0059889

SAF-B03-017
Remaining Sites Confirmation Sampling-Other Solid
FINAL DATA PACKAGE

E:MAIL RESULTS TO:

Ella Feist N/A
INITIAL/DATE

Mike Stankovich N/A
INITIAL/DATE

MAIL COMPLETE COPY OF DATA PACKAGE TO:

Ella Feist	H9-01	BL INITIAL/DATE
Mike Stankovich	H9-02	BL INITIAL/DATE 6/9/03
Bob Hynes	H0-18	BL INITIAL/DATE
Jeanette Duncan	H9-02	BL INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE COVER SHEET)

SDG H2223 SAF-B03-017

Rad only X Chem only Rad & Chem

X Complete Partial

Sample Location/Waste Site: 600-139/600-176

RECEIVED
JUL 28 2003
EDMC

LIONVILLE LABORATORY INC.

30 May 2003

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

Subject: Contract No. 630
Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0305L431
SDG #	H2223
SAF #	B03-017
Date Received	5-17-03
# Samples	12
Matrix	Other Solid
Volatiles	
Semivolatiles	X
Pest/PCB	X
DRO/KRO/GRO	
GC Alcohols	
Herbicides	X
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

RECEIVED JUN 2003

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

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RECEIVED
JUN 2003

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP4	002	SO	03LE0596	05/15/03	05/19/03	05/22/03
J00NP5	003	SO	03LE0596	05/15/03	05/19/03	05/22/03
J00NP6	004	SO	03LE0596	05/15/03	05/19/03	05/22/03
J00NP6	004 01	SO	03LE0596	05/15/03	05/19/03	05/27/03
J00NP6	004 MS	SO	03LE0596	05/15/03	05/19/03	05/22/03
J00NP6	004 MSD	SO	03LE0596	05/15/03	05/19/03	05/22/03
J00NP7	005	SO	03LE0596	05/15/03	05/19/03	05/22/03
J00NP8	006	SO	03LE0596	05/15/03	05/19/03	05/22/03
J00NP9	007	SO	03LE0596	05/15/03	05/19/03	05/28/03
J00NR0	008	SO	03LE0596	05/15/03	05/19/03	05/27/03
J00NR1	009	SO	03LE0596	05/15/03	05/19/03	05/27/03
J00NR2	010	SO	03LE0596	05/15/03	05/19/03	05/28/03
J00NR3	011	SO	03LE0596	05/15/03	05/19/03	05/28/03
J00NR4	012	SO	03LE0596	05/15/03	05/19/03	05/28/03
J00NR5	013	SO	03LE0596	05/15/03	05/19/03	05/28/03

LAB QC:

SBLKTS	MB1	S	03LE0596	N/A	05/19/03	05/22/03
SBLKTS	MB1 BS	S	03LE0596	N/A	05/19/03	05/22/03

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B03-017
LVL #: 0305L431
SDG/SAF # H2223/B03-017

W.O. #: 11343-606-001-9999-00
Date Received: 05-17-2003

SEMIVOLATILE

Twelve (12) solid samples were collected on 05-15-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 05-19-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-22,27,28-2003.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. Several samples required 5 to 20-fold dilution due to the nature of the sample matrix.
5. Six (6) of one hundred two (102) surrogate recoveries were outside EPA QC limits. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).
6. One (1) of twenty-two (22) matrix spike recoveries was outside EPA QC limits.
7. All blank spike recoveries were within EPA QC limits.
8. Internal standard area criteria were not met for samples J00NP6 DL, J00NP8 and J00NP7. However, the GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly.
9. Manual integrations are performed according to OP 21-06A-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").
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.

for J. Michael Taylor
President
Lionville Laboratory Incorporated

05-30-03
Date

som\gorup\data\bna\tnu-hanford-0305-431.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 3 2 pages.

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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: 05/29/03 15:45

RFW Batch Number: 0305L431 Client: TNUHANFORD B03-017 H2223 Work Order: 11343606001 Page: 1a

	Cust ID:	J00NP4	J00NP5	J00NP6	J00NP6	J00NP6	J00NP6
Sample Information	RFW#:	002	003	004	004 DL	004 MS	004 MSD
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	10.0	10.0	10.0	20.0	10.0	20.0
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	339 * %	189 * %	81 %	70 %	58 %	54 %
	2-Fluorobiphenyl	68 %	70 %	74 %	70 %	54 %	70 %
	Terphenyl-d14	72 %	68 %	66 %	98 %	54 %	72 %
	Phenol-d5	84 %	64 %	57 %	75 %	35 %	25 %
	2-Fluorophenol	81 %	81 %	69 %	70 %	53 %	47 %
	2,4,6-Tribromophenol	86 %	82 %	70 %	64 %	55 %	72 %
		fl	fl	fl	fl	fl	fl
Phenol		3300 U	6300 U	3300 U	6700 U	36 %	57 %
bis(2-Chloroethyl)ether		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2-Chlorophenol		3300 U	6300 U	3300 U	6700 U	36 %	41 %
1,3-Dichlorobenzene		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
1,4-Dichlorobenzene		3300 U	6300 U	3300 U	6700 U	43 %	59 %
1,2-Dichlorobenzene		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2-Methylphenol		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2,2'-oxybis(1-Chloropropane)		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
3- and/or 4-Methylphenol		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
N-Nitroso-di-n-propylamine		3300 U	6300 U	3300 U	6700 U	67 %	88 %
Hexachloroethane		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
Nitrobenzene		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
Isophorone		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2-Nitrophenol		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2,4-Dimethylphenol		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
bis(2-Chloroethoxy)methane		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2,4-Dichlorophenol		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
1,2,4-Trichlorobenzene		3300 U	6300 U	3300 U	6700 U	45 %	60 %
Naphthalene		1000 J	6300 U	3300 U	6700 U	3300 U	6700 U
4-Chloroaniline		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
Hexachlorobutadiene		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
4-Chloro-3-methylphenol		3300 U	6300 U	3300 U	6700 U	79 %	95 %
2-Methylnaphthalene		430 J	370 J	3300 U	6700 U	3300 U	6700 U
Hexachlorocyclopentadiene		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2,4,6-Trichlorophenol		3300 U	6300 U	3300 U	6700 U	3300 U	6700 U
2,4,5-Trichlorophenol		8400 U	16000 U	8400 U	17000 U	8400 U	17000 U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0305L431 Client: TNUHANFORD B03-017 H2223 Work Order: 11343606001 Page: 1b

Cust ID:	J00NP4		J00NP5		J00NP6		J00NP6		J00NP6		J00NP6	
RFW#:	002		003		004		004 DL		004 MS		004 MSD	
2-Chloronaphthalene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
2-Nitroaniline	8400	U	16000	U	8400	U	17000	U	8400	U	17000	U
Dimethylphthalate	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Acenaphthylene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
2,6-Dinitrotoluene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
3-Nitroaniline	8400	U	16000	U	8400	U	17000	U	8400	U	17000	U
Acenaphthene	3300	U	6300	U	3300	U	6700	U	49	%	65	%
2,4-Dinitrophenol	8400	U	16000	U	8400	U	17000	U	8400	U	17000	U
4-Nitrophenol	8400	U	16000	U	8400	U	17000	U	44	%	94	%
Dibenzofuran	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
2,4-Dinitrotoluene	3300	U	6300	U	3300	U	6700	U	54	%	55	%
Diethylphthalate	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
4-Chlorophenyl-phenylether	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Fluorene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
4-Nitroaniline	8400	U	16000	U	8400	U	17000	U	8400	U	17000	U
4,6-Dinitro-2-methylphenol	8400	U	16000	U	8400	U	17000	U	8400	U	17000	U
N-Nitrosodiphenylamine (1)	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
4-Bromophenyl-phenylether	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Hexachlorobenzene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Pentachlorophenol	8400	U	16000	U	8400	U	17000	U	87	%	144 *	%
Phenanthrene	3300	U	350	J	3300	U	6700	U	3300	U	6700	U
Anthracene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Carbazole	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Di-n-butylphthalate	3300	U	6300	U	50000	E	53000	D	46000	E	83000	E
Fluoranthene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Pyrene	3300	U	6300	U	3300	U	6700	U	51	%	66	%
Butylbenzylphthalate	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
3,3'-Dichlorobenzidine	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Benzo(a)anthracene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Chrysene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
bis(2-Ethylhexyl)phthalate	3300	U	7500		220	J	6700	U	3300	U	2000	J
Di-n-octyl phthalate	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Benzo(b)fluoranthene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Benzo(k)fluoranthene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Benzo(a)pyrene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Indeno(1,2,3-cd)pyrene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Dibenz(a,h)anthracene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U
Benzo(g,h,i)perylene	3300	U	6300	U	3300	U	6700	U	3300	U	6700	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/29/03 15:45

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 2a

	Cust ID:	J00NP7	J00NP8	J00NP9	J00NR0	J00NR1	J00NR2
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	20.0	10.0	40.0	1.00	1.00	20.0
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	204 * %	206 * %	93 %	80 %	89 %	74 %
	2-Fluorobiphenyl	73 %	80 %	80 %	77 %	85 %	79 %
	Terphenyl-d14	58 %	67 %	105 %	124 %	119 %	93 %
	Phenol-d5	46 %	66 %	77 %	73 %	86 %	77 %
	2-Fluorophenol	60 %	80 %	76 %	70 %	76 %	75 %
	2,4,6-Tribromophenol	64 %	88 %	86 %	87 %	97 %	84 %
		fl	fl	fl	fl	fl	fl
Phenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
bis(2-Chloroethyl)ether		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2-Chlorophenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
1,3-Dichlorobenzene		6700 U	3400 U	13000 U	330 U	330 U	6700 U
1,4-Dichlorobenzene		6700 U	3400 U	13000 U	330 U	330 U	6700 U
1,2-Dichlorobenzene		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2-Methylphenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2,2'-oxybis(1-Chloropropane)		6700 U	3400 U	13000 U	330 U	330 U	6700 U
3- and/or 4-Methylphenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
N-Nitroso-di-n-propylamine		6700 U	3400 U	13000 U	330 U	330 U	6700 U
Hexachloroethane		6700 U	3400 U	13000 U	330 U	330 U	6700 U
Nitrobenzene		6700 U	3400 U	13000 U	330 U	330 U	6700 U
Isophorone		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2-Nitrophenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2,4-Dimethylphenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
bis(2-Chloroethoxy)methane		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2,4-Dichlorophenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
1,2,4-Trichlorobenzene		6700 U	3400 U	13000 U	330 U	330 U	6700 U
Naphthalene		6700 U	1000 J	4200 J	330 U	330 U	370 J
4-Chloroaniline		6700 U	3400 U	13000 U	330 U	330 U	6700 U
Hexachlorobutadiene		6700 U	3400 U	13000 U	330 U	330 U	6700 U
4-Chloro-3-methylphenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2-Methylnaphthalene		2200 J	460 J	770 J	330 U	330 U	6700 U
Hexachlorocyclopentadiene		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2,4,6-Trichlorophenol		6700 U	3400 U	13000 U	330 U	330 U	6700 U
2,4,5-Trichlorophenol		17000 U	8400 U	34000 U	840 U	840 U	17000 U

*= Outside of EPA CLP QC limits.

