0070113

SAF-RC-051
100 & 300 Area Component of the RCBRA - Incremental Soil Sampling
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jill Thomson	H0-23	KW 6/15/06 INITIAL/DATE
Jeanette Duncan	H9-02	KW 6/15/06 INITIAL/DATE

COMMENTS:

SDG K0315 SAF-RC-051

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 300-A Riparian #6

RECEIVED
JUL 11 2006
EDMC

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

RECEIVED JUN 2006

DATE RECEIVED: 04/19/06 LVL LOT # :06

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11JC1	001	S	06LE0318	04/17/06	04/25/06	05/04/06
J11JH0	002	S	06LE0318	04/17/06	04/25/06	05/04/06
J11JH0	002 MS	S	06LE0318	04/17/06	04/25/06	05/04/06
J11JH0	002 MSD	S	06LE0318	04/17/06	04/25/06	05/04/06
J11JH~~0~~1 KDL 5/16/06	003	S	06LE0318	04/17/06	04/25/06	05/07/06
J11JH2	004	S	06LE0318	04/17/06	04/25/06	05/07/06
J11JH3	005	S	06LE0318	04/17/06	04/25/06	05/07/06

LAB QC:

SBLKWW	MB1	S	06LE0318	N/A	04/25/06	05/03/06
SBLKWW	MB1 BS	S	06LE0318	N/A	04/25/06	05/03/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-051
LVL #: 0604L802
SDG/SAF # K0315/RC-051

W.O. #: 11343-606-001-9999-00
Date Received: 04-19-2006

SEMIVOLATILE

Five (5) soil samples were collected on 04-17-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 04-25-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-03,04,07-2006.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of a discrepancy, which was documented on the Sample Receipt Checklist.

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

3. All soil sample results were reported on a wet-weight basis.

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

5. All surrogate recoveries were within acceptance criteria.

6. Four (4) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria.

   One (1) of sixty-four (64) blank spike recoveries was outside acceptance criteria.

   A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Internal standard area and retention time criteria were met.

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 2 5 pages.

LIONVILLE LABORATORY INC.

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

9. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

10. I certify, that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data, contained in this hard-copy data package, has been authorized, by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/10/06
Date

som\gorup\data\bna\tnu-hanford\0604-802.doc

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06MS153

Initiator: Sharon Saylor
Date: 5-8-06
Client: TNU

Batch: 0604LF02
Samples: 05 MSD
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 061E031F

1. Reason for SDR

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

b. General Discrepancy

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

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

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

low recovery of 2,4-dinitrophenol in the blank spike + the matrix spike dup but the matrix spike is ok

2. Known or Probable Causes(s)

loss due to highly erratic chromatographic behavior of this compound

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: 5/9/06

✓ 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: 5/10/06 Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
1	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	3	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

000000004

GLOSSARY

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

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

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

sb\10-03\gloss.doc

GLOSSARY

ABBREVIATIONS

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

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

MP - **Missed Peak:** Manually added peak not found by automatic quan program.

PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.

RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.

SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/09/06 13:34

RFW Batch Number: 0604L802 Client: TNUHANFORD RC-051 K0315 Work Order: 11343606001 Page: 1a

	Cust ID:	J11JC1	J11JH0	J11JH0	J11JH0	J11JH0	J11JH2
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	64 %	64 %	91 %	65 %	65 %	64 %
	2-Fluorobiphenyl	67 %	65 %	97 %	67 %	63 %	65 %
	Terphenyl-d14	83 %	73 %	107 %	77 %	74 %	73 %
	Phenol-d5	62 %	63 %	94 %	70 %	50 %	52 %
	2-Fluorophenol	52 %	52 %	86 %	58 %	45 %	47 %
	2,4,6-Tribromophenol	74 %	68 %	103 %	72 %	65 %	65 %
		fl	fl	fl	fl	fl	fl
Phenol		330 U	330 U	104 %	79 %	330 U	330 U
bis(2-Chloroethyl)ether		330 U	330 U	107 %	82 %	330 U	330 U
2-Chlorophenol		330 U	330 U	101 %	74 %	330 U	330 U
1,3-Dichlorobenzene		330 U	330 U	91 %	65 %	330 U	330 U
1,4-Dichlorobenzene		330 U	330 U	89 %	65 %	330 U	330 U
1,2-Dichlorobenzene		330 U	330 U	96 %	70 %	330 U	330 U
2-Methylphenol		330 U	330 U	108 %	82 %	330 U	330 U
2,2'-oxybis(1-Chloropropane)		330 U	330 U	111 %	85 %	330 U	330 U
4-Methylphenol		330 U	330 U	108 %	86 %	330 U	330 U
N-Nitroso-di-n-propylamine		330 U	330 U	112 %	89 %	330 U	330 U
Hexachloroethane		330 U	330 U	90 %	64 %	330 U	330 U
Nitrobenzene		330 U	330 U	98 %	72 %	330 U	330 U
Isophorone		330 U	330 U	117 %	90 %	330 U	330 U
2-Nitrophenol		330 U	330 U	97 %	70 %	330 U	330 U
2,4-Dimethylphenol		330 U	330 U	104 %	78 %	330 U	330 U
bis(2-Chloroethoxy)methane		330 U	330 U	110 %	83 %	330 U	330 U
2,4-Dichlorophenol		330 U	330 U	101 %	76 %	330 U	330 U
1,2,4-Trichlorobenzene		330 U	330 U	95 %	69 %	330 U	330 U
Naphthalene		330 U	330 U	96 %	72 %	330 U	330 U
4-Chloroaniline		330 U	330 U	92 %	78 %	330 U	330 U
Hexachlorobutadiene		330 U	330 U	104 %	75 %	330 U	330 U
4-Chloro-3-methylphenol		330 U	330 U	116 %	95 %	330 U	330 U
2-Methylnaphthalene		330 U	330 U	104 * %	81 %	330 U	330 U
Hexachlorocyclopentadiene		330 U	330 U	62 %	36 %	330 U	330 U
2,4,6-Trichlorophenol		330 U	330 U	110 %	79 %	330 U	330 U
2,4,5-Trichlorophenol		830 U	830 U	113 %	84 %	830 U	830 U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0604L802 Client: TNUHANFORD RC-051 K0315 Work Order: 11343606001 Page: 1b

Cust ID:	J11JC1		J11JH0		J11JH0		J11JH0		J11JH0		J11JH2	
RFW#:	001		002		002 MS		002 MSD		003		004	
2-Chloronaphthalene	330	U	330	U	100	%	73	%	330	U	330	U
2-Nitroaniline	830	U	830	U	119	%	88	%	830	U	830	U
Dimethylphthalate	330	U	330	U	115	%	85	%	330	U	330	U
Acenaphthylene	330	U	330	U	104	%	76	%	330	U	330	U
2,6-Dinitrotoluene	330	U	330	U	114 *	%	84	%	330	U	330	U
3-Nitroaniline	830	U	830	U	116	%	89	%	830	U	830	U
Acenaphthene	330	U	330	U	105	%	76	%	330	U	330	U
2,4-Dinitrophenol	830	U	830	U	62	%	17 *	%	830	U	830	U
4-Nitrophenol	830	U	830	U	103	%	77	%	830	U	830	U
Dibenzofuran	330	U	330	U	109	%	79	%	330	U	330	U
2,4-Dinitrotoluene	330	U	330	U	124	%	92	%	330	U	330	U
Diethylphthalate	330	U	330	U	119	%	88	%	330	U	330	U
4-Chlorophenyl-phenylether	330	U	330	U	112	%	84	%	330	U	330	U
Fluorene	330	U	330	U	108	%	80	%	330	U	330	U
4-Nitroaniline	830	U	830	U	110	%	81	%	830	U	830	U
4,6-Dinitro-2-methylphenol	830	U	830	U	101	%	61	%	830	U	830	U
N-Nitrosodiphenylamine (1)	330	U	330	U	85	%	62	%	330	U	330	U
4-Bromophenyl-phenylether	330	U	330	U	92	%	66	%	330	U	330	U
Hexachlorobenzene	330	U	330	U	109	%	79	%	330	U	330	U
Pentachlorophenol	830	U	830	U	141 *	%	93	%	830	U	830	U
Phenanthrene	330	U	330	U	107	%	77	%	330	U	330	U
Anthracene	330	U	330	U	110	%	80	%	330	U	330	U
Carbazole	330	U	330	U	118	%	86	%	330	U	330	U
Di-n-butylphthalate	25	J	330	U	117	%	84	%	330	U	330	U
Fluoranthene	330	U	330	U	127	%	93	%	330	U	330	U
Pyrene	330	U	330	U	110	%	80	%	330	U	330	U
Butylbenzylphthalate	330	U	330	U	118	%	88	%	330	U	330	U
3,3'-Dichlorobenzidine	330	U	330	U	67	%	51	%	330	U	330	U
Benzo(a)anthracene	330	U	330	U	112	%	83	%	330	U	330	U
Chrysene	330	U	330	U	111	%	82	%	330	U	330	U
bis(2-Ethylhexyl)phthalate	58	J	62	J	120	%	85	%	330	U	26	J
Di-n-octyl phthalate	330	U	330	U	122	%	91	%	330	U	330	U
Benzo(b)fluoranthene	330	U	330	U	110	%	82	%	330	U	330	U
Benzo(k)fluoranthene	330	U	330	U	108	%	79	%	330	U	330	U
Benzo(a)pyrene	330	U	330	U	105	%	77	%	330	U	330	U
Indeno(1,2,3-cd)pyrene	330	U	330	U	106	%	77	%	330	U	330	U
Dibenz(a,h)anthracene	330	U	330	U	106	%	77	%	330	U	330	U
Benzo(g,h,i)perylene	330	U	330	U	105	%	77	%	330	U	330	U

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

0000000009

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/09/06 13:34

RFW Batch Number: **0604L802** Client: **TNUHANFORD RC-051 K0315** Work Order: 11343606001 Page: 2a

	Cust ID:	J11JH3	SBLKWW	SBLKWW BS
Sample Information	RFW#:	005	06LE0318-MB1	06LE0318-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	68 %	75 %	67 %
	2-Fluorobiphenyl	67 %	74 %	76 %
	Terphenyl-d14	89 %	99 %	93 %
	Phenol-d5	53 %	59 %	63 %
	2-Fluorophenol	45 %	60 %	56 %
	2,4,6-Tribromophenol	73 %	68 %	85 %
Phenol		330 U	330 U	69 %
bis(2-Chloroethyl)ether		330 U	330 U	74 %
2-Chlorophenol		330 U	330 U	72 %
1,3-Dichlorobenzene		330 U	330 U	75 %
1,4-Dichlorobenzene		330 U	330 U	74 %
1,2-Dichlorobenzene		330 U	330 U	80 %
2-Methylphenol		330 U	330 U	73 %
2,2'-oxybis(1-Chloropropane)		330 U	330 U	64 %
4-Methylphenol		330 U	330 U	73 %
N-Nitroso-di-n-propylamine		330 U	330 U	87 %
Hexachloroethane		330 U	330 U	76 %
Nitrobenzene		330 U	330 U	75 %
Isophorone		330 U	330 U	84 %
2-Nitrophenol		330 U	330 U	69 %
2,4-Dimethylphenol		330 U	330 U	60 %
bis(2-Chloroethoxy)methane		330 U	330 U	72 %
2,4-Dichlorophenol		330 U	330 U	73 %
1,2,4-Trichlorobenzene		330 U	330 U	78 %
Naphthalene		330 U	330 U	72 %
4-Chloroaniline		330 U	330 U	73 %
Hexachlorobutadiene		330 U	330 U	92 %
4-Chloro-3-methylphenol		330 U	330 U	80 %
2-Methylnaphthalene		330 U	330 U	81 %
Hexachlorocyclopentadiene		330 U	330 U	71 %
2,4,6-Trichlorophenol		330 U	330 U	86 %
2,4,5-Trichlorophenol		830 U	830 U	83 %

*= Outside of EPA CLP QC limits.

