophenol	100-02-7	QCBLK164289-1	02/04/98	02/04/98	60	%REC			10
2,4-Dinitrotoluene	121-14-2	QCBLK164289-1	02/04/98	02/04/98	108	%REC			10
Pentachlorophenol	87-86-5	QCBLK164289-1	02/04/98	02/04/98	107	%REC			10
Pyrene	129-00-0	QCBLK164289-1	02/04/98	02/04/98	257	%REC	*		10
Nitrobenzene-d5	4165-60-0	QCBLK164289-1	02/04/98	02/04/98	116	%REC			10
2-Fluorobiphenyl	321-60-8	QCBLK164289-1	02/04/98	02/04/98	144	%REC	*		10
Terphenyl-d14	1718-51-0	QCBLK164289-1	02/04/98	02/04/98	226	%REC	*		10
Phenol-d5	4165-62-2	QCBLK164289-1	02/04/98	02/04/98	68	%REC			10
2-Fluorophenol	367-12-4	QCBLK164289-1	02/04/98	02/04/98	59	%REC			10
2,4,6-Tribromophenol	118-79-6	QCBLK164289-1	02/04/98	02/04/98	61	%REC			10

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Semivolatile
Method: EPA 8270
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/19/98

Client ID: BONOL3

Quanterra ID : 16833-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Phenol	108-95-2	QCBLK164289-1	02/04/98	02/04/98	76	%REC			10
2-Chlorophenol	95-57-8	QCBLK164289-1	02/04/98	02/04/98	96	%REC			10
1,4-Dichlorobenzene	106-46-7	QCBLK164289-1	02/04/98	02/04/98	94	%REC			10
N-nitroso-di-n-propylamine	621-64-7	QCBLK164289-1	02/04/98	02/04/98	0	%REC	*		10
1,2,4-Trichlorobenzene	120-82-1	QCBLK164289-1	02/04/98	02/04/98	87	%REC			10
4-Chloro-3-Methylphenol	59-50-7	QCBLK164289-1	02/04/98	02/04/98	47	%REC			10
Acenaphthene	83-32-9	QCBLK164289-1	02/04/98	02/04/98	179	%REC	*		10
4-Nitrophenol	100-02-7	QCBLK164289-1	02/04/98	02/04/98	70	%REC			10
2,4-Dinitrotoluene	121-14-2	QCBLK164289-1	02/04/98	02/04/98	121	%REC			10
Pentachlorophenol	87-86-5	QCBLK164289-1	02/04/98	02/04/98	109	%REC			10
Pyrene	129-00-0	QCBLK164289-1	02/04/98	02/04/98	268	%REC	*		10
Nitrobenzene-d5	4165-60-0	QCBLK164289-1	02/04/98	02/04/98	119	%REC			10
2-Fluorobiphenyl	321-60-8	QCBLK164289-1	02/04/98	02/04/98	153	%REC	*		10
Terphenyl-d14	1718-51-0	QCBLK164289-1	02/04/98	02/04/98	229	%REC	*		10
Phenol-d5	4165-62-2	QCBLK164289-1	02/04/98	02/04/98	73	%REC			10
2-Fluorophenol	367-12-4	QCBLK164289-1	02/04/98	02/04/98	57	%REC			10
2,4,6-Tribromophenol	118-79-6	QCBLK164289-1	02/04/98	02/04/98	65	%REC			10