Cust ID:	J00NP7		J00NP8		J00NP9		J00NR0		J00NR1		J00NR2	
RFW#:	005		006		007		008		009		010	
2-Chloronaphthalene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
2-Nitroaniline	17000	U	8400	U	34000	U	840	U	840	U	17000	U
Dimethylphthalate	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Acenaphthylene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
2,6-Dinitrotoluene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
3-Nitroaniline	17000	U	8400	U	34000	U	840	U	840	U	17000	U
Acenaphthene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
2,4-Dinitrophenol	17000	U	8400	U	34000	U	840	U	840	U	17000	U
4-Nitrophenol	17000	U	8400	U	34000	U	840	U	840	U	17000	U
Dibenzofuran	6700	U	3400	U	13000	U	330	U	330	U	6700	U
2,4-Dinitrotoluene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Diethylphthalate	6700	U	3400	U	13000	U	330	U	330	U	6700	U
4-Chlorophenyl-phenylether	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Fluorene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
4-Nitroaniline	17000	U	8400	U	34000	U	840	U	840	U	17000	U
4,6-Dinitro-2-methylphenol	17000	U	8400	U	34000	U	840	U	840	U	17000	U
N-Nitrosodiphenylamine (1)	6700	U	3400	U	13000	U	330	U	330	U	6700	U
4-Bromophenyl-phenylether	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Hexachlorobenzene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Pentachlorophenol	17000	U	8400	U	34000	U	840	U	840	U	17000	U
Phenanthrene	1300	J	290	J	13000	U	330	U	44	J	6700	U
Anthracene	440	J	3400	U	13000	U	330	U	330	U	6700	U
Carbazole	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Di-n-butylphthalate	28000		3400	U	1900	J	330	U	300	J	6700	U
Fluoranthene	710	J	3400	U	13000	U	330	U	60	J	6700	U
Pyrene	340	J	3400	U	13000	U	330	U	44	J	6700	U
Butylbenzylphthalate	6700	U	3400	U	13000	U	330	U	330	U	6700	U
3,3'-Dichlorobenzidine	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Benzo(a)anthracene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Chrysene	350	J	3400	U	13000	U	330	U	62	J	6700	U
bis(2-Ethylhexyl)phthalate	14000		3400	U	6700	J	19	J	24	J	3000	J
Di-n-octyl phthalate	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Benzo(b)fluoranthene	6700	U	3400	U	13000	U	330	U	36	J	6700	U
Benzo(k)fluoranthene	6700	U	3400	U	13000	U	330	U	26	J	6700	U
Benzo(a)pyrene	6700	U	3400	U	13000	U	330	U	32	J	6700	U
Indeno(1,2,3-cd)pyrene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Dibenz(a,h)anthracene	6700	U	3400	U	13000	U	330	U	330	U	6700	U
Benzo(g,h,i)perylene	6700	U	3400	U	13000	U	330	U	330	U	6700	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0305L431 Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Report Date: 05/29/03 15:45 Page: 3a

	Cust ID:	J00NR3		J00NR4		J00NR5		SBLKTS		SBLKTS BS	
Sample Information	RFW#:	011		012		013		03LE0596-MB1		03LE0596-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOIL		SOIL	
	D.F.:	20.0		40.0		40.0		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	102	%	226 *	%	141 *	%	65	%	63	%
	2-Fluorobiphenyl	87	%	96	%	79	%	68	%	70	%
	Terphenyl-d14	107	%	116	%	105	%	100	%	94	%
	Phenol-d5	96	%	80	%	84	%	62	%	67	%
	2-Fluorophenol	109	%	95	%	86	%	70	%	69	%
	2,4,6-Tribromophenol	92	%	89	%	84	%	68	%	70	%
Phenol		6700	U	20000	U	20000	U	330	U	59	%
bis(2-Chloroethyl)ether		6700	U	20000	U	20000	U	330	U	330	U
2-Chlorophenol		6700	U	20000	U	20000	U	330	U	58	%
1,3-Dichlorobenzene		6700	U	20000	U	20000	U	330	U	330	U
1,4-Dichlorobenzene		6700	U	20000	U	20000	U	330	U	55	%
1,2-Dichlorobenzene		6700	U	20000	U	20000	U	330	U	330	U
2-Methylphenol		6700	U	20000	U	20000	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		6700	U	20000	U	20000	U	330	U	330	U
3- and/or 4-Methylphenol		6700	U	20000	U	20000	U	330	U	330	U
N-Nitroso-di-n-propylamine		6700	U	20000	U	20000	U	330	U	57	%
Hexachloroethane		6700	U	20000	U	20000	U	330	U	330	U
Nitrobenzene		6700	U	20000	U	20000	U	330	U	330	U
Isophorone		6700	U	20000	U	20000	U	330	U	330	U
2-Nitrophenol		6700	U	20000	U	20000	U	330	U	330	U
2,4-Dimethylphenol		6700	U	20000	U	20000	U	330	U	330	U
bis(2-Chloroethoxy)methane		6700	U	20000	U	20000	U	330	U	330	U
2,4-Dichlorophenol		6700	U	20000	U	20000	U	330	U	330	U
1,2,4-Trichlorobenzene		6700	U	20000	U	20000	U	330	U	57	%
Naphthalene		6700	U	6000	J	20000	U	330	U	330	U
4-Chloroaniline		6700	U	20000	U	20000	U	330	U	330	U
Hexachlorobutadiene		6700	U	20000	U	20000	U	330	U	330	U
4-Chloro-3-methylphenol		6700	U	20000	U	20000	U	330	U	66	%
2-Methylnaphthalene		6700	U	2200	J	20000	U	330	U	330	U
Hexachlorocyclopentadiene		6700	U	20000	U	20000	U	330	U	330	U
2,4,6-Trichlorophenol		6700	U	20000	U	20000	U	330	U	330	U
2,4,5-Trichlorophenol		17000	U	50000	U	51000	U	840	U	840	U

*= Outside of EPA CLP QC limits.

Cust ID:	J00NR3		J00NR4		J00NR5		SBLKTS		SBLKTS BS	
RFW#:	011		012		013		03LE0596-MB1		03LE0596-MB1	
2-Chloronaphthalene	6700	U	20000	U	20000	U	330	U	330	U
2-Nitroaniline	17000	U	50000	U	51000	U	840	U	840	U
Dimethylphthalate	6700	U	20000	U	20000	U	330	U	330	U
Acenaphthylene	6700	U	20000	U	20000	U	330	U	330	U
2,6-Dinitrotoluene	6700	U	20000	U	20000	U	330	U	330	U
3-Nitroaniline	17000	U	50000	U	51000	U	840	U	840	U
Acenaphthene	6700	U	20000	U	20000	U	330	U	63	%
2,4-Dinitrophenol	17000	U	50000	U	51000	U	840	U	840	U
4-Nitrophenol	17000	U	50000	U	51000	U	840	U	74	%
Dibenzofuran	6700	U	20000	U	20000	U	330	U	330	U
2,4-Dinitrotoluene	6700	U	20000	U	20000	U	330	U	70	%
Diethylphthalate	6700	U	20000	U	20000	U	330	U	330	U
4-Chlorophenyl-phenylether	6700	U	20000	U	20000	U	330	U	330	U
Fluorene	6700	U	20000	U	20000	U	330	U	330	U
4-Nitroaniline	17000	U	50000	U	51000	U	840	U	840	U
4,6-Dinitro-2-methylphenol	17000	U	50000	U	51000	U	840	U	840	U
N-Nitrosodiphenylamine (1)	6700	U	20000	U	20000	U	330	U	330	U
4-Bromophenyl-phenylether	6700	U	20000	U	20000	U	330	U	330	U
Hexachlorobenzene	6700	U	20000	U	20000	U	330	U	330	U
Pentachlorophenol	17000	U	50000	U	51000	U	840	U	57	%
Phenanthrene	6700	U	20000	U	20000	U	330	U	330	U
Anthracene	6700	U	20000	U	20000	U	330	U	330	U
Carbazole	6700	U	20000	U	20000	U	330	U	330	U
Di-n-butylphthalate	16000		3600	J	2600	J	330	U	330	U
Fluoranthene	6700	U	20000	U	20000	U	330	U	330	U
Pyrene	6700	U	20000	U	20000	U	330	U	76	%
Butylbenzylphthalate	6700	U	20000	U	20000	U	330	U	330	U
3,3'-Dichlorobenzidine	6700	U	20000	U	20000	U	330	U	330	U
Benzo(a)anthracene	6700	U	20000	U	20000	U	330	U	330	U
Chrysene	6700	U	20000	U	20000	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	6700	U	20000	U	20000	U	330	U	19	J
Di-n-octyl phthalate	6700	U	20000	U	20000	U	330	U	330	U
Benzo(b)fluoranthene	6700	U	20000	U	20000	U	330	U	330	U
Benzo(k)fluoranthene	6700	U	20000	U	20000	U	330	U	330	U
Benzo(a)pyrene	6700	U	20000	U	20000	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	6700	U	20000	U	20000	U	330	U	330	U
Dibenz(a,h)anthracene	6700	U	20000	U	20000	U	330	U	330	U
Benzo(g,h,i)perylene	6700	U	20000	U	20000	U	330	U	330	U

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NP4

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C052210

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/22/03

Injection Volume: 2.0(uL) Dilution Factor: 10.0

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	10.473	50000	J
2.	UNKNOWN	11.209	40000	J
3.	UNKNOWN	11.521	40000	J
4.	ORGANIC ACID	21.778	60000	J
5.	UNKNOWN	30.424	70000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NP5

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-003

Sample wt/vol: 16.0 (g/mL) G Lab File ID: C052211

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 1 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/22/03

Injection Volume: 2.0(uL) Dilution Factor: 10.0

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. 85-44-9	PHTHALIC ANHYDRIDE	15.723	30000	JN
2.	ORGANIC ACID	21.770	80000	J
3.	ORGANIC ACID	22.948	20000	J
4.	UNKNOWN	30.407	60000	J
5.	UNKNOWN	38.169	300000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NP6

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C052212

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/22/03

Injection Volume: 2.0(uL) Dilution Factor: 10.0

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 FREON	4.937	7000	J
2.	ALDOL CONDENSATE	7.043	20000	JAB
3. 85-44-9	PHTHALIC ANHYDRIDE	15.688	4000	JN
4.	UNKNOWN	30.346	7000	J
5.	UNKNOWN	37.970	3000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NP6DL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-004 DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052713

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/27/03

Injection Volume: 2.0(uL) Dilution Factor: 20.0

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

EPA SAMPLE NO.