000000010

Cust ID:	J11JH3		SBLKWW		SBLKWW BS	
RFW#:	005		06LE0318-MB1		06LE0318-MB1	
2-Chloronaphthalene	330	U	330	U	83	%
2-Nitroaniline	830	U	830	U	88	%
Dimethylphthalate	330	U	330	U	89	%
Acenaphthylene	330	U	330	U	84	%
2,6-Dinitrotoluene	330	U	330	U	83	%
3-Nitroaniline	830	U	830	U	94	%
Acenaphthene	330	U	330	U	86	%
2,4-Dinitrophenol	830	U	830	U	13 *	%
4-Nitrophenol	830	U	830	U	89	%
Dibenzofuran	330	U	330	U	92	%
2,4-Dinitrotoluene	330	U	330	U	92	%
Diethylphthalate	330	U	330	U	93	%
4-Chlorophenyl-phenylether	330	U	330	U	93	%
Fluorene	330	U	330	U	89	%
4-Nitroaniline	830	U	830	U	76	%
4,6-Dinitro-2-methylphenol	830	U	830	U	81	%
N-Nitrosodiphenylamine (1)	330	U	330	U	76	%
4-Bromophenyl-phenylether	330	U	330	U	84	%
Hexachlorobenzene	330	U	330	U	95	%
Pentachlorophenol	830	U	830	U	75	%
Phenanthrene	330	U	330	U	95	%
Anthracene	330	U	330	U	97	%
Carbazole	330	U	330	U	88	%
Di-n-butylphthalate	330	U	330	U	103	%
Fluoranthene	330	U	330	U	100	%
Pyrene	330	U	330	U	102	%
Butylbenzylphthalate	330	U	330	U	95	%
3,3'-Dichlorobenzidine	330	U	330	U	92	%
Benzo(a)anthracene	330	U	330	U	89	%
Chrysene	330	U	330	U	89	%
bis(2-Ethylhexyl)phthalate	27	J	330	U	94	%
Di-n-octyl phthalate	330	U	330	U	97	%
Benzo(b)fluoranthene	330	U	330	U	91	%
Benzo(k)fluoranthene	330	U	330	U	90	%
Benzo(a)pyrene	330	U	330	U	83	%
Indeno(1,2,3-cd)pyrene	330	U	330	U	72	%
Dibenz(a,h)anthracene	330	U	330	U	73	%
Benzo(g,h,i)perylene	330	U	330	U	64	%

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11JC1

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

Client: TNUHANFORD RC-051 K0315

Matrix: (soil/water) SOIL

Lab Sample ID: 0604L802-001

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

Lab File ID: D050414

Level: (low/med) LOW

Date Received: 04/19/06

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 04/25/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	30.618	3000	J
2.	UNKNOWN	30.860	3000	J
3.	ALKANE	34.632	3000	J
4.	ALKANE	34.916	2000	J
5.	UNKNOWN	42.212	1000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11JH0

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

Client: TNUHANFORD RC-051 K0315

Matrix: (soil/water) SOIL

Lab Sample ID: 0604L802-002

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

Lab File ID: D050413

Level: (low/med) LOW

Date Received: 04/19/06

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 04/25/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	30.602	3000	J
2.	UNKNOWN	30.843	3000	J
3.	ALKANE	34.616	3000	J
4.	UNKNOWN	34.909	1000	J
5.	UNKNOWN	42.196	1000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11JH

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

Client: TNUHANFORD RC-051 K0315

Matrix: (soil/water) SOIL

Lab Sample ID: 0604L802-003

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

Lab File ID: J050711

Level: (low/med) LOW

Date Received: 04/19/06

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 04/25/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/07/06

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. 110-82-7	CYCLOHEXANE	4.762	2000	JBN
2.	UNKNOWN	30.161	800	J
3.	ALKANE	30.876	3000	J
4.	ALKANE	34.655	4000	J
5.	ALKANE	40.164	800	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11JH2

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

Client: TNUHANFORD RC-051 K0315

Matrix: (soil/water) SOIL

Lab Sample ID: 0604L802-004

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

Lab File ID: J050712

Level: (low/med) LOW

Date Received: 04/19/06

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 04/25/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/07/06

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. 110-82-7	CYCLOHEXANE	4.772	2000	JBN
2.	UNKNOWN	25.636	1000	J
3.	ALKANE	30.886	4000	J
4.	UNKNOWN	33.671	1000	J
5.	ALKANE	34.665	4000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11JH3

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

Client: TNUHANFORD RC-051 K0315

Matrix: (soil/water) SOIL

Lab Sample ID: 0604L802-005

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

Lab File ID: J050713

Level: (low/med) LOW

Date Received: 04/19/06

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 04/25/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/07/06

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. 110-82-7	CYCLOHEXANE	4.782	2000	JBN
2.	UNKNOWN	30.161	900	J
3.	ALKANE	30.875	4000	J
4.	ALKANE	34.665	4000	J
5.	ALKANE	40.174	900	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKWW

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

Client: TNUHANFORD RC-051 K0315

Matrix: (soil/water) SOIL

Lab Sample ID: 06LE0318-MB1

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

Lab File ID: J050210

Level: (low/med) LOW

Date Received: 04/25/06

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

Date Extracted: 04/25/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/03/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	CYCLOHEXANE	4.803	2000	JN

FORM 1 SV-TIC RFW (v3.3)

Lionville Laboratory Use Only

06041802

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client INL HANFORD SAF# RC-051

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 4/19/06 Date Due 5/19/06

			A-C	D-F		G-I			J-L		M-O	P-R	S-U				
Refrigerator #			3	3		3			3		3	3	3				
#/Type Container	Liquid																
	Solid		G	G		G			G		G	G	G				
Volume	Liquid																
	Solid		30	30		30			30		30	30	30				
Preservatives			—	—		—			—		—	—	—				
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb	PCB			Metal	CN	IC Anions	NO2 NO3	pH Alcalinity				
Lionville Laboratory Use Only			0425H	0605H		0406			MERA(S)		IC NO3	NO2 NO3	IC PO4				

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	J11JC1	✓	✓	S	4/17/06	1000		1	1		1		3		1	1	1		
002	J11JH0	✓	✓			1105		3	1		1		1		1	1	3		
003	1	✓	✓			1425		1	3		3		1		1	1	1		
004	2	✓	✓			1120		1	1		1		1		3	3	1		
005	3					1350		1	1		1		3		1	1	3		

Special Instructions: QC ONLY #001 — 004
001 = Met
002 = BNA, Hef
003 = Pest, PCB
#004 = Met, Hef
NO I% SOL
METALS = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U (No Hg)

DATE/REVISIONS:
#005 1. No QC
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	4/19/06	0915

Relinquished by	Received by	Date	Time

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

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-051-72	Page 2 of 1

Collector STANKOVICH, M.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA - Incremental So	Sampling Location 300-A RIPARIAN #6		SAF No. RC-051
Ice Chest No.	Field Logbook No. EL-1596	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8L

Air Quality ☐

Data Turnaround 45 Days

00000019

POSSIBLE SAMPLE HAZARDS/REMARKS

NONE

Special Handling and/or Storage

Use page 3 for original material to Corvallis for MIS preparation and aliquoting, page 1 for radioanalytical fractions to Eberline, & page 2 for chemical analytical fractions to Lionville.

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	G/P	G/P	aG	aG	aG	aG	G/P	G/P	^	^
No. of Container(s)	9	9	7		7	7	7	7	0	0
Volume	30g	30g	30g	30g	30g	30g	30g	30g	1^	1^
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	PCBs - 8082	IC Anions - 300.0 (Nitrate)	NO2/NO3 - 353.2 (Nitrogen in Nitrite and Nitrate)	-	--

Sample No.	Matrix *	Sample Date	Sample Time										
J11JC1	SOIL	4-17-06	1000	3	1	1		1	1	1	1		
J11JH0			1105	1	3	3		1	1	1	1		
J11JH1			1425	1	1	1		3	3	1	1		
J11JH2			1120	1	1	1		1	1	3	3		
J11JH3			1350	3	3	1		1	1	1	1		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Elizabeth M Tepper		CH2M Hill	
Relinquished By/Removed From: CH2M Elizabeth M Tepper	4-18-06 11:30	Received By/Stored In: Fed Ex	4-18-06 11:30
Relinquished By/Removed From: [signature]	4-19-06 0915	Received By/Stored In: [signature]	4-19-06 0915
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

` These marks indicate that unless lined out, analytes to be included with Strontium-89,90 -- Total Sr analysis fraction.

^-- These marks indicate that this is a non-analysis used to properly format COC form. Contact Joan Kessner for any questions.

(1) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]

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
Ve=Vegetation
X=Other

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

BHI-EE-011 (08/29/2005)

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH0

Tray # 23

Tare Wt. ~~3176.9~~ 1450 (HW) gm.

Total Dry Wt. 4626.9 gm.

Net Dry Wt. 3176.9 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:05	400 g	400.39	AW
RAD STR		30 g	30.16	
ICP MET		30 g	30.02	
HEX CR		30 g	30.09	
SEMI VOA		30 g	30.43	
PEST		30 g	30.08	
PCB		30 g	30.10	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.08	
HEX CR MS		30 g	30.11	
HEX CR MSD		30 g	30.23	
SEMI VOA MS		30 g	30.09	
SEMI VOA MSD		30 g	30.91	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JC1

Tray # 62

Tare Wt. 1458 gm.

Total Dry Wt. 5025.1 gm.

Net Dry Wt. 3567.1 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	10:06	400 g	400.98	AW
RAD STR		30 g	30.15	
ICP MET		30 g	30.18	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.37	
PEST		30 g	30.26	
PCB		30 g	30.13	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.17	
RAD STR MS		30 g	30.06	
RAD STR MSD		30 g	30.31	
ICP MET MS		30 g	30.02	
ICP MET MSD		30 g	30.05	

Comments:

Name (print): Ashley Willer

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH1

Tray # 68

Tare Wt. 1460 gm.

Total Dry Wt. 4531.7 gm.

Net Dry Wt. 3071.7 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	14:25	400 g	400.23	AW
RAD STR		30 g	30.06	
ICP MET		30 g	30.03	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.08	
PEST		30 g	30.12	
PCB		30 g	30.14	
IC ANION		30 g	30.10	
NO2/NO3		30 g	30.19	
PEST MS		30 g	30.35	
PEST MSD		30 g	30.04	
PCB MS		30 g	30.16	
PCB MSD		30 g	30.05	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH2

Tray # 12

Tare Wt. 1460 gm.

Total Dry Wt. 4523.8 gm.

Net Dry Wt. 3063.8 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:20	400 g	401.6g	DHK
RAD STR	↓	30 g	30.0g	DHK
ICP MET	↓	30 g	30.0g	DHK
HEX CR	↓	30 g	30.1g	DHK
SEMI VOA	↓	30 g	30.0g	DHK
PEST	↓	30 g	30.3g	DHK
PCB	↓	30 g	30.0g	DHK
IC ANION	↓	30 g	30.0g	DHK
NO2/NO3	↓	30 g	30.2g	DHK
IC ANION MS	↓	30 g	30.1g	DHK
IC ANION MSD	↓	30 g	30.5g	DHK
NO2/NO3 MS	↓	30 g	30.5g	DHK
NO2/NO3 MSD	↓	30 g	30.1g	DHK

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH3

Tray # 24

Tare Wt. 1450 gm.

Total Dry Wt. 5238.3 gm.

