W03170

0053278

H0D270129 Sample Data Summary **1**

Sample Receipt Documentation **12**

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Volatiles **16**
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- Raw Sample Data 25
- Standards Data 64
- Raw QC Data 138
- Miscellaneous Data 160

Sample Receipt Documentation **168**

Total # of Pages **170**

RECEIVED
JUN 26 2000
EDMC

MAY 2000
RECEIVED
Data
Log In

Quanterra

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

423 588-6401 Telephone
423 584-4315 Fax

CERTIFICATE OF ANALYSIS

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

May 2, 2000

Attention: Keith Maki

MAY 2000
RECEIVED
Data
Log In

SAF Number	:	B99-009
Date Samples Received	:	April 27, 2000
Number of Samples	:	Two (2)
Sample Type	:	Air
Data Deliverable	:	45 Day Data Package

I. Introduction

Two (2) air samples were received on April 27, 2000 by the STL Knoxville Laboratory for analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

STLKL ID#	BHI ID#	MATRIX	DATE OF RECEIPT
DCFMC	B0Y2C0	Air	04/27/00
DCFMD	B0Y2C1	Air	04/27/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information and analytical results.

The requested analysis was:

Volatile Organics by TO-14

III. Quality Control

The analytical results for the analysis performed includes a minimum of one Laboratory Control Sample (LCS).

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

IV. Comments

The original chain of custody documentation is included with this report.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. 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:

Jamie McKinney
Project Manager

Sample Data Summary

BECHTEL HANFORD, INC.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H0D270129 001
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL Date Received: 04/27/00
Work Order: DCFMC101 Date Extracted:04/27/00
Dilution factor: 1.78 Date Analyzed: 04/27/00

QC Batch: 0118260

Client Sample Id: B0Y2C0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	8.9	U
56-23-5	**Carbon tetrachloride**	**0.43**	
67-66-3	Chloroform	0.36	U
75-09-2	**Methylene chloride**	**0.50**	
127-18-4	Tetrachloroethene	0.36	U
79-01-6	Trichloroethene	0.36	U
78-93-3	2-Butanone (MEK)	0.89	U

BECHTEL HANFORD, INC.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H0D270129 002
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL Date Received: 04/27/00
Work Order: DCFMD101 Date Extracted: 04/27/00
Dilution factor: 1184 Date Analyzed: 04/27/00

QC Batch: 0118260

Client Sample Id: B0Y2C1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	5900	U
56-23-5	Carbon tetrachloride	13000	
67-66-3	Chloroform	240	U
75-09-2	Methylene chloride	240	U
127-18-4	Tetrachloroethene	240	U
79-01-6	Trichloroethene	240	U
78-93-3	2-Butanone (MEK)	590	U

BECHTEL HANFORD, INC.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H0D270129 002
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL Date Received: 04/27/00
Work Order: DCFMD102 Date Extracted:04/27/00
Dilution factor: 1184 Date Analyzed: 04/27/00

QC Batch: 0118260

Client Sample Id: B0Y2C1 DUP

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	5900	U
56-23-5	Carbon tetrachloride	12000	
67-66-3	Chloroform	240	U
75-09-2	Methylene chloride	240	U
127-18-4	Tetrachloroethene	240	U
79-01-6	Trichloroethene	240	U
78-93-3	2-Butanone (MEK)	590	U

BECHTEL HANFORD, INC.
METHOD BLANK COMPOUNDS

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H0D270000 260
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL Date Received: 04/27/00
Work Order: DCG4L101 Date Extracted: 04/27/00
Dilution factor: 1 Date Analyzed: 04/27/00

QC Batch: 0118260

Client Sample Id: INTRA-LAB BLANK

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	5.0	U
56-23-5	Carbon tetrachloride	0.20	U
67-66-3	Chloroform	0.20	U
75-09-2	Methylene chloride	0.20	U
127-18-4	Tetrachloroethene	0.20	U
79-01-6	Trichloroethene	0.20	U
78-93-3	2-Butanone (MEK)	0.50	U