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0N0L3

Lab Name: QUANTERRA MO Contract: 550-261

Lab Code: ITMO Case No.: S83301 SAS No.: SDG No.: W02219

Matrix: (soil/water) WASTE Lab Sample ID: 16833-001

Sample wt/vol: 1.0187 (g/mL) ML Lab File ID: H5494

Level: (low/med) LOW Date Received: 01/30/98

% Moisture: decanted: (Y/N) Date Extracted: 02/04/98

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	980000	U
111-44-4	bis(2-Chloroethyl)Ether	980000	U
95-57-8	2-Chlorophenol	980000	U
541-73-1	1,3-Dichlorobenzene	980000	U
106-46-7	1,4-Dichlorobenzene	980000	U
95-50-1	1,2-Dichlorobenzene	980000	U
95-48-7	2-Methylphenol	980000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	980000	U
106-44-5	4-Methylphenol	980000	U
621-64-7	N-Nitroso-Di-n-Propylamine	980000	U
67-72-1	Hexachloroethane	980000	U
98-95-3	Nitrobenzene	980000	U
78-59-1	Isophorone	980000	U
88-75-5	2-Nitrophenol	980000	U
105-67-9	2,4-Dimethylphenol	980000	U
111-91-1	bis(2-Chloroethoxy)Methane	980000	U
120-83-2	2,4-Dichlorophenol	980000	U
120-82-1	1,2,4-Trichlorobenzene	980000	U
91-20-3	Naphthalene	980000	U
106-47-8	4-Chloroaniline	980000	U
87-68-3	Hexachlorobutadiene	980000	U
59-50-7	4-Chloro-3-Methylphenol	980000	U
91-57-6	2-Methylnaphthalene	980000	U
77-47-4	Hexachlorocyclopentadiene	4900000	U
88-06-2	2,4,6-Trichlorophenol	980000	U
95-95-4	2,4,5-Trichlorophenol	980000	U
91-58-7	2-Chloronaphthalene	980000	U
88-74-4	2-Nitroaniline	4900000	U
131-11-3	Dimethyl Phthalate	980000	U
208-96-8	Acenaphthylene	980000	U
606-20-2	2,6-Dinitrotoluene	980000	U
99-09-2	3-Nitroaniline	4900000	U
83-32-9	Acenaphthene	980000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0N0L3

Lab Name: QUANTERRA MO Contract: 550-261

Lab Code: ITMO Case No.: S83301 SAS No.: SDG No.: W02219

Matrix: (soil/water) WASTE Lab Sample ID: 16833-001

Sample wt/vol: 1.0187 (g/mL) ML Lab File ID: H5494

Level: (low/med) LOW Date Received: 01/30/98

% Moisture: decanted: (Y/N) Date Extracted: 02/04/98

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	4900000	U
100-02-7	4-Nitrophenol	4900000	U
132-64-9	Dibenzofuran	980000	U
121-14-2	2,4-Dinitrotoluene	980000	U
84-66-2	Diethylphthalate	980000	U
7005-72-3	4-Chlorophenyl-phenylether	980000	U
86-73-7	Fluorene	980000	U
100-01-6	4-Nitroaniline	4900000	U
534-52-1	4,6-Dinitro-2-Methylphenol	4900000	U
86-30-6	N-Nitrosodiphenylamine (1)	980000	U
101-55-3	4-Bromophenyl-phenylether	980000	U
118-74-1	Hexachlorobenzene	980000	U
87-86-5	Pentachlorophenol	4900000	U
85-01-8	Phenanthrene	980000	U
120-12-7	Anthracene	980000	U
86-74-8	Carbazole	980000	U
84-74-2	Di-n-Butylphthalate	980000	U
206-44-0	Fluoranthene	980000	U
129-00-0	Pyrene	980000	U
85-68-7	Butylbenzylphthalate	980000	U
91-94-1	3,3'-Dichlorobenzidine	4900000	U
56-55-3	Benzo(a)Anthracene	980000	U
218-01-9	Chrysene	980000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	980000	U
117-84-0	Di-n-Octyl Phthalate	980000	U
205-99-2	Benzo(b)Fluoranthene	980000	U
207-08-9	Benzo(k)Fluoranthene	980000	U
50-32-8	Benzo(a)Pyrene	980000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	980000	U
53-70-3	Dibenz(a,h)Anthracene	980000	U
191-24-2	Benzo(g,h,i)Perylene	980000	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0N0L3