Net Dry Wt. 3788.3 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	13:50	400 g	400.6g	DHK
RAD STR		30 g	30.0g	
ICP MET		30 g	30.0g	
HEX CR		30 g	30.7g	
SEMI VOA		30 g	30.5g	
PEST		30 g	30.0g	
PCB		30 g	30.3g	
IC ANION		30 g	30.3g	
NO2/NO3		30 g	30.8g	
ICP MET MS		30 g	30.0g	
ICP MET MSD		30 g	30.3g	
HEX CR MS		30 g	30.1g	
HEX CR MSD		30 g	30.0g	

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 4/19/06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-051

LvLI Batch # : 0604L862

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier Fed Ex — Airbill# 6595 0631 4862

2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient? IR	Temp 10.8 °C		Cooler # N/A	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☑ Yes	☐ No		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A	
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☐ Yes	☑ No		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes	☐ No	☐ No Discrepancies	

Temp

SR-002-B

LvLI

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

RECEIVED JUN 2006

DATE RECEIVED: 04/19/06 LVL LOT # :06

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11JC1	001	S	06LE0343	04/17/06	05/01/06	05/07/06
J11JH0	002	S	06LE0343	04/17/06	05/01/06	05/08/06
J11JH0	003	S	06LE0343	04/17/06	05/01/06	05/08/06
J11JH0	003 MS	S	06LE0343	04/17/06	05/01/06	05/08/06
J11JH0	003 MSD	S	06LE0343	04/17/06	05/01/06	05/07/06
J11JH2	004	S	06LE0343	04/17/06	05/01/06	05/08/06
J11JH3	005	S	06LE0343	04/17/06	05/01/06	05/08/06

LAB QC:

PBLKGK	MB1	S	06LE0343	N/A	05/01/06	05/05/06
PBLKGK	MB1 BS	S	06LE0343	N/A	05/01/06	05/05/06
PBLKGK	MB1 BSD	S	06LE0343	N/A	05/01/06	05/05/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-051
LVL #: 0604L802
SDG/SAF # K0315/RC-051

W.O. #: 11343-606-001-9999-00
Date Received: 04-19-2006

CHLORINATED PESTICIDES

Five (5) soil samples were collected on 04-17-2006.

The samples and their associated QC samples were extracted on 05-01-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 05-05,07,08-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081. All soil samples are reported on a dry weight base unless requested by the client, required by the method or noted otherwise.

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

1. Discrepancies from the Sample acceptance policy have been recorded on the Sample Receipt Checklist.

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

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

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

5. Twelve (12) of twenty (20) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 06GC150) has been enclosed.

6. Twenty (20) of forty (40) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 06GC150) has been enclosed.

7. All matrix spike recoveries were within acceptance criteria.

8. The results for soil samples were reported on a wet-weight basis.

9. All samples required a 4-fold instrument dilutions due to matrix. Reporting limits have been adjusted to reflect the necessary dilutions.

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.

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

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

12. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/12/06
Date

kim\r:\group\data\pest\tnu hanford\0604-802.pst

LVLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06 GC 150

Initiator: KBW
Date: 5/11/06
Client: TN

Batch: 06 04L 802
Samples: 001, 002, 003, 0035, 0035, 004
Method: SW846/MCAWW/CLP/ 8011

Parameter: PEST
Matrix: SOIL
Prep Batch: 06-GE 0343

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) Surrogate recoveries high in most samples.
(2) BSD sample was spiked and surrogated twice. Recoveries are doubled.

2. Known or Probable Causes(s)

(1) Samples 003 and BSD appear to be double surrogated
(2) BS and MS/MSD recoveries all in control

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: _____

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

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

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

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

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

QA-105-A-0805

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 05/11/06 14:18

RFW Batch Number: 0604L802 Client: TNUHANFORD RC-051 K0315 Work Order: 11343606001 Page: 1

	Cust ID:	J11JC1	J11JH0	J11JH0	J11JH0	J11JH0	J11JH2
Sample Information	RFW#:	001	002	003	003 MS	003 MSD	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	136 * %	132 * %	192 * %	120 * %	119 * %	125 * %
	Decachlorobiphenyl	122 %	127 * %	178 * %	131 * %	108 %	125 * %
Alpha-BHC		1.3 U	1.3 U	1.3 U	110 %	96 %	1.3 U
gamma-BHC (Lindane)		1.3 U	1.3 U	1.3 U	114 %	100 %	1.3 U
Beta-BHC		1.3 U	1.3 U	1.3 U	119 %	103 %	1.3 U
Heptachlor		1.3 U	1.3 U	1.3 U	117 %	98 %	1.3 U
Delta-BHC		1.3 U	1.3 U	1.3 U	94 %	77 %	1.3 U
Aldrin		1.3 U	1.3 U	1.3 U	110 %	91 %	1.3 U
Heptachlor epoxide		1.3 U	1.3 U	1.3 U	114 %	96 %	1.3 U
gamma-Chlordane		1.3 U	1.3 U	1.3 U	112 %	93 %	1.3 U
Endosulfan I		0.80 J	2.0	2.6	108 %	96 %	0.50 J
alpha-Chlordane		1.3 U	1.3 U	1.3 U	114 %	95 %	1.3 U
4,4'-DDE		1.5 J	1.6 J	1.9	110 %	94 %	1.6 J
Dieldrin		1.3 U	1.3 U	1.3 U	110 %	90 %	1.3 U
Endrin		1.3 U	1.3 U	1.3 U	114 %	92 %	1.3 U
4,4'-DDD		1.3 U	1.3 U	1.3 U	115 %	92 %	1.3 U
Endosulfan II		1.3 U	1.3 U	1.3 U	110 %	92 %	1.3 U
4,4'-DDT		0.93 J	1.8	2.3	100 %	82 %	1.1 J
Endrin aldehyde		1.3 U	1.3 U	1.3 U	110 %	88 %	1.3 U
Endosulfan sulfate		1.3 U	1.3 U	1.3 U	106 %	89 %	1.3 U
Methoxychlor		1.3 U	1.3 U	1.3 U	121 %	94 %	1.3 U
Endrin ketone		1.3 U	1.3 U	1.3 U	117 %	98 %	1.3 U
Toxaphene		13 U	13 U	13 U	13 U	13 U	13 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: 05/11/06 14:18

RFW Batch Number: 0604L802 Client: TNUHANFORD RC-051 K0315 Work Order: 11343606001 Page: 2

	Cust ID:	J11JH3	PBLKGK	PBLKGK BS	PBLKGK BSD
Sample Information	RFW#:	005	06LE0343-MB1	06LE0343-MB1	06LE0343-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG

Surrogate:	Tetrachloro-m-xylene	112	%	114	%	112	%	189	*	%					
	Decachlorobiphenyl	122	%	100	%	100	%	173	*	%					
==========	==========	==========	fl	==========	fl	==========	fl	==========	fl	==========	fl	==========	fl	==========	fl
Alpha-BHC		1.3	U	0.33	U	116	%	200	*	%					
gamma-BHC (Lindane)		1.3	U	0.33	U	114	%	195	*	%					
Beta-BHC		1.3	U	0.33	U	106	%	183	*	%					
Heptachlor		1.3	U	0.33	U	108	%	180	*	%					
Delta-BHC		1.3	U	0.33	U	100	%	176	*	%					
Aldrin		1.3	U	0.33	U	106	%	182	*	%					
Heptachlor epoxide		1.3	U	0.33	U	108	%	184	*	%					
gamma-Chlordane		1.3	U	0.33	U	106	%	184	*	%					
Endosulfan I		1.4	J	0.33	U	108	%	187	*	%					
alpha-Chlordane		1.3	U	0.33	U	105	%	180	*	%					
4,4'-DDE		1.4	J	0.33	U	110	%	193	*	%					
Dieldrin		1.3	U	0.33	U	112	%	198	*	%					
Endrin		1.3	U	0.33	U	114	%	202	*	%					
4,4'-DDD		1.3	U	0.33	U	113	%	204	*	%					
Endosulfan II		1.3	U	0.33	U	108	%	190	*	%					
4,4'-DDT		1.5	J	0.33	U	109	%	195	*	%					
Endrin aldehyde		1.3	U	0.33	U	103	%	180	*	%					
Endosulfan sulfate		1.3	U	0.33	U	106	%	190	*	%					
Methoxychlor		1.3	U	0.33	U	111	%	194		%					
Endrin ketone		1.3	U	0.33	U	108	%	190	*	%					
Toxaphene		13	U	3.3	U	3.3	U	3.3	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

00000007

Lionville Laboratory Use Only

0604L802

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client INL HANFORD SAF# RC-051

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 4/19/06 Date Due 5/19/06

		A-C	D-F		G-I			J-L		M-O	P-R	S-U					
Refrigerator #		3	3		3			3		3	3	3					
#/Type Container	Liquid																
	Solid	G	G		G			G		G	G	G					
Volume	Liquid																
	Solid	30	30		30			30		30	30	30					
Preservatives		—	—		—			—		—	—	—					
ANALYSES REQUESTED →	ORGANIC: VOA	BNA	Pest/PCB	Herb	PCB			INORG: Metal	CN	IC Anions	NH3 NO3	pH Chloride					

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		0425H	0608H		PCB			METALS(1)		HNO3	HNO3	HCl
001	J11JC1	✓	✓	S	4/17/06	1000		1	1		1			3		1	1	1
002	J11JH0	✓	✓			1105		3	1		1			1		1	1	3
003	1	✓	✓			1425		1	3		3			1		1	1	1
004	2	✓	✓			1120		1	1		1			1		3	3	1
005	3					1350		1	1		1			3		1	1	3

Special Instructions: QC ONLY #001 — 004
001 = MET
002 = BNA, Hef
003 = Pest, PCB
#004 = MET, Hef

NO I%SOL

METALS(1) = HSL + Bi, B, Li, Mo, P, Se, Sr, Sn, U (No Hg)

DATE/REVISIONS:
#005 1. No QC
2. 0608H, CPCB R
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	4/19/06	0915

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-051-72	Page 2 of 3

Collector STANKOVICH, M.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA - Incremental So	Sampling Location 300-A RIPARIAN #6		SAF No. RC-051
Ice Chest No.	Field Logbook No. EL-1596	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8L

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NONE

Special Handling and/or Storage

Use page 3 for original material to Corvallis for MIS preparation and aliquoting, page 1 for radioanalytical fractions to Eberline, & page 2 for chemical analytical fractions to Lionville.

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	G/P	G/P	aG	aG	aG	aG	G/P	G/P	^	^
No. of Container(s)	9	9	7		7	7	7	7	0	0
Volume	30g	30g	30g	30g	30g	30g	30g	30g	1^	1^
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	PCBs - 8082	IC Anions - 300.0 (Nitrate)	NO2/NO3 - 353.2 (Nitrogen in Nitrite and Nitrate)	-	--

Sample No.	Matrix *	Sample Date	Sample Time											
J11JC1	SOIL	4-17-06	1000	3	1	1		1	1	1	1		
J11JH0			1105	1	3	3		1	1	1	1		
J11JH1			1425	1	1	1		3	3	1	1		
J11JH2			1120	1	1	1		1	1	3	3		
J11JH3			1350	3	3	1		1	1	1	1		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Elizabeth M Tepper		CH2M Hill	
Relinquished By/Removed From CH2M	Date/Time 11:30	Received By/Stored In	Date/Time 11:30
Elizabeth M Tepper	4-18-06	Fed Ex	4-18-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	4-19-06 0915	[illegible]	4-19-06 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
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

` These marks indicate that unless lined out, analytes to be included with Strontium-89,90 -- Total Sr analysis fraction.

^ These marks indicate that this is a non-analysis used to properly format COC form. Contact Joan Kessner for any questions.

(1) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}

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 (08/29/2005)

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH0

Tray # 23

Tare Wt. ~~3176.9~~ 1450 (HW) gm.

Total Dry Wt. 4626.9 gm.

Net Dry Wt. 3176.9 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:05	400 g	400.39	AW
RAD STR		30 g	30.16	
ICP MET		30 g	30.02	
HEX CR		30 g	30.09	
SEMI VOA		30 g	30.43	
PEST		30 g	30.08	
PCB		30 g	30.10	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.08	
HEX CR MS		30 g	30.11	
HEX CR MSD		30 g	30.23	
SEMI VOA MS		30 g	30.09	
SEMI VOA MSD		30 g	30.91	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JC1

Tray # 62

Tare Wt. 1458 gm.

Total Dry Wt. 5025.1 gm.

Net Dry Wt. 3567.1 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	10:06	400 g	400.98	AW
RAD STR		30 g	30.15	
ICP MET		30 g	30.18	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.37	
PEST		30 g	30.26	
PCB		30 g	30.13	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.17	
RAD STR MS		30 g	30.06	
RAD STR MSD		30 g	30.31	
ICP MET MS		30 g	30.02	
ICP MET MSD		30 g	30.05	

Comments:

Name (print): Ashley Willes

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH1

Tray # 68

Tare Wt. 1460 gm.

Total Dry Wt. 4531.7 gm.

