0077897

SAF-RC-054
118-K-1 Burial Grounds – Soil Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 5/15/08
INITIAL/DATE

COMMENTS:

SDG K1164 **SAF-RC-054**

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 118-K-1

RECEIVED
JUN 11 2008
EDMC

LvLI
LIONVILLE LABORATORY INC.

13 May 2008

RECEIVED MAY 2008

Joan Kessner
WC-Hanford
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: 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 #	0803L826
SDG #	K1164
SAF #	RC-054
Date Received	3/27/08
# Samples	7
Matrix	SOIL
Volatiles	X
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
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

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1164

RECEIVED
MAY 2008

DATE RECEIVED: 03/27/08 LVL LOT # 0803L826

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16HY9	001	S	08LVK066	03/24/08	N/A	04/06/08
J16HY9	001 R1	S	08LVK067	03/24/08	N/A	04/07/08
J16J01	002	S	08LVK066	03/24/08	N/A	04/06/08
J16J03	003	S	08LVK067	03/24/08	N/A	04/07/08
J16J05	004	S	08LVK067	03/24/08	N/A	04/07/08
J16J07	005	S	08LVK067	03/24/08	N/A	04/07/08
J16J09	006	S	08LVK067	03/24/08	N/A	04/07/08
J16J11	007	S	08LVK067	03/24/08	N/A	04/07/08
J16J11	007 MS	S	08LVK067	03/24/08	N/A	04/07/08
J16J11	007 MSD	S	08LVK067	03/24/08	N/A	04/07/08

LAB QC:

VBLKXT	MB1	S	08LVK066	N/A	N/A	04/06/08
VBLKXT	MB1 BS	S	08LVK066	N/A	N/A	04/06/08
VBLKXU	MB1	S	08LVK067	N/A	N/A	04/07/08
VBLKXU	MB1 BS	S	08LVK067	N/A	N/A	04/07/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-054
LVL #: 0803L826
SDG/SAF # K1164/RC-054

W.O. #: 11343-606-001-9999-00
Date Received: 03-27-2008

GC/MS VOLATILE

Seven (7) soil samples were collected on 03-24-2008.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 04-06,07-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within required holding time.
2. Non-target compounds were detected in the samples.
3. One (1) of forty-two (42) surrogate recoveries were outside acceptance criteria. Sample J16J11's associated matrix spike analysis fulfilled its reanalysis requirement.
4. One (1) of seventy (70) soil matrix spike recoveries were outside acceptance criteria.
5. Two (2) of seventy (70) soil blank spike recoveries were outside acceptance criteria.
6. The method blanks were below the reporting limit for all target compounds.

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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 26 pages.

LvLI
LIONVILLE LABORATORY INC.

7. Internal standard areas were outside acceptance limits. Sample J16HY9 was reanalyzed on 04-07-2008 which fulfills its reanalysis requirement.

8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

9. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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."

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/24/08
Date

GLOSSARY

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.

GLOSSARY

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.

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 resolve 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 - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.

PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

Richville Laboratory, Inc.
Volatiles by GC/MS, HSL List

Report Date: 04/23/08 14:19

RFW Batch Number: 0803L826 Client: TNUHANFORD RC-054 K1164 Work Order: 11343606001 Page: 1a

	Cust ID:	J16HY9	J16HY9	J16J01	J16J03	J16J05	J16J07
Sample Information	RFW#:	001	001	002	003	004	005
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.06	1.02	0.943	0.943	1.04	4.55
	Units:	ug/Kg	ug/Kg REPREP	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	98 %	94 %	86 %	80 %	81 %	85 %
	Bromofluorobenzene	113 %	101 %	88 %	79 %	80 %	92 %
	1,2-Dichloroethane-d4	125 %	97 %	86 %	79 %	81 %	86 %
		fl	fl	fl	fl	fl	fl
Chloromethane		11 U	11 U	10 U	10 U	11 U	49 U
Bromomethane		11 U	11 U	10 U	10 U	11 U	49 U
Vinyl Chloride		11 U	11 U	10 U	10 U	11 U	49 U
Chloroethane		11 U	11 U	10 U	10 U	11 U	49 U
Methylene Chloride		4 BJ	9 B	1 JB	10 B	10 B	54 B
Acetone		11 U	19	10 U	10 U	11 U	49 U
Carbon Disulfide		6 U	6 U	5 U	5 U	6 U	24 U
1,1-Dichloroethene		6 U	6 U	5 U	5 U	6 U	24 U
1,1-Dichloroethane		6 U	6 U	5 U	5 U	6 U	24 U
1,2-Dichloroethene (total)		6 U	6 U	5 U	5 U	6 U	24 U
Chloroform		6 U	6 U	5 U	5 U	6 U	24 U
1,2-Dichloroethane		6 U	6 U	5 U	5 U	6 U	24 U
2-Butanone		11 U	11 U	10 U	10 U	11 U	49 U
1,1,1-Trichloroethane		6 U	6 U	5 U	5 U	6 U	24 U
Carbon Tetrachloride		6 U	6 U	5 U	5 U	6 U	24 U
Bromodichloromethane		6 U	6 U	5 U	5 U	6 U	24 U
1,2-Dichloropropane		6 U	6 U	5 U	5 U	6 U	24 U
cis-1,3-Dichloropropene		6 U	6 U	5 U	5 U	6 U	24 U
Trichloroethene		6 U	6 U	5 U	5 U	6 U	24 U
Dibromochloromethane		6 U	6 U	5 U	5 U	6 U	24 U
1,1,2-Trichloroethane		6 U	6 U	5 U	5 U	6 U	24 U
Benzene		6 U	6 U	5 U	5 U	6 U	24 U
Trans-1,3-Dichloropropene		6 U	6 U	5 U	5 U	6 U	24 U
Bromoform		6 U	6 U	5 U	5 U	6 U	24 U
4-Methyl-2-pentanone		11 U	11 U	10 U	10 U	11 U	49 U
2-Hexanone		11 U	11 U	10 U	10 U	11 U	49 U
Tetrachloroethene		6 U	6 U	5 U	5 U	6 U	24 U
1,1,2,2-Tetrachloroethane		6 U	6 U	5 U	5 U	6 U	24 U
Toluene		6 U	6 U	5 U	5 U	6 U	14 J

*= Outside of EPA CLP QC limits.

000000007

Cust ID:	J16HY9	J16HY9	J16J01	J16J03	J16J05	J16J07
RFW#:	001	001 REPREP	002	003	004	005
Chlorobenzene	1 J	6 U	5 U	5 U	6 U	24 U
Ethylbenzene	6 U	6 U	5 U	5 U	6 U	24 U
Styrene	6 U	6 U	5 U	5 U	6 U	24 U
Xylenes (total)	2 J	6 U	5 U	5 U	6 U	11 J
cis-1,2-dichloroethene	6 U	6 U	5 U	5 U	6 U	24 U
trans-1,2-dichloroethene	6 U	6 U	5 U	5 U	6 U	24 U

*= Outside of EPA CLP QC limits.

Lionville Laboratory, Inc.
Volatiles by GC/MS, HSL List

RFW Batch Number: 0803L826 Client: TNUHANFORD RC-054 K1164 Work Order: 11343606001 Page: 2a Report Date: 04/23/08 14:19

	Cust ID:	J16J09	J16J11	J16J11	J16J11	VBLKXT	VBLKXT BS
Sample Information	RFW#:	006	007	007 MS	007 MSD	08LVK066-MB1	08LVK066-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.55	4.17	4.55	3.85	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	94 %	85 %	87 %	90 %	90 %	93 %
	Bromofluorobenzene	71 %	75 %	83 %	48 * %	89 %	91 %
	1,2-Dichloroethane-d4	92 %	86 %	87 %	91 %	92 %	92 %
		fl	fl	fl	fl	fl	fl
Chloromethane		47 U	45 U	94 %	99 %	10 U	118 %
Bromomethane		47 U	45 U	112 %	118 %	10 U	121 %
Vinyl Chloride		47 U	45 U	113 %	115 %	10 U	126 %
Chloroethane		47 U	45 U	121 %	128 %	10 U	127 %
Methylene Chloride		48 B	44 B	75 %	75 %	2 J	83 %
Acetone		47 U	45 U	206 %	204 %	10 U	237 %
Carbon Disulfide		24 U	22 U	88 %	87 %	5 U	100 %
1,1-Dichloroethene		24 U	22 U	96 %	99 %	5 U	105 %
1,1-Dichloroethane		24 U	22 U	91 %	92 %	5 U	97 %
1,2-Dichloroethene (total)		24 U	22 U	88 %	88 %	5 U	94 %
Chloroform		24 U	22 U	88 %	91 %	5 U	93 %
1,2-Dichloroethane		24 U	22 U	86 %	90 %	5 U	93 %
2-Butanone		47 U	45 U	146 %	142 %	10 U	174 %
1,1,1-Trichloroethane		24 U	22 U	86 %	84 %	5 U	97 %
Carbon Tetrachloride		24 U	22 U	83 %	81 %	5 U	97 %
Bromodichloromethane		24 U	22 U	87 %	86 %	5 U	94 %
1,2-Dichloropropane		24 U	22 U	86 %	87 %	5 U	96 %
cis-1,3-Dichloropropene		24 U	22 U	88 %	87 %	5 U	93 %
Trichloroethene		24 U	22 U	83 %	81 %	5 U	93 %
Dibromochloromethane		24 U	22 U	90 %	86 %	5 U	94 %
1,1,2-Trichloroethane		24 U	22 U	89 %	86 %	5 U	90 %
Benzene		24 U	22 U	85 %	84 %	5 U	93 %
Trans-1,3-Dichloropropene		24 U	22 U	89 %	86 %	5 U	89 %
Bromoform		24 U	22 U	85 %	79 %	5 U	92 %
4-Methyl-2-pentanone		47 U	45 U	95 %	90 %	10 U	101 %
2-Hexanone		47 U	45 U	124 %	122 %	10 U	135 %
Tetrachloroethene		24 U	22 U	84 %	74 %	5 U	99 %
1,1,2,2-Tetrachloroethane		24 U	22 U	84 %	46 * %	5 U	90 %
Toluene		39	22 U	85 %	80 %	5 U	92 %

*= Outside of EPA CLP QC limits.

000000009

Cust ID:	J16J09		J16J11		J16J11		J16J11		VBLKXT		VBLKXT BS	
RFW#:	006		007		007 MS		007 MSD		08LVK066-MB1		08LVK066-MB1	
Chlorobenzene	24	U	22	U	85	%	79	%	5	U	90	%
Ethylbenzene	27		22	U	82	%	74	%	5	U	92	%
Styrene	24	U	22	U	80	%	74	%	5	U	91	%
Xylenes (total)	140		22	U	81	%	73	%	5	U	93	%
cis-1,2-dichloroethene	24	U	22	U	90	%	91	%	5	U	94	%
trans-1,2-dichloroethene	24	U	22	U	87	%	86	%	5	U	95	%

*= Outside of EPA CLP QC limits.