BECHTEL HANFORD, INC.
CHECK SAMPLE COMPOUNDS

Lab Name:Severn Trent Laboratories, Inc. , SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H0D270000 260
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: 100 / mL Date Received: 04/27/00
Work Order: DCG4L102 Date Extracted:04/27/00
Dilution factor: 1 Date Analyzed: 04/27/00

QC Batch: 0118260

Client Sample Id: CHECK SAMPLE

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
79-01-6	Trichloroethene	10	
71-43-2	Benzene	10	
108-90-7	Chlorobenzene	10	
75-35-4	1,1-Dichloroethene	11	
108-88-3	Toluene	10	

EPA-19 TO-14 SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: BECHTEL HANFORD, INC.

Lab Code: QESKNX QESSDG:

Lot #: H0D270129

	CLIENT ID.	SRG01	SRG02	SRG03	TOT OUT
01	B0Y2C0	94	106	85	00
02	B0Y2C1	97	102	83	00
03	METHOD BLK. DCG4L101	91	109	86	00
04	LCS DCG4L102	98	101	93	00
05	B0Y2C1 DUP	96	107	85	00

SURROGATES		QC LIMITS
SRG01	= 1,2-Dichloroethane-d4	(70-130)
SRG02	= Toluene-d8	(70-130)
SRG03	= 4-Bromofluorobenzene	(70-130)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

EPA-19 TO-14 CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: BECHTEL HANFORD, INC.

Lab Code: QESKNX SDG No:

Lot #: H0D270000 WO #: DCG4L102
BATCH: 0118260

COMPOUND	SPIKE ADDED (ppb(v)	SAMPLE CONCENT. (ppb(v)	% REC	QC LIMITS REC	QUAL
Benzene	10	10	105	70- 130	
Chlorobenzene	10	10	104	70- 130	
1,1-Dichloroethene	10	11	106	70- 130	
Toluene	10	10	103	70- 130	
Trichloroethene	10	10	104	70- 130	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

BLANK WORKORDER NO.

DCG4L101

EPA-19 TO-14 METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: QESKNX

SDG Number:

Lab File ID: bk0427t.d

Lot Number: H0D270129

Date Analyzed: 04/27/00

Time Analyzed: 11:43

Matrix: AIR

Date Extracted:04/27/00

GC Column: DB-5 ID: .32

Extraction Method: TO-14

Instrument ID: MT

Level:(low/med) LOW

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

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	B0Y2C0	DCFMC101	dcfmc.d	04/27/00	17:26
02	B0Y2C1	DCFMD101	DCFMD	04/27/00	17:56
03	B0Y2C1 DUP	DCFMD102 X	DCFMDDP	04/27/00	18:26
04	CHECK SAMPLE	DCG4L102 C	rf0427t.d	04/27/00	11:10
05					
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30					

COMMENTS:

Sample Receipt Documentation

HOD270129

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-009-07	Page 1 of 1
Collector: Baechler/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 9N
Project Designation: 200-ZP-1 Operations On-Site and Off-Site Air Monitor Samp	Sampling Location: 200 West		SAF No.: B99-009	Air Quality ☐
Ice Chest No.: SUMAS CASE	Field Logbook No.: EL 1330	COA: R20ZP1D760	Method of Shipment: Hand Delivered	Data Turnaround: 45 Days
Shipped To: Quanterra Incorporated	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

NONE

Special Handling and/or Storage

Preservation	None										
Type of Container	Summa Canister										
No. of Container(s)	1										
Volume	6L										
SAMPLE ANALYSIS	See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
B0Y2C0	Vapor	4/26/00	1346	X									
B0Y2C1	Vapor	4/26/00	1353	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
M Dunser	4/26/00 1400	R. Thoren	4.26.00/1400
R. Thoren	4.26.00/1510	K. Lehrschall	4-26-00 1510
K. Lehrschall	4-26-00 1510	Bryan K. [illegible]	4-27-00 10:00

SPECIAL INSTRUCTIONS

(1) VOA - T0-14 (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene)

Custody seals intact received at ambient temp BKD 4-27-00

Sample originated in non-RAD Controlled area. <2000pCi/g. NO TA Required.

