



4 February 2002

0056896

H1675



Joan Kessner  
Bechtel-Hanford, Inc.  
3190 Washington Way  
MSIN H9-03  
Richland, WA 99352

**RECEIVED**  
APR 16 2002

**EDMC**

**Subject: Contract No. 630  
Analytical Data Package**

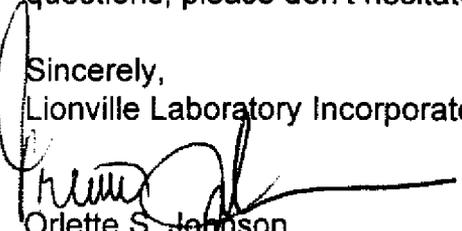
Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0201L825
SDG #	H1675
SAF #	B01-114
Date Received	1-22-02
# Samples	4
Matrix	Water
Volatiles	X
Semivolatiles	
Pest/PCB	
DRO/GRO	
GC Scan	
Metals	
Inorganics	

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

  
Orlette S. Johnson  
Project Manager

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Lionville Laboratory, Inc.  
 VOA ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B01-114



RFW LOT # : 02015825

CLIENT ID	RFW #	MTX	PREP #	COLLECTN	DATE	REC	EXT/PREP	ANALYSIS
B13F35	001	W	02LVG012	01/16/02	01/22/02	N/A		01/23/02
B13F36	002	W	02LVG012	01/17/02	01/22/02	N/A		01/23/02
B13F36	002 MS	W	02LVG012	01/17/02	01/22/02	N/A		01/23/02
B13F36	002 MSD	W	02LVG012	01/17/02	01/22/02	N/A		01/23/02
B13F37	003	W	02LVG012	01/18/02	01/22/02	N/A		01/23/02
B12XL7	004	W	02LVG012	01/19/02	01/22/02	N/A		01/23/02
B12XL7	004 D1	W	02LVG012	01/19/02	01/22/02	N/A		01/23/02

LAB QC:

VBLKID	MB1	W	02LVG012	N/A	N/A	N/A		01/23/02
VBLKID	MB1 BS	W	02LVG012	N/A	N/A	N/A		01/23/02



Client: TNU-HANFORD B01-114  
LVL #: 0201L825  
SDG/SAF #: H1675/B01-114

W.O. #: 11343-606-001-9999-00  
Date Received: 01-22-2002

**GC/MS VOLATILE**

Four (4) water samples were collected on 01-16,17,18,19-2002.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260A for client specified Volatile target compounds on 01-23-2002.

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

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
2. The analysis holding time was met.
3. Non-target compounds were not detected in the samples.
4. Sample B12XL7 required a 2-fold dilution due to high levels of target compounds.
5. All surrogate recoveries were within EPA QC limits.
6. All matrix spike recoveries were within EPA QC limits.
7. All blank spike recoveries were within EPA QC limits.
8. Internal standard area and retention time criteria were met.
9. "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."

by   
J. Michael Taylor

President  
Lionville Laboratory Incorporated

02-01-02  
Date

som\group\data\voa\tnu-hanford\0201-825.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 1 4 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, Special List

Report Date: 01/25/02 16:12

RFW Batch Number: 0201L825

Client: TNU-HANFORD B01-114

Work Order: 11343606001 Page: 1a

Sample Information	Cust ID:	B13F35	B13F36	B13F36	B13F36	B13F37	B12XL7
	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate	Toluene-d8	98 %	100 %	97 %	100 %	101 %	100 %
Recovery	Bromofluorobenzene	109 %	110 %	109 %	115 %	109 %	108 %
	1,2-Dichloroethane-d4	97 %	102 %	103 %	104 %	104 %	103 %
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride		5 U	5 U	5 U	5 U	5 U	5 U
Acetone		10 U	10 U	10 U	10 U	10 U	13 J
Carbon Disulfide		5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene		5 U	5 U	63 %	62 %	5 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)		5 U	5 U	5 U	5 U	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U	5 U	9
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride		5 U	5 U	5 U	5 U	5 U	280 E
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene		5 U	5 U	89 %	86 %	5 U	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Benzene		5 U	5 U	87 %	85 %	5 U	5 U
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene		5 U	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	5 U
Toluene		5 U	5 U	102 %	101 %	5 U	5 J

\*= Outside of EPA CLP QC limits.

Cust ID: B13F35 B13F36 B13F36 B13F36 B13F37

B12XL7

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RFW#: 001 002 002 MS 002 MSD 003 004

	001	002	002 MS	002 MSD	003	004
Chlorobenzene	5 U	5 U	98 %	96 %	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U
N-butylbenzene	5 U	5 U	5 U	5 U	5 U	5 U

\*= Outside of EPA CLP QC limits.