Lab Name: QUANTERRA MO Contract: 550-261

Lab Code: ITMO Case No.: S83301 SAS No.: SDG No.: W02219

Matrix: (soil/water) WASTE Lab Sample ID: 16833-001

Sample wt/vol: 1.0187 (g/mL) ML Lab File ID: H5494

Level: (low/med) LOW Date Received: 01/30/98

% Moisture: decanted: (Y/N) Date Extracted: 02/04/98

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 0	Aldol Condensation.	4.04	1200000	ABJN
2.	UNKNOWN	12.20	210000	J
3.	UNKNOWN	18.62	440000	J

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Volatiles 8260
Method: EPA 8260
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/10/98

Client ID: BONOL3

Quanterra ID : 16833-001

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK164504-1	02/04/98	02/04/98	50000	UG/L	U	50000	5000
Bromomethane	74-83-9	QCBLK164504-1	02/04/98	02/04/98	50000	UG/L	U	50000	5000
Vinyl Chloride	75-01-4	QCBLK164504-1	02/04/98	02/04/98	50000	UG/L	U	50000	5000
Chloroethane	75-00-3	QCBLK164504-1	02/04/98	02/04/98	50000	UG/L	U	50000	5000
Methylene Chloride	75-09-2	QCBLK164504-1	02/04/98	02/04/98	23000	UG/L	BJ	25000	5000
Acetone	67-64-1	QCBLK164504-1	02/04/98	02/04/98	6200000	UG/L	BE	100000	5000
Carbon Disulfide	75-15-0	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
1,1-Dichloroethene	75-35-4	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
1,1-Dichloroethane	75-34-3	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
1,2-Dichloroethene (total)	540-59-0	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Chloroform	67-66-3	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
1,2-Dichloroethane	107-06-2	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
2-Butanone (MEK)	78-93-3	QCBLK164504-1	02/04/98	02/04/98	43000	UG/L	BJ	100000	5000
1,1,1-Trichloroethane	71-55-6	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Carbon Tetrachloride	56-23-5	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Bromodichloromethane	75-27-4	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
1,2-Dichloropropane	78-87-5	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
cis-1,3-Dichloropropene	10061-01-5	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Trichloroethene	79-01-6	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Dibromochloromethane	124-48-1	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
1,1,2-Trichloroethane	79-00-5	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Benzene	71-43-2	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
trans-1,3-Dichloropropene	10061-02-6	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Bromoform	75-25-2	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK164504-1	02/04/98	02/04/98	100000	UG/L	U	100000	5000
2-Hexanone	591-78-6	QCBLK164504-1	02/04/98	02/04/98	100000	UG/L	U	100000	5000
Tetrachloroethene	127-18-4	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Toluene	108-88-3	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Chlorobenzene	108-90-7	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
EthylBenzene	100-41-4	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Styrene	100-42-5	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Xylene (total)	1330-20-7	QCBLK164504-1	02/04/98	02/04/98	25000	UG/L	U	25000	5000
Unknown-1	TIC-32	QCBLK164504-1	02/04/98	02/04/98	181742	UG/L	J		5000
Unknown Alkane-1	TIC-42	QCBLK164504-1	02/04/98	02/04/98	46323	UG/L	J		5000
Unknown-2	TIC-33	QCBLK164504-1	02/04/98	02/04/98	179704	UG/L	J		5000
Unknown Alkane-2	TIC-43	QCBLK164504-1	02/04/98	02/04/98	150245	UG/L	J		5000
Unknown Alkane-3	TIC-142	QCBLK164504-1	02/04/98	02/04/98	297450	UG/L	J		5000
Tridecane	629-50-5	QCBLK164504-1	02/04/98	02/04/98	697815	UG/L	JN		5000
Unknown Dodecane	TIC-8866	QCBLK164504-1	02/04/98	02/04/98	277792	UG/L	J		5000
Tetradecane	629-59-4	QCBLK164504-1	02/04/98	02/04/98	220768	UG/L	JN		5000
Unknown-3	TIC-34	QCBLK164504-1	02/04/98	02/04/98	34374	UG/L	J		5000
Toluene-d8	2037-26-5	QCBLK164504-1	02/04/98	02/04/98	114	%REC			5000
Bromofluorobenzene	460-00-4	QCBLK164504-1	02/04/98	02/04/98	103	%REC			5000
Dibromofluoromethane	1868-53-7	QCBLK164504-1	02/04/98	02/04/98	92	%REC			5000