Matrix *

S=Soil
SE=Sediment
SO=Solid
S=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

BHI-EE-011 (10/99)

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

H0D270129

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 4983
Page 1 of ____

Project Name/No. 1 ____
Sample Team Members 2 ____
Profit Center No. 3 ____
Project Manager 4 ____
Purchase Order No. 6 ____
Required Report Date 11 ____

Samples Shipment Date 7 4-20-00
Lab Destination 8 STL Richland
Lab Contact 9 Jackie Waddle
Project Contact/Phone 12 ____
Carrier/Waybill No. 13 ____

Bill to: 5 ____
Report to: 10 ____

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Preservative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
12267	—	—	Summa	6lt	N/A	—		
64734			↓	↓	↓			
							Custody seals intact	
							received at ambient temp	
							BKN 4-27-00	

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☐ Archive (mos.)

Turnaround Time Required: 26
Normal ☐ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by 28 (Signature/Affiliation) David D. Ferns	Date: 4-20-00 Time: 1800	1. Received by 28 (Signature/Affiliation) R. Thoren ERC	Date: 4-26-00 Time: 1315
2. Relinquished by (Signature/Affiliation) R. Thoren ERC	Date: 4-26-00 Time: 1510	2. Received by (Signature/Affiliation) K. Lehrschall	Date: 4-26-00 Time: 1510
3. Relinquished by (Signature/Affiliation) K. Lehrschall	Date: 4-26-00 Time: 1510	3. Received by (Signature/Affiliation) Bryan K. Jameson	Date: 4-27-00 Time: 10:00

Comments: 29

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

14

MCA 3/15/91

Invoice

Quanterra

STL Knoxville
5815 Middlebrook Pike
Knoxville,TN 37921-5947
Tel: 865 5886401
Fax.

Number: 14003832
Date: 02 MAY 00
Quanterra Project Number: H0D270129
Customer Number: 127642
Terms: NET 30 DAYS

REMIT TO:
Severn Trent Laboratories, Inc.
P.O. Box 2473
Carol Stream, IL 60132-2473

Customer Contact
SAMPLE RECEIVING DATE : 4/27/00
REPORT DATE : 5/02/00
Keith Maki

Bill To:
Bechtel Hanford, Inc.
3350 George Washington Way
Accounts Payable
Richland,WA 99352

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

Line No.	Qty.	Matrix Code	Analysis Description	Unit Price	Extended Price
1	1		AIR, TO-14 Volatile Organics (LCS)		158.00
2	1		AIR, TO-14, Volatile Organics (Duplicate)		158.00
			Sample Subtotal		316.00
			CLIENT ID = B0Y2C0		
		AIR	QUANTERRA SAMPLE ID = H0D270129-001		
3	1		AIR, TO-14, Volatile Organics		158.00
			Sample Subtotal		158.00
			CLIENT ID = B0Y2C1		
		AIR	QUANTERRA SAMPLE ID = H0D270129-002		
4	1		AIR, TO-14, Volatile Organics		158.00
			Sample Subtotal		158.00

Please reference Invoice number when remitting.

Customer PO Number / Contract Number / Reference
MW6-SBB-A19981 (0000X-SC-G0063)/B99-009/B99-009

Quanterra Project Manager: Jamie A. McKinney
Salesperson: MCK

Sub Total
Tax 632.00
Total

ORIGINAL (Page 1 of 1)

QUA-4027 (0597)

Federal Tax I.D. # 84-127

Volatiles

QC Summary

EPA-19 TO-14 SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc.. Client: BECHTEL HANFORD, INC.

Lab Code: QESKNX QESSDG:

Lot #: H0D270129

	CLIENT ID.	SRG01	SRG02	SRG03	TOT OUT
01	B0Y2C0	94	106	85	00
02	B0Y2C1	97	102	83	00
03	METHOD BLK. DCG4L101	91	109	86	00
04	LCS DCG4L102	98	101	93	00
05	B0Y2C1 DUP	96	107	85	00

SURROGATES		QC LIMITS
SRG01	= 1,2-Dichloroethane-d4	(70-130)
SRG02	= Toluene-d8	(70-130)
SRG03	= 4-Bromofluorobenzene	(70-130)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

EPA-19 TO-14 CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: BECHTEL HANFORD, INC.