J00NP7

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C052215

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/22/03

Injection Volume: 2.0(uL) Dilution Factor: 20.0

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	11.789	30000	J
2.	ALKANE	15.991	20000	J
3.	ORGANIC ACID	21.769	60000	J
4.	UNKNOWN	24.654	30000	J
5.	UNKNOWN	38.428	1000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NP8

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C052216

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 1 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/22/03

Injection Volume: 2.0(uL) Dilution Factor: 10.0

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	7.059	30000	JAB
2.	UNKNOWN	14.050	40000	J
3. 85-44-9	PHTHALIC ANHYDRIDE	15.791	300000	JN
4.	ORGANIC ACID	21.795	60000	J
5.	UNKNOWN	32.771	60000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NP9

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052803

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 1 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/28/03

Injection Volume: 2.0(uL) Dilution Factor: 40.0

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	5.022	30000	JAB
2. 85-44-9	PHTHALIC ANHYDRIDE	13.151	30000	JN
3.	ORGANIC ACID	19.950	20000	J
4.	UNKNOWN	25.463	9000	J
5.	UNKNOWN	30.653	20000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NR0

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052711

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/27/03

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	5.190	20000	JAB
2. 85-44-9	PHTHALIC ANHYDRIDE	13.241	6000	JN
3.	ORGANIC ACID	21.214	1000	J
4.	UNKNOWN	24.474	1000	J
5.	UNKNOWN	25.040	1000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NR1

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052712

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/27/03

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	5.209	20000	JAB
2. 85-44-9	PHTHALIC ANHYDRIDE	13.216	4000	JN
3.	ORGANIC ACID	21.198	6000	J
4.	ORGANIC ACID	21.319	9000	J
5.	UNKNOWN	23.197	2000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NR2

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052804

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/28/03

Injection Volume: 2.0(uL) Dilution Factor: 20.0

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	5.031	30000	JAB
2. 85-44-9	PHTHALIC ANHYDRIDE	13.169	30000	JN
3.	ORGANIC ACID	19.872	30000	J
4.	ORGANIC ACID	19.994	60000	J
5.	UNKNOWN	30.827	100000	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NR3

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-011

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052805

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 1 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/28/03

Injection Volume: 2.0(uL) Dilution Factor: 20.0

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.	ORGANIC ACID	12.264	20000	J
2. 85-44-9	UNKNOWN	13.307	200000	JN
3.	ORGANIC ACID	20.089	400000	J
4.	ORGANIC ACID	21.167	70000	J
5.	ORGANIC ACID	21.271	80000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NR4

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-012

Sample wt/vol: 20.0 (g/mL) G Lab File ID: D052806

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/28/03

Injection Volume: 2.0(uL) Dilution Factor: 40.0

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. 85-44-9	PHTHALIC ANHYDRIDE	13.276	500000	JN
2.	UNKNOWN	14.494	100000	J
3.	ORGANIC ACID	20.058	400000	J
4.	ORGANIC ACID	21.162	100000	J
5.	ORGANIC ACID	21.258	80000	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00NR5

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0305L431-013

Sample wt/vol: 20.0 (g/mL) G Lab File ID: D052807

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: 1 decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/28/03

Injection Volume: 2.0(uL) Dilution Factor: 40.0

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	9.951	40000	J
2.	ORGANIC ACID	12.220	50000	J
3. 85-44-9	PHTHALIC ANHYDRIDE	13.177	70000	JN
4.	ORGANIC ACID	19.924	60000	J
5.	UNKNOWN	25.523	90000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKTS

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 03LE0596-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C052208

Level: (low/med) LOW Date Received: 05/19/03

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 05/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/22/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	7.076	10000	JA

(b) BNA PIPCB PEST PCBs VOA

Lionville Laboratory Use Only

0305L431

Custody Transfer Record/Lab Work Request

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-017

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPLL Del: STD TAT: 7 Days

Date Rec'd: 5.17.03 Date Due: 5-24-03

		A	B					C	D		E			
Refrigerator #		2	—	—							—			
#/Type Container	Liquid													
	Solid	1qg	1qg	—				1g	1qg		1qg			
Volume	Liquid													
	Solid	120	250	—				60	120		120			
Preservatives		—	—	—				—	—		—			
ANALYSES REQUESTED		VOA	BNA	Pest/PCB	Herb			INORG Metal (1)	Total CN		Sulfide			

Lionville Laboratory Use Only

								0625H	0608H OPCB	0438Gx			MRCRATO	ICORTO		ISFD		
MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected											
	001	JOONL4			SO	5.13.03	0830	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~		~~X~~		
	002	JOONP4				5.15.03	0845	X	X	X			X					
	003	JOONP5					0855	X	X	X			X					
	004	JOONP6					0915	X	X	X			X					
	005	JOONP7					0935	X	X	X			X					
	006	JOONP8					0955	X	X	X			X					
	007	JOONP9					1005	X	X	X			X					
	008	JOONR0					1020	X	X	X			X					
	009	JOONR1					1030	X	X	X			X					
	010	JOONR2					1050	X	X	X			X					

Special Instructions: SAF # B03-017

Run Matrix QC

DATE/REVISIONS:

5-20-03 1. Sample -001 Moved to 0305L449

2.

3.

4.

5.

6.

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___

2) Ambient or Chilled

3) Received in Good Condition (Y) or N

4) Samples Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was: 1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample (Y) or N

4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 7902 9204 9770/0.8° 7922 3014 4333

Relinquished by	Received by	Date	Time
Fed Ex	J Smith	5.17.03	1155

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN	CORPORATE WASTE		

Lionville Laboratory Use Only
0305L431

Custody Transfer Record/Lab Work Request

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford
Est. Final Proj. Sampling Date:
Project #: See page 1
Project Contact/Phone #:
Lionville Laboratory Project Manager:
QC: Del: TAT: 7 days
Date Rec'd: Date Due:

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid			
	Solid	1aq	1aq-1	1aq
Volume	Liquid			
	Solid	120	250-1	60
Preservatives		—	—	—

ANALYSES REQUESTED →

	ORGANIC				INORG	
	VOA	BNA	Pest/PCB	Herb	Metal (1)	CN

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H OPCD	0608H	OHBGX	MRCRATO
011	JOONR3			SO	5.15.03	1055	X	X	X	X
012	JOONR4			↓	↓	1100	X	X	X	X
013	JOONR5			↓	↓	1105	X	X	X	X

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	11.17.03	1155

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-106	Page 1 of 1

Collector: R Fahlberg	Company Contact: M Stankovich — Telephone No.: 531-7620	Project Coordinator: KESSNER, JH	Price Code: 9C — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-139	SAF No.: B03-017	Air Quality ☐
Ice Chest No.: ERC 96 039	Field Logbook No.: EL 1577 — COA: C17HX4 671C	Method of Shipment: Fed EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030 231	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	240mL	120mL	60mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Sulfides - 9030	Total Cyanide - 9010				

Sample No.	Matrix *	Sample Date	Sample Time										
J00NL4	OTHER SOLID	5-13-03	0830	X	X	X		X	X				

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	1430 5-13-03	IA 3728	5-13-03 1430
REF IA 3728	51603 1100	SJOALE	51603 1100
SJOALE	51603 1100	FED EX	
[illegible]	5-17-03 11:55	[illegible]	5-17-03 11:55

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # IA on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-108	Page 1 of 1

Collector R Fahlberg	Company Contact R Nielson	Telephone No. 372-9658	Project Coordinator KESSNER, JH	Price Code 9C	Data Turnaround
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-176		SAF No. B03-017	Air Quality ☐	7 Days
Ice Chest No. ERC 99 055	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed EX		
Shipped To TMA/RECRA	Offsite Property No. A030 232		Bill of Lading/Air Bill No. 5OE 05PC		

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

Sample No.	Matrix *	Sample Date	Sample Time										
J00NP4	OTHER SOLID	5·15·03	0845	X	X	X	X						
J00NP5	OTHER SOLID	5·15·03	0855	X	X	X	X						
J00NP6	OTHER SOLID	5·15·03	0915	X	X	X	X						
J00NP7	OTHER SOLID	5·15·03	0935	X	X	X	X						
J00NP8	OTHER SOLID	5·15·03	0955	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From R. Fahlberg R. Fahlberg 5·15·03	Date/Time 1530	Received By/Stored In 3B 3728 5·15·03
Relinquished By/Removed From REF 3B 3728 51603 1100	Date/Time	Received By/Stored In S JOALE 51603 1100
Relinquished By/Removed From S JOALE 51603 1100	Date/Time	Received By/Stored In FED EX
Relinquished By/Removed From Fed Ex 5·17·03 11:55	Date/Time	Received By/Stored In L Miller 5·17·03 11:55
Relinquished By/Removed From	Date/Time	Received By/Stored In
Relinquished By/Removed From	Date/Time	Received By/Stored In

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-109	Page 1 of 1

Collector R Fahlberg	Company Contact R Nielson	Telephone No. 372-9658	Project Coordinator KESSNER, JH
Price Code 9C	Data Turnaround 7 Days	Air Quality ☐	
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-176		SAF No. B03-017
Ice Chest No. ERC 99 055	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A030232		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

Sample No.	Matrix *	Sample Date	Sample Time											
J00NP9	OTHER SOLID	5·15·03	1005	X	X	X	X							
J00NR0	OTHER SOLID	5·15·03	1020	X	X	X	X							
J00NR1	OTHER SOLID	5·15·03	1030	X	X	X	X							
J00NR2	OTHER SOLID	5·15·03	1050	X	X	X	X							
J00NR3	OTHER SOLID	5·15·03	1055	X	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1530	Received By/Stored In	Date/Time 1530
R Fahlberg R Fahlberg	5-15-03	3B 3728	5·15·03
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF 3B 3728	51603 1100	SJGALE	51603 1100
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJGALE	51603 1100	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX	5.17.03 1155		517.03 1155
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 33 on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-110

Collector: R Fahlberg	Company Contact: R Nielson	Telephone No.: 372-9658	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176	SAF No.: B03-017	
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A030232	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5-15-03							

Sample No.	Matrix *	Sample Date	Sample Time										
J00NR4	OTHER SOLID	5·15·03	1100	X	X	X	X						
J00NR5	OTHER SOLID	5·15·03	1105	X	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	5·15·03 1530	3B 3728	5·15·03 1530
REF 3B 3728	51603 1100	S J Gale	51603 1100
S J Gale	51603 1100	FED EX	
FED EX	5·17·03 1155		5·17·03 1155

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref #5B on 5/16/03

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

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

LIENT: TNU HanFord

urchase Order/Project:

DATE: 5.17.03

AF# / SOW# / Release #: B03-017

aboratory SDG #: Q3051431

OTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☒ N/A	☐ see Comment #
10. Shipment meets LvL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12. coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99 055 / 0.8°

ERC 96 039 / 0.3°

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:

32

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP4	002	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP5	003	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP6	004	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP6	004 MS	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP6	004 MSD	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NP7	005	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NP8	006	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NP9	007	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NR0	008	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NR1	009	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NR2	010	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NR3	011	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NR4	012	SO	03LE0597	05/15/03	05/19/03	05/24/03
J00NR5	013	SO	03LE0597	05/15/03	05/19/03	05/24/03

LAB QC:

PBLKUJ	MB1	S	03LE0597	N/A	05/19/03	05/23/03
PBLKUJ	MB1 BS	S	03LE0597	N/A	05/19/03	05/23/03

5/29/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-017
LVL #: 0305L431
SDG/SAF #: H2223/B03-017

W.O. #: 11343-606-001-9999-00
Date Received: 05-17-03

PESTICIDE

The set of samples consisted of twelve (12) solid samples collected on 05-15-03.

The samples and their associated QC samples were extracted on 05-19-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081A.

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

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

2. All required holding times for extraction and analysis have been met.

3. All samples and their associated QC samples received Florisil and Sulfur cleanups.

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

5. Three (3) of four (4) obtainable surrogate were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. Four (4) of six (6) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.

8. All samples required 50-fold instrument dilutions due to the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

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

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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 16 pages.

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

5/30/03
Date

pef\r:\group\data\pest\tmu hanford\05L-431.pes

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 03GC 154

Initiator: Bryce Santaro
Date: 5/27/03
Client: TRU

Batch: 0305L431, 432, 450
Samples: BS
Method: SW846/MCAWW/CLP/

Parameter: 0608H
Matrix: Soil
Prep Batch: 03LE0597, 0611

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)

(1) High spike and surrogate recoveries in BS (03LE0597, see attached). Samples contain hits.