Lionville Laboratory, Inc.
Volatiles by GC/MS, HSL List

Report Date: 04/23/08 14:19

RFW Batch Number: 0803L826 Client: TNUHANFORD RC-054 K1164 Work Order: 11343606001 Page: 3a

	Cust ID:	VBLKXU		VBLKXU BS	
Sample Information	RFW#:	08LVK067-MB1		08LVK067-MB1	
	Matrix:	SOIL		SOIL	
	D.F.:	1.00		1.00	
	Units:	ug/Kg		ug/Kg	
Surrogate Recovery	Toluene-d8	82	%	84	%
	Bromofluorobenzene	78	%	77	%
	1,2-Dichloroethane-d4	81	%	80	%
Chloromethane		10	U	100	%
Bromomethane		10	U	112	%
Vinyl Chloride		10	U	109	%
Chloroethane		10	U	116	%
Methylene Chloride		7		66	%
Acetone		10	U	153	%
Carbon Disulfide		5	U	89	%
1,1-Dichloroethene		5	U	95	%
1,1-Dichloroethane		5	U	88	%
1,2-Dichloroethene (total)		5	U	86	%
Chloroform		5	U	86	%
1,2-Dichloroethane		5	U	78	%
2-Butanone		10	U	112	%
1,1,1-Trichloroethane		5	U	89	%
Carbon Tetrachloride		5	U	89	%
Bromodichloromethane		5	U	84	%
1,2-Dichloropropane		5	U	83	%
cis-1,3-Dichloropropene		5	U	82	%
Trichloroethene		5	U	87	%
Dibromochloromethane		5	U	80	%
1,1,2-Trichloroethane		5	U	73	%
Benzene		5	U	83	%
Trans-1,3-Dichloropropene		5	U	80	%
Bromoform		5	U	75	%
4-Methyl-2-pentanone		10	U	67	%
2-Hexanone		10	U	92	%
Tetrachloroethene		5	U	91	%
1,1,2,2-Tetrachloroethane		5	U	65 *	%
Toluene		5	U	85	%

*= Outside of EPA CLP QC limits.

000000011

Cust ID: VBLKXU VBLKXU BS

RFW#: 08LVK067-MB1 08LVK067-MB1

Chlorobenzene	5	U	83	%
Ethylbenzene	5	U	86	%
Styrene	5	U	82	%
Xylenes (total)	5	U	84	%
cis-1,2-dichloroethene	5	U	88	%
trans-1,2-dichloroethene	5	U	84	%

*= Outside of EPA CLP QC limits.

000000012

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16HY9

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-001

Sample wt/vol: 4.70 (g/mL) G Lab File ID: k040606

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 6 Date Analyzed: 04/06/08

Column: (pack/cap) CAP Dilution Factor: 1.06

Number TICs found: 15

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.228	80	JB
2.	C3-ALKYLBENZENE	20.465	20	J
3.	UNKNOWN	20.831	10	J
4.	UNKNOWN	21.858	30	J
5.	UNKNOWN	22.310	30	J
6.	C4-ALKYLBENZENE	22.449	10	J
7.	UNKNOWN	22.588	10	J
8.	UNKNOWN	22.867	20	J
9.	UNKNOWN	23.459	20	J
10.	UNKNOWN	23.720	10	J
11.	UNKNOWN	24.155	20	J
12.	UNKNOWN	25.095	10	J
13.	UNKNOWN	25.495	30	J
14.	UNKNOWN	25.878	10	J
15.	UNKNOWN	26.191	20	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16HY9RE

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-001

Sample wt/vol: 4.90 (g/mL) G Lab File ID: k040713

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 6 Date Analyzed: 04/07/08

Column: (pack/cap) CAP Dilution Factor: 1.02

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.242	50	JB
2.	SILOXANE	22.324	30	JB
3.	UNKNOWN	22.880	7	J
4.	UNKNOWN	23.472	7	J
5.	UNKNOWN	24.168	6	J
6.	UNKNOWN	24.638	30	J
7.	UNKNOWN	24.795	30	J
8.	UNKNOWN	25.508	9	

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16J01

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-002

Sample wt/vol: 5.30 (g/mL) G Lab File ID: k040607

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 8 Date Analyzed: 04/06/08

Column: (pack/cap) CAP Dilution Factor: 0.943

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.228	30	JB
2.	SILOXANE	22.328	10	JB
3.	UNKNOWN	24.903	6	JB

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16J03

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-003

Sample wt/vol: 5.30 (g/mL) G Lab File ID: k040706

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 8 Date Analyzed: 04/07/08

Column: (pack/cap) CAP Dilution Factor: 0.943

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.208	40	JB
2.	SILOXANE	22.325	20	JB
3.	UNKNOWN	24.900	10	JB

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16J05

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-004

Sample wt/vol: 4.80 (g/mL) G Lab File ID: k040707

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 8 Date Analyzed: 04/07/08

Column: (pack/cap) CAP Dilution Factor: 1.04

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.226	30	JB
2.	SILOXANE	22.325	10	JB
3.	UNKNOWN	24.900	20	JB

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16J07

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-005

Sample wt/vol: 1.10 (g/mL) G Lab File ID: k040708

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 8 Date Analyzed: 04/07/08

Column: (pack/cap) CAP Dilution Factor: 4.55

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.232	200	JB
2.	UNKNOWN	21.183	30	J
3.	UNKNOWN	21.305	700	J
4.	UNKNOWN	21.740	50	J
5.	UNKNOWN	22.210	40	J
6.	SILOXANE	22.332	100	JB
7.	UNKNOWN	22.645	40	J
8.	UNKNOWN	22.923	200	J
9.	UNKNOWN	23.724	40	J
10.	UNKNOWN	24.507	400	J
11.	UNKNOWN	24.629	500	J
12.	UNKNOWN	24.803	900	J
13.	UNKNOWN	26.038	100	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16J09

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-006

Sample wt/vol: 1.10 (g/mL) G Lab File ID: k040709

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 4 Date Analyzed: 04/07/08

Column: (pack/cap) CAP Dilution Factor: 4.55

Number TICs found: 15

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.231	100	JB
2.	UNKNOWN	18.136	200	J
3.	UNKNOWN	19.267	200	J
4.	UNKNOWN	19.616	200	J
5.	UNKNOWN	20.468	400	J
6.	UNKNOWN	20.834	100	J
7.	UNKNOWN	21.321	3000	J
8.	UNKNOWN	22.313	80	J
9.	UNKNOWN	22.922	400	J
10.	C4-ALKYLBENZENE	23.479	100	J
11.	UNKNOWN	23.723	100	J
12.	UNKNOWN	24.523	900	J
13.	UNKNOWN	24.645	1000	J
14.	UNKNOWN	24.819	2000	JB
15.	UNKNOWN	26.055	200	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16J11

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0803L826-007

Sample wt/vol: 1.20 (g/mL) G Lab File ID: k040711

Level: (low/med) LOW Date Received: 03/27/08

% Moisture: not dec. 8 Date Analyzed: 04/07/08

Column: (pack/cap) CAP Dilution Factor: 4.17

Number TICs found: 9

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.232	200	JB
2.	UNKNOWN	21.322	800	J
3.	UNKNOWN	22.314	90	J
4.	UNKNOWN	22.923	100	J
5.	UNKNOWN	23.724	50	J
6.	UNKNOWN	24.524	700	J
7.	UNKNOWN	24.646	1000	J
8.	UNKNOWN	24.820	2000	JB
9.	UNKNOWN	26.056	100	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKXT

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK066-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: k040605

Level: (low/med) LOW Date Received: 04/06/08

% Moisture: not dec. 0 Date Analyzed: 04/06/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.230	30	J
2.	SILOXANE	22.311	20	J
3.	UNKNOWN	24.887	5	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKXU

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK067-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: k040705

Level: (low/med) LOW Date Received: 04/07/08

% Moisture: not dec. 0 Date Analyzed: 04/07/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.215	30	J
2.	SILOXANE	22.314	20	J
3.	UNKNOWN	24.907	7	J

nville Laboratory Use Only

8030826

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

0000000023

nt TNU HANFORD SAF# RC-054

Final Proj. Sampling Date

ncts# 11343-606-001-9999-00

ct Contact/Phone#

ville Laboratory Project Manager O JOHNSON

SW846 Del STD TAT 21

Rec'd 3-27-08 Date Due 4-17-08

		A	B	C					D							
Refrigerator #		6	3	3					3							
#/Type Container	Liquid															
	Solid	1G	1G	1G					1G							
Volume		250	250	250					250							
Preservatives		–	–	–					–							
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb				TCL Metals	CN						
		Lionville Laboratory Use Only														
		06244	06254	OPCB					Met①							

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254	OPCB					Met①						
001	J16HY9			Soil	3/24/08	1231	X	X	X					X						
002	J01					1320	X	X	X					X						
003	J03					1332	X	X	X					X						
004	J05					1350	X	X	X					X						
005	J07					1404	X	X	X					X						
006	J09					1416	X	X	X					X						
007	J11					1427	X	X	X					X						

Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum Solids
Drum Liquids
TCLP
Leachate
Pipe
Other
Fish

ial Instructions:

met① = RCRA TO

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/27/08	0935

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-031	Page 1 of 2

llector Rob Zane	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH	Price Code	Data Turnaround 21 days
ıject Designation 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054		
Chest No. ERC-02-007	Field Logbook No. EL1602-4	COA R118K12600	Method of Shipment Fed Ex		
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080205		Bill of Lading/Air Bill No. SEE OSPC		

000000024

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1						
Volume	250mL	250mL	250mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)		RCF SCREEN/J15J00				
Sample No. / Matrix * / Sample Date / Sample Time										
6HY9 / SOIL / 3-24-08 / 1231	X	X	X	X						
6J01 / SOIL / 3-24-08 / 1320	X	X	X	X						
6J03 / SOIL / 3-24-08 / 1332	X	X	X	X						
6J05 / SOIL / 3-24-08 / 1350	X	X	X	X						
6J07 / SOIL / 3-24-08 / 1404	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
inquished By/Removed From: R. Zane/RZ	Received By/Stored In: Doug Bowers/Doug Bowers	3/24/08 1445
inquished By/Removed From: Doug Bowers/Doug Bowers	Received By/Stored In: RPF 1A / D60 RMSA	3-24-08/1720
inquished By/Removed From: D60 BATELLE 1A	Received By/Stored In: DAVID ST. JOHN / David St. John	3/26/08 1230
inquished By/Removed From: DAVID ST. JOHN / David St. John	Received By/Stored In: FED EX	3/26/08 1230
inquished By/Removed From: FED EX	Received By/Stored In: Pat Hunsing	3-27-08 0935
inquished By/Removed From	Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-054-031 | Page 2 of 2

llector Rob Zane	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH
Price Code	Data Turnaround 21 days		
ɔject Designation 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054
Chest No. ERC-02-007	Field Logbook No. EL1602-4	COA R118K12600	Method of Shipment Fed Ex
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080205		Bill of Lading/Air Bill No. SEE OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	250mL	250mL	250mL	250mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

RCF SCREEN J15J00

Sample No.	Matrix *	Sample Date	Sample Time										
6J09	SOIL	3-24-08	1416	X	X	X	X						
6J11	SOIL	3-24-08	1427	X	X	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
nquished By/Removed From Zane/	3/24/08 1445	Received By/Stored In Doug Doug Bowers Bowers	3-24-08/1445
nquished By/Removed From ugBowers/Doug Bowers	3-24-08/1720	Received By/Stored In Rifik 1060 RMSA	3-24-08/1720
nquished By/Removed From 60 BATELLE LA	3/26/08 1230	Received By/Stored In DAVID ST. JOHN	3/26/08 1230
nquished By/Removed From DAVID ST JOHN	3/26/08 1230	Received By/Stored In FED EX	
nquished By/Removed From Fed Ex	3-27-08 0935	Received By/Stored In V. Hernandez	3-27-08 0935
nquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7470 - (CV)

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000025

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-054

Date: 3/27/08

LvLI Batch #: 0803L 826

Sample Custodian: V. Hunady

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7909 7026 9246
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.2	°C	Cooler # ERC-02-007
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY, INC.