Lab Code: QESKNX SDG No:

Lot #: H0D270000 WO #: DCG4L102
BATCH: 0118260

COMPOUND	SPIKE ADDED (ppb(v)	SAMPLE CONCENT. (ppb(v)	% REC	QC LIMITS REC	QUAL
Benzene	10	10	105	70- 130	
Chlorobenzene	10	10	104	70- 130	
1,1-Dichloroethene	10	11	106	70- 130	
Toluene	10	10	103	70- 130	
Trichloroethene	10	10	104	70- 130	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

FORM III

BLANK WORKORDER NO.

DCG4L101

EPA-19 TO-14 METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: QESKNX

SDG Number:

Lab File ID: bk0427t.d

Lot Number: H0D270129

Date Analyzed: 04/27/00

Time Analyzed: 11:43

Matrix: AIR

Date Extracted:04/27/00

GC Column: DB-5 ID: .32

Extraction Method: TO-14

Instrument ID: MT

Level:(low/med) LOW

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

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	B0Y2C0	DCFMC101	dcfmc.d	04/27/00	17:26
02	B0Y2C1	DCFMD101	DCFMD	04/27/00	17:56
03	B0Y2C1 DUP	DCFMD102 X	DCFMDDP	04/27/00	18:26
04	CHECK SAMPLE	DCG4L102 C	rf0427t.d	04/27/00	11:10
05					
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COMMENTS:

FORM 5
OTHER ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: QUANTERRA - KNOXVILLE Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: T021300

Lab File ID: BF0211TX BFB Injection Date: 02/11/0

Instrument ID: MT BFB Injection Time: 1751

GC Column: DB-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.9
75	30.0 - 60.0% of mass 95	43.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	88.7
175	5.0 - 9.0% of mass 174	6.3 (7.1)1
176	95.0 - 101.0% of mass 174	86.0 (96.9)1
177	5.0 - 9.0% of mass 176	5.7 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	HI0211T	HI0211T	HI0211T	02/11/0	1823
02	MH0211T	MH0211T	MH0211T	02/11/0	1924
03	MD0211TX	MD0211TX	MD0211TX	02/11/0	1954
04					
05					
06					
07					
08					
09					
10					
11					
12					
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16					
17					
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19					
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22					

FORM 5
OTHER ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: QUANTERRA - KNOXVILLE Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: T021300

Lab File ID: BF0213T BFB Injection Date: 02/13/0

Instrument ID: MT BFB Injection Time: 1534

GC Column: DB-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.4
75	30.0 - 60.0% of mass 95	43.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	88.0
175	5.0 - 9.0% of mass 174	6.2 (7.1)1
176	95.0 - 101.0% of mass 174	85.1 (96.8)1
177	5.0 - 9.0% of mass 176	5.7 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ML0213T	ML0213T	ML0213T	02/13/0	1604
02	LW0213T	LW0213T	LW0213T	02/13/0	1633
03					
04					
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12					
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15					
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20					
21					
22					

FORM 5
OTHER ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: QUANTERRA - KNOXVILLE Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: H0D270129

Lab File ID: BF0427T BFB Injection Date: 04/27/0

Instrument ID: MT BFB Injection Time: 1010

GC Column: DB-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0% of mass 95	19.5	
75	30.0 - 60.0% of mass 95	48.2	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.4	
173	Less than 2.0% of mass 174	0.0	(0.0)1
174	50.0 - 100.0% of mass 95	87.0	
175	5.0 - 9.0% of mass 174	6.1	(7.0)1
176	95.0 - 101.0% of mass 174	83.0	(95.5)1
177	5.0 - 9.0% of mass 176	5.5	(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	MD0427T	MD0427T	MD0427T	04/27/0	1040
02	INTRA-LAB CHECK	DCG4L102	RF0427T	04/27/0	1110
03	INTRA-LAB BLANK	DCG4L101	BK0427T	04/27/0	1143
04	B0Y2C0	DCFMC101	DCFMC	04/27/0	1726
05	B0Y2C1	DCFMD101	DCFMD	04/27/0	1756
06	B0Y2C1	DCFMD102	DCFMDDP	04/27/0	1826
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 8
OTHER INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: QUANTERRA - KNOXVILLE Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: H0D270129