Lionville Laboratory, Inc.  
 Volatiles By GC/MS, Special List

Report Date: 01/25/02 16:12

RFW Batch Number: 0201L825

Client: TNU-HANFORD B01-114

Work Order: 11343606001 Page: 2a

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	Cust ID:	B12XL7	VBLKID	VBLKID BS
Sample	RFW#:	004 DL	02LVG012-MB1	02LVG012-MB1
Information	Matrix:	WATER	WATER	WATER
	D.F.:	2.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L

Surrogate	Toluene-d8	98 %	101 %	95 %
Recovery	Bromofluorobenzene	101 %	112 %	106 %
	1,2-Dichloroethane-d4	105 %	93 %	96 %
Chloromethane	20 U	10 U	10 U	10 U
Bromomethane	20 U	10 U	10 U	10 U
Vinyl Chloride	20 U	10 U	10 U	10 U
Chloroethane	20 U	10 U	10 U	10 U
Methylene Chloride	10 U	5 U	5 U	5 U
Acetone	10 JD	10 U	10 U	10 U
Carbon Disulfide	10 U	5 U	5 U	5 U
1,1-Dichloroethene	10 U	5 U	5 U	61 %
1,1-Dichloroethane	10 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	10 U	5 U	5 U	5 U
Chloroform	8 JD	5 U	5 U	5 U
1,2-Dichloroethane	10 U	5 U	5 U	5 U
2-Butanone	20 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	5 U	5 U	5 U
Carbon Tetrachloride	250 D	5 U	5 U	5 U
Bromodichloromethane	10 U	5 U	5 U	5 U
1,2-Dichloropropane	10 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	10 U	5 U	5 U	5 U
Trichloroethene	10 U	5 U	5 U	92 %
Dibromochloromethane	10 U	5 U	5 U	5 U
1,1,2-Trichloroethane	10 U	5 U	5 U	5 U
Benzene	10 U	5 U	5 U	86 %
Trans-1,3-Dichloropropene	10 U	5 U	5 U	5 U
Bromoform	10 U	5 U	5 U	5 U
4-Methyl-2-pentanone	20 U	10 U	10 U	10 U
2-Hexanone	20 U	10 U	10 U	10 U
Tetrachloroethene	10 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	10 U	5 U	5 U	5 U
Toluene	4 JD	5 U	5 U	98 %

\*= Outside of EPA CLP QC limits.

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Cust ID: B12XL7 VBLKID VBLKID BS

RFW#: 004 DL 02LVG012-MB1 02LVG012-MB1

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Chlorobenzene	10	U	5	U	95	%
Ethylbenzene	10	U	5	U	5	U
Styrene	10	U	5	U	5	U
Xylene (total)	10	U	5	U	5	U
N-butylbenzene	10	U	5	U	5	U

\*= Outside of EPA CLP QC limits.



<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B01-114-39	Page 1 of 1
Collector Renee Nielson	Company Contact Virginia Rohay	Telephone No. 372-9100	Project Coordinator TRENT, SJ		Price Code 7N	Date Turnaround 45 Days
Project Designation PFP Well Installation Sampling and Analysis - Water		Sampling Location 200 West		SAF No. B01-114	Air Quality <input type="checkbox"/>	
Ice Chest No. ERC 96 064	Field Logbook No. EL-1562	COA T20ZP1D722		Method of Shipment Federal Express		
Shipped To TMA/RECRA		Offsite Property No. A020094			Bill of Lading/Air Bill No. 4225 7955 0453	

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  Samples did not originate in radiological controlled area. No total activity associated with sample/samples.  <b>Special Handling and/or Storage</b>	Preservation	HCl to pH < 2 Cool 4C																	
	Type of Container	sGs*																	
	No. of Container(s)	3																	
	Volume	40mL																	
<b>SAMPLE ANALYSIS</b>		VOA - 8260A (TCL); VOA - 8260A (Add-On) (n-Butylbenzene)																	

Sample No.	Matrix *	Sample Date	Sample Time																	
B13F35	WATER	1-16-02	20:00	X																

<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>	
Relinquished By <i>R. Nielson</i>	Date/Time 0445	Received By / stored in REF # ac	Date/Time 1/17/02	SAMPLES STORED IN REF.# <u>ac</u> AT THE 3728 SHIPPING FACILITY ON <u>1/17/02</u> . COLLECTOR NOT AVAILABLE TO RELINQUISH SAMPLES ON <u>1/21/02</u> FOR SHIPMENT.				S=Soil SB=Soil/Sediment SO=Soil S=Sludge W=Water O=Oil A=Air DS=Drum Solid DL=Drum Liquid T=Timex W=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By REF # ac	Date/Time 1-21-02	Received By Doug Bowers	Date/Time 1-21-02						
Relinquished By Doug Bowers	Date/Time 1-21-02	Received By FOREX	Date/Time						
Relinquished By FEDEX	Date/Time 1-22-02	Received By Carl Henry	Date/Time 1-22-02						
Relinquished By	Date/Time	Received By	Date/Time						

