

0057287 H1600



RECEIVED JUN 10 2002

EDMC

Lionville Laboratory, Inc. GCSC ANALYTICAL DATA PACKAGE FOR TNUHANFORD B02-007 H1600

DATE RECEIVED: 11/07/01

LVL LOT # :0111L292

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B13D86	001	W	01LJMB19	11/02/01	11/19/01	11/19/01
B13D86	001 MS	W	01LJMB19	11/02/01	11/19/01	11/19/01
B13D86	001 MSD	W	01LJMB19	11/02/01	11/19/01	11/19/01
LAB QC:						
BLK	MB1	W	01LJMB19	N/A	11/19/01	11/19/01
BLK	MB1 BS	W	01LJMB19	N/A	11/19/01	11/19/01
BLK	MB1 BSD	W	01LJMB19	N/A	11/19/01	11/19/01

*Handwritten signature/initials*



Analytical Report

Client: TNU HANFORD B02-007  
LVL#: 0111L292  
SDG/SAF#: H1600/B02-007

W.O.#: 11343-606-001-9999-00  
Date Received: 11-07-01

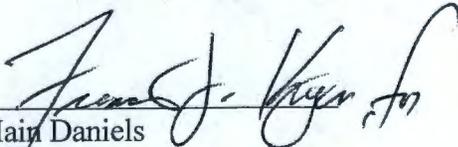
GC SCAN

One (1) water sample was collected on 11-02-01.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on Method 8015 for target compounds Ethanol and n-Propyl Alcohol on 11-19-01.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. The sample was packaged and stored as specified in the method protocol.
3. Surrogates are not currently employed in the methodology.
4. All initial calibrations were within acceptance criteria.
5. All continuing calibrations run prior to analysis were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, 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.

  
Iain Daniels  
Deputy Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

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The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.



## GLOSSARY OF GC VOLATILES DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF GC VOLATILES DATA

- P** = This flag is used for an GC VOLATILES target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC VOLATILES.

Lionville Laboratory, Inc.

GC SCAN

Report Date: 11/28/01 14:25 <sup>5</sup>

RFW Batch Number: 0111L292

Client: TNUHANFORD B02-007 H1600 Work Order: 11343606001 Page: 1

	Cust ID:	B13D86	B13D86	B13D86	BLK	BLK BS	BLK BSD
Sample Information	RFW#:	001	001 MS	001 MSD	01LJMB19-MB1	01LJMB19-MB1	01LJMB19-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

	fl	fl	fl	fl	fl	fl
n-Propyl Alcohol	5.0 U	98 %	94 %	5.0 U	99 %	94 %
Ethanol	5.0 U	101 %	98 %	5.0 U	103 %	98 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

*Flora 11/28/01*



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B02-007-05		Page 1 of 1	
Collector Watson, D/Bowen DL		Company Contact Cearlock, CS		Telephone No. 372-9638		Project Coordinator TRENT, SJ		Price Code 7N Data Turnaround 45 Days	
Project Designation 200 Area Source Characterization 200-CS-1 OU - QC Samplin		Sampling Location 200 East		SAF No. B02-007		Air Quality <input type="checkbox"/>			
Ice Chest No. SML-382		Field Logbook No. EL1551		COA B20CS1673C		Method of Shipment Fed Ex			
Shipped To <sup>DSW</sup> TRECRA 11/2/01		Offsite Property No. A020032		Bill of Lading/Air Bill No. 42357954-8729					
POSSIBLE SAMPLE HAZARDS/REMARKS Samples did not originate in radiological controlled area. No total activity associated with sample/samples. Special Handling and/or storage			Preservation HCl to pH <2 Cool AC						
			Type of Container 4Gs*						
			No. of Container(s) 1						
			Volume 40mL						
SAMPLE ANALYSIS					VQA - R260A (TCL); VQA - R260A (Add-On) (1-Propanol, Ethanol)				
Sample No.	Matrix *	Sample Date	Sample Time						
B13D86	WATER	11/2/01	0530	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From DS Watson/ELW		Date/Time 11/2/01 11:5		Received By/Stored In REF-85 3728 BRG.		Date/Time 11/2/01		<ul style="list-style-type: none"> <li>** Laboratory is to measure pH within 24 hours of sample receipt.</li> <li>** The ERC acknowledges the 48-hour holding time will not be met for Nitrate using EPA method 300.0.</li> <li>** The laboratory is to report Decane as a TIC if present in detectable quantities.</li> </ul> <p>Samples stored in Ref. #3B at the 3728 Shipping Facility on 11/2/01. Collector not available to relinquish samples on 11/6/01 for shipment.</p> <p>RT 11-6-01</p>	
Relinquished By/Removed From Ref 3B 3728		Date/Time 11-6-01 0700		Received By/Stored In R. Thoren		Date/Time 11-6-01			
Relinquished By/Removed From R. Thoren		Date/Time 11-6-01 0700		Received By/Stored In FED EX		Date/Time			
Relinquished By/Removed From Fed Ex		Date/Time 11/2/01 15:25		Received By/Stored In D. Watson		Date/Time 11/2/01 15:25			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