Lab File ID (Standard): MD0427T Date Analyzed: 04/27/0

Instrument ID: MT Time Analyzed: 1040

GC Column: DB-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	77525	7.51	436646	8.58	399204	11.88
	UPPER LIMIT	155050	8.01	873292	9.08	798408	12.38
	LOWER LIMIT	38762	7.01	218323	8.08	199602	11.38
	CLIENT SAMPLE NO.						
01	INTRA-LAB CHECK	79016	7.52	436549	8.58	396723	11.88
02	INTRA-LAB BLANK	74342	7.50	427546	8.57	361449	11.87
03	B0Y2C0	69539	7.50	397040	8.57	348323	11.88
04	B0Y2C1	71729	7.50	388673	8.58	351671	11.87
05	B0Y2C1	71850	7.50	401298	8.57	346763	11.88
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Miscellaneous Data

Quanterra GC/MS Air Data Review / Narrative Checklist

LOT/Project # H0D270129

Method: TO-14 - KNOX-MS-0001 Rev 1

Instrument:	MT					
Scanned File Names:	T0213001					
	T042700					

Review Items **A. Tune / Continuing Calibration**	N/A	Yes	No	Why is data reportable?	2nd ✓
1. Were all samples injected within 12 hr of BFB?		✓			✓
2. Has a Continuing Calibration Checklist been completed for each analytical batch?		✓			
3. Was the correct CCAL used for quantitation? (Manually calculate 1-2 compounds for batch.)		✓			
B. CLIENT SAMPLE AND QC SAMPLE Results					
1. Were all special project requirements met?		✓			
2. Were dilution factors/header information verified?		✓			
3. Are surrogates and internal standards within QC limits? (70-130% R for surr.; 50-150%R from CCAL for IS) *If no, list samples/reason (e.g.,* **sur1***):* Sample Reason Sample Reason		✓		**[sur1]** DUP surr. %R demonstrated same effect. **[sur2]** Reanalysis demonstrated same effect. **[sur5]** At the client's request, data was flagged as estimated and released without further investigation. * **[is1]** Per client, reanalysis was not performed * **[is2]** Reanalysis confirmed a matrix effect. See Comment no. ____.	
4. Were positive hits evaluated using qualitative identification criteria and technical judgement?		✓			
5. Are positive results within calibration range?		✓			
6. For dilutions, is highest concentration hit ≥ 5 ppb?		✓			
7. If manual integrations were performed, are they clearly identified, initialed, dated and reason given?		✓		Reasons: 1)Corrected split peak; 2)Unresolved peak; 3)tailing; 4)RT shift; 5)wrong peak selected; 6)other	
8. Have alternate hits/manual integrations been verified as correct?		✓			
9. Final report acceptable? (Results correct, RLs calculated correctly, units correct, surrogate %R correct, appropriate flags used, dilution factor correct, analysis dates correct.)	✓			CLP-Like?	
10. Was a narrative prepared and all deviations noted?		✓			
C. Preparation/Matrix QC					
1. System blank run every 12 hours prior to samples?		✓			
2. System blank surrogate recoveries within QC limits (70-130% R) ?		✓		**[mb1]** All sample surrogates OK and there is no analyte >RL in samples associated with blank.*	
3. Are all analytes present in the system blank ≤ RL? *If no, list blank ID:* ____		✓		**[mb3]** There is no analyte > RL in the samples associated with method blank.* **[mb4]** Sample results are > 20x higher than blank. **[mb6]** Common lab contaminant (methylene chloride/Freon) ≤2x RL.*	
4. DUP done per 20 samples and are all RPDs within limits? (≤30 RPD for nonpolars; ≤40 RPD for polars; no criteria for methanol and n-butanol) *If no, list DUP ID:* 4/28/00		✓			
5. Were MS run #'s assigned correctly?		✓			
D. Other					
1. Are all nonconformances documented appropriately and copy included with deliverable?	✓				✓

Analyst:	**Date:** 4/28/00	**Analyst:**	**Date:** 4/28/00
Comments:		**Comments:**	

* Such action must be taken in consultation with client.