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

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B01-114-40	Page 1 of 1
Collector Renee Nielson	Company Contact Virginia Rohay	Telephone No. 372-9100	Project Coordinator TRENT, SJ	Price Code 7N	Data Turnaround 45 Days	
Project Designation PFP Well Installation Sampling and Analysis - Water	Sampling Location 200 West	SAF No. B01-114	Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 96 064	Field Logbook No. EL-1562	COA T20ZP1D722	Method of Shipment Federal Express			
Shipped To TMA/RECRA	Offsite Property No. A020094	Bill of Lading/Air Bill No. 4235 7955 0453				

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Samples did not originate in radiological controlled area. No total activity associated with sample/samples. Special handling instructions	Preservation	HCl to pH <2 Cool 4C																			
	Type of Container	uGs*																			
	No. of Container(s)	3																			
	Volume	40mL																			

<b>SAMPLE ANALYSIS</b>		VOA - 8260A (TCL); VOA - 8260A (Add-On) (n-Butylbenzene)																	
------------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Sample No.	Matrix *	Sample Date	Sample Time																		
B13F36	WATER	1-17-02	1700	X																	

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>										<b>Matrix *</b>	
Relinquished By/Removed From <i>Renee Nielson</i>	Date/Time 0420	Received By/Stored In <i>Ref # 2B</i>	Date/Time 1/18/02 0420	<b>SAMPLES STORED IN REF # 2B AT THE 3728 SHIPPING FACILITY ON 1/18/02. COLLECTOR NOT AVAILABLE TO RELINQUISH SAMPLES ON 1/21/02 FOR SHIPMENT.</b>										S-Soil SB-Soil/Sediment SD-Solid SL-Sludge W-Water O-Oil A-Air DS-Dry Solid DL-Dry Liquid T-Tissue Wp-Wipe L-Liquid V-Vegetation X-Other	
Relinquished By/Removed From <i>Rof 2B</i>	Date/Time 1-21-02/1026	Received By/Stored In <i>Ray Bowers</i>	Date/Time 1-21-02/1026												
Relinquished By/Removed From <i>Ray Bowers</i>	Date/Time 1-21-02/1026	Received By/Stored In <i>F. P. Ex.</i>	Date/Time												
Relinquished By/Removed From <i>F. P. Ex.</i>	Date/Time 1-22-02 0940	Received By/Stored In <i>Carl Hemp</i>	Date/Time 1-22-02 0940												
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time												
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time												

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



<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B01-114-05	Page 1 of 1
Collector Renee Nielson	Company Contact Virginia Rohay	Telephone No. 372-9100	Project Coordinator TRENT, SJ		Price Code 7N	Data Turnaround 45 Days
Project Designation PFP Well Installation Sampling and Analysis - Water		Sampling Location 200 West; Well Number C3803, Well Name 299-W15-42		SAF No. B01-114	Air Quality <input type="checkbox"/>	
Ice Chest No. ERC 96 064	Field Logbook No. EL-1562	COA T20ZP1D722	Method of Shipment Federal Express			
Shipped To TMA/RECRA		Offsite Property No. AD 20094		Bill of Lading/Air Bill No. 4235 7955 0453		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	FLW 1/15/01 HCl or HNO3 to pH < 2.00																		
	Type of Container	aGs*																		
	No. of Container(s)	3																		
	Volume	40ml.																		
Special Handling and/or Storage																				
SAMPLE ANALYSIS			VOA - E260A (TCL); VOA - E260A (Add- On) (n- Butylbenzene)																	
Sample No.	Matrix *	Sample Date	Sample Time																	
B12XL7	WATER	1/19/02	0127	X																
																				B12XL3

<b>CHAIN OF POSSESSION</b>		<b>Sign/Print Names</b>		<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>
Relinquished By R. Nielson	Date/Time 0415 1/19/02	Received By Stored in REF # 20	Date/Time 0415 1/19/02	<b>SAMPLES STORED IN REF.# 20 AT THE 3728 SHIPPING FACILITY ON 1/19/02. COLLECTOR NOT AVAILABLE TO RELINQUISH SAMPLES ON 1/21/02 FOR SHIPMENT.</b>				<ul style="list-style-type: none"> <li>S=Soil</li> <li>SB=Soil/Bottom</li> <li>SO=Soil</li> <li>S=Sediment</li> <li>W=Water</li> <li>O=Oil</li> <li>A=Air</li> <li>DS=Dry Solid</li> <li>DL=Dry Liquid</li> <li>T=Tree</li> <li>WL=Wipe</li> <li>L=Liquid</li> <li>V=Vegetation</li> <li>X=Other</li> </ul>
Relinquished By REF. 20	Date/Time 1100 1/21/02	Received By SIGALE	Date/Time 1100 1/21/02					
Relinquished By ERC	Date/Time 1100 1/21/02	Received By FED EX	Date/Time					
Relinquished By FEDEX	Date/Time 0940 1-22-02	Received By Cals Henry	Date/Time 0940 1-22-02					
Relinquished By	Date/Time	Received By	Date/Time					

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