(2) High surrogate recovery in Blank (03LE0611, extracted w/ 450-004 MS, MSD). Blank is clean.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

__ 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: [signature] 5/27/03

✓ 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: [signature] 5/27/03 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
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

QA-105-A-0801

4

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 05/27/03 15:20

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 1

	Cust ID:	J00NP4		J00NP5		J00NP6		J00NP6		J00NP6		J00NP7	
Sample Information	RFW#:	002		003		004		004 MS		004 MSD		005	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	50.0		50.0		50.0		50.0		50.0		50.0	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	D	%	D	%	D	%	D	%	D	%	D	%
	Decachlorobiphenyl	D	%	D	%	D	%	D	%	D	%	D	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		84	U	250	U	83	U	83	U	83	U	84	U
Beta-BHC		84	U	250	U	83	U	83	U	83	U	84	U
Delta-BHC		84	U	250	U	83	U	83	U	83	U	84	U
gamma-BHC (Lindane)		84	U	250	U	83	U	D	%	D	%	84	U
Heptachlor		84	U	250	U	83	U	D	%	D	%	84	U
Aldrin		84	U	250	U	83	U	D	%	D	%	84	U
Heptachlor epoxide		84	U	250	U	83	U	83	U	83	U	81	J
Endosulfan I		84	U	250	U	83	U	83	U	83	U	84	U
Dieldrin		170	U	510	U	170	U	D	%	D	%	170	U
4,4'-DDE		170	U	510	U	170	U	170	U	170	U	170	U
Endrin		170	U	510	U	170	U	D	%	D	%	170	U
Endosulfan II		170	U	510	U	170	U	170	U	170	U	170	U
4,4'-DDD		170	U	510	U	170	U	170	U	170	U	170	U
Endosulfan sulfate		170	U	510	U	170	U	170	U	170	U	170	U
4,4'-DDT		170	U	460	J	170	U	D	%	D	%	1300	
Methoxychlor		840	U	2500	U	830	U	830	U	830	U	840	U
Endrin ketone		170	U	510	U	170	U	170	U	170	U	170	U
Endrin aldehyde		170	U	510	U	170	U	170	U	170	U	170	U
alpha-Chlordane		84	U	250	U	83	U	83	U	83	U	84	U
gamma-Chlordane		84	U	250	U	83	U	83	U	83	U	84	U
Toxaphene		8400	U	25000	U	8300	U	8300	U	8300	U	8400	U

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.

Pesticide/PCBs by GC, CLP List

Report Date: 05/27/03 15:20

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 2

	Cust ID:	J00NP8		J00NP9		J00NR0		J00NR1		J00NR2		J00NR3	
Sample Information	RFW#:	006		007		008		009		010		011	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	50.0		50.0		50.0		50.0		50.0		50.0	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	D	%	D	%	D	%	D	%	D	%	D	%
	Decachlorobiphenyl	D	%	D	%	D	%	D	%	D	%	D	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		84	U	84	U	83	U	84	U	83	U	84	U
Beta-BHC		84	U	84	U	83	U	84	U	83	U	84	U
Delta-BHC		84	U	84	U	83	U	84	U	83	U	84	U
gamma-BHC (Lindane)		84	U	84	U	83	U	84	U	83	U	84	U
Heptachlor		84	U	84	U	83	U	84	U	83	U	84	U
Aldrin		84	U	84	U	83	U	84	U	83	U	84	U
Heptachlor epoxide		84	U	84	U	83	U	84	U	83	U	84	U
Endosulfan I		84	U	84	U	83	U	84	U	83	U	84	U
Dieldrin		170	U	170	U	170	U	170	U	170	U	170	U
4,4'-DDE		170	U	170	U	170	U	1700		170	U	170	U
Endrin		170	U	170	U	170	U	170	U	170	U	170	U
Endosulfan II		170	U	170	U	170	U	170	U	170	U	170	U
4,4'-DDD		170	U	170	U	170	U	170	U	170	U	170	U
Endosulfan sulfate		170	U	170	U	170	U	170	U	170	U	170	U
4,4'-DDT		170	U	170	U	170	U	170	U	170	U	170	U
Methoxychlor		840	U	840	U	830	U	840	U	830	U	840	U
Endrin ketone		170	U	170	U	170	U	170	U	170	U	170	U
Endrin aldehyde		170	U	170	U	170	U	170	U	170	U	170	U
alpha-Chlordane		84	U	84	U	83	U	84	U	83	U	84	U
gamma-Chlordane		84	U	84	U	83	U	84	U	83	U	84	U
Toxaphene		8400	U	8400	U	8300	U	8400	U	8300	U	8400	U

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.

Pesticide/PCBs by GC, CLP List Report Date: 05/27/03 15:20

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 3

	Cust ID:	**J00NR4**	**J00NR5**	**PBLKUJ**	**PBLKUJ BS**
Sample Information	RFW#:	**012**	**013**	**03LE0597-MB1**	**03LE0597-MB1**
	Matrix:	SOLID	SOLID	SOIL	SOIL
	D.F.:	50.0	50.0	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG

Surrogate:											
Tetrachloro-m-xylene	D	%	D	%	115	%	130 *	%			
Decachlorobiphenyl	D	%	D	%	135 *	%	150 *	%			
		fl		fl		fl		fl		fl	fl
Alpha-BHC	84	U	84	U	1.7	U	1.7	U			
Beta-BHC	84	U	84	U	1.7	U	1.7	U			
Delta-BHC	84	U	84	U	1.7	U	1.7	U			
gamma-BHC (Lindane)	84	U	84	U	1.7	U	124	%			
Heptachlor	84	U	84	U	1.7	U	128 *	%			
Aldrin	84	U	84	U	1.7	U	118	%			
Heptachlor epoxide	84	U	84	U	1.7	U	1.7	U			
Endosulfan I	84	U	84	U	1.7	U	1.7	U			
Dieldrin	170	U	170	U	3.3	U	133 *	%			
4,4'-DDE	170	U	190		3.3	U	3.3	U			
Endrin	170	U	170	U	3.3	U	148 *	%			
Endosulfan II	170	U	170	U	3.3	U	3.3	U			
4,4'-DDD	170	U	170	U	3.3	U	3.3	U			
Endosulfan sulfate	170	U	170	U	3.3	U	3.3	U			
4,4'-DDT	170	U	170	U	3.3	U	135 *	%			
Methoxychlor	840	U	840	U	17	U	17	U			
Endrin ketone	170	U	170	U	3.3	U	3.3	U			
Endrin aldehyde	170	U	170	U	3.3	U	3.3	U			
alpha-Chlordane	84	U	84	U	1.7	U	1.7	U			
gamma-Chlordane	84	U	84	U	1.7	U	1.7	U			
Toxaphene	8400	U	8400	U	170	U	170	U			

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

Custody Transfer Record/Lab Work Request Page ___ of ___

0305L431

LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-017

Est. Final Proj. Sampling Date:

Project #: 11343-606.001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 Days

Date Rec'd: 5.17.03 Date Due: 5-24-03

		A	B					C	D		E				
Refrigerator #		2	—	—	—	—	—	—	—	—	—				
#/Type Container	Liquid														
	Solid	1qg	1qg	—				1g	1qg		1qg				
Volume	Liquid							1g							
	Solid	120	250	—				60	120		120				
Preservatives		—	—	—				—	—		—				
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal (1)	Total CN		Sulfide				
Lionville Laboratory Use Only			0625H	0608H OPC3	OH3Gx			MRCRATO	ICATO		ISFD				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H OPC3	OH3Gx	MRCRATO	ICATO	ISFD
001	JOONL4			SO	5.13.03	0830	X	X	X	X	X	X
002	JOONP4				5.15.03	0845	X	X	X	X		
003	JOONP5					0855	X	X	X	X		
004	JOONP6					0915	X	X	X	X		
005	JOONP7					0935	X	X	X	X		
006	JOONP8					0955	X	X	X	X		
007	JOONP9					1005	X	X	X	X		
008	JOONR0					1020	X	X	X	X		
009	JOONR1					1030	X	X	X	X		
010	JOONR2					1050	X	X	X	X		

Special Instructions: SAF # B03-017

Run Matrix QC

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___

2) Ambient or Chilled

3) Received in Good Condition (Y) or N

4) Samples Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was: 1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample (Y) or N

4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 7903 9204 9770/0.8° 7922 5014 4333

Relinquished by	Received by	Date	Time
Fedex	J. Smith	5.17.03	1155

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN	COMPOSITE WASTE		

Lionville Laboratory Use Only
0305L431

Custody Transfer Record/Lab Work Request

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford
Est. Final Proj. Sampling Date:
Project #: See page 1
Project Contact/Phone #:
Lionville Laboratory Project Manager:
QC: Del: TAT: 7 days

Date Rec'd: Date Due:

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid			
	Solid	1aq	1aq	1aq
Volume	Liquid			
	Solid	120	250	60
Preservatives		—	—	—

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal (1)	CN
								0625H 0PCB	0608H	0HBGX	MRCRATO	
011	JOONR3			SO	5-15-03	1055		X	X	X	X	
012	JOONR4			↓	↓	1100		X	X	X	X	
013	JOONR5			↓	↓	1105		X	X	X	X	

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	11-17-03	1155

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-106	Page 1 of 1

Collector R Fahlberg	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH
Price Code 9C	Data Turnaround 7 Days	Air Quality ☐	
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-139		SAF No. B03-017
Ice Chest No. CRC 96 039	Field Logbook No. EL 1577	COA C17HX4671C	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A030231		Bill of Lading/Air Bill No. SGE 05PC

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	240mL	120mL	60mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Sulfides - 9030	Total Cyanide - 9010				

Sample No.	Matrix *	Sample Date	Sample Time										
J00NL4	OTHER SOLID	5-13-03	0830	X	X	X		X	X				

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1430	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	5-13-03	IA 3728	5-13-03 1430
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF IA 3728	51603 1100	SJGALE	51603 1100
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJGALE	51603 1100	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX	5-17-03 11:55		5-17-03 11:55
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # IA on 5/16/03

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-017 100
Collector R Fahlberg	Company Contact R Nielson	Telephone No. 372-9658	Project Coordinator KESSNER, JH	Price Code 9C Air Quality ☐
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-176		SAF No. B03-017	Data Turnaround 7 Days
Ice Chest No. ERC 99 055	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed EX	
Shipped To TMA/RECRA	Offsite Property No. A030 232		Bill of Lading/Air Bill No. SEE OSPC	

13

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C								
Type of Container	aG	aG	aG	aG								
No. of Container(s)	1	1	1	1								
Volume	60mL	250mL	120mL	60mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 6/15/03								

Sample No.	Matrix *	Sample Date	Sample Time										
✓ J00NP4	OTHER SOLID	5·15·03	0845	X	X	X	X						
✓ J00NP5	OTHER SOLID	5·15·03	0855	X	X	X	X						
✓ J00NP6	OTHER SOLID	5·15·03	0915	X	X	X	X						
✓ J00NP7	OTHER SOLID	5·15·03	0935	X	X	X	X						
✓ J00NP8	OTHER SOLID	5·15·03	0955	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: R. Fahlberg R. Fahlberg	Date/Time 1530 5·15·03	Received By/Stored In: 3B 3728	Date/Time 1530 5·15·03
Relinquished By/Removed From: REF 3B 3728	Date/Time 51603 1100	Received By/Stored In: SJGALE	Date/Time 51603 1100
Relinquished By/Removed From: SJGALE	Date/Time 51603 1100	Received By/Stored In: FED EX	Date/Time
Relinquished By/Removed From: Fed Ex	Date/Time 5·17·03 11:55	Received By/Stored In: [signature]	Date/Time 5·17·03 11:55
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		
Collector R Fahlberg	Company Contact R Nielson	Telephone No. 372-9658	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-176		SAF No. B03-017
Ice Chest No. ERC 99 055	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A030232		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9C

Air Quality ☐

Data Turnaround 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

Sample No.	Matrix *	Sample Date	Sample Time										
J00NP9	OTHER SOLID	5·15·03	1005	X	X	X	X						
J00NR0	OTHER SOLID	5·15·03	1020	X	X	X	X						
J00NR1	OTHER SOLID	5·15·03	1030	X	X	X	X						
J00NR2	OTHER SOLID	5·15·03	1050	X	X	X	X						
J00NR3	OTHER SOLID	5·15·03	1055	X	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Fahlberg R. Fahlberg	1530 5-15-03	3B 3728	1530 5·15·03
REF 3B 3728	51603 1100	SJGALE	51603 1100
SJGALE	51603 1100	FED EX	
	5.17.03 1155		517.03 1155