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Volatiles 8260
Method: EPA 8260
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/10/98

Client ID: BONOL3

Quanterra ID : 16833-001DL1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK164504-1	02/05/98	02/05/98	500000	UG/L	U	500000	50000
Bromomethane	74-83-9	QCBLK164504-1	02/05/98	02/05/98	500000	UG/L	U	500000	50000
Vinyl Chloride	75-01-4	QCBLK164504-1	02/05/98	02/05/98	500000	UG/L	U	500000	50000
Chloroethane	75-00-3	QCBLK164504-1	02/05/98	02/05/98	500000	UG/L	U	500000	50000
Methylene Chloride	75-09-2	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Acetone	67-64-1	QCBLK164504-1	02/05/98	02/05/98	9300000	UG/L	BD	1000000	50000
Carbon Disulfide	75-15-0	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,1-Dichloroethene	75-35-4	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,1-Dichloroethane	75-34-3	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,2-Dichloroethene (total)	540-59-0	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Chloroform	67-66-3	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,2-Dichloroethane	107-06-2	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
2-Butanone (MEK)	78-93-3	QCBLK164504-1	02/05/98	02/05/98	1000000	UG/L	U	1000000	50000
1,1,1-Trichloroethane	71-55-6	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Carbon Tetrachloride	56-23-5	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Bromodichloromethane	75-27-4	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,2-Dichloropropane	78-87-5	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
cis-1,3-Dichloropropene	10061-01-5	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Trichloroethene	79-01-6	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Dibromochloromethane	124-48-1	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,1,2-Trichloroethane	79-00-5	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Benzene	71-43-2	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
trans-1,3-Dichloropropene	10061-02-6	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Bromoform	75-25-2	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK164504-1	02/05/98	02/05/98	1000000	UG/L	U	1000000	50000
2-Hexanone	591-78-6	QCBLK164504-1	02/05/98	02/05/98	1000000	UG/L	U	1000000	50000
Tetrachloroethene	127-18-4	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Toluene	108-88-3	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Chlorobenzene	108-90-7	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
EthylBenzene	100-41-4	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Styrene	100-42-5	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
Xylene (total)	1330-20-7	QCBLK164504-1	02/05/98	02/05/98	250000	UG/L	U	250000	50000
1,2,4-Trichlorobenzene	120-82-1	QCBLK164504-1	02/05/98	02/05/98	295269	UG/L	DJN		50000
Toluene-d8	2037-26-5	QCBLK164504-1	02/05/98	02/05/98	120	%REC			50000
Bromofluorobenzene	460-00-4	QCBLK164504-1	02/05/98	02/05/98	102	%REC			50000
Dibromofluoromethane	1868-53-7	QCBLK164504-1	02/05/98	02/05/98	97	%REC			50000

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Volatiles 8260
Method: EPA 8260
Matrix: LIQUID