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 4/28/00
Time: 8:10:49

LEV 1	LEV 2		LEV 1	LEV 2	
_	_	Blank	_	_	Weights/Volumes
_	_	Check	_	_	Spike & Surrogate Worksheet
_	_	MS/MSD	_	_	Vial contains correct volume
			_	_	Labels, greenbars, worksheets
			_	_	computer batch: correct & all match
			_	_	Anomalies to Extraction Method

_ Expanded Deliverable
_ COC Completed
_ Bench Sheet Copied
_ Package Submitted to AnalyticalGroup
_ Bench Sheet Copied per COC

Extractionist: _____

Concentrationist: _____

****
* QC BATCH: 0118260 *
****

PREP DATE: 4/27/00
COMP DATE: 4/27/00

Reviewer/Date: _____ / 0/00/00

Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	SOLVENTS VOL	SPIKE STANDARD/ SURROGATE ID
0/00/00	5/15/00	H0D260119-003 DCE6R-1-01		88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772
COMMENTS:															
0/00/00	5/15/00	H0D260126-002 DCE84-1-01	D	88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772
COMMENTS:															
0/00/00	5/15/00	H0D260126-003 DCE85-1-01	D	88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772
COMMENTS:															
0/00/00	6/08/00	H0D270129-001 DCFMC-1-01	D	88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772
COMMENTS:															
0/00/00	6/08/00	H0D270129-002 0119035 DCFMD-1-01	D	88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772
COMMENTS:															
0/00/00	6/08/00	H0D270129-002 0119035 DCFMD-1-02X	D	88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772
COMMENTS:															
0/00/00	0/00/00	H0D270000-260 DCG4L-1-01B		88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772
COMMENTS:															

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 4/28/00
Time: 8:10:49

****
* *
* QC BATCH: 0118260 *
* *
****

PREP DATE: 4/27/00
COMP DATE: 4/27/00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJ1	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
		H0D270000-260													
0/00/00	0/00/00	DCG4L-1-02C		88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-772

COMMENTS:

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
$

NUMBER OF WORK ORDERS IN BATCH: 8

Canister Dilution
Initial & In can

analyst : dwc client: ??

notebook: 1897 page: 37

barometer: 730.884 mm Hg at Knoxville date: 4/27/00
29.96 inches at sea level

wo #	sample	can	P init inches	P init Abs,mm	P final psig	P final Abs,mm	dilution factor
h0d270129	dcfmc	04734 ✓	0.0	730.9	11.0 ✓	1299.7	1.78
	dcfmd	12267 ✓	0.0	730.9	12.0	1351.5	1.85

1 psig = 2.036 inch Hg
Pinit(Abs,mm)=(Pinit(inch)*25.4mm/inch)+Pbar(mm)
Pfinal(Abs,mm)=(Pfinal(psig)*2.036 (inch Hg/psig)*25.4 (mm/inch))+Pbar(mm)
dilution factor = Pfinal(Abs,mm)/Pinit(Abs,mm)
barometer: correction factor for 300 m altitude of Knoxville = 30.1 from Handbook of Chem and Physics
pressure in mm Hg = [(pressure at sea level in inches*25.4 in/mm) - 30.1]

cjcandil.xls
rev.01

Serial Canister Dilution

analyst : dwc client: ?

notebook: 1897 page: 37

barometer: 730.884 date: 4/27/00

wo#	sample	from can	to can	init vol (ml)	final in psig	P final abs,mm	dilution factor
h0d270129	dcfmd	12267	4389	60	13	1403.2	192.0