Net Dry Wt. 3071.7 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	14:25	400 g	400.23	AW
RAD STR		30 g	30.06	
ICP MET		30 g	30.03	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.08	
PEST		30 g	30.12	
PCB		30 g	30.14	
IC ANION		30 g	30.10	
NO2/NO3		30 g	30.19	
PEST MS		30 g	30.35	
PEST MSD		30 g	30.04	
PCB MS		30 g	30.16	
PCB MSD		30 g	30.05	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH2

Tray # 12

Tare Wt. 1460 gm.

Total Dry Wt. 4523.8 gm.

Net Dry Wt. 3063.8 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:20	400 g	401.6g	DHK
RAD STR		30 g	30.0g	DHK
ICP MET		30 g	30.0g	DHK
HEX CR		30 g	30.1g	DHK
SEMI VOA		30 g	30.0g	DHK
PEST		30 g	30.3g	DHK
PCB		30 g	30.0g	DHK
IC ANION		30 g	30.0g	DHK
NO2/NO3		30 g	30.2g	DHK
IC ANION MS		30 g	30.1g	DHK
IC ANION MSD		30 g	30.5g	DHK
NO2/NO3 MS		30 g	30.5g	DHK
NO2/NO3 MSD		30 g	30.1g	DHK

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH3

Tray # 24

Tare Wt. 1450 gm.

Total Dry Wt. 5238.3 gm.

Net Dry Wt. 3788.3 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	13:50	400 g	400.6g	DHK
RAD STR	↓	30 g	30.0g	↓
ICP MET	↓	30 g	30.0g	↓
HEX CR	↓	30 g	30.7g	↓
SEMI VOA	↓	30 g	30.5g	↓
PEST	↓	30 g	30.0g	↓
PCB	↓	30 g	30.3g	↓
IC ANION	↓	30 g	30.3g	↓
NO2/NO3	↓	30 g	30.8g	↓
ICP MET MS	↓	30 g	30.0g	↓
ICP MET MSD	↓	30 g	30.3g	↓
HEX CR MS	↓	30 g	30.1g	↓
HEX CR MSD	↓	30 g	30.0g	↓

Comments:

Name (print): Daijna Kaumanns

Signature: Daijna Kaumanns

Sub-Sampled Date: 04/17/2006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 4/19/06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-051

LvLI Batch # : 0604L882

Sample Custodian: P. Remond

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier Fed Ex — Airbill# 6595 0631 4862

2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient? IR	Temp 10.8 °C		Cooler # N/A	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☑ Yes	☐ No		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A	
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☐ Yes	☑ No		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes	☐ No	☐ No Discrepancies	

Temp

SR-002-B

LVLI

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

RECEIVED JUN 2006

DATE RECEIVED: 04/19/06 LVL LOT # 0604L802

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11JC1	001	S	06LE0332	04/17/06	04/27/06	05/12/06
J11JH0	002	S	06LE0332	04/17/06	04/27/06	05/12/06
J11JH0	003	S	06LE0332	04/17/06	04/27/06	05/12/06
J11JH0	003 MS	S	06LE0332	04/17/06	04/27/06	05/12/06
J11JH0	003 MSD	S	06LE0332	04/17/06	04/27/06	05/12/06
J11JH2	004	S	06LE0332	04/17/06	04/27/06	05/12/06
J11JH3	005	S	06LE0332	04/17/06	04/27/06	05/12/06

LAB QC:

PBLKGZ	MB1	S	06LE0332	N/A	04/27/06	05/11/06
PBLKGZ	MB1 BS	S	06LE0332	N/A	04/27/06	05/11/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-051
LVL #: 0604L802
SDG/SAF # K0315/RC-051

W.O. #: 11343-606-001-9999-00
Date Received: 04-19-2006

PCB

Five (5) soil samples were collected on 04-17-2006.

The samples and their associated QC samples were extracted on 04-27-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 05-11,12-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of a discrepancy, which was documented on the Sample Receipt Checklist.

2. All soil sample results were reported on a wet-weight basis.

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

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

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

6. All surrogate recoveries were within acceptance criteria.

7. The blank spike recoveries were within acceptance criteria.

8. All matrix spike recoveries were within acceptance criteria.

9. The initial calibrations associated with this data set 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 1 3 pages.

LIONVILLE LABORATORY INC.

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

11. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

12. 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 Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/24/04
Date

som\r:\group\data\pest\tmu hanford\0604-802.pcbs

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 05/17/06 13:40

RFW Batch Number: 0604L802 Client: TNUHANFORD RC-051 K0315 Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J11JC1	J11JH0	J11JH0	J11JH0	J11JH0	J11JH2
Sample Information	RFW#:	001	002	003	003 MS	003 MSD	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	93 %	82 %	84 %	87 %	91 %	87 %
	Decachlorobiphenyl	110 %	106 %	99 %	106 %	114 %	107 %
Aroclor-1016		13 U	13 U	13 U	92 %	97 %	13 U
Aroclor-1221		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1260		13 U	13 U	4.4 J	99 %	104 %	6.8 J

	Cust ID:	J11JH3	PBLKGZ	PBLKGZ BS
Sample Information	RFW#:	005	06LE0332-MB1	06LE0332-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	86 %	92 %	92 %
	Decachlorobiphenyl	107 %	92 %	106 %
Aroclor-1016		13 U	13 U	103 %
Aroclor-1221		13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U
Aroclor-1260		9.5 J	13 U	105 %

5/18/06

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

06041802

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client INL HANFORD SAF# RC-051

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 4/19/06 Date Due 5/19/06

		A-C	D-F	G-I	J-L	M-O	P-R	S-U
Refrigerator #		3	3	3	3	3	3	3
#/Type Container	Liquid							
	Solid	6	6	6	6	6	6	6
Volume	Liquid							
	Solid	30	30	30	30	30	30	30
Preservatives		—	—	—	—	—	—	—

ANALYSES REQUESTED →

ORGANIC					INORG				
VOA	BNA	Pest/PCB	Herb	PCB	Metal	CN	IC Anions	NH3 NO3	Hg Chrom

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	0425H	0605H	2FCB	MERAISU	ILB3	ILB3B	ILB6
001	J11JC1	✓	✓	S	4/17/06	1000	1	1	1	3	1	1	1
002	J11JH0	✓	✓			1105	3	1	1	1	1	1	3
003	1	✓	✓			1425	1	3	3	1	1	1	1
004	2	✓	✓			1120	1	1	1	1	3	3	1
005	3					1350	1	1	1	3	1	1	3

Special Instructions: QC ONLY #001 — 004

NO I% SOL

001 = MET
002 = BNA, Herb
003 = Pest, PCB
004 = MET, Herb

METALS(1) = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U (NO Hg)

DATE/REVISIONS:

#005 1. No QC

2. 0605H,

3. CPCB R

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	4/19/06	0915

Relinquished by	Received by	Date	Time

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

0000000006

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-051-72	Page 2 of 3

Collector STANKOVICH, M.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA - Incremental So	Sampling Location 300-A RIPARIAN #6		SAF No. RC-051
Ice Chest No.	Field Logbook No. EL-1596	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8L

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NONE

Special Handling and/or Storage

Use page 3 for original material to Corvallis for MIS preparation and aliquoting, page 1 for radioanalytical fractions to Eberline, & page 2 for chemical analytical fractions to Lionville.

SAMPLE ANALYSIS				See item (1) in Special Instructions	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	PCBs - 8082	IC Anions - 300.0 (Nitrate)	NO2/NO3 - 353.2 (Nitrogen in Nitrite and Nitrate)	-	--
Preservation				None	None	None	None	None	None	None	None	None	None
Type of Container				G/P	G/P	aG	aG	aG	aG	G/P	G/P	^	^
No. of Container(s)				9	9	7		7	7	7	7	0	0
Volume				30g	30g	30g	30g	30g	30g	30g	30g	1^	1^
Sample No.	Matrix *	Sample Date	Sample Time										
J11JC1	SOIL	4-17-06	1000	3	1	1		1	1	1	1		
J11JH0			1105	1	3	3		1	1	1	1		
J11JH1			1425	1	1	1		3	3	1	1		
J11JH2			1120	1	1	1		1	1	3	3		
J11JH3			1350	3	3	1		1	1	1	1		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Elizabeth M Tepper		CH2M Hill	
Relinquished By/Removed From CH2M	Date/Time 11:30	Received By/Stored In	Date/Time 11:30
Elizabeth M Tepper	4-18-06	Fed Ex	4-18-06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	4-19-06 0915	[illegible]	4-19-06 0915
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
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

* These marks indicate that unless lined out, analytes to be included with Strontium-89,90 -- Total Sr analysis fraction.

^ These marks indicate that this is a non-analysis used to properly format COC form.

Contact Joan Kessner for any questions.

(1) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc)

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sh=Shale
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 (08/29/2005)

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH0

Tray # 23

Tare Wt. ~~3176.9~~ 1450 AW gm.

Total Dry Wt. 4626.9 gm.

Net Dry Wt. 3176.9 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:05	400 g	400.39	AW
RAD STR		30 g	30.16	
ICP MET		30 g	30.02	
HEX CR		30 g	30.09	
SEMI VOA		30 g	30.43	
PEST		30 g	30.08	
PCB		30 g	30.10	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.08	
HEX CR MS		30 g	30.11	
HEX CR MSD		30 g	30.23	
SEMI VOA MS		30 g	30.09	
SEMI VOA MSD		30 g	30.91	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JC1

Tray # 62

Tare Wt. 1458 gm.

Total Dry Wt. 5025.1 gm.

Net Dry Wt. 3567.1 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	10:00	400 g	400.98	AW.
RAD STR		30 g	30.15	
ICP MET		30 g	30.18	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.37	
PEST		30 g	30.26	
PCB		30 g	30.13	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.17	
RAD STR MS		30 g	30.06	
RAD STR MSD		30 g	30.31	
ICP MET MS		30 g	30.02	
ICP MET MSD		30 g	30.05	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH1

Tray # 68

Tare Wt. 1460 gm.

Total Dry Wt. 4531.7 gm.

Net Dry Wt. 3071.7 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	14:25	400 g	400.23	AW
RAD STR		30 g	30.06	
ICP MET		30 g	30.03	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.08	
PEST		30 g	30.12	
PCB		30 g	30.14	
IC ANION		30 g	30.10	
NO2/NO3		30 g	30.19	
PEST MS		30 g	30.35	
PEST MSD		30 g	30.04	
PCB MS		30 g	30.16	
PCB MSD		30 g	30.05	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH2

Tray # 12

Tare Wt. 1460 gm.

Total Dry Wt. 4523.8 gm.

Net Dry Wt. 3063.8 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:20	400 g	401.6g	DHK
RAD STR		30 g	30.0g	DHK
ICP MET		30 g	30.0g	DHK
HEX CR		30 g	30.1g	DHK
SEMI VOA		30 g	30.0g	DHK
PEST		30 g	30.3g	DHK
PCB		30 g	30.0g	DHK
IC ANION		30 g	30.0g	DHK
NO2/NO3		30 g	30.2g	DHK
IC ANION MS		30 g	30.1g	DHK
IC ANION MSD		30 g	30.5g	DHK
NO2/NO3 MS		30 g	30.5g	DHK
NO2/NO3 MSD		30 g	30.1g	DHK

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH3

Tray # 24

Tare Wt. 1450 gm.

Total Dry Wt. 5238.3 gm.