Client ID: BONOL3

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/10/98

Quanterra ID : 16833-001MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK164504-1	02/05/98	02/05/98	110	%REC			50000
Trichloroethene	79-01-6	QCBLK164504-1	02/05/98	02/05/98	99	%REC			50000
Benzene	71-43-2	QCBLK164504-1	02/05/98	02/05/98	103	%REC			50000
Toluene	108-88-3	QCBLK164504-1	02/05/98	02/05/98	98	%REC			50000
Chlorobenzene	108-90-7	QCBLK164504-1	02/05/98	02/05/98	103	%REC			50000
Toluene-d8	2037-26-5	QCBLK164504-1	02/05/98	02/05/98	117	%REC			50000
Bromofluorobenzene	460-00-4	QCBLK164504-1	02/05/98	02/05/98	102	%REC			50000
Dibromofluoromethane	1868-53-7	QCBLK164504-1	02/05/98	02/05/98	95	%REC			50000

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Volatiles 8260
Method: EPA 8260
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/10/98

Client ID: BOWOL3

Quanterra ID : 16833-001MSD

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
1,1-Dichloroethene	75-35-4	QCBLK164504-1	02/05/98	02/05/98	109	%REC			50000
Trichloroethene	79-01-6	QCBLK164504-1	02/05/98	02/05/98	99	%REC			50000
Benzene	71-43-2	QCBLK164504-1	02/05/98	02/05/98	104	%REC			50000
Toluene	108-88-3	QCBLK164504-1	02/05/98	02/05/98	99	%REC			50000
Chlorobenzene	108-90-7	QCBLK164504-1	02/05/98	02/05/98	103	%REC			50000
Toluene-d8	2037-26-5	QCBLK164504-1	02/05/98	02/05/98	122	%REC	*		50000
Bromofluorobenzene	460-00-4	QCBLK164504-1	02/05/98	02/05/98	106	%REC			50000
Dibromofluoromethane	1868-53-7	QCBLK164504-1	02/05/98	02/05/98	99	%REC			50000

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Volatiles 8260
Method: EPA 8260
Matrix: LIQUID

Sample Date : NA
Receipt Date : NA
Report Date : 02/10/98

Client ID: BONOL3

Quanterra ID : QCBLK164504-1

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Chloromethane	74-87-3	QCBLK164504-1	02/05/98	02/05/98	10	UG/L	U	10	1
Bromomethane	74-83-9	QCBLK164504-1	02/05/98	02/05/98	10	UG/L	U	10	1
Vinyl Chloride	75-01-4	QCBLK164504-1	02/05/98	02/05/98	10	UG/L	U	10	1
Chloroethane	75-00-3	QCBLK164504-1	02/05/98	02/05/98	10	UG/L	U	10	1
Methylene Chloride	75-09-2	QCBLK164504-1	02/05/98	02/05/98	6	UG/L		5	1
Acetone	67-64-1	QCBLK164504-1	02/05/98	02/05/98	10	UG/L	J	20	1
Carbon Disulfide	75-15-0	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
1,1-Dichloroethene	75-35-4	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
1,1-Dichloroethane	75-34-3	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
1,2-Dichloroethene (total)	540-59-0	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Chloroform	67-66-3	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
1,2-Dichloroethane	107-06-2	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
2-Butanone (MEK)	78-93-3	QCBLK164504-1	02/05/98	02/05/98	20	UG/L	U	20	1
1,1,1-Trichloroethane	71-55-6	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Carbon Tetrachloride	56-23-5	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Bromodichloromethane	75-27-4	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
1,2-Dichloropropane	78-87-5	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
cis-1,3-Dichloropropene	10061-01-5	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Trichloroethene	79-01-6	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Dibromochloromethane	124-48-1	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
1,1,2-Trichloroethane	79-00-5	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Benzene	71-43-2	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
trans-1,3-Dichloropropene	10061-02-6	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Bromoform	75-25-2	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
4-Methyl-2-Pentanone (MIBK)	108-10-1	QCBLK164504-1	02/05/98	02/05/98	20	UG/L	U	20	1
2-Hexanone	591-78-6	QCBLK164504-1	02/05/98	02/05/98	20	UG/L	U	20	1
Tetrachloroethene	127-18-4	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
1,1,2,2-Tetrachloroethane	79-34-5	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Toluene	108-88-3	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Chlorobenzene	108-90-7	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
EthylBenzene	100-41-4	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Styrene	100-42-5	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Xylene (total)	1330-20-7	QCBLK164504-1	02/05/98	02/05/98	5	UG/L	U	5	1
Unknown-1	TIC-32	QCBLK164504-1	02/05/98	02/05/98	7	UG/L	J		1
Toluene-d8	2037-26-5	QCBLK164504-1	02/05/98	02/05/98	118	%REC			1
Bromofluorobenzene	460-00-4	QCBLK164504-1	02/05/98	02/05/98	103	%REC			1
Dibromofluoromethane	1868-53-7	QCBLK164504-1	02/05/98	02/05/98	109	%REC			1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0N0L3