1 psig = 2.036 inch Hg
Pfinal(Abs,mm)=(Pfinal(psig)*2.036 (inch Hg/psig)*25.4 (mm/inch))+Pbar(mm)
dilution factor = Pfinal(Abs,mm)/((init vol(ml)*Pbar(mm))/6000ml))

candil.xls
rev.01

Lot # HOD270129 [illegible] PBAR = 730.884 4/27/00

w/o #	Can #	P.(in)	Pf psig	to can	vol(ml)	pf psig
DCFMC	04734	0.0	11.0			
DCFMD	12267	0.0	12.0	04389	60ml +40ml H_2O	13.0

Lot # HOD270125 [illegible] PBAR = 730.884 4/27/00

w/o #	Can #	P.(in)	Pf psig	to can	vol(ml)	pf psig
DCFL5	12878	sample under vacuum no sample taken				
DCFLA	12272	sample under vacuum no sample taken.				

Lot # HOD280104 [illegible] PBAR = 727.58 4/28/00

w/o #	Can #	P.(in)	Pf psig	to can	vol(ml)	pf psig
DCH06	04750	-20.4	11.6			

Lot # HOD280108 [illegible] PBAR = 727.58 4/28/00

w/o #	Can #	P.(in)	Pf psig	to can	vol(ml)	pf psig
DCH11	03854	-2.0	12.2	in can	0 → 47.4	
DCH12	92074	-2.5	12.6	in can	0 → 46.6	
DCH14	93019	-0.8	13.0			

Continued on Page

Read and Understood By

Signed	Date	Signed	Date

12:53 PM EDT on April 27, 2000 Observed at Knoxville, Tennessee	
Temperature	63° F
Humidity	38%
Dewpoint	37° F
Wind	SSE at 8 mph
Pressure	29.96 in
Conditions	Clear
Visibility	10 miles
Sunrise	6:44 AM (EDT)
Sunset	8:18 PM (EDT)
Moon Rise	3:10 AM (EDT)
Moon Set	1:43 PM (EDT)
Moon Phase	

Historical Conditions

April 27

Sample Receipt Documentation

110D270129

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-009-07	Page 1 of 1
Collector: Baechler/Johansen	Company Contact: K Maki; Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 9N; Data Turnaround: 45 Days
Project Designation: 200-ZP-1 Operations On-Site and Off-Site Air Monitor Samp	Sampling Location: 200 West	SAF No.: B99-009	Air Quality ☐
Ice Chest No.: SUMAS CASE	Field Logbook No.: EL 1330; COA: R20ZP1D760	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
NONE

Special Handling and/or Storage

Preservation	None										
Type of Container	Summa Canister										
No. of Container(s)	1										
Volume	6L										
SAMPLE ANALYSIS	See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
B0Y2C0	Vapor	4/26/00	1346	X									
B0Y2C1	Vapor	4/26/00	1353	X									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	M Johnson	4/26/00 1400	Received By: R. Thoren	4.26.00/1400
Relinquished By: R. Thoren		4.26.00/1510	Received By: K. Lehrsdell	4-26-00 1510
Relinquished By: K. Lehrsdell		4-26-00 1510	Received By	4-27-00 10:00
Relinquished By			Received By	
Relinquished By			Received By	
Relinquished By			Received By	

SPECIAL INSTRUCTIONS

(1) VOA - T0-14 (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene)

Custody seal intact removed at ambient temp BKB 4-27-00

Sample originated in non-RAD Controlled area. <2000pCi/g. NO TA Required.

Matrix *
S=Soil
SE=Sediment
SO=Solid
S=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

BHI-EE-011 (10/99)

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

H0D270129

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 4983
Page 1 of ____

Project Name/No. 1 ____
Sample Team Members 2 ____
Profit Center No. 3 ____
Project Manager 4 ____
Purchase Order No. 6 ____
Required Report Date 11 ____

Samples Shipment Date 7 4-20-00
Lab Destination 8 STL Richland
Lab Contact 9 Jackie Waddell
Project Contact/Phone 12 ____
Carrier/Waybill No. 13 ____

Bill to: 5 ____
Report to: 10 ____

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
12267	—		Summa	6lt	N/A	—		
04734			1	1	1			
							Custody seals intact Received at ambient temp BKD 4-27-00	

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☐ Archive (mos.)