Net Dry Wt. 3788.3 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	13:50	400 g	400.6 g	DHK
RAD STR		30 g	30.0 g	
ICP MET		30 g	30.0 g	
HEX CR		30 g	30.7 g	
SEMI VOA		30 g	30.5 g	
PEST		30 g	30.0 g	
PCB		30 g	30.3 g	
IC ANION		30 g	30.3 g	
NO2/NO3		30 g	30.8 g	
ICP MET MS		30 g	30.0 g	
ICP MET MSD		30 g	30.9 g	
HEX CR MS		30 g	30.1 g	
HEX CR MSD		30 g	30.0 g	

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNL HANFORD

Date: 4/19/06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-057

LvLI Batch # : 0604L862

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier Fed Ex — Airbill# 6595 0631 4862

2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient? IR	Temp 10.8 °C		Cooler # N/A	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☑ Yes	☐ No		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A	
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☐ Yes	☑ No		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes	☐ No	☐ No Discrepancies	

Temp

SR-002-B

LVLI

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

RECEIVED JUN 2006

DATE RECEIVED: 04/19/06 LVL LOT # 0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11JC1						
SILVER, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
SILVER, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
SILVER, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
ALUMINUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
ALUMINUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
ALUMINUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
ARSENIC, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
ARSENIC, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
ARSENIC, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
BORON, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
BORON, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
BORON, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
BARIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
BARIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
BARIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
BERYLLIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
BERYLLIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
BERYLLIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
BISMUTH, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
BISMUTH, TOTAL REP	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
BISMUTH, TOTAL SPIKE	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
CALCIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
CALCIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
CALCIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
CADMIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
CADMIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
CADMIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
COBALT, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
COBALT, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
COBALT, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
CHROMIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
CHROMIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
CHROMIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
COPPER, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
COPPER, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
IRON, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
IRON, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
IRON, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
POTASSIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
POTASSIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
POTASSIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
LITHIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
LITHIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
LITHIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
MAGNESIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
MAGNESIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
MAGNESIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
MANGANESE, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
MANGANESE, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
MANGANESE, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
MOLYBDENUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
MOLYBDENUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
MOLYBDENUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
SODIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
SODIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
SODIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
NICKEL, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
NICKEL, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
NICKEL, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
PHOSPHORUS, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/09/06
PHOSPHORUS, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/09/06
PHOSPHORUS, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/09/06
LEAD, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
LEAD, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
LEAD, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
ANTIMONY, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
ANTIMONY, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
ANTIMONY, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
SELENIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
SELENIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
SELENIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
SILICON, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILICON, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
SILICON, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
TIN, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
TIN, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
TIN, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
STRONTIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
STRONTIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
STRONTIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
THALLIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
THALLIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
THALLIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
URANIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
URANIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
URANIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
VANADIUM, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
VANADIUM, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
VANADIUM, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
ZINC, TOTAL	001	S	06L0278	04/17/06	05/05/06	05/08/06
ZINC, TOTAL	001 REP	S	06L0278	04/17/06	05/05/06	05/08/06
ZINC, TOTAL	001 MS	S	06L0278	04/17/06	05/05/06	05/08/06
J11JH0						
SILVER, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
ALUMINUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
ARSENIC, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
BORON, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
BARIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
BERYLLIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
BISMUTH, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
CALCIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
CADMIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
COBALT, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
CHROMIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
COPPER, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
IRON, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
POTASSIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
LITHIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MAGNESIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
MANGANESE, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
MOLYBDENUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
SODIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
NICKEL, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
PHOSPHORUS, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/09/06
LEAD, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
ANTIMONY, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
SELENIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
SILICON, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
TIN, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
STRONTIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
THALLIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
URANIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
VANADIUM, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
ZINC, TOTAL	002	S	06L0278	04/17/06	05/05/06	05/08/06
J11JH1						
SILVER, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
ALUMINUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
ARSENIC, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
BORON, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
BARIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
BERYLLIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
BISMUTH, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
CALCIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
CADMIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
COBALT, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
CHROMIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
COPPER, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
IRON, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
POTASSIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
LITHIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
MAGNESIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
MANGANESE, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
MOLYBDENUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
SODIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NICKEL, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
PHOSPHORUS, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/09/06
LEAD, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
ANTIMONY, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
SELENIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
SILICON, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
TIN, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
STRONTIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
THALLIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
URANIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
VANADIUM, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
ZINC, TOTAL	003	S	06L0278	04/17/06	05/05/06	05/08/06
J11JH2						
SILVER, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
ALUMINUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
ARSENIC, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
BORON, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
BARIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
BERYLLIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
BISMUTH, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
CALCIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
CADMIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
COBALT, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
CHROMIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
COPPER, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
IRON, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
POTASSIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
LITHIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
MAGNESIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
MANGANESE, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
MOLYBDENUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
SODIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
NICKEL, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
PHOSPHORUS, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/09/06
LEAD, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
ANTIMONY, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
SILICON, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
TIN, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
STRONTIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
THALLIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
URANIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
VANADIUM, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
ZINC, TOTAL	004	S	06L0278	04/17/06	05/05/06	05/08/06
J11JH3						
SILVER, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
ALUMINUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
ARSENIC, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
BORON, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
BARIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
BERYLLIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
BISMUTH, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
CALCIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
CADMIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
COBALT, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
CHROMIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
COPPER, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
IRON, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
POTASSIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
LITHIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
MAGNESIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
MANGANESE, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
MOLYBDENUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
SODIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
NICKEL, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
PHOSPHORUS, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/09/06
LEAD, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
ANTIMONY, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
SELENIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
SILICON, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
TIN, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
STRONTIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
THALLIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
URANIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
VANADIUM, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06
ZINC, TOTAL	005	S	06L0278	04/17/06	05/05/06	05/08/06

LAB QC:

SILVER LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
SILVER, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
ALUMINUM LABORTORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
ALUMINUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
ARSENIC LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
ARSENIC, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
BORON LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
BORON, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
BARIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
BARIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
BERYLLIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
BERYLLIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
BISMUTH, LCS	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
BISMUTH, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
CALCIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
CALCIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
CADMIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
CADMIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
COBALT LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
COBALT, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
CHROMIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
CHROMIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
COPPER LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
COPPER, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
IRON LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
IRON, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
POTASSIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
POTASSIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
LITHIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
LITHIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
MAGNESIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MAGNESIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
MANGANESE LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
MANGANESE, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
MOLYBDENUM LABORATOR	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
MOLYBDENUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
SODIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
SODIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
NICKEL LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
NICKEL, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
PHOSPHORUS LCS	LC1 BS	S	06L0278	N/A	05/05/06	05/09/06
PHOSPHORUS, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/09/06
LEAD LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
LEAD, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
ANTIMONY LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
ANTIMONY, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
SELENIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
SELENIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
SILICON LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
SILICON, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
TIN LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
TIN, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
STRONTIUM LCS STANDA	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
STRONTIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
THALLIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
THALLIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
URANIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
URANIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
VANADIUM LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
VANADIUM, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06
ZINC LABORATORY	LC1 BS	S	06L0278	N/A	05/05/06	05/08/06
ZINC, TOTAL	MB1	S	06L0278	N/A	05/05/06	05/08/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-051
LVL#: 0604L802
SDG/SAF#: K0315/RC-051

W.O.#: 11343-606-001-9999-00
Date Received: 04-19-06

METALS CASE NARRATIVE

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

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

1. This narrative covers the analyses of 5 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were digested in 2 gram increments in multiple beakers until all of the metals sample aliquot was digested. The resulting digestates were composited to represent each sample for analysis, and a portion of the final digestate volume was filtered for analysis. All samples were reported with 3-fold dilutions due to high concentrations and sample matrix. The sample results are reported on a wet weight, 'as received' basis.

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

4. Please refer to the Sample Receipt Check List for sample discrepancies in 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), 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.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 29 pages.

9. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon at 75.9%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

10. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J11JL6	Aluminum	66,000	93.1
	Iron	66,000	73.1
	Manganese	3,000	86.3
	Antimony	300	95.8
	Silicon	6,300	96.5

12. The duplicate analyses for 3 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. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/5/06
Date

jjw/m04-802

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: ~~0605~~ 0604L802

wrong entry

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	X 6010B		__200.7				__99
Antimony	X 6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X 6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	X 6010B		__200.7				__99
Bismuth	X 6010B [1]		__200.7 [1]			__1620	__99
Boron	X 6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X 6010B		__200.7				__99
Chromium	X 6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X 6010B		__200.7				__99
Copper	X 6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X 6010B		__200.7				__99
Lead	X 6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	X 6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X 6010B		__200.7				__99
Manganese	X 6010B		__200.7				__99
Mercury	__7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X 6010B		__200.7				__99
Nickel	X 6010B		__200.7				__99
Potassium	X 6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X 6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X 6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X 6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X 6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	X 6010B		__200.7				__99
Thallium	X 6010B	__7841 [5]	__200.7	__279.2__200.9			__99
Tin	X 6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	X 6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X 6010B		__200.7				__99
Zinc	X 6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other: Phosphorous Method: 6010B