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector R Fahlberg	**Company Contact** R Nielson	**Telephone No.** 372-9658	**Project Coordinator** KESSNER, JH
Price Code 9C	**Data Turnaround** 7 Days	**Air Quality** ☐	
Project Designation Remaining Sites Confirmation Sampling-Other Solid	**Sampling Location** 600-176		**SAF No.** B03-017
Ice Chest No. ERC 99 055	**Field Logbook No.** EL 1577	**COA** C17HXU671C	**Method of Shipment** Fed EX
Shipped To TMA/RECRA	**Offsite Property No.** A030252		**Bill of Lading/Air Bill No.** SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

Sample No.	Matrix *	Sample Date	Sample Time											
J00NR4	OTHER SOLID	5·15·03	1100	X	X	X	X							
J00NR5	OTHER SOLID	5·15·03	1105	X	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1530	Received By/Stored In	Date/Time 1530
R. Fahlberg R. Fahlberg	5·15·03	3B 3728	5·15·03
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF 3B 3728	51603 1100	SJ GALE	51603 1100
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJ GALE	51603 1100	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX	5·17·03 1155		5·17·03 1155
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5.17.03

CAF# / SOW# / Release #: B03-017

Laboratory SDG #: 03051431

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☒ N/A	☐ see Comment #
10. Shipment meets LvL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12. coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99 055 / 0.8°

ERC 96 039 / 0.3°

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP4	002	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP5	003	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP6	004	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP6	004 MS	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP6	004 MSD	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP7	005	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP8	006	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NP9	007	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NR0	008	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NR1	009	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NR2	010	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NR3	011	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NR4	012	SO	03LE0597	05/15/03	05/19/03	05/23/03
J00NR5	013	SO	03LE0597	05/15/03	05/19/03	05/23/03

LAB QC:

PBLKUJ	MB1	S	03LE0597	N/A	05/19/03	05/23/03
PBLKUJ	MB1 BS	S	03LE0597	N/A	05/19/03	05/23/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-017
LVL #: 0305L431
SDG/SAF #: H2223/B03-017

W.O. #: 11343-606-001-9999-00
Date Received: 05-17-03

PCB

The set of samples consisted of twelve (12) solid samples collected on 05-15-03.

The samples and their associated QC samples were extracted on 05-19-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082.

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

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

2. All required holding times for extraction and analysis have been met.

3. All samples and their associated QC samples received Florisil, Sulfuric Acid, and Sulfur cleanups.

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

5. Three (3) of four (4) obtainable surrogate were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. All blank spike recoveries were within acceptance criteria.

7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.

8. All samples required 50-fold instrument dilutions due to the high concentrations of non-target and target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

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

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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.

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

5/30/13
Date

pef\r:\group\data\pest\tnu hanford\05L-431.pcb

LVLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 060151

Initiator: Bryce Santoro
Date: 5/27/03
Client: TNU

Batch: 030581,432,441,450
Samples: BS
Method: SW846/MCAWW/CLP/

Parameter: 8PCB
Matrix: Soil
Prep Batch: 03E0597

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)

High surrogate recovery in BS. All spike recoveries good.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: 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: 5/27/03

✓ 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: 5/27/03 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
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 05/27/03 13:51

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 1

	Cust ID:	J00NP4		J00NP5		J00NP6		J00NP6		J00NP6		J00NP7	
Sample Information	RFW#:	002		003		004		004 MS		004 MSD		005	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	50.0		50.0		50.0		50.0		50.0		50.0	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Decachlorobiphenyl	D	%	D	%	D	%	D	%	D	%	D	%
	Tetrachloro-m-xylene	D	%	D	%	D	%	D	%	D	%	D	%
			fl		fl		fl		fl		fl		fl
Aroclor-1016		750	U	2300	U	750	U	D	%	D	%	750	U
Aroclor-1221		750	U	2300	U	750	U	750	U	750	U	750	U
Aroclor-1232		750	U	2300	U	750	U	750	U	750	U	750	U
Aroclor-1242		750	U	2300	U	750	U	750	U	750	U	750	U
Aroclor-1248		750	U	2300	U	750	U	750	U	750	U	750	U
Aroclor-1254		270	J	1300	J	750	U	750	U	750	U	14000	
Aroclor-1260		750	U	2300	U	750	U	D	%	D	%	750	U

	Cust ID:	J00NP8		J00NP9		J00NR0		J00NR1		J00NR2		J00NR3	
Sample Information	RFW#:	006		007		008		009		010		011	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	50.0		50.0		50.0		50.0		50.0		50.0	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Decachlorobiphenyl	D	%	D	%	D	%	D	%	D	%	D	%
	Tetrachloro-m-xylene	D	%	D	%	D	%	D	%	D	%	D	%
			fl		fl		fl		fl		fl		fl
Aroclor-1016		750	U	750	U	750	U	750	U	750	U	760	U
Aroclor-1221		750	U	750	U	750	U	750	U	750	U	760	U
Aroclor-1232		750	U	750	U	750	U	750	U	750	U	760	U
Aroclor-1242		750	U	750	U	750	U	750	U	750	U	760	U
Aroclor-1248		750	U	750	U	750	U	750	U	750	U	760	U
Aroclor-1254		750	U	1400		750	U	220	J	750	U	760	U
Aroclor-1260		750	U	750	U	750	U	750	U	750	U	390	J

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.

PCBs by GC

Report Date: 05/27/03 13:51

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 2

	Cust ID:	J00NR4	J00NR5	PBLKUJ	PBLKUJ BS
Sample Information	RFW#:	012	013	03LE0597-MB1	03LE0597-MB1
	Matrix:	SOLID	SOLID	SOIL	SOIL
	D.F.:	50.0	50.0	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Decachlorobiphenyl	D %	D %	130 * %	155 * %
	Tetrachloro-m-xylene	D %	D %	105 %	120 * %
Aroclor-1016		750 U	760 U	15 U	115 %
Aroclor-1221		750 U	760 U	15 U	15 U
Aroclor-1232		750 U	760 U	15 U	15 U
Aroclor-1242		750 U	760 U	15 U	15 U
Aroclor-1248		750 U	760 U	15 U	15 U
Aroclor-1254		750 U	760 U	15 U	15 U
Aroclor-1260		750 U	500 J	15 U	122 %

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

0305L431

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LIONVILLE LABORATORY INC

Client: TNU-Hanford B03-017

Est. Final Proj. Sampling Date:

Project #: 11343-606.001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 5.17.03 Date Due: 5-24-03

		A	B		C	D	E
Refrigerator #		2					
#/Type Container	Liquid						
	Solid	1 aq	1 aq	-1	1 g	1 aq	1 aq
Volume	Liquid						
	Solid	120	250	-1	60	120	120
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb	INORG: Metal (1)	Total CN	Sulfide

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H OPCB	0H3GX	MRCRATO	ICRTO	ISFD
001	JOONL4			SO	5-13-03	0830	X	X	X	X	X	X
002	JOONP4				5-15-03	0845	X	X	X	X		
003	JOONP5					0855	X	X	X	X		
004	JOONP6					0915	X	X	X	X		
005	JOONP7					0935	X	X	X	X		
006	JOONP8					0955	X	X	X	X		
007	JOONP9					1005	X	X	X	X		
008	JOONR0					1020	X	X	X	X		
009	JOONR1					1030	X	X	X	X		
010	JOONR2					1050	X	X	X	X		

Special Instructions: SAF # B03-017

Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 0.3 °C

Relinquished by	Received by	Date	Time
Ted Ex	D J Smith	5.17.03	1155

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN	COMPOSITE WASTE		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:
7902 9204 9770/0.8° 7922 5014 4333

Lionville Laboratory Use Only

0305L431

Custody Transfer Record/Lab Work Request

Page 2 of 2

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford

Est. Final Proj. Sampling Date:

Project #: See page 1

Project Contact/Phone #:

Lionville Laboratory Project Manager:

QC: Del: TAT: 7 days

Date Rec'd: Date Due:

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid			
	Solid	1aq	1aq	1aq
Volume	Liquid			
	Solid	120	250	60
Preservatives		—	—	—

ANALYSES REQUESTED →

	ORGANIC				INORG	
	VOA	BNA	Pest/PCB	Herb	Metal (1)	CN
Lab ID		0625H OPCD	0608H	OHBGX	MRCRATO	
011		X	X	X	X	
012		X	X	X	X	
013		X	X	X	X	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
011	JOONR3			SO	5-15-03	1055
012	JOONR4					1100
013	JOONR5					1105

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	11-17-03	1155

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-106	Page 1 of 1

Collector R Fahlberg	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-139		SAF No. B03-017
Ice Chest No. ERC 96 039	Field Logbook No. EL 1577	COA C17HX4 671C	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A030 231		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9C

Air Quality ☐

Data Turnaround 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	240mL	120mL	60mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Sulfides - 9030	Total Cyanide - 9010				

Sample No.	Matrix *	Sample Date	Sample Time										
J00NL4	OTHER SOLID	5-13-03	0830	X	X	X		X	X				

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From R. Fahlberg R. Fahlberg	Date/Time 1430 5-13-03	Received By/Stored In 1A 3728	Date/Time 5-13-03 1430
Relinquished By/Removed From REF 1A 3728 51603	Date/Time 1100	Received By/Stored In SJGALE[illegible]	Date/Time 51603 1100
Relinquished By/Removed From SJGALE[illegible]	Date/Time 51603 1100	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From [illegible]	Date/Time 5-17-03 11:55	Received By/Stored In [illegible]	Date/Time 5-17-03 11:55
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-017-100
Collector R Fahlberg	Company Contact R Nielson	Telephone No. 372-9658	Project Coordinator KESSNER, JH	Price Code 9C Air Quality ☐
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-176		SAF No. B03-017	Data Turnaround 7 Days
Ice Chest No. ERC 99 055	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed EX	
Shipped To TMA/RECRA	Offsite Property No. A030 232		Bill of Lading/Air Bill No. SEE OSPL	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C								
Type of Container	aG	aG	aG	aG								
No. of Container(s)	1	1	1	1								
Volume	60mL	250mL	120mL	60mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 6/15/03								

Sample No.	Matrix *	Sample Date	Sample Time										
J00NP4	OTHER SOLID	5·15·03	0845	X	X	X	X						
J00NP5	OTHER SOLID	5·15·03	0855	X	X	X	X						
J00NP6	OTHER SOLID	5·15·03	0915	X	X	X	X						
J00NP7	OTHER SOLID	5·15·03	0935	X	X	X	X						
J00NP8	OTHER SOLID	5·15·03	0955	X	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	5·15·03 1530	3B 3728	5·15·03 1530
REF 3B 3728	51603 1100	SJGALE	51603 1100
SJGALE	51603 1100	FED EX	
Fed Ex	5·17·03 11:55	[illegible]	5·17·03 11:55

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-017-103
Collector: R Fahlberg	Company Contact: R Nielson	Telephone No.: 372-9658	Project Coordinator: KESSNER, JH
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176		SAF No.: B03-017
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A030232		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9C

Air Quality ☐

Data Turnaround: 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C								
Type of Container	aG	aG	aG	aG								
No. of Container(s)	1	1	1	1								
Volume	60mL	250mL	120mL	60mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5-15-03								