Turnaround Time Required: 26
Normal ☐ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by 28 (Signature/Affiliation) David D. Ferns	Date: 4-20-00 Time: 1800	1. Received by 28 (Signature/Affiliation) R. Thoren R. Thoren ERC	Date: 4-26-00 Time: 1315
2. Relinquished by (Signature/Affiliation) R. Thoren R. Thoren ERC	Date: 4-26-00 Time: 1510	2. Received by (Signature/Affiliation) K. Lehrschall	Date: 4-26-00 Time: 1510
3. Relinquished by (Signature/Affiliation) K. Lehrschall	Date: 4-26-00 Time: 1510	3. Received by (Signature/Affiliation) Bryan K. Jameson	Date: 4/27/00 Time: 10:00

Comments: 29

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

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MCA 3/15/91

Original Chain of Custody Documentation

HOD270129

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-009-07	Page 1 of 1

Collector: Baechler/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 200-ZP-1 Operations On-Site and Off-Site Air Monitor Samp	Sampling Location: 200 West	SAF No.: B99-009	
Ice Chest No.: SUMAS CASE	Field Logbook No.: EL 1330	COA: R20ZP1D760	Method of Shipment: Hand Delivered
Shipped To: Quanterra Incorporated	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
NONE

Special Handling and/or Storage

Preservation	None										
Type of Container	Summa Canister										
No. of Container(s)	1										
Volume	6L										
SAMPLE ANALYSIS	See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
B0Y2C0	Vapor	4/26/00	1346	X									
B0Y2C1	Vapor	4/26/00	1353	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
M Comrser [illegible]	4/26/00 1400	R. Thoren	4.26.00/1400
R. Thoren	4.26.00/1510	K. Lehrschall	4-26-00 1510
K. Lehrschall	4-26-00 1510	[illegible]	4-27-00 10:00

SPECIAL INSTRUCTIONS

(1) VOA - T0-14 {2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene}

Custody seals intact
received at ambient temp
BKD 4-27-00

Sample originated in non-RAD Controlled area. <2000pCi/g. NO TA Required.

Matrix *
S=Soil
SE=Sediment
SO=Solid
S=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

BHI-EE-011 (10/99)

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

HOD270129

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 4983
Page 1 of ____

Project Name/No. 1
Sample Team Members 2
Profit Center No. 3
Project Manager 4
Purchase Order No. 6
Required Report Date 11

Samples Shipment Date 7 4-20-00
Lab Destination 8 STL Richland
Lab Contact 9 Jackie Waddell
Project Contact/Phone 12
Carrier/Waybill No. 13

Bill to: 5
Report to: 10

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
12267	—	—	Summa	6lt	N/A	—		
04734			↓	↓	↓		FOR LAB USE ONLY	
							Custody seals intact	
							FOR LAB USE ONLY	
							Temp ambient	
								Bin 4-27-00

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☐ Archive (mos.)

Turnaround Time Required: 26
Normal ☐ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by 28 (Signature/Affiliation) David D. Ferns	Date: 4-20-00 Time: 1800	1. Received by 28 (Signature/Affiliation) R. Thoren R. Thoren ERC	Date: 4-26-00 Time: 1315
2. Relinquished by (Signature/Affiliation) R. Thoren R. Thoren ERC	Date: 4-26-00 Time: 1510	2. Received by (Signature/Affiliation) K. Lehrschall Kurt Lehrschall	Date: 4-26-00 Time: 1510
3. Relinquished by (Signature/Affiliation) K. Lehrschall Kurt Lehrschall	Date: 4-26-00 Time: 1510	3. Received by (Signature/Affiliation) Bryan K. Dameron	Date: 4/27/00 Time: 10:00

Comments: 29

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

MCA 3/15/91