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 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11JC1	Silver, Total	0.10 u	MG/KG	0.10	3.0
		Aluminum, Total	11200	MG/KG	4.3	3.0
		Arsenic, Total	10.0	MG/KG	0.91	3.0
		Boron, Total	2.8	MG/KG	0.36	3.0
		Barium, Total	160	MG/KG	0.03	3.0
		Beryllium, Total	0.39	MG/KG	0.03	3.0
		Bismuth, Total	0.76 u	MG/KG	0.76	3.0
		Calcium, Total	4730	MG/KG	2.5	3.0
		Cadmium, Total	1.3	MG/KG	0.10	3.0
		Cobalt, Total	8.8	MG/KG	0.21	3.0
		Chromium, Total	21.5	MG/KG	0.19	3.0
		Copper, Total	29.5	MG/KG	0.18	3.0
		Iron, Total	23700	MG/KG	5.2	3.0
		Potassium, Total	1470	MG/KG	3.4	3.0
		Lithium, Total	14.0	MG/KG	0.04	3.0
		Magnesium, Total	4990	MG/KG	1.4	3.0
		Manganese, Total	408	MG/KG	0.04	3.0
		Molybdenum, Total	0.53	MG/KG	0.43	3.0
		Sodium, Total	156	MG/KG	1.1	3.0
		Nickel, Total	20.1	MG/KG	0.36	3.0
		Phosphorus, Total	959	MG/KG	1.3	3.0
		Lead, Total	29.1	MG/KG	0.46	3.0
		Antimony, Total	0.66 u	MG/KG	0.66	3.0
		Selenium, Total	0.70 u	MG/KG	0.70	3.0
		Silicon, Total	297	MG/KG	3.4	3.0
		Tin, Total	1.6 u	MG/KG	1.6	3.0
		Strontium, Total	32.2	MG/KG	0.01	3.0
		Thallium, Total	1.0 u	MG/KG	1.0	3.0
		Uranium, Total	7.2	MG/KG	1.3	3.0
		Vanadium, Total	50.2	MG/KG	0.13	3.0
		Zinc, Total	198	MG/KG	0.24	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J11JH0	Silver, Total	0.10 u	MG/KG	0.10	3.0
		Aluminum, Total	11500	MG/KG	4.3	3.0
		Arsenic, Total	9.8	MG/KG	0.92	3.0
		Boron, Total	3.1	MG/KG	0.36	3.0
		Barium, Total	158	MG/KG	0.03	3.0
		Beryllium, Total	0.40	MG/KG	0.03	3.0
		Bismuth, Total	0.76 u	MG/KG	0.76	3.0
		Calcium, Total	4850	MG/KG	2.5	3.0
		Cadmium, Total	1.3	MG/KG	0.10	3.0
		Cobalt, Total	8.7	MG/KG	0.21	3.0
		Chromium, Total	22.6	MG/KG	0.20	3.0
		Copper, Total	30.4	MG/KG	0.18	3.0
		Iron, Total	24700	MG/KG	5.2	3.0
		Potassium, Total	1560	MG/KG	3.4	3.0
		Lithium, Total	14.1	MG/KG	0.04	3.0
		Magnesium, Total	5080	MG/KG	1.5	3.0
		Manganese, Total	418	MG/KG	0.04	3.0
		Molybdenum, Total	0.58	MG/KG	0.44	3.0
		Sodium, Total	161	MG/KG	1.1	3.0
		Nickel, Total	20.5	MG/KG	0.36	3.0
		Phosphorus, Total	920	MG/KG	1.4	3.0
		Lead, Total	30.0	MG/KG	0.46	3.0
		Antimony, Total	0.66 u	MG/KG	0.66	3.0
		Selenium, Total	0.70 u	MG/KG	0.70	3.0
		Silicon, Total	316	MG/KG	3.4	3.0
		Tin, Total	1.6 u	MG/KG	1.6	3.0
		Strontium, Total	33.6	MG/KG	0.02	3.0
		Thallium, Total	1.0 u	MG/KG	1.0	3.0
		Uranium, Total	7.2	MG/KG	1.3	3.0
		Vanadium, Total	53.3	MG/KG	0.14	3.0
		Zinc, Total	205	MG/KG	0.24	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J11JH1	Silver, Total	0.10 u	MG/KG	0.10	3.0
		Aluminum, Total	10800	MG/KG	4.3	3.0
		Arsenic, Total	9.4	MG/KG	0.92	3.0
		Boron, Total	2.4	MG/KG	0.36	3.0
		Barium, Total	153	MG/KG	0.03	3.0
		Beryllium, Total	0.40	MG/KG	0.03	3.0
		Bismuth, Total	0.76 u	MG/KG	0.76	3.0
		Calcium, Total	4660	MG/KG	2.5	3.0
		Cadmium, Total	1.2	MG/KG	0.10	3.0
		Cobalt, Total	8.6	MG/KG	0.21	3.0
		Chromium, Total	21.3	MG/KG	0.20	3.0
		Copper, Total	27.8	MG/KG	0.18	3.0
		Iron, Total	24700	MG/KG	5.2	3.0
		Potassium, Total	1450	MG/KG	3.4	3.0
		Lithium, Total	13.5	MG/KG	0.04	3.0
		Magnesium, Total	4930	MG/KG	1.5	3.0
		Manganese, Total	412	MG/KG	0.04	3.0
		Molybdenum, Total	0.48	MG/KG	0.44	3.0
		Sodium, Total	154	MG/KG	1.1	3.0
		Nickel, Total	19.5	MG/KG	0.36	3.0
		Phosphorus, Total	923	MG/KG	1.4	3.0
		Lead, Total	26.9	MG/KG	0.46	3.0
		Antimony, Total	0.66 u	MG/KG	0.66	3.0
		Selenium, Total	0.70 u	MG/KG	0.70	3.0
		Silicon, Total	289	MG/KG	3.4	3.0
		Tin, Total	1.6 u	MG/KG	1.6	3.0
		Strontium, Total	32.0	MG/KG	0.02	3.0
		Thallium, Total	1.0 u	MG/KG	1.0	3.0
		Uranium, Total	5.1	MG/KG	1.3	3.0
		Vanadium, Total	54.5	MG/KG	0.14	3.0
		Zinc, Total	192	MG/KG	0.24	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11JH2	Silver, Total	0.10 u	MG/KG	0.10	3.0
		Aluminum, Total	10500	MG/KG	4.3	3.0
		Arsenic, Total	8.8	MG/KG	0.92	3.0
		Boron, Total	2.5	MG/KG	0.36	3.0
		Barium, Total	144	MG/KG	0.03	3.0
		Beryllium, Total	0.38	MG/KG	0.03	3.0
		Bismuth, Total	0.76 u	MG/KG	0.76	3.0
		Calcium, Total	4620	MG/KG	2.5	3.0
		Cadmium, Total	1.3	MG/KG	0.10	3.0
		Cobalt, Total	8.2	MG/KG	0.21	3.0
		Chromium, Total	21.0	MG/KG	0.20	3.0
		Copper, Total	30.9	MG/KG	0.18	3.0
		Iron, Total	23700	MG/KG	5.2	3.0
		Potassium, Total	1440	MG/KG	3.4	3.0
		Lithium, Total	13.1	MG/KG	0.04	3.0
		Magnesium, Total	4820	MG/KG	1.5	3.0
		Manganese, Total	394	MG/KG	0.04	3.0
		Molybdenum, Total	0.52	MG/KG	0.44	3.0
		Sodium, Total	163	MG/KG	1.1	3.0
		Nickel, Total	18.7	MG/KG	0.36	3.0
		Phosphorus, Total	913	MG/KG	1.4	3.0
		Lead, Total	31.1	MG/KG	0.46	3.0
		Antimony, Total	0.66 u	MG/KG	0.66	3.0
		Selenium, Total	0.70 u	MG/KG	0.70	3.0
		Silicon, Total	260	MG/KG	3.4	3.0
		Tin, Total	1.6 u	MG/KG	1.6	3.0
		Strontium, Total	32.4	MG/KG	0.02	3.0
		Thallium, Total	1.0 u	MG/KG	1.0	3.0
		Uranium, Total	4.5	MG/KG	1.3	3.0
		Vanadium, Total	52.7	MG/KG	0.14	3.0
		Zinc, Total	207	MG/KG	0.24	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J11JH3	Silver, Total	0.16	MG/KG	0.10	3.0
		Aluminum, Total	10900	MG/KG	4.3	3.0
		Arsenic, Total	9.8	MG/KG	0.92	3.0
		Boron, Total	2.5	MG/KG	0.36	3.0
		Barium, Total	146	MG/KG	0.03	3.0
		Beryllium, Total	0.40	MG/KG	0.03	3.0
		Bismuth, Total	0.76 u	MG/KG	0.76	3.0
		Calcium, Total	4630	MG/KG	2.5	3.0
		Cadmium, Total	1.3	MG/KG	0.10	3.0
		Cobalt, Total	8.4	MG/KG	0.21	3.0
		Chromium, Total	21.8	MG/KG	0.20	3.0
		Copper, Total	31.2	MG/KG	0.18	3.0
		Iron, Total	24100	MG/KG	5.2	3.0
		Potassium, Total	1520	MG/KG	3.4	3.0
		Lithium, Total	13.5	MG/KG	0.04	3.0
		Magnesium, Total	4880	MG/KG	1.5	3.0
		Manganese, Total	408	MG/KG	0.04	3.0
		Molybdenum, Total	0.48	MG/KG	0.44	3.0
		Sodium, Total	164	MG/KG	1.1	3.0
		Nickel, Total	19.5	MG/KG	0.36	3.0
		Phosphorus, Total	916	MG/KG	1.4	3.0
		Lead, Total	29.6	MG/KG	0.46	3.0
		Antimony, Total	0.66 u	MG/KG	0.66	3.0
		Selenium, Total	0.70 u	MG/KG	0.70	3.0
		Silicon, Total	269	MG/KG	3.4	3.0
		Tin, Total	1.6 u	MG/KG	1.6	3.0
		Strontium, Total	32.0	MG/KG	0.02	3.0
		Thallium, Total	1.0 u	MG/KG	1.0	3.0
		Uranium, Total	3.7	MG/KG	1.3	3.0
		Vanadium, Total	53.0	MG/KG	0.14	3.0
		Zinc, Total	201	MG/KG	0.24	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0278-MB1	Silver, Total	0.04 u	MG/KG	0.04	1.0
		Aluminum, Total	1.4 u	MG/KG	1.4	1.0
		Arsenic, Total	0.30 u	MG/KG	0.30	1.0
		Boron, Total	0.12 u	MG/KG	0.12	1.0
		Barium, Total	0.01	MG/KG	0.01	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Bismuth, Total	0.26 u	MG/KG	0.26	1.0
		Calcium, Total	0.82 u	MG/KG	0.82	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	0.07 u	MG/KG	0.07	1.0
		Chromium, Total	0.06 u	MG/KG	0.06	1.0
		Copper, Total	0.06 u	MG/KG	0.06	1.0
		Iron, Total	4.0	MG/KG	1.7	1.0
		Potassium, Total	1.3	MG/KG	1.1	1.0
		Lithium, Total	0.02 u	MG/KG	0.02	1.0
		Magnesium, Total	0.48 u	MG/KG	0.48	1.0
		Manganese, Total	0.02 u	MG/KG	0.02	1.0
		Molybdenum, Total	0.14 u	MG/KG	0.14	1.0
		Sodium, Total	0.38 u	MG/KG	0.38	1.0
		Nickel, Total	0.12 u	MG/KG	0.12	1.0
		Phosphorus, Total	0.45 u	MG/KG	0.45	1.0
		Lead, Total	0.16 u	MG/KG	0.16	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.24 u	MG/KG	0.24	1.0
		Silicon, Total	1.1 u	MG/KG	1.1	1.0
		Tin, Total	0.54 u	MG/KG	0.54	1.0
		Strontium, Total	0.005u	MG/KG	0.005	1.0
		Thallium, Total	0.35 u	MG/KG	0.35	1.0
		Uranium, Total	1.1	MG/KG	0.44	1.0
		Vanadium, Total	0.04 u	MG/KG	0.04	1.0
		Zinc, Total	0.08 u	MG/KG	0.08	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J11JC1	Silver, Total	2.4	0.10u	2.5	96.0	3.0
		Aluminum, Total	11900	11200	100	737.3*	3.0
		Arsenic, Total	104	10.0	100	94.4	3.0
		Boron, Total	48.1	2.8	50.0	90.6	3.0
		Barium, Total	256	160	100	95.7	3.0
		Beryllium, Total	2.8	0.39	2.5	96.4	3.0
		Bismuth, Total	47.6	0.76u	50 ~~250~~	~~19.0~~ 95.2	3.0
		Calcium, Total	5960	4730	1250	97.9 correct	3.0
		Cadmium, Total	3.6	1.3	2.5	92.0 entry	3.0
		Cobalt, Total	32.6	8.8	25.0	95.2 pwd	3.0
		Chromium, Total	31.6	21.5	10.0	101.0 6/8/06	3.0
		Copper, Total	41.8	29.5	12.5	98.4	3.0
		Iron, Total	24500	23700	50.0	1484 *	3.0
		Potassium, Total	2720	1470	1250	99.6	3.0
		Lithium, Total	65.9	14.0	50.0	103.8	3.0
		Magnesium, Total	6190	4990	1250	96.1	3.0
		Manganese, Total	426	408	25.0	73.2*	3.0
		Molybdenum, Total	47.7	0.53	50.0	94.3	3.0
		Sodium, Total	1390	156	1250	98.9	3.0
		Nickel, Total	43.9	20.1	25.0	95.2	3.0
		Phosphorus, Total	1160	959	250	81.6	3.0
		Lead, Total	53.0	29.1	25.0	95.6	3.0
		Antimony, Total	8.5	0.66u	25.0	34.0	3.0
		Selenium, Total	94.7	0.70u	100	94.7	3.0
		Silicon, Total	489	297	50.0	383.6*	3.0
		Tin, Total	46.0	1.6 u	50.0	92.0	3.0
		Strontium, Total	82.5	32.2	50.0	100.6	3.0
		Thallium, Total	95.7	1.0 u	100	95.7	3.0
		Uranium, Total	58.2	7.2	50 ~~250~~	~~90.4~~ 102.1	3.0
		Vanadium, Total	76.5	50.2	25.0	105.2 correct	3.0
		Zinc, Total	225	198	25.0	107.2* entry	3.0
						pwd 6/8/06	