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1164

RECEIVED
MAY 2008

DATE RECEIVED: 03/27/08 LVL LOT #: 0803L826

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16HY9	001	S	08LE0147	03/24/08	03/30/08	04/17/08
J16HY9	001 MS	S	08LE0147	03/24/08	03/30/08	04/17/08
J16HY9	001 MSD	S	08LE0147	03/24/08	03/30/08	04/17/08
J16J01	002	S	08LE0147	03/24/08	03/30/08	04/17/08
J16J03	003	S	08LE0147	03/24/08	03/30/08	04/18/08
J16J05	004	S	08LE0147	03/24/08	03/30/08	04/17/08
J16J07	005	S	08LE0147	03/24/08	03/30/08	04/17/08
J16J09	006	S	08LE0147	03/24/08	03/30/08	04/17/08
J16J09	006 01	S	08LE0147	03/24/08	03/30/08	04/18/08
J16J11	007	S	08LE0147	03/24/08	03/30/08	04/17/08

LAB QC:

SBLKTP	MB1	S	08LE0147	N/A	03/30/08	04/08/08
SBLKTP	MB1 BS	S	08LE0147	N/A	03/30/08	04/08/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-054
LVL #: 0803L826
SDG/SAF # K1164 / RC-054

W.O. #: 11343-606-001-9999-00
Date Received: 03-27-2008

SEMIVOLATILE

Seven (7) soil samples were collected on 03-24-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 03-3420-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-08, 17, 18-2008.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.

2. Samples were extracted and analyzed within required holding time.

3. Non-target compounds were detected in the samples.

4. The following samples had an elevated final volume of 4 mls (extracts dark): J16HY9, J16HY9MS, J16HY9MSD, J16J07, J16J09, and J16J11. Reporting limits have been adjusted to reflect these changes.

5. The following extracted sample required dilution because it contained high levels of target analytes: Sample J16J09 required a 2-fold dilution. Reporting limits have been adjusted to reflect the necessary dilutions.

6. Three (3) of seventy-two (72) surrogate recoveries were outside acceptance criteria. However, surrogate recovery acceptance criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).

r:\group\data\2008\bna\tnu\0803-826cs2.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 29 pages.

LvLI
LIONVILLE LABORATORY INC.

7. Fifteen (15) of one hundred and twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS084) has been enclosed.

8. Two (2) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS084) has been enclosed.

9. The method blank was below the reporting limit for all target compounds.

10. All initial calibrations associated with this data set were within acceptance criteria.

11. All continuing calibrations standards analyzed prior to sample extracts were within acceptance criteria.

12. Internal standard area criteria were not met for sample J16J09DL. Analysis of sample J16J09 fulfilled its reanalysis requirement. The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits; consequently, the sample

13. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

14. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. 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
Laboratory Manager
Lionville Laboratory Incorporated

4/23/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS054

Initiator: Shawn Saylor
Date: 4-21-08
Client: TRM RL054 F1164

Batch: 0803L826
Samples: MS, MSD, BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 08160147

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

low or no recovery of several analytes in the MS, MSD, BS (hexachlorocyclopentadiene, 33'dichlorobenzidine, butylbenzylphthalate, bis(2-ethylhexyl) phthalate, dinoctylphthalate, 24 dinitrophenol, nitroaniline)

2. Known or Probable Causes(s) Hexachlorocyclopentadiene subject to thermal decomposition in the inlet of the gas chromatograph, chemical reactions in acetone solution, and photochemical decomposition. 33'dichlorobenzidine can be subject to cumulative losses during solvent concentration. Acidic phenols/nitroanilines subject to erratic chromatographic behavior especially if the GC system contaminated with high boiling material. Butylbenzylphthalate & dinoctylphthalate present in sample itself as well.

3. Discussion and Proposed Action Other Description: MS/MSD. narrate

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 4/21/08

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: _____ Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
1	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	2	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY

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.

A = Indicates that a TIC is a suspected aldol-condensation product.

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.

GLOSSARY

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.

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.

Semivolatiles by GC/MS, HSL List

Report Date: 04/22/08 12:09

RFW Batch Number: 0803L826 Client: TNUHANFORD RC-054 K1164 Work Order: 11343606001 Page: 1a

	Cust ID:	J16HY9	J16HY9	J16HY9	J16J01	J16J03	J16J05
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	79 %	91 %	81 %	49 %	67 %	50 %
	2-Fluorobiphenyl	83 %	116 * %	94 %	58 %	72 %	60 %
	Terphenyl-d14	63 %	96 %	84 %	90 %	99 %	74 %
	Phenol-d5	84 %	97 %	87 %	52 %	68 %	55 %
	2-Fluorophenol	86 %	98 %	91 %	50 %	64 %	48 %
	2,4,6-Tribromophenol	111 %	140 * %	131 * %	71 %	51 %	38 %
		fl	fl	fl	fl	fl	fl
Phenol		1400 U	77 %	90 %	360 U	360 U	360 U
bis(2-Chloroethyl)ether		1400 U	62 %	68 %	360 U	360 U	360 U
2-Chlorophenol		1400 U	89 %	99 %	360 U	360 U	360 U
1,3-Dichlorobenzene		1400 U	76 %	84 %	360 U	360 U	360 U
1,4-Dichlorobenzene		1400 U	74 %	84 %	360 U	360 U	360 U
1,2-Dichlorobenzene		1400 U	80 %	89 %	360 U	360 U	360 U
2-Methylphenol		1400 U	97 %	127 * %	360 U	360 U	360 U
2,2'-oxybis(1-Chloropropane)		1400 U	62 %	65 %	360 U	360 U	360 U
3/4 Methylphenol		1400 U	91 %	103 %	360 U	360 U	360 U
N-Nitroso-di-n-propylamine		1400 U	73 %	83 %	360 U	360 U	360 U
Hexachloroethane		1400 U	69 %	79 %	360 U	360 U	360 U
Nitrobenzene		1400 U	76 %	79 %	360 U	360 U	360 U
Isophorone		1400 U	87 %	92 %	360 U	360 U	360 U
2-Nitrophenol		1400 U	98 %	105 %	360 U	360 U	360 U
2,4-Dimethylphenol		1400 U	104 %	117 %	360 U	360 U	360 U
bis(2-Chloroethoxy)methane		1400 U	82 %	81 %	360 U	360 U	360 U
2,4-Dichlorophenol		1400 U	105 %	110 %	360 U	360 U	360 U
1,2,4-Trichlorobenzene		1400 U	91 %	96 %	360 U	360 U	360 U
Naphthalene		1400 U	80 %	85 %	360 U	360 U	360 U
4-Chloroaniline		1400 U	55 %	70 %	360 U	360 U	360 U
Hexachlorobutadiene		1400 U	97 %	110 %	360 U	360 U	360 U
4-Chloro-3-methylphenol		1400 U	102 %	124 %	360 U	360 U	360 U
2-Methylnaphthalene		140 J	83 %	90 %	360 U	360 U	360 U
Hexachlorocyclopentadiene		1400 U	0 * %	0 * %	360 U	360 U	360 U
2,4,6-Trichlorophenol		1400 U	127 %	114 %	360 U	360 U	360 U
2,4,5-Trichlorophenol		3500 U	118 %	121 %	900 U	900 U	910 U

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J16HY9		J16HY9		J16HY9		J16J01		J16J03		J16J05	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	1400	U	93	%	90	%	360	U	360	U	360	U
2-Nitroaniline	3500	U	109	%	105	%	900	U	900	U	910	U
Dimethylphthalate	1400	U	108	%	107	%	360	U	360	U	360	U
Acenaphthylene	1400	U	91	%	87	%	360	U	360	U	37	J
2,6-Dinitrotoluene	1400	U	102	%	115 *	%	360	U	360	U	360	U
3-Nitroaniline	3500	U	85	%	94	%	900	U	900	U	910	U
Acenaphthene	1400	U	84	%	79	%	360	U	360	U	360	U
2,4-Dinitrophenol	3500	U	121 *	%	127 *	%	900	U	900	U	910	U
4-Nitrophenol	3500	U	163 *	%	173 *	%	900	U	900	U	910	U
Dibenzofuran	1400	U	88	%	90	%	360	U	360	U	360	U
2,4-Dinitrotoluene	1400	U	110	%	118	%	360	U	360	U	360	U
Diethylphthalate	1400	U	95	%	93	%	360	U	360	U	360	U
4-Chlorophenyl-phenylether	1400	U	81	%	83	%	360	U	360	U	360	U
Fluorene	1400	U	82	%	81	%	360	U	360	U	360	U
4-Nitroaniline	3500	U	127 *	%	119	%	900	U	900	U	910	U
4,6-Dinitro-2-methylphenol	3500	U	161 *	%	168 *	%	900	U	900	U	910	U
N-Nitrosodiphenylamine (1)	310	J	99	%	91	%	360	U	360	U	360	U
4-Bromophenyl-phenylether	1400	U	98	%	89	%	360	U	360	U	360	U
Hexachlorobenzene	1400	U	101	%	109	%	360	U	360	U	360	U
Pentachlorophenol	3500	U	130	%	140 *	%	900	U	900	U	910	U
Phenanthrene	640	J	69	%	70	%	360	U	360	U	360	U
Anthracene	190	J	68	%	70	%	360	U	360	U	360	U
Carbazole	1400	U	111	%	107	%	360	U	360	U	360	U
Di-n-butylphthalate	1100	J	79	%	73	%	52	J	360	U	360	U
Fluoranthene	1400	U	88	%	85	%	360	U	360	U	360	U
Pyrene	1400	U	79	%	80	%	360	U	360	U	360	U
Butylbenzylphthalate	5400		0 *	%	0 *	%	360	U	360	U	360	U
3,3'-Dichlorobenzidine	1400	U	89	%	117	%	360	U	360	U	360	U
Benzo(a)anthracene	1400	U	96	%	91	%	360	U	360	U	360	U
Chrysene	1400	U	88	%	92	%	360	U	360	U	360	U
bis(2-Ethylhexyl)phthalate	2300		120	%	147	%	59	J	23	J	24	J
Di-n-octyl phthalate	260	J	54	%	44 *	%	360	U	360	U	360	U
Benzo(b)fluoranthene	1400	U	85	%	102	%	360	U	360	U	360	U
Benzo(k)fluoranthene	1400	U	98	%	83	%	360	U	360	U	360	U
Benzo(a)pyrene	1400	U	89	%	101	%	360	U	360	U	360	U
Indeno(1,2,3-cd)pyrene	1400	U	86	%	93	%	360	U	360	U	360	U
Dibenz(a,h)anthracene	1400	U	95	%	103	%	360	U	360	U	360	U
Benzo(g,h,i)perylene	1400	U	98	%	68	%	360	U	360	U	360	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

000000009

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0803L826 Client: TNUHANFORD RC-054 K1164 Work Order: 11343606001 Report Date: 04/22/08 12:09 Page: 2a