Lab Name: QUANTERRA MO Contract: 550.261

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02219

Matrix: (soil/water) WATER Lab Sample ID: 16833-001 5000X

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP1249

Level: (low/med) LOW Date Received: 01/30/98

% Moisture: not dec. _____ Date Analyzed: 02/04/98

Column: (pack/cap) CAP Dilution Factor: 5000.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	50000	U
74-83-9	Bromomethane	50000	U
75-01-4	Vinyl Chloride	50000	U
75-00-3	Chloroethane	50000	U
75-09-2	Methylene Chloride	23000	JB
67-64-1	Acetone	6200000	EB
75-15-0	Carbon Disulfide	25000	U
75-35-4	1,1-Dichloroethene	25000	U
75-34-3	1,1-Dichloroethane	25000	U
540-59-0	1,2-Dichloroethene (total)	25000	U
67-66-3	Chloroform	25000	U
107-06-2	1,2-Dichloroethane	25000	U
78-93-3	2-Butanone	43000	JB
71-55-6	1,1,1-Trichloroethane	25000	U
56-23-5	Carbon Tetrachloride	25000	U
75-27-4	Bromodichloromethane	25000	U
78-87-5	1,2-Dichloropropane	25000	U
10061-01-5	cis-1,3-Dichloropropene	25000	U
79-01-6	Trichloroethene	25000	U
124-48-1	Chlorodibromomethane	25000	U
79-00-5	1,1,2-Trichloroethane	25000	U
71-43-2	Benzene	25000	U
10061-02-6	trans-1,3-Dichloropropene	25000	U
75-25-2	Bromoform	25000	U
108-10-1	4-Methyl-2-pentanone	100000	U
591-78-6	2-Hexanone	100000	U
127-18-4	Tetrachloroethene	25000	U
108-88-3	Toluene	25000	U
79-34-5	1,1,2,2-Tetrachloroethane	25000	U
108-90-7	Chlorobenzene	25000	U
100-41-4	Ethylbenzene	25000	U
100-42-5	Styrene	25000	U
1330-20-7	Xylenes (total)	25000	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0N0L3

Lab Name: QUANTERRA MO Contract: 550.261

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02219

Matrix: (soil/water) WATER Lab Sample ID: 16833-001 5000X

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: BSMP1249

Level: (low/med) LOW Date Received: 01/30/98

% Moisture: not dec. _____ Date Analyzed: 02/04/98

Column: (pack/cap) CAP Dilution Factor: 5000.0

Number TICs found: 9

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	22.030	181742	J
2.	Unknown Alkane	22.605	46323	J
3.	Unknown	23.545	179704	J
4.	Unknown Alkane	24.015	150245	J
5.	Unknown Alkane	24.694	297450	J
6. 629-50-5	Tridecane	24.990	697815	NJ
7.	Unknown Dodecane	25.616	277792	J
8. 629-59-4	Tetradecane	25.860	220768	NJ
9.	Unknown	26.052	34374	J
10.				
11.				
12.				
13.				
14.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BONOL3 DL