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J11JC1	Silver, Total	0.10u	0.40	~~NC~~ 200	3.0
		Aluminum, Total	11200	11200	0.031	3.0
		Arsenic, Total	10.0	10.1	1.0	3.0
		Boron, Total	2.8	2.2	24.0	3.0
		Barium, Total	160	160	0.19	3.0
		Beryllium, Total	0.39	0.39	0.36	3.0
		Bismuth, Total	0.76u	0.76u	NC	3.0
		Calcium, Total	4730	4730	0.047	3.0
		Cadmium, Total	1.3	1.3	0.00	3.0
		Cobalt, Total	8.8	8.8	0.00	3.0
		Chromium, Total	21.5	21.5	0.00	3.0
		Copper, Total	29.5	29.7	0.68	3.0
		Iron, Total	23700	24100	1.4	3.0
		Potassium, Total	1470	1490	1.1	3.0
		Lithium, Total	14.0	13.9	0.72	3.0
		Magnesium, Total	4990	4990	0.002	3.0
		Manganese, Total	408	406	0.39	3.0
		Molybdenum, Total	0.53	0.56	6.7	3.0
		Sodium, Total	156	157	0.89	3.0
		Nickel, Total	20.1	20.0	0.50	3.0
		Phosphorus, Total	959	922	3.9	3.0
		Lead, Total	29.1	29.5	1.4	3.0
		Antimony, Total	0.66u	0.66u	NC	3.0
		Selenium, Total	0.70u	0.70u	NC	3.0
		Silicon, Total	297	279	6.2	3.0
		Tin, Total	1.6 u	1.6 u	NC	3.0
		Strontium, Total	32.2	32.5	0.93	3.0
		Thallium, Total	1.0 u	1.0 u	NC	3.0
		Uranium, Total	7.2	5.2	32.3	3.0
		Vanadium, Total	50.2	51.5	2.6	3.0
		Zinc, Total	198	200	1.3	3.0

corrected entry MJ 6/1/06

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/01/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	06L0278-LC1	Silver, LCS	24.2	25.0	MG/KG	96.8
		Aluminum, LCS	242	250	MG/KG	96.7
		Arsenic, LCS	467	500	MG/KG	93.4
		Boron, LCS	240	250	MG/KG	96.1
		Barium, LCS	243	250	MG/KG	97.3
		Beryllium, LCS	11.9	12.5	MG/KG	95.2
		Bismuth, LCS	47.4	50 ~~250~~ *	MG/KG	* ~~20.0~~ 94.8
		Calcium, LCS	1170	1250	MG/KG	93.8
		Cadmium, LCS	11.9	12.5	MG/KG	95.2
		Cobalt, LCS	120	125	MG/KG	96.0
		Chromium, LCS	24.2	25.0	MG/KG	96.8
		Copper, LCS	61.1	62.5	MG/KG	97.8
		Iron, LCS	243	250	MG/KG	97.0
		Potassium, LCS	1120	1250	MG/KG	89.8
		Lithium, LCS	252	250	MG/KG	100.6
		Magnesium, LCS	1160	1250	MG/KG	92.7
		Manganese, LCS	35.5	37.5	MG/KG	94.7
		Molybdenum, LCS	247	250	MG/KG	98.8
		Sodium, LCS	1130	1250	MG/KG	90.5
		Nickel, LCS	96.3	100	MG/KG	96.3
		Phosphorus, LCS	219	250	MG/KG	87.6
		Lead, LCS	119	125	MG/KG	95.3
		Antimony, LCS	143	150	MG/KG	95.2
		Selenium, LCS	459	500	MG/KG	91.7
		Silicon, LCS	190	250	MG/KG	75.9
		Tin, LCS	245	250	MG/KG	97.9
		Strontium, LCS	245	250	MG/KG	98.0
		Thallium, LCS	482	500	MG/KG	96.3
		Uranium, LCS	51.5	50 ~~250~~ *	MG/KG	* ~~20.6~~ 103.0
		Vanadium, LCS	117	125	MG/KG	93.6
		Zinc, LCS	47.2	50.0	MG/KG	94.4

* corrected entries
MW 6/1/06

Lionville Laboratory Use Only

0604L802

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client INL HANFORD SAF# RC-051

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 4/19/06 Date Due 5/19/06

		A-C	D-F		G-I			J-L		M-O	P-R	S-U			
Refrigerator #		3	3		3			3		3	3	3			
#/Type Container	Liquid														
	Solid	G	G		G			G		G	G	G			
Volume	Liquid														
	Solid	30	30		30			30		30	30	30			
Preservatives		—	—		—			—		—	—	—			
ANALYSES REQUESTED →	ORGANIC: VOA	BNA	Pest/~~PCB~~	Herb	PCB			INORG: Metal	CN	IC Anions	NO2 NO3	NH4 Chloride			
Lionville Laboratory Use Only		04GSH	06GSH		8PCB			METALS		ANIONS	NO2NO3	NH3Cl			

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
S - Soil	001	J11JC1	✓	✓	S	4/17/06	1000		1	1		1			3		1	1	1	
SE - Sediment	002	J11JH0	✓	✓			1105		3	1		1			1		1	1	3	
SO - Solid	003	1	✓	✓			1425		1	3		3			1		1	1	1	
SL - Sludge	004	2	✓	✓			1120		1	1		1			1		3	3	1	
W - Water	005	3					1350		1	1		1			3		1	1	3	
O - Oil																				
A - Air																				
DS - Drum Solids																				
DL - Drum Liquids																				
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

Special Instructions: QC ONLY #001 — 004

001 = MET

002 = BNA, Herb

003 = Pest, PCB

004 = MET, Herb

NO I% SOL

METALS = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, Tl (No Hg)

DATE/REVISIONS:

1. #005 No QC
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	4/19/06	0915

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
*COMPOSITE WASTE	ORIGINAL DEWIDITEM		

0000000022

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-051-72	Page 2 of 3

Collector STANKOVICH, M.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 8L Air Quality ☐	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA - Incremental So	Sampling Location 300-A RIPARIAN #6		SAF No. RC-051		
Ice Chest No.	Field Logbook No. EL-1596	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

NONE

Special Handling and/or Storage

Use page 3 for original material to Corvallis for MIS preparation and aliquoting, page 1 for radioanalytical fractions to Eberline, & page 2 for chemical analytical fractions to Lionville.

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	G/P	G/P	aG	aG	aG	aG	G/P	G/P	^	^
No. of Container(s)	9	9	7		7	7	7	7	0	0
Volume	30g	30g	30g	30g	30g	30g	30g	30g	1^	1^

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	PCBs - 8082	IC Anions - 300.0 (Nitrate)	NO2/NO3 - 353.2 (Nitrogen in Nitrite and Nitrate)	-	--
J11JC1	SOIL	4-17-06	1000	3	1	1		1	1	1	1		
J11JH0			1105	1	3	3		1	1	1	1		
J11JH1			1425	1	1	1		3	3	1	1		
J11JH2			1120	1	1	1		1	1	3	3		
J11JH3			1350	3	3	1		1	1	1	1		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Elizabeth M Tepper		CH2M Hill	
Elizabeth M Tepper CH2M	4-18-06 11:30	Fed Ex	4-18-06 11:30
[illegible]	4-19-06 0915	[illegible]	4-19-06 0915

SPECIAL INSTRUCTIONS

' These marks indicate that unless lined out, analytes to be included with Strontium-89,90 -- Total Sr analysis fraction.

^ These marks indicate that this is a non-analysis used to properly format COC form. Contact Joan Kessner for any questions.

(1) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc)

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 (08/29/2005)

00000023

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH0

Tray # 23

Tare Wt. ~~3176.9~~ 1450 (AW) gm.

Total Dry Wt. 4626.9 gm.

Net Dry Wt. 3176.9 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:05	400 g	400.39	AW
RAD STR		30 g	30.16	
ICP MET		30 g	30.02	
HEX CR		30 g	30.09	
SEMI VOA		30 g	30.43	
PEST		30 g	30.08	
PCB		30 g	30.10	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.08	
HEX CR MS		30 g	30.11	
HEX CR MSD		30 g	30.23	
SEMI VOA MS		30 g	30.09	
SEMI VOA MSD		30 g	30.91	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JC1

Tray # 62

Tare Wt. 1458 gm.

Total Dry Wt. 5025.1 gm.

Net Dry Wt. 3567.1 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	10:00	400 g	400.98	AW
RAD STR		30 g	30.15	
ICP MET		30 g	30.18	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.37	
PEST		30 g	30.26	
PCB		30 g	30.13	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.17	
RAD STR MS		30 g	30.06	
RAD STR MSD		30 g	30.31	
ICP MET MS		30 g	30.02	
ICP MET MSD		30 g	30.05	

Comments:

Name (print): Ashley Willer

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH1

Tray # 68

Tare Wt. 1460 gm.

Total Dry Wt. 4531.7 gm.

Net Dry Wt. 3071.7 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	14:25	400 g	400.23	AW
RAD STR		30 g	30.06	
ICP MET		30 g	30.03	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.08	
PEST		30 g	30.12	
PCB		30 g	30.14	
IC ANION		30 g	30.10	
NO2/NO3		30 g	30.19	
PEST MS		30 g	30.35	
PEST MSD		30 g	30.04	
PCB MS		30 g	30.16	
PCB MSD		30 g	30.05	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH2

Tray # 12

Tare Wt. 1460 gm.

Total Dry Wt. 4523.8 gm.

Net Dry Wt. 3063.8 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:20	400 g	401.6g	DHK
RAD STR		30 g	30.0g	DHK
ICP MET		30 g	30.0g	DHK
HEX CR		30 g	30.1g	DHK
SEMI VOA		30 g	30.0g	DHK
PEST		30 g	30.3g	DHK
PCB		30 g	30.0g	DHK
IC ANION		30 g	30.0g	DHK
NO2/NO3		30 g	30.2g	DHK
IC ANION MS		30 g	30.1g	DHK
IC ANION MSD		30 g	30.5g	DHK
NO2/NO3 MS		30 g	30.5g	DHK
NO2/NO3 MSD		30 g	30.1g	DHK

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH3

Tray # 24

Tare Wt. 1450 gm.

Total Dry Wt. 5238.3 gm.

Net Dry Wt. 3788.3 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	13:50	400 g	400.6g	DHK
RAD STR		30 g	30.0g	
ICP MET		30 g	30.0g	
HEX CR		30 g	30.7g	
SEMI VOA		30 g	30.5g	
PEST		30 g	30.0g	
PCB		30 g	30.3g	
IC ANION		30 g	30.3g	
NO2/NO3		30 g	30.8g	
ICP MET MS		30 g	30.0g	
ICP MET MSD		30 g	30.3g	
HEX CR MS		30 g	30.1g	
HEX CR MSD		30 g	30.0g	

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Date: 4/19/06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-051

LvLI Batch # : 0604L882

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier Fed Ex — Airbill# 6595 0631 4862

2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient? IR	Temp 10.8 °C		Cooler # N/A	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☑ Yes	☐ No		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A	
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☐ Yes	☑ No		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes	☐ No	☐ No Discrepancies	

Temp

SR-002-B

LVLI LIONVILLE LABORATORY, INC.

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

RECEIVED JUN 2006

DATE RECEIVED: 04/19/06 LVL LOT # :06[illegible]802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11JC1						
NITRATE BY IC	001	S	06LICA56	04/17/06	06/06/06	06/07/06
CHROMIUM VI	001	S	06LVIA31	04/17/06	04/26/06	04/26/06
NITRATE NITRITE	001	S	06LN3046	04/17/06	06/07/06	06/07/06
J11JH0						
NITRATE BY IC	002	S	06LICA56	04/17/06	06/06/06	06/07/06
CHROMIUM VI	002	S	06LVIA31	04/17/06	04/26/06	04/26/06
CHROMIUM VI	002 REP	S	06LVIA31	04/17/06	04/26/06	04/26/06
CHROMIUM VI	002 MS	S	06LVIA31	04/17/06	04/26/06	04/26/06
NITRATE NITRITE	002	S	06LN3046	04/17/06	06/07/06	06/07/06
J11JH1						
NITRATE BY IC	003	S	06LICA56	04/17/06	06/06/06	06/07/06
CHROMIUM VI	003	S	06LVIA31	04/17/06	04/26/06	04/26/06
NITRATE NITRITE	003	S	06LN3046	04/17/06	06/07/06	06/07/06
J11JH2						
NITRATE BY IC	004	S	06LICA56	04/17/06	06/06/06	06/07/06
NITRATE BY IC	004 REP	S	06LICA56	04/17/06	06/06/06	06/07/06
NITRATE BY IC	004 MS	S	06LICA56	04/17/06	06/06/06	06/07/06
CHROMIUM VI	004	S	06LVIA31	04/17/06	04/26/06	04/26/06
NITRATE NITRITE	004	S	06LN3046	04/17/06	06/07/06	06/07/06
NITRATE NITRITE	004 REP	S	06LN3046	04/17/06	06/07/06	06/07/06
NITRATE NITRITE	004 MS	S	06LN3046	04/17/06	06/07/06	06/07/06
J11JH3						
NITRATE BY IC	005	S	06LICA56	04/17/06	06/06/06	06/07/06
CHROMIUM VI	005	S	06LVIA31	04/17/06	04/26/06	04/26/06
NITRATE NITRITE	005	S	06LN3046	04/17/06	06/07/06	06/07/06

LAB QC:

NITRATE BY IC	MB1	S	06LICA56	N/A	06/06/06	06/07/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-051 K0315

DATE RECEIVED: 04/19/06 LVL LOT # :0604L802

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	MB1 BS	S	06LICA56	N/A	06/06/06	06/07/06
CHROMIUM VI	MB1	S	06LVIA31	N/A	04/26/06	04/26/06
CHROMIUM VI	MB1 BS	S	06LVIA31	N/A	04/26/06	04/26/06
CHROMIUM VI	MB1 BSD	S	06LVIA31	N/A	04/26/06	04/26/06
NITRATE NITRITE	MB1	W	06LN3046	N/A	06/07/06	06/07/06
NITRATE NITRITE	MB1 BS	W	06LN3046	N/A	06/07/06	06/07/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-051 K0315
LVL#: 0604L802

W.O.#: 11343-606-001-9999-00
Date Received: 04-19-06

INORGANIC NARRATIVE

1. This narrative covers the analyses of 5 soil samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary with the exception of the sample digestate compilation modification requested by the client for Chromium VI. The total sample mass submitted for each sample number was determined and then portioned for the digestion preparation step and the subsequent digestates were composited prior to the colorimetric analysis. For Nitrate Nitrite and IC analyses, the sample extraction ratios were 1:10 using the total sample masses submitted. The Nitrate Nitrite extracts were preserved with sulfuric acid prior to analysis. The sample weights were as follows:

LvLI Sample	Site ID	Cr6+ sample wt,g	Nitrate-Nitrite IC Nitrate sample wt,g
0604L802-001	J11JC1	30.032	30.112
0604L802-002	J11JH0	30.081	30.091
0604L802-002 dup	J11JH0	30.222	NA
0604L802-002 spk	J11JH0	30.085	NA
0604L802-003	J11JH1	30.040	30.122
0604L802-004	J11JH2	30.094	30.170
0604L802-004 dup	J11JH2	NA	30.509
0604L802-004 spk	J11JH2	NA	30.021
0604L802-005	J11JH3	30.717	30.383

The results presented in this report relate to the analytical testing and conditions of the samples upon 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 18 pages.

LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that did not meet LvLI's sample acceptance policy as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits.

7. The matrix spike (MS) recoveries for Nitrate and Nitrate Nitrite were within the 75-125% control limits however MS recovery for Soluble Chromium VI was below the control limits at 65.0% that may be attributed to sample inhomogeneity.

8. The replicate analyses for Chromium VI, Nitrate and Nitrate Nitrite were within the 20% Relative Percent Difference (RPD) control limit.

9. Results for solid samples were reported on an "as received" weight basis.

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 package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/9/06
Date

njp\04-802

LvLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	__ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: Nitrate **Method:** EPA 300.0

Other: Nitrate + Nitrite **Method** EPA 353.2

Lionville Laboratory Incorporated

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
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/09/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11JC1	Nitrate by IC	121	MG/KG	4.98	2.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
		Nitrate Nitrite	26.3	MG/KG	1.0	5.0
-002	J11JH0	Nitrate by IC	86.5	MG/KG	2.49	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
		Nitrate Nitrite	18.6	MG/KG	1.0	5.0
-003	J11JH1	Nitrate by IC	108	MG/KG	4.98	2.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
		Nitrate Nitrite	19.4	MG/KG	1.0	5.0
-004	J11JH2	Nitrate by IC	95.2	MG/KG	2.49	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
		Nitrate Nitrite	18.7	MG/KG	0.99	5.0
-005	J11JH3	Nitrate by IC	93.8	MG/KG	2.47	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
		Nitrate Nitrite	18.7	MG/KG	0.99	5.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/09/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	06LICA56-MB1	Nitrate by IC	2.50 u	MG/KG	2.50	1.0
BLANK10	06LVIA31-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK10	06LN3046-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/09/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J11JH0	Soluble Chromium VI	2.4	0.20u	4.0	65.0	1.0
-004	J11JH2	Nitrate by IC	196	95.2	100	100.9	2.0
		Nitrate Nitrite	43.2	18.7	50.0	49.0	5.0
BLANK10	06LICA56-MB1	Nitrate by IC	49.1	2.50u	50.0	98.3	1.0
BLANK10	06LVIA31-MB1	Soluble Chromium VI	4.0	0.20u	4.0	99.1	1.0
		Insoluble Chromium VI	1230	0.20u	1200	102.9	100
BLANK10	06LN3046-MB1	Nitrate Nitrite	4.9	0.20u	5.0	97.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/09/06

CLIENT: TNUHANFORD RC-051 K0315 LVL LOT #: 0604L802

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J11JH0	Chromium VI	0.20u	0.20u	NC	1.0
-004REP	J11JH2	Nitrate by IC	95.2	93.9	1.4	1.0
		Nitrate Nitrite	18.7	18.4	1.4	5.0

Lionville Laboratory Use Only

06041802

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client INL HANFORD SAF# RC-051

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 4/19/06 Date Due 5/19/06

			A-C	D-F		G-I			J-L		M-O	P-R	S-U				
Refrigerator #			3	3		3			3		3	3	3				
#/Type Container	Liquid																
	Solid		G	G		G			G		G	G	G				
Volume	Liquid																
	Solid		30	30		30			30		30	30	30				
Preservatives			—	—		—			—		—	—	—				
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb	PCB			Metal	CN	IC Anions	NO2 NO3	PH Sheen				
Lionville Laboratory Use Only			0425H	0605H		2PCB			METALS(U)		IC NO3	SULFIDE	PH Sheen				

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
S - Soil	001	J11JC1	✓	✓	S	4/19/06	1000		1	1		1			3		1	1	1	
SE - Sediment	002	J11JH0	✓	✓			1105		3	1		1			1		1	1	3	
SO - Solid	003	1	✓	✓			1425		1	3		3			1		1	1	1	
SL - Sludge	004	2	✓	✓			1120		1	1		1			1		3	3	1	
W - Water	005	3					1350		1	1		1			3		1	1	3	
O - Oil																				
A - Air																				
DS - Drum Solids																				
DL - Drum Liquids																				
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

Special Instructions: QC ONLY #001 — 004

NO I% SOL

001 = MET

#002 = BNA, Hex

#003 = Pest, PCB

#004 = MET, Hex

METALS(U) = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, Tl (No Hg)

DATE/REVISIONS:

#005 1. No QC

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	4/19/06	0915

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-051-72	Page 2 of 3

Collector STANKOVICH, M.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA - Incremental So	Sampling Location 300-A RIPARIAN #6		SAF No. RC-051
Ice Chest No.	Field Logbook No. EL-1596	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060151		Bill of Lading/Air Bill No. SEE OSPC

Price Code 8L

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

NONE

Special Handling and/or Storage

Use page 3 for original material to Corvallis for MIS preparation and aliquoting, page 1 for radioanalytical fractions to Eberline, & page 2 for chemical analytical fractions to Lionville.

Preservation	None	None	None	None	None	None	None	None	None	None
Type of Container	G/P	G/P	aG	aG	aG	aG	G/P	G/P	^	^
No. of Container(s)	9	9	7		7	7	7	7	0	0
Volume	30g	30g	30g	30g	30g	30g	30g	30g	1^	1^

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	PCBs - 8082	IC Anions - 300.0 (Nitrate)	NO2/NO3 - 353.2 (Nitrogen in Nitrite and Nitrate)	-	--
J11JC1	SOIL	4-17-06	1000	3	1	1		1	1	1	1		
J11JH0			1105	1	3	3		1	1	1	1		
J11JH1			1425	1	1	1		3	3	1	1		
J11JH2			1120	1	1	1		1	1	3	3		
J11JH3			1350	3	3	1		1	1	1	1		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Elizabeth M Tepper		CH2M Hill	
Elizabeth M Tepper CH2M	11:30 4-18-06	Fed Ex	11:30 4-18-06
[illegible]	4-19-06 0915	[illegible]	4-19-06 0915

SPECIAL INSTRUCTIONS

` These marks indicate that unless lined out, analytes to be included with Strontium-89,90 -- Total Sr analysis fraction.

*-- These marks indicate that this is a non-analysis used to properly format COC form. Contact Joan Kessner for any questions.

(1) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc]

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 (08/29/2005)

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH0

Tray # 23

Tare Wt. ~~3176.9~~ 1450 AW gm.

Total Dry Wt. 4626.9 gm.

Net Dry Wt. 3176.9 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:05	400 g	400.39	AW
RAD STR		30 g	30.16	
ICP MET		30 g	30.02	
HEX CR		30 g	30.09	
SEMI VOA		30 g	30.43	
PEST		30 g	30.08	
PCB		30 g	30.10	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.08	
HEX CR MS		30 g	30.11	
HEX CR MSD		30 g	30.23	
SEMI VOA MS		30 g	30.09	
SEMI VOA MSD		30 g	30.91	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JC1

Tray # 62

Tare Wt. 1458 gm.

Total Dry Wt. 5025.1 gm.

Net Dry Wt. 3567.1 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	10:00	400 g	400.98	AW
RAD STR		30 g	30.15	
ICP MET		30 g	30.18	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.37	
PEST		30 g	30.26	
PCB		30 g	30.13	
IC ANION		30 g	30.04	
NO2/NO3		30 g	30.17	
RAD STR MS		30 g	30.06	
RAD STR MSD		30 g	30.31	
ICP MET MS		30 g	30.02	
ICP MET MSD		30 g	30.05	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH1

Tray # 68

Tare Wt. 1460 gm.

Total Dry Wt. 4531.7 gm.

Net Dry Wt. 3071.7 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	14:25	400 g	400.23	AW
RAD STR		30 g	30.06	
ICP MET		30 g	30.03	
HEX CR		30 g	30.04	
SEMI VOA		30 g	30.08	
PEST		30 g	30.12	
PCB		30 g	30.14	
IC ANION		30 g	30.10	
NO2/NO3		30 g	30.19	
PEST MS		30 g	30.35	
PEST MSD		30 g	30.04	
PCB MS		30 g	30.16	
PCB MSD		30 g	30.05	

Comments:

Name (print): Ashley Wille

Signature: [illegible]

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH2

Tray # 12

Tare Wt. 1460 gm.

Total Dry Wt. 4523.8 gm.

Net Dry Wt. 3063.8 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	11:20	400 g	401.6g	DHK
RAD STR	↓	30 g	30.0g	DHK
ICP MET		30 g	30.0g	DHK
HEX CR		30 g	30.1g	DHK
SEMI VOA		30 g	30.0g	DHK
PEST		30 g	30.3g	DHK
PCB		30 g	30.0g	DHK
IC ANION		30 g	30.0g	DHK
NO2/NO3		30 g	30.2g	DHK
IC ANION MS		30 g	30.1g	DHK
IC ANION MSD		30 g	30.5g	DHK
NO2/NO3 MS		30 g	30.5g	DHK
NO2/NO3 MSD	✓	30 g	30.1g	DHK

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

CH2M HILL Soil Sampling Bench Sheet
Spring 2006

Project ID WCH

Project # 336761.AO.ZZ

Site # 300-A RIPARIAN #6

Sample # J11JH3

Tray # 24

Tare Wt. 1450 gm.

Total Dry Wt. 5238.3 gm.

Net Dry Wt. 3788.3 gm.

ALL SAMPLES COLLECTED BELOW CONSIST OF 50 SAMPLE INCREMENTS

Analyte	Sample Time	Grams Needed	Grams Collected	Initials
GEA	13:50	400 g	400.6g	DHK
RAD STR		30 g	30.0g	
ICP MET		30 g	30.0g	
HEX CR		30 g	30.7g	
SEMI VOA		30 g	30.5g	
PEST		30 g	30.0g	
PCB		30 g	30.3g	
IC ANION		30 g	30.3g	
NO2/NO3		30 g	30.8g	
ICP MET MS		30 g	30.0g	
ICP MET MSD		30 g	30.3g	
HEX CR MS		30 g	30.1g	
HEX CR MSD		30 g	30.0g	

Comments:

Name (print): Dayna Kaumanns

Signature: Dayna Kaumanns

Sub-Sampled Date: 04/17/2006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 4/19/06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-051

LvLI Batch # : 0604L882

Sample Custodian: P. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 6595 0631 4862	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient? IR	Temp 10.8 °C		Cooler # N/A	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☑ Yes	☐ No		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14.	QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A	
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☐ Yes	☑ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☑ Yes	☐ No	☐ No Discrepancies	

Temp

SR-002-B

LVLI