	Cust ID:	J16J07		J16J09		J16J09		J16J11		SBLKTP		SBLKTP BS	
Sample Information	RFW#:	005		006		006 DL		007		08LE0147-MB1		08LE0147-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	4.00		4.00		8.00		4.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	56	%	72	%	79	%	67	%	77	%	70	%
	2-Fluorobiphenyl	68	%	94	%	90	%	81	%	77	%	89	%
	Terphenyl-d14	68	%	79	%	79	%	88	%	96	%	92	%
	Phenol-d5	62	%	80	%	71	%	68	%	76	%	92	%
	2-Fluorophenol	64	%	75	%	78	%	69	%	74	%	88	%
	2,4,6-Tribromophenol	64	%	105	%	79	%	63	%	48	%	28	%
			fl		fl		fl		fl		fl		fl
Phenol		1400	U	1400	U	2800	U	1400	U	330	U	89	%
bis(2-Chloroethyl)ether		1400	U	1400	U	2800	U	1400	U	330	U	79	%
2-Chlorophenol		1400	U	1400	U	2800	U	1400	U	330	U	86	%
1,3-Dichlorobenzene		1400	U	1400	U	2800	U	1400	U	330	U	82	%
1,4-Dichlorobenzene		1400	U	1400	U	2800	U	1400	U	330	U	81	%
1,2-Dichlorobenzene		1400	U	1400	U	2800	U	1400	U	330	U	87	%
2-Methylphenol		1400	U	1400	U	2800	U	1400	U	330	U	84	%
2,2'-oxybis(1-Chloropropane)		1400	U	1400	U	2800	U	1400	U	330	U	82	%
3/4 Methylphenol		1400	U	1400	U	2800	U	1400	U	330	U	88	%
N-Nitroso-di-n-propylamine		1400	U	1400	U	2800	U	1400	U	330	U	87	%
Hexachloroethane		1400	U	1400	U	2800	U	1400	U	330	U	82	%
Nitrobenzene		1400	U	1400	U	2800	U	1400	U	330	U	67	%
Isophorone		1400	U	1400	U	2800	U	1400	U	330	U	75	%
2-Nitrophenol		1400	U	1400	U	2800	U	1400	U	330	U	64	%
2,4-Dimethylphenol		1400	U	1400	U	2800	U	1400	U	330	U	53	%
bis(2-Chloroethoxy)methane		1400	U	1400	U	2800	U	1400	U	330	U	67	%
2,4-Dichlorophenol		1400	U	1400	U	2800	U	1400	U	330	U	64	%
1,2,4-Trichlorobenzene		1400	U	1400	U	2800	U	1400	U	330	U	67	%
Naphthalene		1400	U	230	J	320	JD	1400	U	330	U	67	%
4-Chloroaniline		1400	U	1400	U	2800	U	1400	U	330	U	48	%
Hexachlorobutadiene		1400	U	1400	U	2800	U	1400	U	330	U	70	%
4-Chloro-3-methylphenol		1400	U	1400	U	2800	U	1400	U	330	U	71	%
2-Methylnaphthalene		1400	U	720	J	710	JD	1400	U	330	U	71	%
Hexachlorocyclopentadiene		1400	U	1400	U	2800	U	1400	U	330	U	77	%
2,4,6-Trichlorophenol		1400	U	1400	U	2800	U	1400	U	330	U	36	%
2,4,5-Trichlorophenol		3600	U	3500	U	6900	U	3600	U	830	U	67	%

*= Outside of EPA CLP QC limits.

000000010

Cust ID:	J16J07		J16J09		J16J09		J16J11		SBLKTP		SBLKTP BS	
RFW#:	005		006		006 DL		007		08LE0147-MB1		08LE0147-MB1	
2-Chloronaphthalene	1400	U	1400	U	2800	U	1400	U	330	U	83	%
2-Nitroaniline	3600	U	3500	U	6900	U	3600	U	830	U	88	%
Dimethylphthalate	1400	U	1400	U	2800	U	1400	U	330	U	91	%
Acenaphthylene	1300	J	14000	E	14000	D	4500		330	U	87	%
2,6-Dinitrotoluene	1400	U	1400	U	2800	U	1400	U	330	U	90	%
3-Nitroaniline	3600	U	3500	U	6900	U	3600	U	830	U	93	%
Acenaphthene	1400	U	1400	U	2800	U	1400	U	330	U	84	%
2,4-Dinitrophenol	3600	U	3500	U	6900	U	3600	U	830	U	16 *	%
4-Nitrophenol	3600	U	3500	U	6900	U	3600	U	830	U	96	%
Dibenzofuran	1400	U	1400	U	2800	U	1400	U	330	U	89	%
2,4-Dinitrotoluene	1400	U	1400	U	2800	U	1400	U	330	U	100	%
Diethylphthalate	1400	U	1400	U	2800	U	1400	U	330	U	93	%
4-Chlorophenyl-phenylether	1400	U	1400	U	2800	U	1400	U	330	U	87	%
Fluorene	1400	U	1400	U	2800	U	1400	U	330	U	90	%
4-Nitroaniline	3600	U	3500	U	6900	U	3600	U	830	U	106	%
4,6-Dinitro-2-methylphenol	3600	U	3500	U	6900	U	3600	U	830	U	22 *	%
N-Nitrosodiphenylamine (1)	210	J	290	J	2800	U	1400	U	330	U	66	%
4-Bromophenyl-phenylether	1400	U	1400	U	2800	U	1400	U	330	U	70	%
Hexachlorobenzene	1400	U	1400	U	2800	U	1400	U	330	U	86	%
Pentachlorophenol	3600	U	3500	U	6900	U	3600	U	830	U	37	%
Phenanthrene	130	J	120	J	2800	U	1400	U	330	U	88	%
Anthracene	110	J	1400	U	2800	U	1400	U	330	U	92	%
Carbazole	1400	U	1400	U	2800	U	1400	U	330	U	96	%
Di-n-butylphthalate	150	J	180	J	220	JD	1400	U	330	U	96	%
Fluoranthene	1400	U	1400	U	2800	U	1400	U	330	U	108	%
Pyrene	110	J	1400	U	2800	U	1400	U	330	U	86	%
Butylbenzylphthalate	1400	U	1400	U	2800	U	1400	U	330	U	91	%
3,3'-Dichlorobenzidine	1400	U	1400	U	2800	U	1400	U	330	U	69	%
Benzo(a)anthracene	1400	U	1400	U	2800	U	1400	U	330	U	94	%
Chrysene	1400	U	1400	U	2800	U	1400	U	330	U	94	%
bis(2-Ethylhexyl)phthalate	1300	J	350	J	390	JD	120	J	330	U	92	%
Di-n-octyl phthalate	1400	U	1400	U	2800	U	1400	U	330	U	92	%
Benzo(b)fluoranthene	1400	U	1400	U	2800	U	1400	U	330	U	91	%
Benzo(k)fluoranthene	1400	U	1400	U	2800	U	1400	U	330	U	96	%
Benzo(a)pyrene	1400	U	1400	U	2800	U	1400	U	330	U	94	%
Indeno(1,2,3-cd)pyrene	1400	U	1400	U	2800	U	1400	U	330	U	92	%
Dibenz(a,h)anthracene	1400	U	1400	U	2800	U	1400	U	330	U	96	%
Benzo(g,h,i)perylene	1400	U	1400	U	2800	U	1400	U	330	U	93	%

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

000000011

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16HY9

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041707

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/17/08

Injection Volume: 2.0(uL)

Dilution Factor: 4.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	1.394	2000	JA
2.	ALDOL CONDENSATE	3.416	3000	JA
3.	UNKNOWN	3.974	200000	JB
4.	PAH	13.914	4000	J
5.	PAH	16.199	3000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16J01

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041710

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 8 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/17/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.436	700	JA
2.	ALKANE	3.550	500	J
3.	ALKANE	3.680	1000	J
4.	UNKNOWN	4.203	200000	JB
5.	ALDOL CONDENSATE	5.206	500	JA

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16J03

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041805

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 8 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/18/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	3.426	800	J
2.	ALKANE	3.565	2000	J
3.	UNKNOWN	4.062	200000	JB
4.	UNKNOWN	4.089	30000	J
5.	ALDOL CONDENSATE	5.065	800	JA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16J05

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041712

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 8 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/17/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.440	600	JA
2.	ALKANE	3.553	600	J
3.	ALDOL CONDENSATE	3.649	900	JA
4.	UNKNOWN	4.164	100000	JB
5.	UNKNOWN	18.018	600	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16J07

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-005

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041713

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 8 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/17/08

Injection Volume: 2.0(uL)

Dilution Factor: 4.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.945	100000	JB
2.	UNKNOWN	14.330	5000	J
3.	ALKANE	16.196	6000	J
4.	PAH	16.457	10000	J
5.	UNKNOWN	17.469	4000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16J09

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-006

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041714

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/17/08

Injection Volume: 2.0(uL)

Dilution Factor: 4.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.978	200000	JB
2.	UNKNOWN	6.986	30000	J
3.	UNKNOWN	10.142	30000	J
4.	UNKNOWN	13.002	20000	J
5.	UNKNOWN	14.731	80000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16J09DL

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-006 DL

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041806

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/18/08

Injection Volume: 2.0(uL)

Dilution Factor: 8.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 0

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

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16J11

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 0803L826-007

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N041715

Level: (low/med) LOW

Date Received: 03/27/08

% Moisture: 8 decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/17/08

Injection Volume: 2.0(uL)

Dilution Factor: 4.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.978	200000	JB
2.	UNKNOWN	6.978	4000	J
3.	UNKNOWN	9.550	7000	J
4.	UNKNOWN	10.239	10000	J
5.	UNKNOWN	14.345	10000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTP

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

Client: TNUHANFORD RC-054 K1164

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0147-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N040806

Level: (low/med) LOW

Date Received: 03/30/08

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 03/30/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/08/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.658	200	J
2.	UNKNOWN	3.963	100	J
3.	UNKNOWN	4.626	50000	J
4.	UNKNOWN	7.006	100	J
5.	UNKNOWN	18.751	400	J

SAMPLE EXTRACTION RECORD

Sheet no.: 1 of 2

017

Extract. Date: 03/30/08 Extraction Batch No: 08LE0147 Analyst: MF Method: ****

Test: 0625 Cleanup Date: Analyst: Client: BJC BKDD02464A

LIMS Report Date: 04/01/08 Solvent: DCM,ACETONE Adsorbent:

0000000021

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0803L810-	BJC BKDD02464A										
001 H	PWRHS-C-SZ-04		30.0	1.0		2.0		0.5	N		33.33
002 H	PWRHS-C-SZ-05		30.0	1.0		1.0		0.5	N		16.67
0803L816-	VISTA ENGINEERING										
001 N	B051		30.0	1.0		1.0		0.5	N	95.91	17.38
002 N	B052		30.0	1.0		1.0		0.5	N	97.45	17.10
004 N	B054		30.0	1.0		1.0		0.5	N	98.54	16.91
0803L825-	BJC BKDD02464A										
001 H	PWRHS-C-SZ-02		30.0	1.0		10.0		0.5	N		166.7
001 HS	PWRHS-C-SZ-02		30.0	1.0	0.8	10.0		0.5	N		166.7
001 HT	PWRHS-C-SZ-02		30.0	1.0	0.8	10.0		0.5	N		166.7
002 H	PWRHS-C-SZ-02FR		30.0	1.0		4.0		0.5	N		66.67
003 H	PWRHS-C-SZ-03		30.0	1.0		2.0		0.5	N		33.33
004 H	PWRHS-C-SZ-16		30.0	1.0		10.0		0.5	N		166.7
005 H	PWRHS-C-SZ-17		30.0	1.0		4.0		0.5	N		66.67
0803L826-	TNUHANFORD RC-054 K1164										
001 H	J16HY9		30.0	1.0		4.0		0.5	N	94.22	70.76
001 HS	J16HY9		30.0	1.0	0.8	4.0		0.5	N	94.22	70.76
001 HT	J16HY9		30.0	1.0	0.8	4.0		0.5	N	94.22	70.76
002 H	J16J01		30.0	1.0		1.0		0.5	N	92.36	18.05
003 H	J16J03		30.0	1.0		1.0		0.5	N	92.21	18.07
004 H	J16J05		30.0	1.0		1.0		0.5	N	91.94	18.13
005 H	J16J07		30.0	1.0		4.0		0.5	N	92.48	72.09
006 H	J16J09		30.0	1.0		4.0		0.5	N	95.99	69.45