Sample No.	Matrix *	Sample Date	Sample Time										
J00NP9	OTHER SOLID	5·15·03	1005	X	X	X	X						
J00NR0	OTHER SOLID	5·15·03	1020	X	X	X	X						
J00NR1	OTHER SOLID	5·15·03	1030	X	X	X	X						
J00NR2	OTHER SOLID	5·15·03	1050	X	X	X	X						
J00NR3	OTHER SOLID	5·15·03	1055	X	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Fahlberg R. Fahlberg	5-15-03 1530	3B 3728	5·15·03 1530
REF 3B 3728	51603 1100	SJ GALE [signature]	51603 1100
SJ GALE [signature]	51603 1100	FED EX	
[signature]	5.17.03 1155	[signature]	517.03 1155

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: R Fahlberg	Company Contact: R Nielson	Telephone No.: 372-9658	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176		SAF No.: B03-017
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A030232		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5.15.03							

Sample No.	Matrix *	Sample Date	Sample Time											
J00NR4	OTHER SOLID	5·15·03	1100	X	X	X	X							
J00NR5	OTHER SOLID	5·15·03	1105	X	X	X	X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	5·15·03 1530	3B 3728	5·15·03 1530
REF 3B 3728	51603 1100	SJGALE	51603 1100
SJGALE	51603 1100	FED EX	
FED EX	5·17·03 1155		5·17·03 1155
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # SB on 5/16/03

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

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

:LIENT: TNU Hanford

urchase Order/Project:

DATE: 5.17.03

:AF# / SOW# / Release #: B03-017

.aboratory SDG #: 0305L431

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☒ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12. coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99 055 / 0.8°

ERC 96 039 / 0.3°

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager:

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
HBGX ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP4	002	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NP5	003	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NP6	004	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NP7	005	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NP8	006	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NP8	006 MS	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NP8	006 MSD	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NP9	007	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NR0	008	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NR1	009	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NR2	010	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NR3	011	SO	03LE0600	05/15/03	05/21/03	05/23/03
J00NR4	012	SO	03LE0600	05/15/03	05/21/03	05/24/03
J00NR5	013	SO	03LE0600	05/15/03	05/21/03	05/24/03

LAB QC:

PBLKUL	MB1	S	03LE0600	N/A	05/21/03	05/23/03
PBLKUL	MB1 BS	S	03LE0600	N/A	05/21/03	05/27/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU HANFORD B03-017
LVL#: 0305L431
SDG/SAF#: H2223/B03-017

W.O.#: 11343-606-001-9999-00
Date Received: 05-17-03

HERBICIDE

The set of samples consisted of twelve (12) solid samples collected on 05-15-03.

The samples and their associated QC samples were extracted on 05-21-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24,27-03. The extraction and analysis procedure was based on method 8151A.

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

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. One (1) of eight (8) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
7. All samples required 50-fold instrument dilutions due the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. To the best of my knowledge, this data report is in compliance with the terms and conditions of the purchase order, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant laboratory manager or his/her designee to be accurate as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/30/03
Date

pef\7somr:\group\data\herb\\tnu\05L-431.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 14 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 036C153

Initiator: Bryce Santaro
Date: 5/27/03
Client: TNV

Batch: 03052431, 432, 450
Samples: BS
Method: SW846/MCAWW/CLP/

Parameter: OHBGX
Matrix: Soil
Prep Batch: 03LE0600

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)

① Low Dicamba recovery in BS @ 43% (QC limit = 50%). All samples are clean of Dicamba.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

narrate

4. Project Manager Instructions...signature/date: [signature] 5/27/03

✓ 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: [signature] 5/29/03 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
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

GLOSSARY OF HERBICIDE DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF HERBICIDE DATA

P	=	This flag is used for an Herbicide 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 HPLC.

R:/SHARE/HPLC/OLCSCGLOS

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 05/29/03 09:07

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 1

	Cust ID:	J00NP4		J00NP5		J00NP6		J00NP7		J00NP8		J00NP8	
Sample Information	RFW#:	002		003		004		005		006		006 MS	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	50.0		50.0		50.0		50.0		50.0		50.0	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate:	DCAA	D	% fl	D	% fl	D	% fl	D	% fl	D	% fl	D	% fl
Dalapon		8400	U	8400	U	8300	U	8400	U	8400	U	D	%
Dicamba		3300	U	3400	U	3300	U	3300	U	3400	U	D	%
Dichloroprop		8400	U	8400	U	8300	U	8400	U	8400	U	D	%
2,4-D		1700	U	1200	J	1700	U	1700	U	1700	U	D	%
2,4,5-TP (Silvex)		840	U	840	U	830	U	840	U	840	U	D	%
2,4,5-T		840	U	840	U	830	U	840	U	840	U	D	%
2,4-DB		8400	U	8400	U	8300	U	8400	U	8400	U	D	%
Dinoseb		840	U	840	U	830	U	840	U	840	U	D	%

	Cust ID:	J00NP8		J00NP9		J00NR0		J00NR1		J00NR2		J00NR3	
Sample Information	RFW#:	006 MSD		007		008		009		010		011	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	50.0		50.0		50.0		50.0		50.0		50.0	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate:	DCAA	D	% fl	D	% fl	D	% fl	D	% fl	D	% fl	D	% fl
Dalapon		D	%	8400	U	8300	U	8400	U	8300	U	8400	U
Dicamba		D	%	3400	U	3300	U	3300	U	3300	U	3400	U
Dichloroprop		D	%	8400	U	8300	U	8400	U	8300	U	8400	U
2,4-D		D	%	1700	U	1700	U	1700	U	1700	U	1700	U
2,4,5-TP (Silvex)		D	%	840	U	830	U	840	U	830	U	840	U
2,4,5-T		D	%	840	U	830	U	840	U	830	U	840	U
2,4-DB		D	%	8400	U	8300	U	8400	U	8300	U	8400	U
Dinoseb		D	%	840	U	830	U	840	U	830	U	840	U

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.

Herbicides, Special List

Report Date: 05/29/03 09:07

RFW Batch Number: **0305L431** Client: **TNUHANFORD B03-017 H2223** Work Order: 11343606001 Page: 2

	Cust ID:	J00NR4	J00NR5	PBLKUL	PBLKUL BS
Sample Information	RFW#:	012	013	03LE0600-MB1	03LE0600-MB1
	Matrix:	SOLID	SOLID	SOIL	SOIL
	D.F.:	50.0	50.0	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg

Surrogate: DCAA	D	%	D	%	48	%	108	%				
		fl		fl		fl		fl		fl		fl
Dalapon	8400	U	8400	U	170	U	78	%				
Dicamba	3300	U	3400	U	67	U	43	* %				
Dichloroprop	8400	U	8400	U	170	U	92	%				
2,4-D	1700	U	1700	U	33	U	76	%				
2,4,5-TP (Silvex)	840	U	840	U	17	U	92	%				
2,4,5-T	840	U	840	U	17	U	86	%				
2,4-DB	8400	U	8400	U	170	U	93	%				
Dinoseb	840	U	840	U	17	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 Use Only

0305L431

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORY INC

Client: TNU-Hanford B03-017

Est. Final Proj. Sampling Date:

Project #: 11343-606.001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 5.17.03 Date Due: 5-24-03

		A	B		C	D	E	
Refrigerator #		2	—		—	—	—	00
#/Type Container	Liquid							
	Solid	1aq	1aq	-1	1g	1aq	1aq	
Volume	Liquid							
	Solid	120	250	-1	60	120	120	
Preservatives		—	—	—	—	—	—	

ANALYSES REQUESTED →

	ORGANIC				INORG		
	VOA	BNA	Pest/PCB	Herb	Metal (1)	Total CN	Sulfide
Lab ID		0625H	0608H OPCB	0HBGX	MRCRATO	ICMTO	ISFD
001		X	X	X	X	X	X
002		X	X	X	X		
003		X	X	X	X		
004		X	X	X	X		
005		X	X	X	X		
006		X	X	X	X		
007		X	X	X	X		
008		X	X	X	X		
009		X	X	X	X		
010		X	X	X	X		

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	J00NL4			SO	5-13-03	0830
002	J00NP4				5-15-03	0845
003	J00NP5					0855
004	J00NP6					0915
005	J00NP7					0935
006	J00NP8					0955
007	J00NP9					1005
008	J00NR0					1020
009	J00NR1					1030
010	J00NR2					1050

Special Instructions: SAF # B03-017

Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 0.3 °C

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5.17.03	1155

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN	COMPOSITE WASTE		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 7902 9204 9770/0.8° 7922 5014 4333

Lionville Laboratory Use Only
0305L431

Custody Transfer Record/Lab Work Request

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford
Est. Final Proj. Sampling Date:
Project #: see page 1
Project Contact/Phone #:
Lionville Laboratory Project Manager:
QC: Del: TAT: 7 days
Date Rec'd: Date Due:

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid			
	Solid	1aq	1aq	1aq
Volume	Liquid			
	Solid	120	250	60
Preservatives		—	—	—

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal (1), CN

Lionville Laboratory Use Only

MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H OPCB	0608H	OHBGX	MRCRATO
011	JOONR3			SO	5-15-03	1055	X	X	X	X
012	JOONR4					1100	X	X	X	X
013	JOONR5					1105	X	X	X	X

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	11-17-03	1155

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-017-106	Page 1 of 1
Collector R Fahlberg	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code 9C Air Quality ☐
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-139		SAF No. B03-017	Data Turnaround 7 Days
Ice Chest No. ERC 96 039	Field Logbook No. EL 1577	COA C17HX4 67K	Method of Shipment Fed EX	
Shipped To TMA/RECRA	Offsite Property No. A030 231		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	240mL	120mL	60mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Sulfides - 9030	Total Cyanide - 9010				

Sample No.	Matrix *	Sample Date	Sample Time										
J00NL4	OTHER SOLID	5-13-03	0830	X	X	X		X	X				

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	1430 5-13-03	1A 3728	5-13-03 1430
REF 1A 3728	51603 1100	SJGALE	51603 1100
SJGALE	51603 1100	FED EX	
[illegible]	5-17-03 11:55	[illegible]	5-17-03 11:55

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		
Collector: R Fahlberg	Company Contact: R Nielson — Telephone No.: 372-9658	Project Coordinator: KESSNER, JH	Price Code: 9C — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176	SAF No.: B03-017	Air Quality ☐
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577 — COA: C17HXU671C	Method of Shipment: Fed EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030 232	Bill of Lading/Air Bill No.: 5BE 05PC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

Sample No.	Matrix *	Sample Date	Sample Time										
J00NP4	OTHER SOLID	5·15·03	0845	X	X	X	X						
J00NP5	OTHER SOLID	5·15·03	0855	X	X	X	X						
J00NP6	OTHER SOLID	5·15·03	0915	X	X	X	X						
J00NP7	OTHER SOLID	5·15·03	0935	X	X	X	X						
J00NP8	OTHER SOLID	5·15·03	0955	X	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	5·15·03 1530	3B 3728	5·15·03 1530
REF 3B 3728	51603 1100	SJOALC	51603 1100
SJOALC	51603 1100	FED EX	
Fed Ex	5.17.03 11:55		5.17.03 11:55

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		
Collector: R Fahlberg	Company Contact: R Nielson — Telephone No.: 372-9658	Project Coordinator: KESSNER, JH	Price Code: 9C — Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176	SAF No.: B03-017	Air Quality ☐
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577 — COA: C17HXU671C	Method of Shipment: Fed EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030 232	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C								
Type of Container	aG	aG	aG	aG								
No. of Container(s)	1	1	1	1								
Volume	60mL	250mL	120mL	60mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)								