Figure 1. Sample Check-in List

Date/Time Received: 11-7-01 / 15:25

SDG#: 0111L292

Work Order Number: \_\_\_\_\_

SAF# B02-007

Shipping Container ID: 5ml 382

Chain of Custody # B02-007-05

- 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 5.6°c
- 5. Vermiculite/packing materials is Wet [] Dry []
- 6. Number of samples in shipping container: 1
- 7. Sample holding times exceeded? Yes [] No []

<p>8. Samples have:</p> <p><input type="checkbox"/> tape</p> <p><input type="checkbox"/> custody seals</p>	<p><input type="checkbox"/> hazard labels</p> <p><input checked="" type="checkbox"/> appropriate sample labels</p>
<p>9. Samples are:</p> <p><input checked="" type="checkbox"/> in good condition</p> <p><input type="checkbox"/> broken</p>	<p><input type="checkbox"/> leaking</p> <p><input type="checkbox"/> have air bubbles</p>

10. Were any anomalies identified in sample receipt? Yes [] No []

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: \_\_\_\_\_ Date: \_\_\_\_\_

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

Lionville Laboratory, Inc.  
 VOA ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD B02-007 H1600



DATE RECEIVED: 11/07/01

LVL LOT # :0111L292

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B13D86	001	W	01LVH481	11/02/01	N/A	11/14/01
B13D86	001 MS	W	01LVH481	11/02/01	N/A	11/14/01
B13D86	001 MSD	W	01LVH481	11/02/01	N/A	11/14/01
LAB QC:						
VBLKYZ	MB1	W	01LVH481	N/A	N/A	11/14/01
VBLKYZ	MB1 BS	W	01LVH481	N/A	N/A	11/14/01

*W  
11-28-01*

7



Client: TNU-HANFORD B02-007  
LVL #: 0111L292  
SDG/SAF #: H1600/B02-007

W.O. #: 11343-606-001-9999-00  
Date Received: 11-07-2001

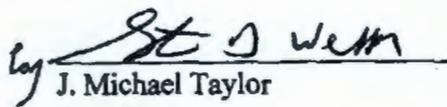
### GC/MS VOLATILE

One (1) water sample was collected on 11-02-2001.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL Volatile target compounds on 11-14-2001.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. The analysis holding time was met.
3. Non-target compounds were detected in the sample.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than 3x the CRQL.
8. Internal standard area and retention time criteria were met.
9. A spectral search was performed for Decane; however, it was not detected in the samples.
10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, 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."

  
J. Michael Taylor  
President  
Lionville Laboratory Incorporated

12-02-01  
Date

son\group\data\voetnu-hanford\0111-292.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

## GLOSSARY OF VOA DATA

### ABBREVIATIONS

- BS** - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** - Indicates blank spike duplicate.
- MS** - Indicates matrix spike.
- MSD** - Indicates matrix spike duplicate.
- DL** - Suffix added to sample number to indicate that results are from a diluted analysis.
- NA** - Not Applicable.
- DF** - Dilution Factor.
- NR** - Not Required.
- SP, Z** - Indicates Spiked Compound.

## GLOSSARY OF VOA DATA

### DATA QUALIFIERS

- U** - Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** - Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** - Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** - Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** - Interference.
- NQ** - Result qualitatively confirmed but not able to quantify.
- N** - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** - This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** - Additional qualifiers used as required are explained in the case narrative.

## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP** - **Missed Peak:** manually added peak not found by automatic quan program.
- PA** - **Peak Assignment:** quan report was changed to reflect correct peak assignment.
- RI** - **Routine Integration:** routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP** - **Split Peak:** the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB** - **Coelution/Background:** peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI** - **Proper Integration:** a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 11/28/01 14:29

RFW Batch Number: 0111L292

Client: THURANFORD B02-007 H1600 Work Order: 11343606001 Page: 1a

Cust ID:		B13D86	B13D86	B13D86	VBLKYZ	VBLKYZ B8
Sample Information	RFW#:	001	001 MS	001 MSD	01LVH481-MB1	01LVH481-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate	Toluene-d8	99 %	99 %	100 %	100 %	100 %
Recovery	Bromofluorobenzene	86 %	90 %	90 %	87 %	89 %
	1,2-Dichloroethane-d4	101 %	101 %	101 %	96 %	96 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl						
Chloromethane		10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U
Methylene Chloride		7 B	8 B	5 B	10	11 B
Acetone		10 U	10 U	10 U	10 U	10 U
Carbon Disulfide		5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene		5 U	79 %	79 %	5 U	80 %
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)		5 U	5 U	5 U	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride		5 U	5 U	5 U	5 U	5 U
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Trichloroethene		5 U	99 %	99 %	5 U	98 %
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U
Benzene		5 U	101 %	102 %	5 U	100 %
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U
Tetrachloroethene		5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U	5 U
Toluene		5 U	106 %	108 %	5 U	106 %

\*= Outside of EPA CLP QC limits.

Cust ID: B13D86 B13D86 B13D86 VBLKYZ VBLKYZ BS

RFW#: 001 001 MS 001 MSD 01LVH481-MB1 01LVH481-MB1

Chlorobenzene	5 U	101 %	101 %	5 U	99 %
Ethylbenzene	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U

\*- Outside of EPA CLP QC limits.

1E  
VOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B13D86

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B02-007 H1600

Matrix: WATER

Lab Sample ID: 01111292-001

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h111413

Level: (low/med) LOW

Date Received: 11/07/01

% Moisture: not dec.       

Date Analyzed: 11/14/01

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	18.291	6	J
2.	SILOXANE	22.219	10	J

Q

1E  
VOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

VBLKYZ

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B02-007 H1600

Matrix: WATER

Lab Sample ID: 01LVH481-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h111404

Level: (low/med) LOW

Date Received: 11/14/01

% Moisture: not dec.       

Date Analyzed: 11/14/01

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B02-007-05 Page 1 of 1			
Collector Watson, D/Brown, DL		Company Contact Cearlock, CS		Telephone No. 372-9638		Project Coordinator TRENT, SJ			
Project Designation 200 Area Source Characterization 200-CS-1 OU - QC Sampling		Sampling Location 200 East		SAF No. B02-007		Price Code 7N Data Turnaround 45 Days			
Ice Chest No. SML-382		Field Logbook No. EL1551		COA B20C81673C		Method of Shipment Fed Ex			
Shipped To D3W TMC/ERCA 11/2/01		Offsite Property No. A020032		Bill of Lading/Air Bill No. 42357954-8729					
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Samples did not originate in radiological controlled area. No total activity associated with sample/samples. Special Handling and/or storage RT 11-6-01			Preservation	FCI to pH < 7 Cool AC					
			Type of Container	1					
			No. of Container(s)	1					
			Volume	40mL					
SAMPLE ANALYSIS				VQA - ERCA (TCL); VQA - ERCA (Add-On) (1-Propanol, Ethanol)					
Sample No.	Matrix *	Sample Date	Sample Time						
B13D86	WATER	11/2/01	0530	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			Matrix *		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
OS Watson/ERCA		11/2/01 11:55		REF-3B 3728 BRG		11/2/01			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Ref 3B 3728		11-6-01 0700		R. J. Thoren		11-6-01 0700			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
RT Watson/ERCA		11-6-01 0700		FED		11-6-01 0700			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Med Co		11/2/01 15:25		D. J. Thoren		11/2/01 15:25			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
		11-10-01							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION				Received By					
FINAL SAMPLE DISPOSITION				Disposal Method					
				Disposed By					
				Date/Time					