Lab Name: QUANTERRA MO Contract: 550.261

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02219

Matrix: (soil/water) WATER Lab Sample ID: 16833-001 DL

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: ESMP0765

Level: (low/med) LOW Date Received: 01/30/98

% Moisture: not dec. _____ Date Analyzed: 02/05/98

Column: (pack/cap) CAP Dilution Factor: 50000.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	500000	U
74-83-9	Bromomethane	500000	U
75-01-4	Vinyl Chloride	500000	U
75-00-3	Chloroethane	500000	U
75-09-2	Methylene Chloride	250000	U
67-64-1	Acetone	9300000	DB
75-15-0	Carbon Disulfide	250000	U
75-35-4	1,1-Dichloroethene	250000	U
75-34-3	1,1-Dichloroethane	250000	U
540-59-0	1,2-Dichloroethene (total)	250000	U
67-66-3	Chloroform	250000	U
107-06-2	1,2-Dichloroethane	250000	U
78-93-3	2-Butanone	1000000	U
71-55-6	1,1,1-Trichloroethane	250000	U
56-23-5	Carbon Tetrachloride	250000	U
75-27-4	Bromodichloromethane	250000	U
78-87-5	1,2-Dichloropropane	250000	U
10061-01-5	cis-1,3-Dichloropropene	250000	U
79-01-6	Trichloroethene	250000	U
124-48-1	Chlorodibromomethane	250000	U
79-00-5	1,1,2-Trichloroethane	250000	U
71-43-2	Benzene	250000	U
10061-02-6	trans-1,3-Dichloropropene	250000	U
75-25-2	Bromoform	250000	U
108-10-1	4-Methyl-2-pentanone	1000000	U
591-78-6	2-Hexanone	1000000	U
127-18-4	Tetrachloroethene	250000	U
108-88-3	Toluene	250000	U
79-34-5	1,1,2,2-Tetrachloroethane	250000	U
108-90-7	Chlorobenzene	250000	U
100-41-4	Ethylbenzene	250000	U
100-42-5	Styrene	250000	U
1330-20-7	Xylenes (total)	250000	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BONOL3 DL

Lab Name: QUANTERRA MO Contract: 550.261

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02219

Matrix: (soil/water) WATER Lab Sample ID: 16833-001 DL

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: ESMP0765

Level: (low/med) LOW Date Received: 01/30/98

% Moisture: not dec. _____ Date Analyzed: 02/05/98

Column: (pack/cap) CAP Dilution Factor: 50000.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 120-82-1	Benzene, 1,2,4-trichloro-	24.924	295269	NJD
2.				
3.				
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Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: Flashpoint
Method: EPA 1010
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BONOL3	16833-001	Flashpoint	IGNITABLTY	NA	02/05/98	02/05/98	29.0	DEG C			1
BONOL3	16833-001DUP	Flashpoint	IGNITABLTY	NA	02/05/98	02/05/98	30.0	DEG C			1

000085

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: FLASHPOINT
Method: EPA 1010
Matrix: LIQUID

Sample Date : NA
Receipt Date : NA
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
NA	QCLCS164418-1	Flashpoint	IGNITABLTY	NA	02/05/98	02/05/98	28	DEG C			1

000086

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: pH
Method: EPA 9045
Matrix: LIQUID

Sample Date : 01/28/98
Receipt Date : 01/30/98
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BONOL3	16833-001	pH	PH	QCBLK164420-1	02/05/98	02/05/98	7.38	PH			1
BONOL3	16833-001DUP	pH	PH	QCBLK164420-1	02/05/98	02/05/98	7.42	PH			1

000087

Quanterra-Richland
3350 George Washington Way
Richland, WA 99352-1613

Project: 550.261

Category: pH
Method: EPA 9045
Matrix: LIQUID

Sample Date : NA
Receipt Date : NA
Report Date : 02/06/98

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
NA	QCBLK164420-1	pH	PH	QCBLK164420-1	02/05/98	02/05/98	4.57	PH			1

000088