Sample No.	Matrix *	Sample Date	Sample Time										
J00NP9	OTHER SOLID	5·15·03	1005	X	X	X	X						
J00NR0	OTHER SOLID	5·15·03	1020	X	X	X	X						
J00NR1	OTHER SOLID	5·15·03	1030	X	X	X	X						
J00NR2	OTHER SOLID	5·15·03	1050	X	X	X	X						
J00NR3	OTHER SOLID	5·15·03	1055	X	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R Fahlberg R. Fahlberg	5-15-03 1530	3B 3728	5·15·03 1530
REF 3B 3728	51603 1100	SJ GALE	51603 1100
SJ GALE	51603 1100	FED EX	
FED EX	5.17.03 1155		5.17.03 1155

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 38 on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: R Fahlberg	Company Contact: R Nielson	Telephone No.: 372-9658	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176		SAF No.: B03-017
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A030252		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5.15.03							
Sample No.	Matrix *	Sample Date	Sample Time								
J00NR4	OTHER SOLID	5·15·03	1100	X	X	X	X				
J00NR5	OTHER SOLID	5·15·03	1105	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1530	Received By/Stored In	Date/Time 1530
R. Fahlberg R. Fahlberg 5·15·03		3B 3728 5·15·03	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF 3B 3728 51603	1100	SJGALE 51603	1100
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJGALE 51603	1100	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex 5·17·03	1155	5·17·03	1155
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5/16/03

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

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

:LIENT: TNU HanDord

urchase Order/Project:

DATE: 5.17.03

:AF# / SOW# / Release #: B03-017

.aboratory SDG #: C3051431

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☒ N/A	☐ see Comment #
10. Shipment meets LvL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12. coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99 055 / 0.8°

ERC 96 039 / 0.3°

Laboratory Sample Custodian:

Laboratory Project Manager: D. Smith

14

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP4						
SILVER, TOTAL	002	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	002	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	002	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	002	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	002	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	002	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	002	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	002	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NP5						
SILVER, TOTAL	003	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	003	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	003	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	003	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	003	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	003	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	003	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	003	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NP6						
SILVER, TOTAL	004	SO	03L0268	05/15/03	05/19/03	05/28/03
SILVER, TOTAL	004 REP	SO	03L0268	05/15/03	05/19/03	05/28/03
SILVER, TOTAL	004 MS	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	004	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	004 REP	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	004 MS	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	004	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	004 REP	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	004 MS	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	004	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	004 REP	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	004 MS	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	004	SO	03L0268	05/15/03	05/19/03	05/28/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM, TOTAL	004 REP	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	004 MS	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	004	SO	03C0121	05/15/03	05/21/03	05/22/03
MERCURY, TOTAL	004 REP	SO	03C0121	05/15/03	05/21/03	05/22/03
MERCURY, TOTAL	004 MS	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	004	SO	03L0268	05/15/03	05/19/03	05/28/03
LEAD, TOTAL	004 REP	SO	03L0268	05/15/03	05/19/03	05/28/03
LEAD, TOTAL	004 MS	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	004	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	004 REP	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	004 MS	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NP7						
SILVER, TOTAL	005	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	005	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	005	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	005	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	005	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	005	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	005	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	005	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NP8						
SILVER, TOTAL	006	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	006	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	006	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	006	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	006	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	006	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	006	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	006	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NP9						
SILVER, TOTAL	007	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	007	SO	03L0268	05/15/03	05/19/03	05/28/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	007	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	007	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	007	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	007	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	007	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	007	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NR0						
SILVER, TOTAL	008	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	008	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	008	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	008	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	008	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	008	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	008	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	008	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NR1						
SILVER, TOTAL	009	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	009	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	009	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	009	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	009	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	009	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	009	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	009	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NR2						
SILVER, TOTAL	010	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	010	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	010	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	010	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	010	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	010	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	010	SO	03L0268	05/15/03	05/19/03	05/28/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	010	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NR3						
SILVER, TOTAL	011	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	011	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	011	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	011	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	011	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	011	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	011	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	011	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NR4						
SILVER, TOTAL	012	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	012	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	012	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	012	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	012	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	012	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	012	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	012	SO	03L0268	05/15/03	05/19/03	05/28/03
J00NR5						
SILVER, TOTAL	013	SO	03L0268	05/15/03	05/19/03	05/28/03
ARSENIC, TOTAL	013	SO	03L0268	05/15/03	05/19/03	05/28/03
BARIUM, TOTAL	013	SO	03L0268	05/15/03	05/19/03	05/28/03
CADMIUM, TOTAL	013	SO	03L0268	05/15/03	05/19/03	05/28/03
CHROMIUM, TOTAL	013	SO	03L0268	05/15/03	05/19/03	05/28/03
MERCURY, TOTAL	013	SO	03C0121	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	013	SO	03L0268	05/15/03	05/19/03	05/28/03
SELENIUM, TOTAL	013	SO	03L0268	05/15/03	05/19/03	05/28/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0268	N/A	05/19/03	05/28/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-017 H2223

DATE RECEIVED: 05/17/03 LVL LOT # :0305L431

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER, TOTAL	MB1	S	03L0268	N/A	05/19/03	05/28/03
ARSENIC LABORATORY	LC1 BS	S	03L0268	N/A	05/19/03	05/28/03
ARSENIC, TOTAL	MB1	S	03L0268	N/A	05/19/03	05/28/03
BARIUM LABORATORY	LC1 BS	S	03L0268	N/A	05/19/03	05/28/03
BARIUM, TOTAL	MB1	S	03L0268	N/A	05/19/03	05/28/03
CADMIUM LABORATORY	LC1 BS	S	03L0268	N/A	05/19/03	05/28/03
CADMIUM, TOTAL	MB1	S	03L0268	N/A	05/19/03	05/28/03
CHROMIUM LABORATORY	LC1 BS	S	03L0268	N/A	05/19/03	05/28/03
CHROMIUM, TOTAL	MB1	S	03L0268	N/A	05/19/03	05/28/03
MERCURY LABORATORY	LC1 BS	S	03C0121	N/A	05/21/03	05/22/03
MERCURY, TOTAL	MB1	S	03C0121	N/A	05/21/03	05/22/03
LEAD LABORATORY	LC1 BS	S	03L0268	N/A	05/19/03	05/28/03
LEAD, TOTAL	MB1	S	03L0268	N/A	05/19/03	05/28/03
SELENIUM LABORATORY	LC1 BS	S	03L0268	N/A	05/19/03	05/28/03
SELENIUM, TOTAL	MB1	S	03L0268	N/A	05/19/03	05/28/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-017
LVL#: 0305L431
SDG/SAF#: H2223/B03-017

W.O.#: 11343-606-001-9999-00
Date Received: 05-17-03

METALS CASE NARRATIVE

1. This narrative covers the analyses of 12 solid samples.

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

   Samples J00NP8 and J00NP9 were reported with five fold dilutions for all ICP analytes due to high concentrations and sample matrix. Sample J00NR1 was reported with twelve fold dilutions for Barium and Lead due to high concentrations of these analytes.

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

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

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.

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

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

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

10. The matrix spike (MS) recoveries for 3 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy 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 23 pages.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J00NP6	Barium	2000	91.9
	Chromium	2000	115.7
	Lead	2500	108.0

12. The duplicate analyses for 7 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

14. 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

05-30-03
Date

gmb/m05-431

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 03054431

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:_____

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 05/28/03

CLIENT: TNUHANFORD B03-017 H2223 LVL LOT #: 0305L431

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J00NP4	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	2.3	MG/KG	0.30	1.0
		Barium, Total	98.2	MG/KG	0.02	1.0
		Cadmium, Total	1.6	MG/KG	0.04	1.0
		Chromium, Total	173	MG/KG	0.09	1.0
		Mercury, Total	0.06	MG/KG	0.02	1.0
		Lead, Total	1260	MG/KG	0.21	1.0
		Selenium, Total	0.50	MG/KG	0.38	1.0
-003	J00NP5	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	7.2	MG/KG	0.32	1.0
		Barium, Total	353	MG/KG	0.02	1.0
		Cadmium, Total	2.3	MG/KG	0.04	1.0
		Chromium, Total	2840	MG/KG	0.1	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Lead, Total	13100	MG/KG	0.22	1.0
		Selenium, Total	0.83	MG/KG	0.41	1.0
-004	J00NP6	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	4.1	MG/KG	0.31	1.0
		Barium, Total	1210	MG/KG	0.02	1.0
		Cadmium, Total	1.5	MG/KG	0.04	1.0
		Chromium, Total	479	MG/KG	0.1	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Lead, Total	1680	MG/KG	0.22	1.0
		Selenium, Total	0.47	MG/KG	0.40	1.0
-005	J00NP7	Silver, Total	0.40	MG/KG	0.11	1.0
		Arsenic, Total	19.4	MG/KG	0.30	1.0
		Barium, Total	2320	MG/KG	0.02	1.0
		Cadmium, Total	437	MG/KG	0.04	1.0
		Chromium, Total	720	MG/KG	0.09	1.0
		Mercury, Total	0.07	MG/KG	0.01	1.0
		Lead, Total	6920	MG/KG	0.21	1.0
		Selenium, Total	0.72	MG/KG	0.39	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/28/03

CLIENT: TNUHANFORD B03-017 H2223 LVL LOT #: 0305L431

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J00NP8	Silver, Total	0.55 u	MG/KG	0.55	5.0
		Arsenic, Total	26.4	MG/KG	1.5	5.0
		Barium, Total	67.2	MG/KG	0.09	5.0
		Cadmium, Total	2.0	MG/KG	0.18	5.0
		Chromium, Total	14100	MG/KG	0.46	5.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	60900	MG/KG	1.1	5.0
		Selenium, Total	1.9 u	MG/KG	1.9	5.0
-007	J00NP9	Silver, Total	0.65	MG/KG	0.59	5.0
		Arsenic, Total	45.7	MG/KG	1.6	5.0
		Barium, Total	591	MG/KG	0.1	5.0
		Cadmium, Total	6.6	MG/KG	0.20	5.0
		Chromium, Total	19800	MG/KG	0.49	5.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	79200	MG/KG	1.1	5.0
		Selenium, Total	2.0 u	MG/KG	2.0	5.0
-008	J00NR0	Silver, Total	0.22	MG/KG	0.12	1.0
		Arsenic, Total	2.2	MG/KG	0.32	1.0
		Barium, Total	234	MG/KG	0.02	1.0
		Cadmium, Total	1.6	MG/KG	0.04	1.0
		Chromium, Total	302	MG/KG	0.1	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	1390	MG/KG	0.22	1.0
		Selenium, Total	0.40 u	MG/KG	0.40	1.0
-009	J00NR1	Silver, Total	0.94	MG/KG	0.12	1.0
		Arsenic, Total	3.6	MG/KG	0.32	1.0
		Barium, Total	11800	MG/KG	0.24	12.0
		Cadmium, Total	1.2	MG/KG	0.04	1.0
		Chromium, Total	86.9	MG/KG	0.1	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Lead, Total	221000	MG/KG	2.7	12.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/28/03