Comments:
Surrogate: 500 UL ESU BNA 89916502 @100-150 UG/ML
Spike: 600 UL BNA LCS SPIKE 86951307

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
	[illegible]	4/1/09 0930	M	4/1/08 1015	Revision

for L825 ex 1,001-5,001-T

binny 825.001 all to same FV of 10.0ml

SAMPLE EXTRACTION RECORD

Sheet no.: 2 of 2

814

000000022

Extract. Date: 03/30/08 Extraction Batch No: 08LE0147 Analyst: MF Method: ****

Test: O625 Cleanup Date: Analyst: Client: BJC BKDD02464A

LIMS Report Date: 04/01/08 Solvent: DCM,ACETONE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0803L826-	TNUHANFORD RC-054 K1164										
007 H	J16J11		30.0	1.0		4.0		0.5	N	92.35	72.19
0803L833-	TNUHANFORD F08-043 H3669										
004 X	B1TDD3-A		30.0	1.0		1.0		0.5	N		16.67
004 XS	B1TDD3-A		30.0	1.0	0.8	1.0		0.5	N		16.67
0803L836-	TNUHANFORD RC-031 K1169										
001 H	J16J16		30.0	1.0		1.0		0.5	N	79.02	21.09
001 HS	J16J16		30.0	1.0	0.8	1.0		0.5	N	79.02	21.09
001 HT	J16J16		30.0	1.0	0.8	1.0		0.5	N	79.02	21.09
08LE0147-MB1 H	SBLKTP		30.0	1.0		1.0		0.5	N	100.00	16.67
08LE0147-MB1 HS	SBLKTP		30.0	1.0	0.8	1.0		0.5	N	100.00	16.67
08LE0147-MB1 N	SBLKTP		30.0	1.0		1.0		0.5	N	100.00	16.67
08LE0147-MB1 NS	SBLKTP		30.0	1.0	0.8	1.0		0.5	N	100.00	16.67
08LE0147-MB1 X	SBLKTP		30.0	1.0		1.0		0.5	N	100	16.67
08LE0147-MB1 XS	SBLKTP		30.0	1.0	1.0	1.0		0.5	N	100	16.67

Comments:
Surrogate: 500 UL ESU BNA 89916502 @100-150 UG/ML
Spike: 600 UL BNA LCS SPIKE 86951307

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
		4/1/08 1000	M	4/1/08 1015	Reason

on page #1

SAMPLE EXTRACTION RECORD

Sheet no.: 1 1 of 2

Extract. Date: 03/30/08 Extraction Batch No: 08LE0147 Analyst: MF Method: **** SOX3540

Test: 0625 Cleanup Date: Analyst: Client: BJC BKDD02464A

LIMS Report Date: 03/31/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0803L810-	BJC BKDD02464A										
001 H	PWRHS-C-SZ-04		30.0	1.0		2.0		0.5	N	0.0	33.33
002 H	PWRHS-C-SZ-05		30.0	1.0		1.0		0.5	N	0.0	16.67
0803L816-	VISTA ENGINEERING										
001 N	B051		30.0	1.0		1.0		0.5	N	95.91	17.38
002 N	B052		30.0	1.0		1.0		0.5	N	97.45	17.10
004 N	B054		30.0	1.0		1.0		0.5	N	98.54	16.91
0803L825-	BJC BKDD02464A										
001 H	PWRHS-C-SZ-02		30.0	1.0		1.0		0.5	N	0.0	16.67
001 HS	PWRHS-C-SZ-02		30.0	1.0	0.8	10.0		0.5	N	0.0	166.7
001 HT	PWRHS-C-SZ-02		30.0	1.0	0.8	1.0	2.0	0.5	N	0.0	16.67
002 H	PWRHS-C-SZ-02FR		30.0	1.0		4.0		0.5	N	0.0	66.67
003 H	PWRHS-C-SZ-03		30.0	1.0		2.0		0.5	N	0.0	33.33
004 H	PWRHS-C-SZ-16		30.0	1.0		10.0		0.5	N	0.0	166.7
005 H	PWRHS-C-SZ-17		30.0	1.0		4.0		0.5	N	0.0	66.67
0803L826-	TNUHANFORD RC-054 K1164										
001 H	J16HY9		30.0	1.0		4.0		0.5	N	94.22	70.76
001 HS	J16HY9		30.0	1.0	0.8	4.0		0.5	N	94.22	70.76
001 HT	J16HY9		30.0	1.0	0.8	4.0		0.5	N	94.22	70.76
002 H	J16J01		30.0	1.0		1.0		0.5	N	92.36	18.05
003 H	J16J03		30.0	1.0		1.0		0.5	N	92.21	18.07
004 H	J16J05		30.0	1.0		1.0		0.5	N	91.94	18.13
005 H	J16J07		30.0	1.0		4.0		0.5	N	92.48	72.09
006 H	J16J09		30.0	1.0		4.0		0.5	N	95.99	69.45

Comments:
Surrogate: 500 UL ESU BNA 89916502 @100-150 UG/ML
Spike: 600 UL BNA LCS SPIKE 86951307

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
		3/31/08 1630	M	3/31/08 2000	Analysis

FV 001 HT 2.0 ml

000000023

SAMPLE EXTRACTION RECORD

Sheet no.: 2 of 2

Extract. Date: 03/30/08 Extraction Batch No: 08LE0147 Analyst: MF Method: ****SC-7354-0

Test: 0625 Cleanup Date: Analyst: Client: BJC BKDD02464A

LIMS Report Date: 03/31/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0803L826-	TNUHANFORD RC-054 K1164										
007 H	J16J11		30.0	1.0		4.0		0.5	N	92.35	72.19
0803L833-	TNUHANFORD F08-043 H3669										
004 X	B1TDD3-A		30.0	1.0		1.0		0.5	N	0.0	16.67
004 XS	B1TDD3-A		30.0	1.0	0.8	1.0		0.5	N	0.0	16.67
0803L836-	TNU-HANFORD RC-031										
001 H	J16J16		30.0	1.0		1.0		0.5	N	79.02	21.09
001 HS	J16J16		30.0	1.0	0.8	1.0		0.5	N	79.02	21.09
001 HT	J16J16		30.0	1.0	0.8	1.0		0.5	N	79.02	21.09
08LE0147-MB1 H	SBLKTP		30.0	1.0		1.0		0.5	N	100.00	16.67
08LE0147-MB1 HS	SBLKTP		30.0	1.0	0.8	1.0		0.5	N	100.00	16.67
08LE0147-MB1 N	SBLKTP		30.0	1.0		1.0		0.5	N	100.00	16.67
08LE0147-MB1 NS	SBLKTP		30.0	1.0	0.8	1.0		0.5	N	100.00	16.67
08LE0147-MB1 X	SBLKTP		30.0	1.0		1.0		0.5	N	100.00	16.67
08LE0147-MB1 XS	SBLKTP		30.0	1.0	1.0	1.0		0.5	N	100.00	16.67

Comments:
Surrogate: 500 UL ESU BNA 89916502 @100-150 UG/ML
Spike: 600 UL BNA LCS SPIKE 86951307

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	3/31/08 1650	M	3/31/08 2000	Analysis

000000024

Lionville Laboratory Use Only

8030826

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000025

t: TNU HANFORD SAF# RC-054

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager: Q JOHNSON

5W846 Del STD TAT 21

Rec'd 3-27-08 Date Due 4-17-08

		A	B	C					D							
Refrigerator #		6	3	3					3							
#/Type Container	Liquid															
	Solid	1G	1G	1G					1G							
Volume		250	250	250					250							
Preservatives		–	–	–					–							
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Resid PCB	Herb				TCP Metal Hg	CN						
		Lionville Laboratory Use Only														
		06274	06254	OPCB					Met							

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06274	06254	OPCB					Met						
001	J16HY9			Soil	32408	1231	X	X	X					X						
002	J01					1320	X	X	X					X						
003	J03					1332	X	X	X					X						
004	J05					1350	X	X	X					X						
005	J07					1404	X	X	X					X						
006	J09					1416	X	X	X					X						
007	J11					1427	X	X	X					X						

Matrix: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, TCLP, Leachate, Tape, Other, Wipe

al Instructions:

net ① = RCRA TO

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/27/08	0935

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-054-031

lector Rob Zane	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH
Price Code	Data Turnaround 21 days		
lect Designation 18-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054-
Chest No. ERC-02-007	Field Logbook No. EL1602-4	COA R118K12600	Method of Shipment Fed Ex
nped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080205		Bill of Lading/Air Bill No. SEE OSPC

000000026

)SSIBLE SAMPLE HAZARDS/REMARKS

)ecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	250mL	250mL	250mL	250mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

RCF SCREENING 15J00

Sample No.	Matrix *	Sample Date	Sample Time										
5HY9	SOIL	3-24-08	1231	X	X	X	X						
5J01	SOIL	3-24-08	1320	X	X	X	X						
5J03	SOIL	3-24-08	1322	X	X	X	X						
5J05	SOIL	3-24-08	1330	X	X	X	X						
5J07	SOIL	3-24-08	1404	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
. Zane/RZ	3/24/08 1445	Doug Bowers	3-24-08/1445
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
ug Bowers	3-24-08/1720	RPF 1A	3-24-08/1720
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
60 BATELLE 1A	3/26/08 1230	David St. John	3/26/08 1230
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
David St. John	3/26/08 1230	FED EX	
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX	3-27-08 0935		3-27-08 0935
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)

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

.BORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

:H-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-031	Page 2 of 2

llector Rob Zane	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH	Price Code	Data Turnaround 21 days
ject Designation 18-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054		
Chest No. ERC-02-007	Field Logbook No. EL1602-4	COA R118K12600	Method of Shipment Fed Ex		
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080205		Bill of Lading/Air Bill No. SEE OSPC		

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	250mL	250mL	250mL	250mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

RCF SCREEN J15J00

Sample No.	Matrix *	Sample Date	Sample Time										
3J09	SOIL	3-24-08	1416	X	X	X	X						
3J11	SOIL	3-24-08	1427	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Zane/RZ	3/24/08 1445	Doug Bowers Bowers	3-24-08/1445
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
gs Bowers/Doug Bowers	3-24-08/1720	RIFIA 1060 RMSA	3-24-08/1720
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
60 BATTELLE IA	3/26/08 1230	DAVID ST. JOHN	3/26/08 1230
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID ST. JOHN	3/26/08 1230	FED EX	
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	3-27-08 0935	V. Nunenda	3-27-08 0935
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)

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

.BORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

:H-EE-011

000000027

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-054

Date: 3/27/08

LvLI Batch #: 08031 826

Sample Custodian: V. Huskey

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7909 7026 9246
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.2	°C	Cooler # ERC-02-007
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1164

RECEIVED MAY 2008

DATE RECEIVED: 03/27/08 LVL LOT # :0803L826

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16HY9						
SILVER, TOTAL	001	S	08L0156	03/24/08	04/17/08	04/21/08
SILVER, TOTAL	001 REP	S	08L0156	03/24/08	04/17/08	04/21/08
SILVER, TOTAL	001 MS	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	001	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	001 REP	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	001 MS	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	001	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	001 REP	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	001 MS	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	001	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	001 REP	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	001 MS	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	001	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	001 REP	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	001 MS	S	08L0156	03/24/08	04/17/08	04/21/08
MERCURY, TOTAL	001	S	08C0062	03/24/08	04/09/08	04/09/08
MERCURY, TOTAL	001 REP	S	08C0062	03/24/08	04/09/08	04/09/08
MERCURY, TOTAL	001 MS	S	08C0062	03/24/08	04/09/08	04/09/08
LEAD, TOTAL	001	S	08L0156	03/24/08	04/17/08	04/21/08
LEAD, TOTAL	001 REP	S	08L0156	03/24/08	04/17/08	04/21/08
LEAD, TOTAL	001 MS	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	001	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	001 REP	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	001 MS	S	08L0156	03/24/08	04/17/08	04/21/08
J16J01						
SILVER, TOTAL	002	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	002	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	002	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	002	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	002	S	08L0156	03/24/08	04/17/08	04/21/08
MERCURY, TOTAL	002	S	08C0062	03/24/08	04/09/08	04/09/08
LEAD, TOTAL	002	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	002	S	08L0156	03/24/08	04/17/08	04/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1164

DATE RECEIVED: 03/27/08 LVL LOT # :0803L826

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16J03						
SILVER, TOTAL	003	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	003	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	003	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	003	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	003	S	08L0156	03/24/08	04/17/08	04/21/08
MERCURY, TOTAL	003	S	08C0062	03/24/08	04/09/08	04/09/08
LEAD, TOTAL	003	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	003	S	08L0156	03/24/08	04/17/08	04/21/08
J16J05						
SILVER, TOTAL	004	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	004	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	004	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	004	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	004	S	08L0156	03/24/08	04/17/08	04/21/08
MERCURY, TOTAL	004	S	08C0062	03/24/08	04/09/08	04/09/08
LEAD, TOTAL	004	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	004	S	08L0156	03/24/08	04/17/08	04/21/08
J16J07						
SILVER, TOTAL	005	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	005	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	005	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	005	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	005	S	08L0156	03/24/08	04/17/08	04/21/08
MERCURY, TOTAL	005	S	08C0062	03/24/08	04/09/08	04/09/08
LEAD, TOTAL	005	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	005	S	08L0156	03/24/08	04/17/08	04/21/08
J16J09						
SILVER, TOTAL	006	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	006	S	08L0156	03/24/08	04/17/08	04/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1164

DATE RECEIVED: 03/27/08 LVL LOT # :0803L826

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	006	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	006	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	006	S	08L0156	03/24/08	04/17/08	04/21/08
MERCURY, TOTAL	006	S	08C0062	03/24/08	04/09/08	04/09/08
LEAD, TOTAL	006	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	006	S	08L0156	03/24/08	04/17/08	04/21/08
J16J11						
SILVER, TOTAL	007	S	08L0156	03/24/08	04/17/08	04/21/08
ARSENIC, TOTAL	007	S	08L0156	03/24/08	04/17/08	04/21/08
BARIUM, TOTAL	007	S	08L0156	03/24/08	04/17/08	04/21/08
CADMIUM, TOTAL	007	S	08L0156	03/24/08	04/17/08	04/21/08
CHROMIUM, TOTAL	007	S	08L0156	03/24/08	04/17/08	04/21/08
MERCURY, TOTAL	007	S	08C0062	03/24/08	04/09/08	04/09/08
LEAD, TOTAL	007	S	08L0156	03/24/08	04/17/08	04/21/08
SELENIUM, TOTAL	007	S	08L0156	03/24/08	04/17/08	04/21/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0156	N/A	04/17/08	04/18/08
SILVER, TOTAL	MB1	S	08L0156	N/A	04/17/08	04/18/08
ARSENIC LABORATORY	LC1 BS	S	08L0156	N/A	04/17/08	04/18/08
ARSENIC, TOTAL	MB1	S	08L0156	N/A	04/17/08	04/18/08
BARIUM LABORATORY	LC1 BS	S	08L0156	N/A	04/17/08	04/18/08
BARIUM, TOTAL	MB1	S	08L0156	N/A	04/17/08	04/18/08
CADMIUM LABORATORY	LC1 BS	S	08L0156	N/A	04/17/08	04/18/08
CADMIUM, TOTAL	MB1	S	08L0156	N/A	04/17/08	04/18/08
CHROMIUM LABORATORY	LC1 BS	S	08L0156	N/A	04/17/08	04/18/08
CHROMIUM, TOTAL	MB1	S	08L0156	N/A	04/17/08	04/18/08
MERCURY LABORATORY	LC1 BS	S	08C0062	N/A	04/09/08	04/09/08
MERCURY, TOTAL	MB1	S	08C0062	N/A	04/09/08	04/09/08
LEAD LABORATORY	LC1 BS	S	08L0156	N/A	04/17/08	04/18/08
LEAD, TOTAL	MB1	S	08L0156	N/A	04/17/08	04/18/08
SELENIUM LABORATORY	LC1 BS	S	08L0156	N/A	04/17/08	04/18/08
SELENIUM, TOTAL	MB1	S	08L0156	N/A	04/17/08	04/18/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-054
LVL#: 0803L826
SDG/SAF#: K1164/RC-020

W.O.#: 11343-606-001-9999-00
Date Received: 03-27-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 7 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury)

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

7. All ICP Interference Check Standards were within control limits.

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for all analytes were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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 20 pages.

11. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

12. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

13. 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
Laboratory Manager
Lionville Laboratory Incorporated

4/24/08
Date

alm/m03-826

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within tl

Lot#: 08031826

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-WI-033/M-03/01

000000006

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/23/08

CLIENT: TNUHANFORD RC-054 K1164 LVL LOT #: 0803L826

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16HY9	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	1.9	MG/KG	0.43	1.0
		Barium, Total	73.5	MG/KG	0.09	1.0
		Cadmium, Total	0.15	MG/KG	0.04	1.0
		Chromium, Total	7.8	MG/KG	0.17	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lead, Total	4.2	MG/KG	0.26	1.0
		Selenium, Total	0.52 u	MG/KG	0.52	1.0
-002	J16J01	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.8	MG/KG	0.41	1.0
		Barium, Total	89.1	MG/KG	0.08	1.0
		Cadmium, Total	0.09	MG/KG	0.04	1.0
		Chromium, Total	15.9	MG/KG	0.16	1.0
		Mercury, Total	0.008u	MG/KG	0.008	1.0
		Lead, Total	5.3	MG/KG	0.24	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0
-003	J16J03	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	3.0	MG/KG	0.44	1.0
		Barium, Total	93.8	MG/KG	0.09	1.0
		Cadmium, Total	0.11	MG/KG	0.04	1.0
		Chromium, Total	17.1	MG/KG	0.18	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lead, Total	5.2	MG/KG	0.26	1.0
		Selenium, Total	0.52 u	MG/KG	0.52	1.0
-004	J16J05	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Arsenic, Total	3.5	MG/KG	0.48	1.0
		Barium, Total	95.1	MG/KG	0.1	1.0
		Cadmium, Total	0.12	MG/KG	0.05	1.0
		Chromium, Total	17.7	MG/KG	0.19	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	5.4	MG/KG	0.29	1.0
		Selenium, Total	0.58 u	MG/KG	0.58	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/23/08

CLIENT: TNUHANFORD RC-054 K1164

LVL LOT #: 0803L826

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J16J07	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Arsenic, Total	1.7	MG/KG	0.37	1.0
		Barium, Total	59.8	MG/KG	0.07	1.0
		Cadmium, Total	0.09	MG/KG	0.04	1.0
		Chromium, Total	9.4	MG/KG	0.15	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lead, Total	3.7	MG/KG	0.22	1.0
		Selenium, Total	0.44 u	MG/KG	0.44	1.0
-006	J16J09	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	7.8	MG/KG	0.39	1.0
		Barium, Total	82.6	MG/KG	0.08	1.0
		Cadmium, Total	0.08	MG/KG	0.04	1.0
		Chromium, Total	10.4	MG/KG	0.16	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lead, Total	3.8	MG/KG	0.23	1.0
		Selenium, Total	0.47 u	MG/KG	0.47	1.0
-007	J16J11	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	5.0	MG/KG	0.41	1.0
		Barium, Total	77.2	MG/KG	0.08	1.0
		Cadmium, Total	0.10	MG/KG	0.04	1.0
		Chromium, Total	13.3	MG/KG	0.16	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lead, Total	5.0	MG/KG	0.24	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/23/08

CLIENT: TNUHANFORD RC-054 K1164 LVL LOT #: 0803L826

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0156-MB1	Silver, Total	0.12	MG/KG	0.10	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.14	MG/KG	0.10	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
BLANK1	08C0062-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/23/08

CLIENT: TNUHANFORD RC-054 K1164

LVL LOT #: 0803L826

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16HY9	Silver, Total	4.0	0.09u	4.2	95.2	1.0
		Arsenic, Total	156	1.9	170	91.0	1.0
		Barium, Total	238	73.5	170	96.9	1.0
		Cadmium, Total	4.2	0.15	4.2	96.3	1.0
		Chromium, Total	25.3	7.8	17.0	102.9	1.0
		Mercury, Total	0.16	0.00u	0.16	101.9	1.0
		Lead, Total	44.0	4.2	42.5	93.6	1.0
		Selenium, Total	131	0.52u	170	77.0	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/23/08

CLIENT: TNUHANFORD RC-054 K1164 LVL LOT #: 0803L826

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16HY9	Silver, Total	0.09u	0.08u	NC	1.0
		Arsenic, Total	1.9	2.0	5.1	1.0
		Barium, Total	73.5	69.4	5.7	1.0
		Cadmium, Total	0.15	0.12	25.5	1.0
		Chromium, Total	7.8	8.4	7.4	1.0
		Mercury, Total	0.00u	0.01u	NC	1.0
		Lead, Total	4.2	3.9	7.4	1.0
		Selenium, Total	0.52u	0.51u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/23/08

CLIENT: TNUHANFORD RC-054 K1164

LVL LOT #: 0803L826

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0156-LC1	Silver, LCS	47.6	50.0	MG/KG	95.2
		Arsenic, LCS	873	1000	MG/KG	87.3
		Barium, LCS	474	500	MG/KG	94.9
		Cadmium, LCS	23.4	25.0	MG/KG	93.6
		Chromium, LCS	47.8	50.0	MG/KG	95.6
		Lead, LCS	232	250	MG/KG	92.6
		Selenium, LCS	832	1000	MG/KG	83.2
LCS1	08C0062-LC1	Mercury, LCS	4.7	4.7	MG/KG	99.2

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0156
Date/Time Initiated: 4/17/08 1645
Date/Time Completed: 4/17/08 2030
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: see backlog

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 91°

Method: SW (circle) 3005A, 3010A, 3015, 3020A, 7060A (As/Se), 7760A (Ag), (3050B), 3051
DW 200.7 (1994), 200.9, 3113B
MCAWW 200.7 (1982), 200 (AA), 206.2 (As/Se)
SM 3030C (NC)
CLP ILMO3.0, ILMO4.0
Other

NSTEL/TMW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0804L934-001		1.17gr	100ml	<2	TO	fine	lt. brown/powdery	small rocks	
001R		1.29gr							
001S	1.0ml	1.17gr							
002		1.22gr							
003		1.28gr							
0803L876-001		1.23gr				coarse	dk. brown/rocks		
001R		1.25gr							
001S	1.0ml	1.25gr							
002		1.33gr				fine	brown		
003		1.24gr							
004		1.13gr							
005		1.48gr				coarse	dk brown		
006		1.33gr							
007		1.33gr					brown		
0804L855-001		1.41gr							
001R		1.36gr							
001S	1.0ml	1.41gr							
002		1.38gr							
08L0156-MB1	(B) W.C. 4/18/08	1.0gr					boiling chips		
LCS	1.0ml	1.0gr							

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL E45047
H_2O_2 E44A06
1:1 HNO_3 9789-077-04
1:1 HCL

File ID#: IC015601 IC015602
LIMS Transfer: (Y) N
Data Review By/Date: updated

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: CB
Date 4/9/08
Start Time/Temp: 1230 | 93°
End Time/Temp: 1305 | 94°

Instrument ID HG3. 1
Balance #: B29 / NA
Pipette Calibration (Daily) Y ___

Prep Batch: 08C0062
Worksheet: HG040901
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	A1			10mL	50mL	
0.2 µg/L	55	0.100				
1.0	3T	0.500				
2.0	AN	1.000				
5.0	A9	2.500				
10.0	PA	5.000				
ICV	537	0.125	2.5			
CCV	R	0.250	5.0			
ICB/CCB	B2					90502
MB1	205			0.30		PBS162 100.00
LC1	L53	*	*	0.34		LCSS162
0803L842-001	41			0.31		R 96.74
002	5H			0.37		97.38
003	28			0.34		95.54
004	I94			0.36		97.86
005	NJ			0.36		93.89
005R	3P			0.33		
005S	Z4	0.500	1.0	0.36		
005T	40	0.500	1.0	0.35		
0803L826-001	KX			0.34		94.22
001R	CT			0.32		
001S	3C	0.500	1.0	0.34		
002	154			0.39		92.36
003	8			0.36		92.21
004	GR			0.33		91.94
005	M1			0.36		92.48
006	NR			0.33		95.99

Standard:	ID	Prep Date/Time
ICAL/MS	R160722-75-07A	4/9/08 0945
ICV/CCV/LCS	US 60728-75-08B	

Reviewed By/Date: [signature] 4/10/08

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

Lionville Laboratory
Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: TRB
Date: 4/9/08
Start Time/Temp: see page
End Time/Temp: 065

Instrument ID: HG3.1
Balance #: 829 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08L0062
Worksheet: HG040901
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
08031826-007	X5			0.36	50mL	92.35
0804852-001	B32			0.31		95.27
002	CYD			0.33		95.75
003	2V			0.32		96.83

CEM 4/9/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 065	

Reviewed By/Date: [signature] 4/10/08

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

ville Laboratory Use Only

8030826

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000017

t TNU HANFORD SAF# RC-054

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O JOHNSON

SW846 Del STD TAT 21

Rec'd 3-27-08 Date Due 4-17-08

		A	B	C					D							
Refrigerator #		6	3	3					3							
#/Type Container	Liquid															
	Solid	1G	1G	1G					1G							
Volume		250	250	250					250							
Preservatives		—	—	—					—							
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb				~~TCL~~ Metal ~~RCL~~	CN						
		Lionville Laboratory Use Only														
		062414	062514	OPCB					Met①							

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	062414	062514	OPCB					Met①						
001	J16HY9			Soil	32408	1231	X	X	X					X						
002	J01					1320	X	X	X					X						
003	J03					1332	X	X	X					X						
004	J05					1350	X	X	X					X						
005	J07					1404	X	X	X					X						
006	J09					1416	X	X	X					X						
007	J11					1427	X	X	X					X						

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Special Instructions:

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6.

nquished by	Received by	Date	Time
[illegible]	[illegible]	3/27/08	0935

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-031	Page 1 of 2

llector Rob Zane	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH
Price Code	Data Turnaround 21 days		
oject Designation 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054
Chest No. ERC-02-007	Field Logbook No. EL1602-4	COA R118K12600	Method of Shipment Fed Ex
ipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A080205		Bill of Lading/Air Bill No. SEE OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	250mL	250mL	250mL	250mL							

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)						
									RCF SCREEN/TISTOO				
6HY9	SOIL	3-24-08	1231	X	X	X	X						
6J01	SOIL	3-24-08	1320	X	X	X	X						
6J03	SOIL	3-24-08	1332	X	X	X	X						
6J05	SOIL	3-24-08	1350	X	X	X	X						
6J07	SOIL	3-24-08	1404	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
inquished By/Removed From Zane/RZ	Date/Time 3/24/08 1445	Received By/Stored In Doug Bowers
Date/Time 3-24-08/1445		
inquished By/Removed From Doug Bowers	Date/Time 3-24-08/1720	Received By/Stored In RPF 1A DGO RMSA
Date/Time 3-24-08/1720		
inquished By/Removed From DGO BATELLE 1A	Date/Time 3/26/08 1230	Received By/Stored In PAUL ST. JOHN
Date/Time 3/26/08 1230		
inquished By/Removed From PAUL ST. JOHN	Date/Time 3/26/08 1230	Received By/Stored In FED EX
Date/Time		
inquished By/Removed From FED EX	Date/Time 3-27-08 0935	Received By/Stored In
Date/Time 3-27-08 0935		
inquished By/Removed From	Date/Time	Received By/Stored In
Date/Time		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7470 - (CV)

Matrix *

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-031	Page 2 of 2

ollector Rob Zane	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH	Price Code	Data Turnaround 21 days
oject Designation 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054		
e Chest No. ERL-02-007	Field Logbook No. EL1602-4	COA R118K12600	Method of Shipment Fed Ex		
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080205		Bill of Lading/Air Bill No. SEE OSPC		

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	250mL	250mL	250mL	250mL							

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)			RCF SCREEN J15J00			
6J09	SOIL	3-24-08	1416	X	X	X	X						
6J11	SOIL	3-24-08	1427	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Zane/RZ	3/24/08 1445	Doug Bowers Doug Bowers	3-24-08/1445
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers/Doug Bowers	3-24-08/1720	A14/A 1060 RMSA	3-24-08/1720
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
60 BATTELLE (A	3/26/08 1230	DAVID ST. JOHN	3/26/08 1230
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID ST JOHN	3/26/08 1230	FED EX	
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX	3-27-08 0935		3-27-08 0935
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7470 - (CV)

Matrix *
S=Soil
SB=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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-054

Date: 3/27/08

LvLI Batch #: 08031 826

Sample Custodian: V. Hunsaker

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7909 7026 9246
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.2	°C	Cooler # ERC-02-007
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI LIONVILLE LABORATORY INC

RECEIVED
MAY 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1164

DATE RECEIVED: 03/27/08 LVL LOT # :0803L826

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16HY9	001	S	08LE0148	03/24/08	03/30/08	04/02/08
J16J01	002	S	08LE0148	03/24/08	03/30/08	04/02/08
J16J01	002 MS	S	08LE0148	03/24/08	03/30/08	04/02/08
J16J01	002 MSD	S	08LE0148	03/24/08	03/30/08	04/02/08
J16J03	003	S	08LE0148	03/24/08	03/30/08	04/02/08
J16J05	004	S	08LE0148	03/24/08	03/30/08	04/03/08
J16J07	005	S	08LE0148	03/24/08	03/30/08	04/03/08
J16J09	006	S	08LE0148	03/24/08	03/30/08	04/03/08
J16J11	007	S	08LE0148	03/24/08	03/30/08	04/03/08
J16J11	007 R1	S	08LE0174	03/24/08	04/15/08	04/16/08

LAB QC:

PBLKON	MB1	S	08LE0148	N/A	03/30/08	04/02/08
PBLKON	MB1 BS	S	08LE0148	N/A	03/30/08	04/02/08
PBLKPC	MB1	S	08LE0174	N/A	04/15/08	04/16/08
PBLKPC	MB1 BS	S	08LE0174	N/A	04/15/08	04/16/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-054
LVL #: 0803L826
SDG/SAF # K1164 / RC-054

W.O. #: 11343-606-001-9999-00
Date Received: 03-27-2008

PCB

Seven (7) soil samples were collected on 03-24-2008.

The samples and their associated QC samples were extracted on 03-20-2008 and 04-15-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-02, 03, 16-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were originally extracted within their required holding time. Due to high surrogate recoveries and contamination with spike mix, sample J16J11 was re-extracted outside of hold time. A copy of the Sample Discrepancy Report (SDR# 08GC040) has been enclosed.

2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.

3. The method blank was below the reporting limits for all target compounds.

4. One (1) of twenty-eight (28) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC040) has been enclosed.

5. All blank spike recoveries were within acceptance criteria.

6. All matrix spike recoveries were within acceptance criteria.

7. Samples J16J09 required a 10-fold instrument dilution due to the matrix.

f:\group\data\pest\tnu\0803-826ks2.pcb.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 15 pages.

LIONVILLE LABORATORY INC.

8. The initial calibrations associated with this data set were within acceptance criteria.

9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

10. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. 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
Laboratory Manager
Lionville Laboratory Incorporated

4/18/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08CC040

Initiator: CAC
Date: 04/04/08
Client: TNU

Batch: 0803L826
Samples: 007
Method: SW846/MCAWW/CLP/

Parameter: PCB
Matrix: SOIL
Prep Batch: 08LE0148

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

007 has double surrogates and hits for Aroclor 1016 + 1260

2. Known or Probable Causes(s)

double surrogate and accidentally spiked

3. Discussion and Proposed Action

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
✓ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

Other Description:

Do not report original result, since PCB hits are obviously due to spiking JS

4. Project Manager Instructions...signature/date: JA 4/18/08

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: 4/18/08

__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation: Reextracted on Batch 08LE0174

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
__ MS BNA: Carden / _____
__ Other: _____

QA-139-A-0208

GLOSSARY OF 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.
. I	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

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.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB 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/MS.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/17/08 13:42

RFW Batch Number: 0803L826 Client: TNUHANFORD RC-054 K1164 Work Order: 11343606001 Page: 1

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	Cust ID:	J16HY9	J16J01	J16J01	J16J01	J16J03	J16J05
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	79 %	80 %	95 %	90 %	86 %	73 %
	Decachlorobiphenyl	83 %	95 %	96 %	96 %	94 %	88 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		14 U	14 U	69 %	84 %	14 U	15 U
Aroclor-1221		14 U	14 U	14 U	14 U	14 U	15 U
Aroclor-1232		14 U	14 U	14 U	14 U	14 U	15 U
Aroclor-1242		14 U	14 U	14 U	14 U	14 U	15 U
Aroclor-1248		14 U	14 U	14 U	14 U	14 U	15 U
Aroclor-1254		14 U	14 U	14 U	14 U	14 U	15 U
Aroclor-1260		14 U	14 U	94 %	104 %	14 U	15 U

	Cust ID:	J16J07	J16J09	J16J11	J16J11	PBLKON	PBLKON BS
Sample Information	RFW#:	005	006	007	007	08LE0148-MB1	08LE0148-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	10.0	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
					REPREP		
Surrogate:	Tetrachloro-m-xylene	59 %	99 %	NR %NR	50 * %	91 %	93 %
	Decachlorobiphenyl	64 %	111 %	NR %NR	86 %	97 %	101 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		14 U	140 U	NR	58 U	13 U	90 %
Aroclor-1221		14 U	140 U	NR	58 U	13 U	13 U
Aroclor-1232		14 U	140 U	NR	58 U	13 U	13 U
Aroclor-1242		14 U	140 U	NR	58 U	13 U	13 U
Aroclor-1248		14 U	140 U	NR	58 U	13 U	13 U
Aroclor-1254		14 U	140 U	NR	58 U	13 U	13 U
Aroclor-1260		14 U	140 U	NR	58 U	13 U	102 %

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

000000007

	Cust ID:	PBLKPC	PBLKPC BS
Sample Information	RFW#:	08LE0174-MB1	08LE0174-MB1
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.00
	Units:	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		84 %	92 %
Decachlorobiphenyl		85 %	93 %
Aroclor-1016		13 U	86 %
Aroclor-1221		13 U	13 U
Aroclor-1232		13 U	13 U
Aroclor-1242		13 U	13 U
Aroclor-1248		13 U	13 U
Aroclor-1254		13 U	13 U
Aroclor-1260		13 U	89 %

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/30/08 Extraction Batch No: 08LE0148 Analyst: MF Method: **** 3 0X3.5/4.0

Test: OPCB Cleanup Date: 03/31/08 Analyst: MF Client: BJC BKDD02464A

LIMS Report Date: 04/02/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0803L810-	BJC BKDD02464A										
001	PWRHS-C-SZ-04		30.0	1.0		10		1.0	N	0.0	333.3
002	PWRHS-C-SZ-05		30.0	1.0		10		1.0	N	0.0	333.3
0803L825-	BJC BKDD02464A										
001	PWRHS-C-SZ-02		15.0	1.0		10		1.0	N	0.0	666.7
002	PWRHS-C-SZ-02FR		30.0	1.0		10		1.0	N	0.0	333.3
003	PWRHS-C-SZ-03		30.0	1.0		10		1.0	N	0.0	333.3
004	PWRHS-C-SZ-16		30.0	1.0		10		1.0	N	0.0	333.3
005	PWRHS-C-SZ-17		30.0	1.0		10		1.0	N	0.0	333.3
005 -S	PWRHS-C-SZ-17		30.0	1.0	1.0	10		1.0	N	0.0	333.3
005 -T	PWRHS-C-SZ-17		30.0	1.0	1.0	10		1.0	N	0.0	333.3
0803L826-	TNUHANFORD RC-054 K1164										
001	J16HY9		30.0	1.0		10		1.0	N	94.22	353.8
002	J16J01		30.0	1.0		10		1.0	N	92.36	360.9
002 -S	J16J01		30.0	1.0	1.0	10		1.0	N	92.36	360.9
002 -T	J16J01		30.0	1.0	1.0	10		1.0	N	92.36	360.9
003	J16J03		30.0	1.0		10		1.0	N	92.21	361.5
004	J16J05		30.0	1.0		10		1.0	N	91.94	362.6
005	J16J07		30.0	1.0		10		1.0	N	92.48	360.4
006	J16J09		30.0	1.0		10		1.0	N	95.99	347.3
007	J16J11		30.0	1.0		10		1.0	N	92.35	360.9
0803L831-	TNUHANFORD RC-074 K1167										
001	J16J13		30.0	1.0		10		1.0	N	98.04	340.0
001 -S	J16J13		30.0	1.0	1.0	10		1.0	N	98.04	340.0

Comments: L825,L826 REC SILAND ACID CLN UP
Surrogate: 250 UL OLM PSURR 89916405
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	4/2/08 1115	SZ	4/02/08 11:15	GC

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Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 03/30/08 Extraction Batch No: 08LE0148 Analyst: MF Method: **** SW3550C

Test: OPCB Cleanup Date: 03/31/08 Analyst: MF Client: BJC BKDD02464A

LIMS Report Date: 04/02/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0803L831-	TNUHANFORD RC-074 K1167										
001 -T	J16J13		30.0	1.0	1.0	10		1.0	N	98.04	340.0
002	J16J14		30.0	1.0		10		1.0	N	98.00	340.1
08LE0148-MB1	PBLKON		30.0	1.0		10		1.0	N	100.00	333.3
08LE0148-MB1 -S	PBLKON		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments: L825,L826 REC SILAND ACID CLN UP
Surrogate: 250 UL OLM PSURR 89916405
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	4/2/08 11:15	SZ	4/2/08 11:15	GC

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Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 04/15/08 Extraction Batch No: 08LE0174 Analyst: MF Method: **** SOX3540

Test: OPCB Cleanup Date: 04/16/08 Analyst: MF Client: LQA-I8082-1254

LIMS Report Date: 04/16/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0803L795-	LQA-I8082-1254										
005	R1 SIDOC-1		30.0	1.0		10		1.0	N	0.00	333.3
006	R1 SIDOC-2		30.0	1.0		10		1.0	N	0.00	333.3
007	R1 SIDOC-3		30.0	1.0		10		1.0	N	0.00	333.3
008	R1 SIDOC-4		30.0	1.0		10		1.0	N	0.00	333.3
010	R1 S LOD CHECK		30.0	1.0		10		1.0	N	0.00	333.3
0803L826-	TNUHANFORD RC-054 K1164										
007	R1 J16J11		30.0	1.0		40.0		1.0	N	92.35	1443.8
0804L900-	TNU-HANFORD RC-088										
001	J169N4		30.0	1.0		10		1.0	N	0.00	333.3
001 -S	J169N4		30.0	1.0	1.0	10		1.0	N	0.00	333.3
001 -T	J169N4		30.0	1.0	1.0	10		1.0	N	0.00	333.3
002	J169N7		30.0	1.0		10		1.0	N	0.00	333.3
0804L904-	VISTA ENGINEERING										
001	B071		30.0	1.0		10		1.0	N	91.07	366.0
002	B072		30.0	1.0		10		1.0	N	96.96	343.8
003	B073		30.0	1.0		10		1.0	N	92.75	359.4
004	B075		30.0	1.0		10		1.0	N	95.91	347.5
005	B077		30.0	1.0		10		1.0	N	97.05	343.5
006	B078		30.0	1.0		10		1.0	N	97.65	341.4
0804L905-	VISTA ENGINEERING										
001	B079		30.0	1.0		10		1.0	N	93.49	356.5
001 -S	B079		30.0	1.0	1.0	10		1.0	N	93.49	356.5
001 -T	B079		30.0	1.0	1.0	10		1.0	N	93.49	356.5

Comments: DOC SPK/W 320 UL ,LOD SPK/W 60 UL AR1254 89916801
Surrogate: 250 UL OLM PSURR 89916504
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	4/16/08 1330	SZ	4/16/08 13:30	GC

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Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 04/15/08 Extraction Batch No: 08LE0174 Analyst: MF Method: ****SCX 3550

Test: OPCB Cleanup Date: 04/16/08 Analyst: MF Client: LQA-I8082-1254

LIMS Report Date: 04/16/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0804L905-	VISTA ENGINEERING										
002	B080		30.0	1.0		10		1.0	N	97.84	340.7
003	B081		30.0	1.0		10		1.0	N	0.0	333.3
08LE0174-MB1	PBLKPC		30.0	1.0		10		1.0	N	100.00	333.3
08LE0174-MB1 -S	PBLKPC		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments: DOC SPK/W 320 UL ,LOD SPK/W 60 UL AR1254 89916801
Surrogate: 250 UL OLM PSURR 89916504
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	4/16/08 1330	SZ	4/16/08 13:30	GC

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onville Laboratory Use Only

28036826

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000012

ent TNU HANFORD SAF# RC-054

Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager O JOHNSON

SW846 Del STD TAT 21

e Rec'd 3-27-08 Date Due 4-17-08

		A	B	C					D							
Refrigerator #		6	3	3					3							
#/Type Container	Liquid															
	Solid	1G	1G	1G					1G							
Volume		250	250	250					250							
Preservatives		-	-	-					-							
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb				TOT Metal	CN						
		Lionville Laboratory Use Only														
		06244	06254	OPCB					Met①							

RIX
ES:
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum Solids
Drum Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	J16HY9			Soil	3-24-08	1231	X	X	X					X				
002	J01					1320	X	X	X					X				
003	J03					1332	X	X	X					X				
004	J05					1350	X	X	X					X				
005	J07					1404	X	X	X					X				
006	J09					1416	X	X	X					X				
007	J11					1427	X	X	X					X				

cial Instructions:

met① = RCRATO

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/27/08	0935

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-031	Page 1 of 2

ollector: Rob Zane	Company Contact: Doug Bowers	Telephone No.: 531-0701	Project Coordinator: KESSNER, JH
Price Code	Data Turnaround: 21 days		
oject Designation: 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location: 118-K-1		SAF No.: RC-054
e Chest No.: ERC-02-007	Field Logbook No.: EL1602-4	COA: R118K12600	Method of Shipment: Fed Ex
hipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080205		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	250mL	250mL	250mL	250mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							
					RCF SCREEN J15J00						
Sample No. / Matrix * / Sample Date / Sample Time											
16HY9 / SOIL / 3-24-08 / 1231	X	X	X	X							
16J01 / SOIL / 3-24-08 / 1320	X	X	X	X							
16J03 / SOIL / 3-24-08 / 1332	X	X	X	X							
16J05 / SOIL / 3-24-08 / 1350	X	X	X	X							
16J07 / SOIL / 3-24-08 / 1404	X	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: R. Zane/R. Zane	Received By/Stored In: Doug Bowers	3/24/08 1445
Relinquished By/Removed From: Doug Bowers	Received By/Stored In: RPF 1A	3-24-08/1720
Relinquished By/Removed From: DOE BATELLE 1A	Received By/Stored In: DAVID ST. JOHN	3/26/08 1230
Relinquished By/Removed From: DAVID ST. JOHN	Received By/Stored In: FED EX	3/26/08 1230
Relinquished By/Removed From: FED EX	Received By/Stored In:	3-27-08 0935
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7470 - (CV)

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

/CH-EE-011

000000013

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-031	Page 2 of 2

ollector Rob Zane	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH
Price Code	Data Turnaround 21 days		
roject Designation 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054
e Chest No. ERC-02-007	Field Logbook No. EL1602-4	COA R118K12600	Method of Shipment Fed Ex
hipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080205		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	250mL	250mL	250mL	250mL							

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)			RCF SCREEN			
16J09	SOIL	3-24-08	1416	X	X	X	X						
16J11	SOIL	3-24-08	1427	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Zane / RZ	3/24/08 1445	Doug Bowers Bowers	3-24-08 / 1445
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers / Doug Bowers	3-24-08 / 1720	RITA 1060 RASA	3-24-08 / 1720
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
1060 BATTELLE (A	3/26/08 1230	DAVID ST. JOHN	3/26/08 1230
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID ST JOHN	3/26/08 1230	FED EX	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	3-27-08 0935		3-27-08 0935
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7470 - (CV)

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

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000014

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-054

Date: 3/27/08

LvLI Batch #: 08031826

Sample Custodian: V. Nunnally

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 790970269246
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.2	°C	Cooler # ERC-02-007
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.