CLIENT: TNUHANFORD B03-017 H2223 LVL LOT #: 0305L431

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-010	J00NR2	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	3.0	MG/KG	0.30	1.0
		Barium, Total	188	MG/KG	0.02	1.0
		Cadmium, Total	1.3	MG/KG	0.04	1.0
		Chromium, Total	193	MG/KG	0.09	1.0
		Mercury, Total	0.10	MG/KG	0.01	1.0
		Lead, Total	1820	MG/KG	0.21	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0
-011	J00NR3	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	3.2	MG/KG	0.32	1.0
		Barium, Total	225	MG/KG	0.02	1.0
		Cadmium, Total	2.2	MG/KG	0.04	1.0
		Chromium, Total	213	MG/KG	0.1	1.0
		Mercury, Total	0.04	MG/KG	0.01	1.0
		Lead, Total	1270	MG/KG	0.22	1.0
		Selenium, Total	0.80	MG/KG	0.41	1.0
-012	J00NR4	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	2.9	MG/KG	0.31	1.0
		Barium, Total	159	MG/KG	0.02	1.0
		Cadmium, Total	1.8	MG/KG	0.04	1.0
		Chromium, Total	205	MG/KG	0.09	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	1900	MG/KG	0.22	1.0
		Selenium, Total	0.95	MG/KG	0.39	1.0
-013	J00NR5	Silver, Total	0.76	MG/KG	0.12	1.0
		Arsenic, Total	18.9	MG/KG	0.33	1.0
		Barium, Total	3070	MG/KG	0.02	1.0
		Cadmium, Total	22.9	MG/KG	0.04	1.0
		Chromium, Total	5070	MG/KG	0.10	1.0
		Mercury, Total	0.24	MG/KG	0.02	1.0
		Lead, Total	14700	MG/KG	0.23	1.0
		Selenium, Total	9.5	MG/KG	0.42	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/28/03

CLIENT: TNUHANFORD B03-017 H2223 LVL LOT #: 0305L431

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	03L0268-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	0.06	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.10 u	MG/KG	0.10	1.0
		Lead, Total	0.43	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0121-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/28/03

CLIENT: TNUHANFORD B03-017 H2223 LVL LOT #: 0305L431

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-004	J00NP6	Silver, Total	4.6	0.11u	4.8	95.8	1.0
		Arsenic, Total	182	4.1	192	92.5	1.0
		Barium, Total	383	1210	192	-430. *	1.0
		Cadmium, Total	5.3	1.5	4.8	79.2	1.0
		Chromium, Total	605	479	19.2	656.8*	1.0
		Mercury, Total	0.16	0.02	0.15	88.8	1.0
		Lead, Total	852	1680	48.1	-1700. *	1.0
		Selenium, Total	170	0.47	192	88.1	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/28/03

CLIENT: TNUHANFORD B03-017 H2223 LVL LOT #: 0305L431

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-004REP	J00NP6	Silver, Total	0.11u	0.12u	NC	1.0
		Arsenic, Total	4.1	3.1	27.8	1.0
		Barium, Total	1210	94.1	171.1	1.0
		Cadmium, Total	1.5	0.54	94.2	1.0
		Chromium, Total	479	159	100.5	1.0
		Mercury, Total	0.02	0.01u	~~NC~~ 200	1.0
		Lead, Total	1680	283	142.4	1.0
		Selenium, Total	0.47	0.40u	~~NC~~ 200	1.0

MP 5/29/03

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/28/03

CLIENT: TNUHANFORD B03-017 H2223 LVL LOT #: 0305L431

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0268-LC1	Silver, LCS	49.8	50.0	MG/KG	99.6
		Arsenic, LCS	931	1000	MG/KG	93.1
		Barium, LCS	496	500	MG/KG	99.1
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	50.9	50.0	MG/KG	101.8
		Lead, LCS	244	250	MG/KG	97.4
		Selenium, LCS	885	1000	MG/KG	88.5
LCS1	03C0121-LC1	Mercury, LCS	6.2	6.2	MG/KG	99.4

(6) BNA RFPCB PRE [illegible]

Lionville Laboratory Use Only

0305L431

Custody Transfer Record/Lab Work Request

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-017

Est. Final Proj. Sampling Date:

Project #: 11343-606.001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 Days

Date Rec'd: 5.17.03 Date Due: 5-24-03

		A	B	C	D	E
Refrigerator #		2	—			1
#/Type Container	Liquid					
	Solid	1qg	1qg	1g	1qg	1qg
Volume	Liquid					
	Solid	120	250	60	120	120
Preservatives		—	—	—	—	—

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal (1), Total CN, Sulfide

Lionville Laboratory Use Only: 0625H, 0608H OPC3, 0413Gx, HRCLATO, ICMTO, IIFD

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H OPC3	0413Gx	HRCLATO	ICMTO	IIFD
001	JOONL4			SO	5.13.03	0830	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
002	JOONP4				5.15.03	0845	X	X	X	X		
003	JOONP5					0855	X	X	X	X		
004	JOONP6					0915	X	X	X	X		
005	JOONP7					0935	X	X	X	X		
006	JOONP8					0955	X	X	X	X		
007	JOONP9					1005	X	X	X	X		
008	JOONR0					1020	X	X	X	X		
009	JOONR1					1030	X	X	X	X		
010	JOONR2					1050	X	X	X	X		

Special Instructions: SAF # B03-017

Run Matrix QC

DATE/REVISIONS:

5.20.03 1. Sample -001 Moved to 0305L449

2.

3.

4.

5.

6.

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___

2) Ambient or Chilled

3) Received In Good Condition (Y) or N

4) Samples Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was: 1) Present on Outer Package (Y) or N; 2) Unbroken on Outer Package (Y) or N; 3) Present on Sample (Y) or N; 4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 7902 9204 9770/0.8° 7922 3014 4333

Relinquished by	Received by	Date	Time
Fed Ex	D J Smith	5.17.03	1155

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN	COMPOSITE WASTE		

Lionville Laboratory Use Only
0305L431

Custody Transfer Record/Lab Work Request

Page 2 of 2

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford
Est. Final Proj. Sampling Date:
Project #: see page 1
Project Contact/Phone #:
Lionville Laboratory Project Manager:
QC: Del: TAT: 7 days

Date Rec'd: Date Due:

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid			
	Solid	1aq	1aq	1aq
Volume	Liquid			
	Solid	120	250	60
Preservatives		—	—	—

ANALYSES REQUESTED →

	ORGANIC				INORG	
	VOA	BNA	Pest/PCB	Herb	Metal (U)	CN
Lab ID		0625H 0PCB	0608H	0HBGX	MERCRATO	
011		X	X	X	X	
012		X	X	X	X	
013		X	X	X	X	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
011	JOONR3			SO	5-15-03	1055
012	JOONR4			↓	↓	1100
013	JOONR5			↓	↓	1105

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Ted Ex	[signature]	11-17-03	1155

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-106	Page 1 of 1

Collector R Fahlberg	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH
Price Code 9C	Data Turnaround 7 Days	Air Quality ☐	
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-139	SAF No. B03-017	
Ice Chest No. ERC 96 039	Field Logbook No. EL 1577	COA C17HX4 671C	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A030 231		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1	1					
Volume	60mL	240mL	120mL	60mL	120mL	120mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Sulfides - 9030	Total Cyanide - 9010					
Sample No. / Matrix * / Sample Date / Sample Time											
J00NL4 / OTHER SOLID / 5-13-03 / 0830	X	X	X		X	X					

N 5-13-03

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg R. Fahlberg	5-13-03 1430	1A 3728	5-13-03 1430
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF 1A 3728	51603 1100	S J Gale	51603 1100
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S J Gale	51603 1100	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
(Fed Ex)	5-17-03 11:55	[illegible]	5-17-03 11:55
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-017-108	Page 1 of 1
Collector R Fahlberg	Company Contact R Nielson	Telephone No. 372-9658	Project Coordinator KESSNER, JH	Price Code 9C Air Quality ☐
Project Designation Remaining Sites Confirmation Sampling-Other Solid	Sampling Location 600-176		SAF No. B03-017	Data Turnaround 7 Days
Ice Chest No. ERC 99 055	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed EX	
Shipped To TMA/RECRA	Offsite Property No. A030 232		Bill of Lading/Air Bill No. SOE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C								
Type of Container	aG	aG	aG	aG								
No. of Container(s)	1	1	1	1								
Volume	60mL	250mL	120mL	60mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 6-15-03								

Sample No.	Matrix *	Sample Date	Sample Time										
J00NP4	OTHER SOLID	5·15·03	0845	X	X	X	X						
J00NP5	OTHER SOLID	5·15·03	0855	X	X	X	X						
J00NP6	OTHER SOLID	5·15·03	0915	X	X	X	X						
J00NP7	OTHER SOLID	5·15·03	0935	X	X	X	X						
J00NP8	OTHER SOLID	5·15·03	0955	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: R. Fahlberg Date/Time: 5·15·03 1530	Received By/Stored In: 3B 3728 Date/Time: 5·15·03 1530	
Relinquished By/Removed From: REF 3B 3728 Date/Time: 51603 1100	Received By/Stored In: SJOALE Date/Time: 51603 1100	
Relinquished By/Removed From: SJOALE Date/Time: 51603 1100	Received By/Stored In: FED EX Date/Time:	
Relinquished By/Removed From: Fed Ex Date/Time: 5·17·03 11:55	Received By/Stored In: [signature] Date/Time: 5·17·03 11:55	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	
Relinquished 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 - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3B on 5 16 03

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

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

BHI-EE-011 (03/01/2002)

20

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-017-109	Page 1 of 1

Collector: R Fahlberg	Company Contact: R Nielson	Telephone No.: 372-9658	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 7 Days	Air Quality ☐	
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176	SAF No.: B03-017	
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A030232	Bill of Lading/Air Bill No.: SEE OSP C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)							

Sample No.	Matrix *	Sample Date	Sample Time											
J00NP9	OTHER SOLID	5·15·03	1005	X	X	X	X							
J00NR0	OTHER SOLID	5·15·03	1020	X	X	X	X							
J00NR1	OTHER SOLID	5·15·03	1030	X	X	X	X							
J00NR2	OTHER SOLID	5·15·03	1050	X	X	X	X							
J00NR3	OTHER SOLID	5·15·03	1055	X	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: R Fahlberg	R. Fahlberg	5-15-03 1530	3B 3728	5·15·03 1530
Relinquished By/Removed From: REF 3B 3728		51603 1100	SJ GALE	51603 1100
Relinquished By/Removed From: SJ GALE		51603 1100	FED EX	
Relinquished By/Removed From:		5·17·03 1155		517.03 1155
Relinquished By/Removed From:			Received By/Stored In:	
Relinquished By/Removed From:			Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 38 on 5/16/03

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

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

BHI-EE-011 (03/01/2002)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-017-110
Collector: R Fahlberg	Company Contact: R Nielson	Telephone No.: 372-9658	Project Coordinator: KESSNER, JH	Price Code: 9C	Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Other Solid	Sampling Location: 600-176		SAF No.: B03-017	Air Quality ☐
Ice Chest No.: ERC 99 055	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A030232		Bill of Lading/Air Bill No.: SCE 05PC

POSSIBLE SAMPLE HAZARDS/REMARKS

Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1							
Volume	60mL	250mL	120mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081 Herbicides	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5-15-03							
Sample No.	Matrix *	Sample Date	Sample Time								
J00NR4	OTHER SOLID	5·15·03	1100	X	X	X	X				
J00NR5	OTHER SOLID	5·15·03	1105	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	R. Fahlberg	5·15·03 1530	3B 3728	5·15·03 1530
Relinquished By/Removed From	REF 3B 3728	51603 1100	SJGALE	51603 1100
Relinquished By/Removed From		51603 1100	FED EX	
Relinquished By/Removed From	FED EX	5·17·03 1155		5·17·03 1155
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) *ICP Metals - 6010TR (Client List)* (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 5B on 5/16/03

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

BHI-EE-011 (03/01/2002)

22

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

IENT: TNU Hanford

rchase Order/Project:

DATE: 5.17.03

F# / SOW# / Release #: B03-017

boratory SDG #: 0305L431

OTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☒ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12. coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99 055 / 0.8°

ERC 96 039 / 0.3°

Laboratory Sample Custodian: D. Smith

Laboratory Project Manager: