0069492

SAF-RC-047
100 & 300 Area Component of the RCBRA Sediment and Tissues
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jill Thomson	H0-23	____NB 4/13/06 INITIAL/DATE
Jeanette Duncan	H9-02	___NB 4/13/06 INITIAL/DATE

COMMENTS:

SDG _K0235_____ SAF-RC-047

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: Cr 1-4, 7-8 Sediment

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APR 2 8 2006
EDMC

LvLI
LIONVILLE LABORATORY INC.

RECEIVED
APR 2006

28 March 2006

Joan Kessner
WC-Hanford
3190 Washington Way
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0602L325
SDG #	K0235
SAF #	RC-047
Date Received	2/2306
# Samples	7
Mat\rix	WATER
Volatiles	
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	X
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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APR 2006

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11298	001	SO	06LE0152	02/21/06	02/28/06	03/03/06
J11299	002	SO	06LE0152	02/21/06	02/28/06	03/03/06
J112B0	003	SO	06LE0152	02/21/06	02/28/06	03/03/06
J112B1	004	SO	06LE0152	02/21/06	02/28/06	03/03/06
J112B1	004 MS	SO	06LE0152	02/21/06	02/28/06	03/03/06
J112B1	004 MSD	SO	06LE0152	02/21/06	02/28/06	03/03/06
J116L6	005	SO	06LE0152	02/21/06	02/28/06	03/06/06
J116L7	006	SO	06LE0152	02/21/06	02/28/06	03/05/06
J11733	007	SO	06LE0152	02/21/06	02/28/06	03/06/06

LAB QC:

SBLKUH	MB1	S	06LE0152	N/A	02/28/06	03/03/06
SBLKUH	MB1 BS	S	06LE0152	N/A	02/28/06	03/03/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L325
SDG/SAF # K0235 /RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-23-2006

SEMIVOLATILE

Seven (7) solid samples were collected on 02-21-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-28-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 03-03-2006.

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

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

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

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

4. All surrogate recoveries were within acceptance criteria.

5. All matrix spike recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. The method blank contained the common laboratory contaminant Bis (2-Ethylhexyl) phthalate at a level less than the CRQL.

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

9. 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").

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 7 pages.

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LIONVILLE LABORATORY INC.

10. 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.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/14/06
Date

som\gorup\data\bna\tmu-hanford\0602-325.doc

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 03/09/06 11:45

RFW Batch Number: **0602L325** Client: **TNU-HANFORD RC-047** Work Order: 11343606001 Page: 1a

000000007

	Cust ID:	J11298		J11299		J112B0		J112B1		J112B1		J112B1	
Sample Information	RFW#:	001		002		003		004		004 MS		004 MSD	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	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	69	%	59	%	81	%	58	%	65	%	76	%
	2-Fluorobiphenyl	74	%	62	%	86	%	67	%	76	%	84	%
	Terphenyl-d14	84	%	73	%	114	%	104	%	89	%	99	%
	Phenol-d5	72	%	60	%	89	%	71	%	75	%	84	%
	2-Fluorophenol	55	%	47	%	86	%	61	%	64	%	83	%
	2,4,6-Tribromophenol	79	%	68	%	80	%	79	%	80	%	84	%
		fl		fl		fl		fl		fl		fl	
Phenol		370	U	370	U	350	U	350	U	84	%	96	%
bis(2-Chloroethyl)ether		370	U	370	U	350	U	350	U	81	%	96	%
2-Chlorophenol		370	U	370	U	350	U	350	U	79	%	96	%
1,3-Dichlorobenzene		370	U	370	U	350	U	350	U	60	%	85	%
1,4-Dichlorobenzene		370	U	370	U	350	U	350	U	61	%	84	%
1,2-Dichlorobenzene		370	U	370	U	350	U	350	U	67	%	89	%
2-Methylphenol		370	U	370	U	350	U	350	U	85	%	94	%
2,2'-oxybis(1-Chloropropane)		370	U	370	U	350	U	350	U	79	%	93	%
4-Methylphenol		370	U	370	U	350	U	350	U	88	%	96	%
N-Nitroso-di-n-propylamine		370	U	370	U	350	U	350	U	96	%	100	%
Hexachloroethane		370	U	370	U	350	U	350	U	58	%	80	%
Nitrobenzene		370	U	370	U	350	U	350	U	73	%	85	%
Isophorone		370	U	370	U	350	U	350	U	86	%	97	%
2-Nitrophenol		370	U	370	U	350	U	350	U	77	%	88	%
2,4-Dimethylphenol		370	U	370	U	350	U	350	U	78	%	85	%
bis(2-Chloroethoxy)methane		370	U	370	U	350	U	350	U	81	%	92	%
2,4-Dichlorophenol		370	U	370	U	350	U	350	U	79	%	91	%
1,2,4-Trichlorobenzene		370	U	370	U	350	U	350	U	69	%	84	%
Naphthalene		370	U	370	U	350	U	350	U	69	%	82	%
4-Chloroaniline		370	U	370	U	350	U	350	U	77	%	92	%
Hexachlorobutadiene		370	U	370	U	350	U	350	U	74	%	90	%
4-Chloro-3-methylphenol		370	U	370	U	350	U	350	U	79	%	91	%
2-Methylnaphthalene		370	U	370	U	350	U	350	U	78	%	90	%
Hexachlorocyclopentadiene		370	U	370	U	350	U	350	U	62	%	74	%
2,4,6-Trichlorophenol		370	U	370	U	350	U	350	U	89	%	97	%
2,4,5-Trichlorophenol		920	U	910	U	870	U	870	U	88	%	96	%

*= Outside of EPA CLP QC limits.

Cust ID:	J11298		J11299		J112B0		J112B1		J112B1		J112B1	
RFW#:	001		002		003		004		004 MS		004 MSD	
2-Chloronaphthalene	370	U	370	U	350	U	350	U	85	%	95	%
2-Nitroaniline	920	U	910	U	870	U	870	U	90	%	101	%
Dimethylphthalate	370	U	370	U	350	U	350	U	88	%	91	%
Acenaphthylene	370	U	370	U	350	U	350	U	85	%	92	%
2,6-Dinitrotoluene	370	U	370	U	350	U	350	U	90	%	96	%
3-Nitroaniline	920	U	910	U	870	U	870	U	96	%	107	%
Acenaphthene	370	U	370	U	350	U	350	U	83	%	93	%
2,4-Dinitrophenol	920	U	910	U	870	U	870	U	96	%	93	%
4-Nitrophenol	920	U	910	U	870	U	870	U	93	%	99	%
Dibenzofuran	370	U	370	U	350	U	350	U	88	%	96	%
2,4-Dinitrotoluene	370	U	370	U	350	U	350	U	94	%	104	%
Diethylphthalate	370	U	370	U	350	U	350	U	91	%	96	%
4-Chlorophenyl-phenylether	370	U	370	U	350	U	350	U	86	%	96	%
Fluorene	370	U	370	U	350	U	350	U	85	%	94	%
4-Nitroaniline	920	U	910	U	870	U	870	U	79	%	87	%
4,6-Dinitro-2-methylphenol	920	U	910	U	870	U	870	U	93	%	99	%
N-Nitrosodiphenylamine (1)	370	U	370	U	350	U	350	U	74	%	81	%
4-Bromophenyl-phenylether	370	U	370	U	350	U	350	U	79	%	85	%
Hexachlorobenzene	370	U	370	U	350	U	350	U	83	%	93	%
Pentachlorophenol	920	U	910	U	870	U	870	U	109	%	114	%
Phenanthrene	370	U	370	U	350	U	350	U	88	%	98	%
Anthracene	370	U	370	U	350	U	350	U	88	%	94	%
Carbazole	370	U	370	U	350	U	350	U	88	%	95	%
Di-n-butylphthalate	370	U	370	U	350	U	350	U	91	%	100	%
Fluoranthene	370	U	370	U	350	U	350	U	83	%	91	%
Pyrene	370	U	370	U	350	U	350	U	96	%	108	%
Butylbenzylphthalate	370	U	370	U	350	U	350	U	107	%	122	%
3,3'-Dichlorobenzidine	370	U	370	U	350	U	350	U	76	%	87	%
Benzo(a)anthracene	370	U	370	U	350	U	350	U	90	%	97	%
Chrysene	370	U	370	U	350	U	350	U	89	%	94	%
bis(2-Ethylhexyl)phthalate	39	JB	54	JB	58	JB	59	JB	106	%	120	%
Di-n-octyl phthalate	370	U	370	U	350	U	350	U	89	%	99	%
Benzo(b)fluoranthene	370	U	370	U	350	U	350	U	80	%	81	%
Benzo(k)fluoranthene	370	U	370	U	350	U	350	U	77	%	82	%
Benzo(a)pyrene	370	U	370	U	350	U	350	U	85	%	91	%
Indeno(1,2,3-cd)pyrene	370	U	370	U	350	U	350	U	106	%	115	%
Dibenz(a,h)anthracene	370	U	370	U	350	U	350	U	104	%	114	%
Benzo(g,h,i)perylene	370	U	370	U	350	U	350	U	106	%	115	%

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: **0602L325** Client: **TNU-HANFORD RC-047** Work Order: 11343606001 Report Date: 03/09/06 11:45 Page: 2a

000000009

	Cust ID:	J116L6	J116L7	J11733	SBLKUH	SBLKUH BS
Sample Information	RFW#:	005	006	007	06LE0152-MB1	06LE0152-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	65 %	54 %	70 %	72 %	79 %
	2-Fluorobiphenyl	65 %	57 %	77 %	71 %	83 %
	Terphenyl-d14	87 %	87 %	106 %	81 %	96 %
	Phenol-d5	68 %	60 %	71 %	69 %	79 %
	2-Fluorophenol	61 %	56 %	72 %	59 %	64 %
	2,4,6-Tribromophenol	72 %	70 %	81 %	69 %	89 %
Phenol		350 U	350 U	350 U	330 U	78 %
bis(2-Chloroethyl)ether		350 U	350 U	350 U	330 U	90 %
2-Chlorophenol		350 U	350 U	350 U	330 U	86 %
1,3-Dichlorobenzene		350 U	350 U	350 U	330 U	84 %
1,4-Dichlorobenzene		350 U	350 U	350 U	330 U	85 %
1,2-Dichlorobenzene		350 U	350 U	350 U	330 U	92 %
2-Methylphenol		350 U	350 U	350 U	330 U	76 %
2,2'-oxybis(1-Chloropropane)		350 U	350 U	350 U	330 U	84 %
4-Methylphenol		350 U	350 U	350 U	330 U	85 %
N-Nitroso-di-n-propylamine		350 U	350 U	350 U	330 U	91 %
Hexachloroethane		350 U	350 U	350 U	330 U	80 %
Nitrobenzene		350 U	350 U	350 U	330 U	83 %
Isophorone		350 U	350 U	350 U	330 U	95 %
2-Nitrophenol		350 U	350 U	350 U	330 U	86 %
2,4-Dimethylphenol		350 U	350 U	350 U	330 U	65 %
bis(2-Chloroethoxy)methane		350 U	350 U	350 U	330 U	88 %
2,4-Dichlorophenol		350 U	350 U	350 U	330 U	79 %
1,2,4-Trichlorobenzene		350 U	350 U	350 U	330 U	82 %
Naphthalene		350 U	350 U	350 U	330 U	86 %
4-Chloroaniline		350 U	350 U	350 U	330 U	104 %
Hexachlorobutadiene		350 U	350 U	350 U	330 U	85 %
4-Chloro-3-methylphenol		350 U	350 U	350 U	330 U	83 %
2-Methylnaphthalene		350 U	350 U	350 U	330 U	95 %
Hexachlorocyclopentadiene		350 U	350 U	350 U	330 U	82 %
2,4,6-Trichlorophenol		350 U	350 U	350 U	330 U	97 %
2,4,5-Trichlorophenol		870 U	880 U	870 U	830 U	72 %

*= Outside of EPA CLP QC limits.

Cust ID:	J116L6		J116L7		J11733		SBLKUH		SBLKUH BS	
RFW#:	005		006		007		06LE0152-MB1		06LE0152-MB1	
2-Chloronaphthalene	350	U	350	U	350	U	330	U	90	%
2-Nitroaniline	870	U	880	U	870	U	830	U	92	%
Dimethylphthalate	350	U	350	U	350	U	330	U	93	%
Acenaphthylene	350	U	350	U	350	U	330	U	91	%
2,6-Dinitrotoluene	350	U	350	U	350	U	330	U	90	%
3-Nitroaniline	870	U	880	U	870	U	830	U	117	%
Acenaphthene	350	U	350	U	350	U	330	U	94	%
2,4-Dinitrophenol	870	U	880	U	870	U	830	U	55	%
4-Nitrophenol	870	U	880	U	870	U	830	U	113	%
Dibenzofuran	350	U	350	U	350	U	330	U	93	%
2,4-Dinitrotoluene	350	U	350	U	350	U	330	U	102	%
Diethylphthalate	350	U	350	U	350	U	330	U	94	%
4-Chlorophenyl-phenylether	350	U	350	U	350	U	330	U	91	%
Fluorene	350	U	350	U	350	U	330	U	99	%
4-Nitroaniline	870	U	880	U	870	U	830	U	119	%
4,6-Dinitro-2-methylphenol	870	U	880	U	870	U	830	U	100	%
N-Nitrosodiphenylamine (1)	350	U	350	U	350	U	330	U	83	%
4-Bromophenyl-phenylether	350	U	350	U	350	U	330	U	86	%
Hexachlorobenzene	350	U	350	U	350	U	330	U	102	%
Pentachlorophenol	870	U	880	U	870	U	830	U	108	%
Phenanthrene	350	U	350	U	350	U	330	U	99	%
Anthracene	350	U	350	U	350	U	330	U	101	%
Carbazole	350	U	350	U	350	U	330	U	101	%
Di-n-butylphthalate	350	U	350	U	350	U	330	U	98	%
Fluoranthene	350	U	350	U	350	U	330	U	102	%
~~Pyrene~~	~~350~~	~~U~~	~~350~~	~~U~~	~~350~~	~~U~~	~~330~~	~~U~~		
Pyrene	350	U	350	U	350	U	330	U	98	%
Butylbenzylphthalate	350	U	350	U	350	U	330	U	99	%
3,3'-Dichlorobenzidine	350	U	350	U	350	U	330	U	117	%
Benzo(a)anthracene	350	U	350	U	350	U	330	U	98	%
Chrysene	350	U	350	U	350	U	330	U	98	%
bis(2-Ethylhexyl)phthalate	58	JB	42	JB	29	JB	34	J	96	%
Di-n-octyl phthalate	350	U	350	U	350	U	330	U	100	%
Benzo(b)fluoranthene	350	U	350	U	350	U	330	U	111	%
Benzo(k)fluoranthene	350	U	350	U	350	U	330	U	93	%
Benzo(a)pyrene	350	U	350	U	350	U	330	U	101	%
Indeno(1,2,3-cd)pyrene	350	U	350	U	350	U	330	U	108	%
Dibenz(a,h)anthracene	350	U	350	U	350	U	330	U	109	%
Benzo(g,h,i)perylene	350	U	350	U	350	U	330	U	105	%

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

Dup
[illegible]

000000010

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11298

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L325-001

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

Lab File ID: J030313

Level: (low/med) LOW

Date Received: 02/23/06

% Moisture: 9 decanted: (Y/N)__

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/03/06

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	5.227	2000	JNB
2.	UNKNOWN	5.403	300	J
3.	UNKNOWN	31.186	400	J
4.	ALKANE	31.973	400	J
5.	ALKANE	36.218	300	J

FORM 1 SV-TIC RFW (v3.3)

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11299

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L325-002

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

Lab File ID: J030314

Level: (low/med) LOW

Date Received: 02/23/06

% Moisture: 9 decanted: (Y/N)__

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/03/06

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. 110-8207	CYCLOHEXANE	5.227	200	JNB
2.	ALKANE	29.042	200	J
3.	UNKNOWN	31.186	300	J
4.	ALKANE	31.973	400	J
5.	ALKANE	36.228	300	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J112B0

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L325-003

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

Lab File ID: N030314

Level: (low/med) LOW

Date Received: 02/23/06

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

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/03/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.991	100	J
2.	ALKANE	25.262	90	J
3.	UNKNOWN	26.774	80	J
4.	ALKANE	27.292	200	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J112B1

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L325-004

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

Lab File ID: N030315

Level: (low/med) LOW

Date Received: 02/23/06

% Moisture: 4 decanted: (Y/N)

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/03/06

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. 60-35-5	ACETAMIDE	4.387	100	JN
2.	ALKANE	25.262	100	J
3.	UNKNOWN	26.782	70	J
4.	ALKANE	27.300	300	J
5.	ALKANE	30.211	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J116L6

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L325-005

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

Lab File ID: D030518

Level: (low/med) LOW

Date Received: 02/23/06

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

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/06/06

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.	UNKNOWN	19.889	600	J
2.	ALKANE	22.757	600	J
3.	ALKANE	25.392	2000	J
4.	ALKANE	27.545	3000	J
5.	ALKANE	30.663	1000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J116L7

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L325-006

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

Lab File ID: N030508

Level: (low/med) LOW

Date Received: 02/23/06

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

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	25.148	100	J
2.	ALKANE	27.134	200	J
3.	ALKANE	29.993	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11733

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L325-007

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

Lab File ID: N030605

Level: (low/med) LOW

Date Received: 02/23/06

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

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/06/06

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	4.893	70	J
2.	UNKNOWN	7.303	90	J
3.	UNKNOWN	25.051	200	J
4.	ALKANE	27.003	400	J
5.	ALKANE	29.810	400	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKUH

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

Client: TNU-HANFORD RC-047

Matrix: (soil/water) SOIL

Lab Sample ID: 06LE0152-MB1

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

Lab File ID: J030311

Level: (low/med) LOW

Date Received: 02/28/06

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

Date Extracted: 02/28/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/03/06

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. 110-82-7	CYCLOHEXANE	5.227	600	JN

FORM 1 SV-TIC RFW (v3.3)

Lionville Laboratory Use Only

0602L325

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVL

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

0000000019

Client: TNU Hanford RC.047

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Orlette Johnson

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 2-23-06 Date Due: 3/25/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	1gl	1gl	1gl	1gl	1pl	1gl
Volume	Liquid						
	Solid	60	60	60	60	125	60
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC				INORG	
		VOA	BNA	Pest/PCB	Herb	TPH-DRO TPH-GRO	PCB	(3) Metal Hg	CN	TPH (Total) 418.1

Lionville Laboratory Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H	ODRO OGRO	OPCB	METALS(3)		IPHC
001	J11298			SO	2.21.06	1100	X	X	X	X	X	~~X~~	X
002	J11299					1200	X	X	X	X	X	2-23-06	X
003	J112B0					1300	X	X	X	X	X		X
004	J112B1					1400	X	X	X	X	X		X
005	J116L6					1445	X	X	X	X	X		X
006	J116L7					1530	X	X	X	X	X		X
007	J11733					1630	X	X	X	X	X		X

Special Instructions:

METALS(3) = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U

Run Matrix QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Leo Ex	D. Martin	2.23.06	0915					COMPOSITE WASTE"	ORIGINAL REWRITTEN		

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-18	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 1, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 AJD13100	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality: [ ]

Data Turnaround: 45 Days

0000000020

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11298	OTHER SOLID	2-21-06	1100				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 1900 2-21-06
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 0730 2-22-06	Received By/Stored In: RZ Steffler R.J. Steffler	Date/Time: 0830 2-22-06
Relinquished By/Removed From: RZ Steffler R.J. Steffler	Date/Time: 1600 2-22-06	Received By/Stored In: Fed EX	Date/Time:
Relinquished By/Removed From: Fed EX	Date/Time: 2-23-06 0915	Received By/Stored In: D J Smith	Date/Time: 2-23-06 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:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(3) 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}; Mercury - 7471 - (CV)

Matrix *

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 MP 13/06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

0000000021

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D, TPH-Gasoline Range - WTPH-G	
Sample No. / Matrix * / Sample Date / Sample Time										
J11299 / OTHER SOLID / 2-21-06 / 1200				X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-21-06 1900	EAS LOCKED STORAGE	2-21-06 1900
EAS LOCKED STORAGE	2-22-06 0830	RZ Steffler	2-22-06 0830
RZ Steffler	2-22-06 1600	Fed Ex	
Fed Ex	2-23-06 0915	D. Smith	2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

Matrix *
S=Soil
SB=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 3, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-15967	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES KLONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	

SAMPLE ANALYSIS				See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	
Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE — Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler — Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler	Date/Time 1600 2-22-06	Received By/Stored In FED EX — Date/Time
Relinquished By/Removed From FED EX	Date/Time 2-23-06 0915	Received By/Stored In — Date/Time 2-23-06 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

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 4, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 SA 131 06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

0000000023

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B1	OTHER SOLID	2-21-06	1400				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 1900 2-21-06
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 0830 2-22-06	Received By/Stored In: RZ Steffler Date/Time: 0830 2-22-06
Relinquished By/Removed From: RZ Steffler Date/Time: 1600 WCH 2-22-06	Received By/Stored In: Fed Ex Date/Time:
Relinquished By/Removed From: Fed Ex Date/Time: 2-23-06 0915	Received By/Stored In: D. Smith Date/Time: 2-23-06 0915
Relinquished By/Removed From: Date/Time:	Received By/Stored In: 2-23-06 Date/Time:
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 7 SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J116L6 / OTHER SOLID / 2-21-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD — Date/Time 2-21-06 1900	Received By/Stored In: EAS LOCKED STORAGE — Date/Time 2-21-06 1900	
Relinquished By/Removed From: EAS LOCKED STORAGE — Date/Time 2-22-06 0830	Received By/Stored In: RZ Stiffler — Date/Time 2-22-06 0830	
Relinquished By/Removed From: RZ Stiffler — Date/Time 2-22-06 1600	Received By/Stored In: Fed Ex — Date/Time	
Relinquished By/Removed From: Fed Ex — Date/Time 2-23-06 0915	Received By/Stored In: [illegible] — Date/Time 2-23-06 0915	
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time 2-23-06	
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time	

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liquid
T=Tissue
WI=Wipe
L=Liquid
Vg=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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr & SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	
Volume	750g	5g	15g	50g	50g	50g	50g	50g	

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J116L7	OTHER SOLID	2-21-06	1530			X	X	X	X	X	X		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler R.J. Steffler	0830 2-22-06
RZ Steffler R.J. Steffler	1600 2-22-06	Fed Ex	
Fed Ex	2.23.06 0915	N. Mirch	2.23.06 0915

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
Dl=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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N Air Quality ☐	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location JSB 2-21-06 REP, SEDIMENT Cr #8		SAF No. RC-047		
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS				Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time										
J11733	OTHER SOLID	2-21-06	1630			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From [signature] Date/Time 1900 JAMES BERNHARD 2-21-06	Received By/Stored In [signature] Date/Time 1900 EAS LOCKED STORAGE 2-21-06	
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-22-06	Received By/Stored In RZ Stoffler R.J. Stoffl 2-22-06 Date/Time 0830	
Relinquished By/Removed From RZ Stoffler R.J. Stoffl Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex 2.23.06 0915	Received By/Stored In [signature] 2.23.06 0915 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	

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Te=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)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hartford **Date:** 2-23-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC.047

LvLI Batch # : 06021325 **Sample Custodian:** [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7918 6832 442	
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 1.2 °C		Cooler # AFS-04-120	
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	

SR-002-B

LVLI LIONVILLE LABORATORY INC.

RECEIVED
APR 2006

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11298	001	SO	06LE0149	02/21/06	02/28/06	03/10/06
J11299	002	SO	06LE0149	02/21/06	02/28/06	03/10/06
J112B0	003	SO	06LE0149	02/21/06	02/28/06	03/10/06
J112B1	004	SO	06LE0149	02/21/06	02/28/06	03/10/06
J112B1	004 MS	SO	06LE0149	02/21/06	02/28/06	03/10/06
J112B1	004 MSD	SO	06LE0149	02/21/06	02/28/06	03/10/06
J116L6	005	SO	06LE0149	02/21/06	02/28/06	03/10/06
J116L7	006	SO	06LE0149	02/21/06	02/28/06	03/10/06
J11733	007	SO	06LE0149	02/21/06	02/28/06	03/10/06

LAB QC:

PBLKCL	MB1	S	06LE0149	N/A	02/28/06	03/09/06
PBLKCL	MB1 BS	S	06LE0149	N/A	02/28/06	03/09/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L325
SDG/SAF # K0235/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-23-2006

CHLORINATED PESTICIDES

Seven (7) solid samples were collected on 02-21-2006.

The samples and their associated QC samples were extracted on 02-28-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-09,10-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

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

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

3. The samples and their associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.

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

5. All surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. All samples required a 4-fold instrument dilution due to the nature of the sample matrix. The reporting limits were adjusted to reflect the necessary dilution.

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 5 pages.

LIONVILLE LABORATORY INC.

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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/6/05
Date

som\r:\group\data\pest\tmu hanford\0602-325s.pst

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: 04/05/06 12:47

RFW Batch Number: 0602L325 Client: TNUHANFORD RC-047 K0235 Work Order: 11343606001 Page: 1

	Cust ID:	J11298		J11299		J112B0		J112B1		J112B1		J112B1	
Sample Information	RFW#:	001		002		003		004		004 MS		004 MSD	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	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	85	%	90	%	83	%	79	%	100	%	82	%
	Decachlorobiphenyl	100	%	103	%	94	%	87	%	110	%	96	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		1.5	U	1.5	U	1.4	U	1.4	U	91	%	77	%
gamma-BHC (Lindane)		1.5	U	1.5	U	1.4	U	1.4	U	96	%	82	%
Beta-BHC		1.5	U	1.5	U	1.4	U	1.4	U	97	%	85	%
Heptachlor		1.5	U	1.5	U	1.4	U	1.4	U	92	%	80	%
Delta-BHC		1.5	U	1.5	U	1.4	U	1.4	U	86	%	74	%
Aldrin		1.5	U	1.5	U	1.4	U	1.4	U	89	%	77	%
Heptachlor epoxide		1.5	U	1.5	U	1.4	U	1.4	U	95	%	83	%
gamma-Chlordane		1.5	U	1.5	U	1.4	U	1.4	U	92	%	80	%
Endosulfan I		0.66	J	1.1	J	1.4	U	1.4	U	92	%	81	%
alpha-Chlordane		1.5	U	1.5	U	1.4	U	1.4	U	94	%	83	%
4,4'-DDE		0.81	J	0.58	J	0.38	J	0.84	J	93	%	81	%
Dieldrin		1.5	U	1.5	U	1.4	U	1.4	U	91	%	79	%
Endrin		1.5	U	1.5	U	1.4	U	1.4	U	92	%	82	%
4,4'-DDD		1.7		1.5	U	1.4	U	1.4	U	97	%	85	%
Endosulfan II		1.5	U	1.5	U	1.4	U	1.4	U	93	%	82	%
4,4'-DDT		110		0.51	J	1.4	U	1.4	U	97	%	85	%
Endrin aldehyde		1.5	U	1.5	U	1.4	U	1.4	U	93	%	79	%
Endosulfan sulfate		1.5	U	1.5	U	1.4	U	1.4	U	91	%	81	%
Methoxychlor		1.5	U	1.5	U	1.4	U	1.4	U	113	%	97	%
Endrin ketone		1.5	U	1.5	U	1.4	U	1.4	U	100	%	88	%
Toxaphene		15	U	15	U	14	U	14	U	14	U	14	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: 04/05/06 12:47

RFW Batch Number: **0602L325** Client: **TNUHANFORD RC-047 K0235** Work Order: 11343606001 Page: 2

	Cust ID:	J116L6		J116L7		J11733		PBLKCL		PBLKCL BS	
Sample Information	RFW#:	005		006		007		06LE0149-MB1		06LE0149-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOIL		SOIL	
	D.F.:	4.00		4.00		4.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate: Tetrachloro-m-xylene		86	%	82	%	90	%	87	%	93	%
Decachlorobiphenyl		99	%	98	%	104	%	88	%	94	%
Alpha-BHC		1.4	U	1.4	U	1.4	U	0.33	U	113	%
gamma-BHC (Lindane)		1.4	U	1.4	U	1.4	U	0.33	U	111	%
Beta-BHC		1.4	U	1.4	U	1.4	U	0.33	U	101	%
Heptachlor		1.4	U	1.4	U	1.4	U	0.33	U	103	%
Delta-BHC		1.4	U	1.4	U	1.4	U	0.33	U	100	%
Aldrin		1.4	U	1.4	U	1.4	U	0.33	U	107	%
Heptachlor epoxide		1.4	U	1.4	U	1.4	U	0.33	U	106	%
gamma-Chlordane		1.4	U	1.4	U	1.4	U	0.33	U	104	%
Endosulfan I		1.4	U	1.4	U	1.4	U	0.33	U	108	%
alpha-Chlordane		1.4	U	1.4	U	1.4	U	0.33	U	104	%
4,4'-DDE		1.4	U	3.5		3.7		0.33	U	114	%
Dieldrin		1.4	U	1.4	U	1.4	U	0.33	U	112	%
Endrin		1.4	U	1.4	U	1.4	U	0.33	U	109	%
4,4'-DDD		1.4	U	1.4	U	1.4	U	0.33	U	119	%
Endosulfan II		1.4	U	1.4	U	1.4	U	0.33	U	109	%
4,4'-DDT		1.4	U	1.3	J	1.4	J	0.33	U	107	%
Endrin aldehyde		1.4	U	1.4	U	1.4	U	0.33	U	100	%
Endosulfan sulfate		1.4	U	1.4	U	1.4	U	0.33	U	109	%
Methoxychlor		1.4	U	1.4	U	1.4	U	0.33	U	108	%
Endrin ketone		1.4	U	1.4	U	1.4	U	0.33	U	112	%
Toxaphene		14	U	14	U	14	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

Lionville Laboratory Use Only

06021325

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford RC.047

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 2.23.06 Date Due: 3/25/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	1gl	1gl	1gl	1gl	1pl	1gl
Volume	Liquid						
	Solid	60	60	60	60	125	60
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC				INORG	
		VOA	BNA	Pest/PCB	Herb	TPH-DRO TPH-GRO	PCB	(3) Metal Hg	CN	TPH (Total) 418.1

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
Wt - Wipe
X - Other
F - Fish

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8260B	8270B	OPCB	ODRO OGRO	OPCB	METALS	Hg	TPHC
001	J11298			SO	2.21.06	1100	X	X		X	X	X	~~X~~	X
002	J11299					1200	X	X		X	X	X	2.23.06	X
003	J112B0					1300	X	X		X	X	X		X
004	J112B1					1400	X	X		X	X	X		X
005	J11666					1445	X	X		X	X	X		X
006	J11667					1530	X	X		X	X	X		X
007	J11733					1630	X	X		X	X	X		X

Special Instructions:

METALS = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U

Run Matrix QC

DATE/REVISIONS:

1. 8260B
2. OPCB
3. ODRO A
4. OGRO B
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[illegible]	2.23.06	09:15

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-047-18	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 1, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 AID13100	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	
Sample No. / Matrix * / Sample Date / Sample Time										
J11298 / OTHER SOLID / 2-21-06 / 1100				X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0730 2-22-06	RZ Steffler R.J. Steffler	0830 2-22-06
RZ Steffler R.J. Steffler	1600 2-22-06	Fed Ex	
Fed Ex	2-23-06 0915	W. Smith	2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 HP/3/06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11299	OTHER SOLID	2-21-06	1200				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler	0830 2-22-06
RZ Steffler	1600 2-22-06	Fed EX	
Fed EX	2-23-06 0915	D. Smith	2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 3, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 4/0 1310 C	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-21-06 1900	EAS LOCKED STORAGE	2-21-06 1900
EAS LOCKED STORAGE	2-22-06 0830	R2 Steffler R.J. Steffler	2-22-06 0830
R2 Steffler R.J. Steffler	2-22-06 1600 WC4	Fed Ex	
Fed Ex	2.23.06 0915	D. J. Miller	2.23.06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 4, SEDIMENT		SAF No. RC-047
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 SA 13106	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B1	OTHER SOLID	2-21-06	1400				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler R.J. Steffler Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In D. Smith Date/Time 2-23-06 0915
Relinquished By/Removed From Date/Time	Received By/Stored In 2-23-06 Date/Time
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(3) 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}; Mercury - 7471 - (CV)

Matrix *

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr ~~7~~ SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		

Sample No.	Matrix *	Sample Date	Sample Time										
J116L6	OTHER SOLID	2-21-06	1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Stiffler Date/Time 0830 2-22-06	
Relinquished By/Removed From RZ Stiffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In Date/Time 2-23-06 1091 5	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time 2-23-06	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr ☿ SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J116L7 / OTHER SOLID / 2-21-06 / 1530			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler Date/Time 0830 2-22-06	
Relinquished By/Removed From RZ Steffler R.J. Steffler Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2.23.06 0915	Received By/Stored In Date/Time 2.23.06 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	

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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location SEE 2-21-06 ~~REF~~, SEDIMENT Cr #8		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS				Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time										
J11733	OTHER SOLID	2-21-06	1630			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler Date/Time 0830 2-22-06	
Relinquished By/Removed From RZ Steffler R.J. Steffler Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex 2.23.06 0915	Received By/Stored In 2.23.06 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	

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)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Date: 2-23-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC.047

LvLI Batch # : 06021325

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7918 6832 4420	
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 1.2 °C		Cooler # AFS-04-120	
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	

SR-002-B

LVLI LIONVILLE LABORATORY INC.

RECEIVED
APR 2006

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11298	001	SO	06LE0149	02/21/06	02/28/06	03/10/06
J11299	002	SO	06LE0149	02/21/06	02/28/06	03/10/06
J112B0	003	SO	06LE0149	02/21/06	02/28/06	03/10/06
J112B1	004	SO	06LE0149	02/21/06	02/28/06	03/10/06
J116L6	005	SO	06LE0149	02/21/06	02/28/06	03/10/06
J116L6	005 MS	SO	06LE0149	02/21/06	02/28/06	03/10/06
J116L6	005 MSD	SO	06LE0149	02/21/06	02/28/06	03/10/06
J116L7	006	SO	06LE0149	02/21/06	02/28/06	03/10/06
J11733	007	SO	06LE0149	02/21/06	02/28/06	03/11/06

LAB QC:

PBLKCL	MB1	S	06LE0149	N/A	02/28/06	03/09/06
PBLKCL	MB1 BS	S	06LE0149	N/A	02/28/06	03/09/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L325
SDG/SAF # K0232/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-23-2006

PCB

Seven (7) solid samples were collected on 02-21-2006.

The samples and their associated QC samples were extracted on 02-28-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-09,10,11-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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

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

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

3. 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.

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

5. All surrogate recoveries were within acceptance criteria.

6. The blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 4 pages.

10. 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.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/18/06
Date

kim\r:\group\data\pest\tmu hanford\0602-325.pcbs

LvLI
LIONVILLE LABORATORY INC.

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/17/06 12:42

RFW Batch Number: 0602L325 Client: TNUHANFORD RC-047 K0235 Work Order: 11343606001 Page: 1

	Cust ID:	J11298	J11299	J112B0	J112B1	J116L6	J116L6
Sample Information	RFW#:	001	002	003	004	005	005 MS
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	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	90 %	96 %	93 %	93 %	98 %	87 %
	Decachlorobiphenyl	92 %	99 %	96 %	94 %	102 %	98 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		15 U	15 U	14 U	14 U	14 U	99 %
Aroclor-1221		15 U	15 U	14 U	14 U	14 U	14 U
Aroclor-1232		15 U	15 U	14 U	14 U	14 U	14 U
Aroclor-1242		15 U	15 U	14 U	14 U	14 U	14 U
Aroclor-1248		15 U	15 U	14 U	14 U	14 U	14 U
Aroclor-1254		15 U	15 U	8.5 J	24	14 U	14 U
Aroclor-1260		15 U	15 U	14 U	14 U	14 U	110 %

	Cust ID:	J116L6	J116L7	J11733	PBLKCL	PBLKCL BS
Sample Information	RFW#:	005 MSD	006	007	06LE0149-MB1	06LE0149-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	102 %	80 %	98 %	86 %	94 %
	Decachlorobiphenyl	113 %	96 %	98 %	94 %	91 %
		fl	fl	fl	fl	fl
Aroclor-1016		114 %	14 U	14 U	13 U	100 %
Aroclor-1221		14 U	14 U	14 U	13 U	13 U
Aroclor-1232		14 U	14 U	14 U	13 U	13 U
Aroclor-1242		14 U	14 U	14 U	13 U	13 U
Aroclor-1248		14 U	14 U	14 U	13 U	13 U
Aroclor-1254		14 U	14 U	14 U	13 U	13 U
Aroclor-1260		124 %	14 U	14 U	13 U	102 %

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

4/17/06

000000005

Lionville Laboratory Use Only

0602L325

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford RC.047

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Orlette Johnson

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 2.23.06 Date Due: 3/25/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	1gl	1gl	1gl	1gl	1pl	1gl
Volume	Liquid						
	Solid	60	60	60	60	125	60
Preservatives		—	—	—	—	—	—

ANALYSES REQUESTED →

	ORGANIC					INORG		
	VOA	BNA	Pest/PCB	Herb	TPH-DRO TPH-GRO	PCB	(S) Metal Hg	CN	TPH (Total) 418.1

Lionville Laboratory Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H	ODRO OGRO	OPCB	METALS(1)		IPHC
001	J11298			SO	2.21.06	1100	X	X	X	X	X	~~X~~	X
002	J11299					1200	X	X	X	X	X	2.23.06	X
003	J112B0					1300	X	X	X	X	X		X
004	J112B1					1400	X	X	X	X	X		X
005	J116L6					1445	X	X	X	X	X		X
006	J116L7					1530	X	X	X	X	X		X
007	J11733					1630	X	X	X	X	X		X

Special Instructions:

METALS(1) = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U

Run Matrix QC

DATE/REVISIONS:

1. 0608H j
2. OPCB R
3. ODRO A
4. OGRO B
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	2.23.06	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-047-18	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 1, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 AJD13106	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

00000007

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11298	OTHER SOLID	2-21-06	1100				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 1900 2-21-06
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 0830 2-22-06	Received By/Stored In: RZ Steffler R.J. Steffler Date/Time: 0830 2-22-06
Relinquished By/Removed From: RZ Steffler R.J. Steffler Date/Time: 1600 2-22-06	Received By/Stored In: Fed Ex Date/Time:
Relinquished By/Removed From: Fed Ex Date/Time: 2-23-06 0915	Received By/Stored In: D J Smith Date/Time: 2-23-06 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:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-15967 HP/3/06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11299	OTHER SOLID	2-21-06	1200				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler	0830 2-22-06
RZ Steffler	1600 2-22-06	Fed Ex	
Fed Ex	2-23-06 0915	D. Smith	2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 3, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596-7	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler	0830 2-22-06
RZ Steffler	1600 2-22-06	Fed Ex	
Fed Ex	2-23-06 0915		2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 4, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7/31/06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	
J112B1	OTHER SOLID	2-21-06	1400				X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1400 2-21-06	EAS LOCKED STORAGE	1400 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler RJ Steffl	0830 2-22-06
RZ Steffler RJ Steffl	1600 WCH 2-22-06	Fed Ex	
Fed Ex	2-23-06 0915	D. Mills	2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time							
J116L6	OTHER SOLID	2-21-06	1445			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Stoffler Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Stoffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From Fed Ex Date/Time 2.23.06 0915	Received By/Stored In Date/Time 2.23.06 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

SPECIAL INSTRUCTIONS

Matrix *

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

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

BHI-EE-011 (03/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J116L7	OTHER SOLID	2-21-06	1530			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler Date/Time 0830 2-22-06	
Relinquished By/Removed From RZ Steffler R.J. Steffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2.23.06 0915	Received By/Stored In Date/Time 2.23.06 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	

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Te=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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location JEA 2-21-06 REP, SEDIMENT Cr #8		SAF No. RC-047
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J11733	OTHER SOLID	2-21-06	1630			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From [signature] Date/Time 1900 JAMES BERNHARD 2-21-06	Received By/Stored In [signature] Date/Time 1900 EAS LOCKED STORAGE 2-21-06	
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-22-06	Received By/Stored In RZ Stoffler R.J. Stoffler 2-22-06 Date/Time 0830	
Relinquished By/Removed From RZ Stoffler R.J. Stoffler Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex 2.23.06 0915	Received By/Stored In [signature] Date/Time 2.23.06 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	

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)

0000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Date: 2-23-06

Purchase Order / Project# / SAF#/ SOW# / Release #: RC.047

LvLI Batch # : 06021325

Sample Custodian: J Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7918 6832 446	
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 1.2 °C		Cooler # AFS-04-120	
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	

SR-002-B

LVLI LIONVILLE LABORATORY INC

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

RECEIVED
APR 2006

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11298	001	SO	06LVJ303	02/21/06	N/A	03/03/06
J11299	002	SO	06LVJ303	02/21/06	N/A	03/03/06
J112B0	003	SO	06LVJ303	02/21/06	N/A	03/03/06
J112B1	004	SO	06LVJ303	02/21/06	N/A	03/03/06
J116L6	005	SO	06LVJ303	02/21/06	N/A	03/03/06
J116L7	006	SO	06LVJ306	02/21/06	N/A	03/06/06
J11733	007	SO	06LVJ306	02/21/06	N/A	03/06/06

LAB QC:

TBLKYU	MB1	S	06LVJ303	N/A	N/A	03/03/06
TBLKYU	MB1 BS	S	06LVJ303	N/A	N/A	03/03/06
TBLKYU	MB1 BSD	S	06LVJ303	N/A	N/A	03/03/06
TBLKYW	MB1	S	06LVJ306	N/A	N/A	03/06/06
TBLKYW	MB1 BS	S	06LVJ306	N/A	N/A	03/06/06
TBLKYW	MB1 BSD	S	06LVJ306	N/A	N/A	03/06/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RCS-047
LVL #: 0602L325
SDG/SAF # K0235/RCS-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-23-2006

GRO

Seven (7) solid samples were collected on 02-21-2006.

The samples and their associated QC samples were analyzed according to Lionville Laboratory SOPs based on SW-846 method 8015B for Gasoline Range Organics (GRO) on 03-03,06-2006.

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

1. All results presented in this report are derived from a sample that met LVLI's sample acceptance policy.
2. All required holding times have been met.
3. The method blank was below the reporting limits for the target compound.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. Matrix spike QC was not performed on any samples in this data set. However, blank spike QC was performed with these samples to demonstrate that systems were in control.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were outside the acceptance criteria.
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

4/12/06
Date

kim\r\group\data\gro\tnu-hanford\0602-239.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 4 pages.

GLOSSARY OF 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.

GAS RANGE ORGANICS

Report Date: 04/08/06 11:26

RFW Batch Number: 0602L325 Client: TNUHANFORD RC-047 K0235 Work Order: 11343606001 Page: 1

	Cust ID:	J11298	J11299	J112B0	J112B1	J116L6	J116L7
Sample Information	RFW#:	001	002	003	004	005	006
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	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
Fluorobenzene		75 %	57 %	80 %	75 %	59 %	83 %
Gasoline Range Organics (GRO)		33 U	30 U	30 U	30 U	30 U	33 U

	Cust ID:	J11733	TBLKYU	TBLKYU BS	TBLKYU BSD	TBLKYW	TBLKYW BS
Sample Information	RFW#:	007	06LVJ303-MB1	06LVJ303-MB1	06LVJ303-MB1	06LVJ306-MB1	06LVJ306-MB1
	Matrix:	SOLID	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
Fluorobenzene		83 %	93 %	96 %	92 %	92 %	96 %
Gasoline Range Organics (GRO)		30 U	30 U	110 %	100 %	30 U	112 %

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

4/10/06

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 04/08/06 11:26

RFW Batch Number: 0602L325 Client: TNUHANFORD RC-047 K0235 Work Order: 11343606001 Page: 2

Cust ID: **TBLKYW BSD**

Sample Information

RFW#: **06LVJ306-MB1**
Matrix: SOIL
D.F.: 1.00
Units: UG/KG

Fluorobenzene	96	%
Gasoline Range Organics (GRO)	109	%

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

4/10/06

Lionville Laboratory Use Only

0602L325

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVL

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford RC.047

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Orlette Johnson

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 2.23.06 Date Due: 3/25/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	1gl	1gl	1gl	1gl	1pl	1gl
Volume	Liquid						
	Solid	60	60	60	60	125	60
Preservatives		—	—	—	—	—	—

ANALYSES REQUESTED →

	ORGANIC						INORG		
	VOA	BNA	Pest/PCB	Herb	TPH-DRO TPH-GRO	PCB	(3) Metal Hg	CN	TPH (Total) 418.1

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

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H	ODRO OGRO	OPCB	METALS(1)		IPHC
001	J11298			SO	2.21.06	1100	X	X	X	X	X	~~X~~	X
002	J11299					1200	X	X	X	X	X	2.23.06	X
003	J112B0					1300	X	X	X	X	X		X
004	J112B1					1400	X	X	X	X	X		X
005	J116L6					1445	X	X	X	X	X		X
006	J116L7					1530	X	X	X	X	X		X
007	J11733					1630	X	X	X	X	X		X

Special Instructions:

METALS(1) = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, Tl

Run Matrix QC

DATE/REVISIONS:

1. 0608H j
2. OPCB R
3. ODRO A
4. OGRO B
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2.23.06	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-047-18	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 1, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 8/D1310	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11298	OTHER SOLID	2-21-06	1100				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler	Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler R.J. Steffler	Date/Time 1600 2-22-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 2-23-06 0915	Received By/Stored In W Smith	Date/Time 2-23-06 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

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

Matrix *

S=Soil
SB=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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 HP 13106	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11299	OTHER SOLID	2-21-06	1200				X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler	0830 2-22-06
RZ Steffler	1600 WCH 2-22-06	FED EX	
FED EX	2-23-06 0915		2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 3, SEDIMENT		SAF No. RC-047
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596-7 [illegible]	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In R2 Steffler R.J. Steffler Date/Time 0830 2-22-06
Relinquished By/Removed From R2 Steffler R.J. Steffler Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In [illegible] Date/Time 2-23-06 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

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}

(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(3) 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}; Mercury - 7471 - (CV)

Matrix *

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 4, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7DA 13106	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B1	OTHER SOLID	2-21-06	1400				X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler RJ Steffler	0830 2-22-06
RZ Steffler RJ Steffler	1600 WCH 2-22-06	Fed Ex	
Fed Ex	2-23-06 0915	D. Miller	2-23-06 0915
			2-23-06

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List) -	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J116L6	OTHER SOLID	2-21-06	1445			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From [signature] Date/Time 1900 JAMES BERNHARD 2-21-06	Received By/Stored In [signature] Date/Time 1900 EAS LOCKED STORAGE 2-21-06	
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-22-06	Received By/Stored In Date/Time 0830 RZ Stiffler R.J. Stiffler 2-22-06	
Relinquished By/Removed From Date/Time 1600 RZ Stiffler R.J. Stiffler 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Date/Time Fed Ex 2-23-06 0945	Received By/Stored In [signature] Date/Time 2-23-06 0945	
Relinquished By/Removed From Date/Time	Received By/Stored In [signature] 2-23-06 Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr & SEDIMENT		SAF No. RC-047
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		

Sample No.	Matrix *	Sample Date	Sample Time										
J116L7	OTHER SOLID	2-21-06	1530			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler Date/Time 0830 2-22-06	
Relinquished By/Removed From RZ Steffler R.J. Steffler Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2.23.06 0915	Received By/Stored In [signature] Date/Time 2.23.06 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	

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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location ~~REF~~, SEDIMENT Cr #8 JEB 2-21-06		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11733 / OTHER SOLID / 2-21-06 / 1630			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 1900 2-21-06	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 0830 2-22-06	Received By/Stored In: RZ Stoffler R.J. Stoffler, Date/Time 0830 2-22-06	
Relinquished By/Removed From: RZ Stoffler R.J. Stoffler, Date/Time 1600 WCH 2-22-06	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: Fed Ex, Date/Time 2.23.06 0915	Received By/Stored In: [illegible] 2.23.06 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	

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)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Date: 2-23-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC.047

LvLI Batch # : 06021325

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7918 6832 442	
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 1.2 °C		Cooler # AFS-04-120	
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	

SR-002-B

LVLI LIONVILLE LABORATORY INC.

RECEIVED
APR 2006

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-047, K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11298	001	SO	06LE0156	02/21/06	03/02/06	03/08/06
J11299	002	SO	06LE0156	02/21/06	03/02/06	03/08/06
J112B0	003	SO	06LE0156	02/21/06	03/02/06	03/08/06
J112B0	003 MS	SO	06LE0156	02/21/06	03/02/06	03/08/06
J112B0	003 MSD	SO	06LE0156	02/21/06	03/02/06	03/08/06
J112B1	004	SO	06LE0156	02/21/06	03/02/06	03/08/06
J116L6	005	SO	06LE0156	02/21/06	03/02/06	03/09/06
J116L7	006	SO	06LE0156	02/21/06	03/02/06	03/09/06
J11733	007	SO	06LE0156	02/21/06	03/02/06	03/09/06

LAB QC:

BLK	MB1	S	06LE0156	N/A	03/02/06	03/08/06
BLK	MB1 BS	S	06LE0156	N/A	03/02/06	03/08/06

3/28/6

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L325
SDG/SAF # K0235/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-23-2006

DIESEL RANGE ORGANICS

Seven (7) solid samples were collected on 02-21-2006.

The samples and their associated QC samples were extracted on 03-02-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-08-2006. The analysis was based on method 8015B. The analysis met the intent of method WTPH-D.

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

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

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

3. The method blank was below the reporting limit for the target compound.

4. All surrogate recoveries were within acceptance criteria.

5. The blank spike recovery was within acceptance criteria.

6. The matrix spike recoveries were within acceptance criteria.

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

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

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.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 4 pages.

LIONVILLE LABORATORY INC.

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

3/23/04
Date

som\r:\group\data\dro\tmu hanford\0602-325s.doc

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.

DIESEL RANGE ORGANICS BY GC

Report Date: 03/16/06 10:05

RFW Batch Number: 0602L325 Client: TNU-HANFORD RC-047,K0235 Work Order: 11343606001 Page: 1

	Cust ID:	J11298	J11299	J112B0	J112B0	J112B0	J112B1
Sample Information	RFW#:	001	002	003	003 MS	003 MSD	004
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	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
p-Terphenyl		62 %	91 %	88 %	79 %	81 %	84 %
Diesel Range Organics		5400 B	6600 B	2900 JB	62 %	72 %	4300 B

LC 3/22/06

	Cust ID:	J116L6	J116L7	J11733	BLK	BLK BS
Sample Information	RFW#:	005	006	007	06LE0156-MB1	06LE0156-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
p-Terphenyl		91 %	86 %	51 %	74 %	73 %
Diesel Range Organics		18000 B	4600 B	4100 JB	1300 J	70 %

LC 3/22/06

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

3/17/06

Lionville Laboratory Use Only
0602L325

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford RC.047
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: Orlette Johnson
QC: Spec Del: Std TAT: 30 Days
Date Rec'd: 2.23.06 Date Due: 3/25/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	1gl	1gl	1gl	1gl	1pl	1gl
Volume	Liquid						
	Solid	60	60	60	60	125	60
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC: VOA, BNA, Pest/PCB, Herb		TPH-DRO, TPH-GRO, PCB		INORG: (S) Metal Hg, CN	TPH (Total) 418.1

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H	ODRO OGRO	OPCB	METALS(S)	CN	IPHC
001	J11298			SO	2.21.06	1100	X	X	X	X	X	~~X~~	X
002	J11299					1200	X	X	X	X	X	2.23.06	X
003	J112B0					1300	X	X	X	X	X		X
004	J112B1					1400	X	X	X	X	X		X
005	J116L6					1445	X	X	X	X	X		X
006	J116L7					1530	X	X	X	X	X		X
007	J11733					1630	X	X	X	X	X		X

Special Instructions:
METALS(S) = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U

Run Matrix QC

DATE/REVISIONS:
1. 0608H
2. OPCB R
3. ODRO A
4. OGRO B
5.
6.

Relinquished by	Received by	Date	Time
Leo Ex	[signature]	2.23.06	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-047-18	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 1, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	

SAMPLE ANALYSIS				See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	
Sample No.	Matrix *	Sample Date	Sample Time										
J11298	OTHER SOLID	2-21-06	1100				X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler R.J. Steffler	0830 2-22-06
RZ Steffler R.J. Steffler	1600 2-22-06	Fed Ex	
Fed Ex	2-23-06 0915	W Smith	2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

Matrix: S=Soil, SB=Sediment, SO=Solid, Sl=Sludge, W = Water, O=Oil, A=Air, DS=Drum S, DL=Drum L, T=Tissue, Wi=Wipe, L=Liquid, V=Vegetati, X=Other

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaroun 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-15967	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11299	OTHER SOLID	2-21-06	1200				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-21-06 1900	EAS LOCKED STORAGE	2-21-06 1900
EAS LOCKED STORAGE	2-22-06 0830	RZ Stoffler	2-22-06 0830
RZ Stoffler	2-22-06 1600	Fed Ex	
Fed Ex	2-23-06 0915		2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 3, SEDIMENT		SAF No. RC-047
Air Quality ☐			
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 4/1306	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D, TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300				X	X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Stettler	0830 2-22-06
RZ Stettler	1600 2-22-06	Fed Ex	
Fed Ex	2-23-06 0915		2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Sc
DL=Drum Li
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetatio
X=Other

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaroun 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 4, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 of 131 06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B1	OTHER SOLID	2-21-06	1400				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler Date/Time 0830 2-22-06	(2) Strontium-89,90 -- Total Sr, Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
Relinquished By/Removed From RZ Steffler Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed EX Date/Time	(3) 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}; Mercury - 7471 - (CV)
Relinquished By/Removed From Fed EX Date/Time 2-23-06 0915	Received By/Stored In D. Miller Date/Time 2-23-06 0915	
Relinquished By/Removed From Date/Time	Received By/Stored In 2-23-06 Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

Matrix

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum S
DL=Drum L
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetatio
X=Other

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SBE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J116L6 / OTHER SOLID / 2-21-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Stiffler Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Stiffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In Date/Time 2-23-06 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

SPECIAL INSTRUCTIONS

Matrix: S=Soil, SE=Sediment, SD=Solid, Sl=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solid, DL=Drum Liquid, 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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr & SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J116L7	OTHER SOLID	2-21-06	1530			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Stoffler Date/Time 0830 2-22-06	
Relinquished By/Removed From RZ Stoffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In Date/Time 2.23.06 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	

Matrix

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Si
DL=Drum L
T=Tissue
WI=Wipe
L=Liquid
V=Vegetatio
X=Other

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location SEE 2-21-06 RBP, SEDIMENT Cr 48		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11733	OTHER SOLID	2-21-06	1670			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From [signature] Date/Time 1900 JAMES BERNHARD 2-21-06	Received By/Stored In [signature] Date/Time 1900 EAS LOCKED STORAGE 2-21-06	
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-22-06	Received By/Stored In RZ Stoffler R.J. Stoffl 2-22-06 Date/Time 0830	
Relinquished By/Removed From RZ Stoffler R.J. Stoffl Date/Time 1600 WCH 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex 2.23.06 0915	Received By/Stored In W. Smith 2.23.06 0915 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	

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

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

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hartford

Date: 2-23-06

Purchase Order / Project# / SAF#/ SOW# / Release #: RC.047

LvLI Batch # : 06021325

Sample Custodian: J Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7918 6832 442	
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 1.2 °C		Cooler # AFS-04-120	
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	

SR-002-B

LVLI LIONVILLE LABORATORY INC

RECEIVED
APR 2006

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11298						
SILVER, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
SILVER, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
SILVER, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL REP	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL SPIKE	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
MERCURY, TOTAL	001	SO	06C0036	02/21/06	03/04/06	03/06/06
MERCURY, TOTAL	001 REP	SO	06C0036	02/21/06	03/04/06	03/06/06
MERCURY, TOTAL	001 MS	SO	06C0036	02/21/06	03/04/06	03/06/06
POTASSIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/13/06
POTASSIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/13/06
POTASSIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/13/06
LITHIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
LITHIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
LITHIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
SODIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/13/06
SODIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/13/06
SODIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/13/06
NICKEL, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
NICKEL, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
NICKEL, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
PHOSPHORUS, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/13/06
PHOSPHORUS, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/13/06
PHOSPHORUS, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/13/06
LEAD, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
LEAD, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
LEAD, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
SELENIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/13/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/13/06
SELENIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/13/06
SILICON, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
SILICON, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
SILICON, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	001	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	001 REP	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	001 MS	SO	06L0130	02/21/06	02/28/06	03/08/06
J11299						
SILVER, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
MERCURY, TOTAL	002	SO	06C0036	02/21/06	03/04/06	03/06/06
POTASSIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/13/06
LITHIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
SODIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/13/06
NICKEL, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
PHOSPHORUS, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/13/06
LEAD, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
SELENIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/13/06
SILICON, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	002	SO	06L0130	02/21/06	02/28/06	03/08/06
J112B0						
SILVER, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
MERCURY, TOTAL	003	SO	06C0036	02/21/06	03/04/06	03/06/06
POTASSIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/13/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LITHIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
SODIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/13/06
NICKEL, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
PHOSPHORUS, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/13/06
LEAD, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
SELENIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/13/06
SILICON, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	003	SO	06L0130	02/21/06	02/28/06	03/08/06
J112B1						
SILVER, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
MERCURY, TOTAL	004	SO	06C0036	02/21/06	03/04/06	03/06/06
POTASSIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/13/06
LITHIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
SODIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/13/06
NICKEL, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
PHOSPHORUS, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/13/06
LEAD, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
SELENIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/13/06
SILICON, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	004	SO	06L0130	02/21/06	02/28/06	03/08/06
J116L6						
SILVER, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
MERCURY, TOTAL	005	SO	06C0036	02/21/06	03/04/06	03/06/06
POTASSIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/13/06
LITHIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
SODIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/13/06
NICKEL, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PHOSPHORUS, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/13/06
LEAD, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
SELENIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/13/06
SILICON, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	005	SO	06L0130	02/21/06	02/28/06	03/08/06
J116L7						
SILVER, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
MERCURY, TOTAL	006	SO	06C0036	02/21/06	03/04/06	03/06/06
POTASSIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/13/06
LITHIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
SODIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/13/06
NICKEL, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
PHOSPHORUS, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/13/06
LEAD, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/13/06
SILICON, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
STRONTIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	006	SO	06L0130	02/21/06	02/28/06	03/08/06
J11733						
SILVER, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
ALUMINUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
ARSENIC, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
BORON, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
BARIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
BERYLLIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
BISMUTH, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
CALCIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
CADMIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
COBALT, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
CHROMIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
COPPER, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
IRON, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
MERCURY, TOTAL	007	SO	06C0036	02/21/06	03/04/06	03/06/06
POTASSIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/13/06
LITHIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
MAGNESIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
MANGANESE, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
MOLYBDENUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
SODIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/13/06
NICKEL, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
PHOSPHORUS, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/13/06
LEAD, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
ANTIMONY, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
SELENIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/13/06
SILICON, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
TIN, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
STRONTIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
THALLIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
URANIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
VANADIUM, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06
ZINC, TOTAL	007	SO	06L0130	02/21/06	02/28/06	03/08/06

LAB QC:

SILVER LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
SILVER, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
ALUMINUM LABORTORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
ALUMINUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
ARSENIC LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
ARSENIC, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
BORON LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
BORON, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
BARIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
BARIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
BERYLLIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
BERYLLIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
BISMUTH, LCS	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
BISMUTH, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
CALCIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
CALCIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
CADMIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
CADMIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
COBALT LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
COBALT, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
CHROMIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
CHROMIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
COPPER LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
COPPER, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
IRON LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
IRON, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
MERCURY LABORATORY	LC1 BS	S	06C0036	N/A	03/04/06	03/06/06
MERCURY, TOTAL	MB1	S	06C0036	N/A	03/04/06	03/06/06
POTASSIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/13/06
POTASSIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/13/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LITHIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
LITHIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
MAGNESIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
MAGNESIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
MANGANESE LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
MANGANESE, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
MOLYBDENUM LABORATOR	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
MOLYBDENUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
SODIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/13/06
SODIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/13/06
NICKEL LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
NICKEL, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
PHOSPHORUS LCS	LC1 BS	S	06L0130	N/A	02/28/06	03/13/06
PHOSPHORUS, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/13/06
LEAD LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
LEAD, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
ANTIMONY LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
ANTIMONY, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
SELENIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/13/06
SELENIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/13/06
SILICON LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
SILICON, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
TIN LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
TIN, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
STRONTIUM LCS STANDA	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
STRONTIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
THALLIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
THALLIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
URANIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
URANIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
VANADIUM LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
VANADIUM, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06
ZINC LABORATORY	LC1 BS	S	06L0130	N/A	02/28/06	03/08/06
ZINC, TOTAL	MB1	S	06L0130	N/A	02/28/06	03/08/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-047
LVL#: 0603L325
SDG/SAF#: K0235/RC-047

W.O.#: 11343-606-001-9999-00
Date Received: 02-23-06

METALS CASE NARRATIVE

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

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were rerun for Potassium, Sodium, Selenium, and Phosphorous due to high concentrations and sample matrix.

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

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

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

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.

9. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon at 63.4%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

10. The matrix spike (MS) recoveries for 4 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:

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 34 pages.

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J11298	Iron	22,000	92.2
	Antimony	100	96.2
	Silicon	2,100	91.3
	Zinc	1,200	95.3

12. The duplicate analyses for 2 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

4/6/06
Date

jjw/m02-325

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#: 06021325

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A X 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]	X 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 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11298	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	6090	MG/KG	3.1	1.0
		Arsenic, Total	4.6	MG/KG	0.65	1.0
		Boron, Total	0.81	MG/KG	0.26	1.0
		Barium, Total	61.9	MG/KG	0.02	1.0
		Beryllium, Total	0.55	MG/KG	0.02	1.0
		Bismuth, Total	0.54 u	MG/KG	0.54	1.0
		Calcium, Total	3530	MG/KG	1.7	1.0
		Cadmium, Total	1.4	MG/KG	0.07	1.0
		Cobalt, Total	5.8	MG/KG	0.15	1.0
		Chromium, Total	19.3	MG/KG	0.14	1.0
		Copper, Total	19.9	MG/KG	0.13	1.0
		Iron, Total	15500	MG/KG	3.7	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	876	MG/KG	82.3	1.0
		Lithium, Total	8.0	MG/KG	0.03	1.0
		Magnesium, Total	3790	MG/KG	1.0	1.0
		Manganese, Total	250	MG/KG	0.03	1.0
		Molybdenum, Total	0.50	MG/KG	0.31	1.0
		Sodium, Total	135	MG/KG	2.7	1.0
		Nickel, Total	13.6	MG/KG	0.26	1.0
		Phosphorus, Total	710	MG/KG	0.96	1.0
		Lead, Total	33.6	MG/KG	0.33	1.0
		Antimony, Total	0.47 u	MG/KG	0.47	1.0
		Selenium, Total	3.9 u	MG/KG	3.9	1.0
		Silicon, Total	804	MG/KG	2.4	1.0
		Tin, Total	1.2	MG/KG	1.1	1.0
		Strontium, Total	20.7	MG/KG	0.01	1.0
		Thallium, Total	0.75 u	MG/KG	0.75	1.0
		Uranium, Total	0.94 u	MG/KG	0.94	1.0
		Vanadium, Total	30.6	MG/KG	0.1	1.0
		Zinc, Total	286	MG/KG	0.17	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J11299	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	5930	MG/KG	3.0	1.0
		Arsenic, Total	4.7	MG/KG	0.64	1.0
		Boron, Total	0.88	MG/KG	0.25	1.0
		Barium, Total	66.8	MG/KG	0.02	1.0
		Beryllium, Total	0.62	MG/KG	0.02	1.0
		Bismuth, Total	0.54 u	MG/KG	0.54	1.0
		Calcium, Total	3660	MG/KG	1.7	1.0
		Cadmium, Total	1.6	MG/KG	0.07	1.0
		Cobalt, Total	6.0	MG/KG	0.15	1.0
		Chromium, Total	18.1	MG/KG	0.14	1.0
		Copper, Total	20.7	MG/KG	0.13	1.0
		Iron, Total	16300	MG/KG	3.7	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Potassium, Total	830	MG/KG	81.3	1.0
		Lithium, Total	7.8	MG/KG	0.03	1.0
		Magnesium, Total	3820	MG/KG	1.0	1.0
		Manganese, Total	261	MG/KG	0.03	1.0
		Molybdenum, Total	0.43	MG/KG	0.31	1.0
		Sodium, Total	130	MG/KG	2.6	1.0
		Nickel, Total	13.1	MG/KG	0.25	1.0
		Phosphorus, Total	794	MG/KG	0.95	1.0
		Lead, Total	31.5	MG/KG	0.33	1.0
		Antimony, Total	0.46 u	MG/KG	0.46	1.0
		Selenium, Total	3.8 u	MG/KG	3.8	1.0
		Silicon, Total	783	MG/KG	2.4	1.0
		Tin, Total	1.3	MG/KG	1.1	1.0
		Strontium, Total	20.4	MG/KG	0.01	1.0
		Thallium, Total	0.74 u	MG/KG	0.74	1.0
		Uranium, Total	0.93 u	MG/KG	0.93	1.0
		Vanadium, Total	31.7	MG/KG	0.09	1.0
		Zinc, Total	270	MG/KG	0.17	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J112BD	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	3890	MG/KG	2.9	1.0
		Arsenic, Total	2.0	MG/KG	0.62	1.0
		Boron, Total	0.89	MG/KG	0.24	1.0
		Barium, Total	47.1	MG/KG	0.02	1.0
		Beryllium, Total	0.83	MG/KG	0.02	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Calcium, Total	6230	MG/KG	1.7	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	6.3	MG/KG	0.14	1.0
		Chromium, Total	5.5	MG/KG	0.13	1.0
		Copper, Total	17.1	MG/KG	0.12	1.0
		Iron, Total	18900	MG/KG	3.5	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	804	MG/KG	78.2	1.0
		Lithium, Total	4.3	MG/KG	0.03	1.0
		Magnesium, Total	3360	MG/KG	0.98	1.0
		Manganese, Total	329	MG/KG	0.03	1.0
		Molybdenum, Total	0.40	MG/KG	0.29	1.0
		Sodium, Total	116	MG/KG	2.5	1.0
		Nickel, Total	8.0	MG/KG	0.24	1.0
		Phosphorus, Total	1160	MG/KG	0.91	1.0
		Lead, Total	3.9	MG/KG	0.31	1.0
		Antimony, Total	0.45 u	MG/KG	0.45	1.0
		Selenium, Total	3.7 u	MG/KG	3.7	1.0
		Silicon, Total	725	MG/KG	2.3	1.0
		Tin, Total	1.1 u	MG/KG	1.1	1.0
		Strontium, Total	20.4	MG/KG	0.01	1.0
		Thallium, Total	0.71 u	MG/KG	0.71	1.0
		Uranium, Total	0.89 u	MG/KG	0.89	1.0
		Vanadium, Total	38.0	MG/KG	0.09	1.0
		Zinc, Total	38.0	MG/KG	0.16	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J112B1	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	3400	MG/KG	2.9	1.0
		Arsenic, Total	1.6	MG/KG	0.61	1.0
		Boron, Total	0.60	MG/KG	0.24	1.0
		Barium, Total	75.1	MG/KG	0.02	1.0
		Beryllium, Total	0.77	MG/KG	0.02	1.0
		Bismuth, Total	0.51 u	MG/KG	0.51	1.0
		Calcium, Total	5300	MG/KG	1.7	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	5.8	MG/KG	0.14	1.0
		Chromium, Total	3.8	MG/KG	0.13	1.0
		Copper, Total	14.2	MG/KG	0.12	1.0
		Iron, Total	17700	MG/KG	3.5	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	791	MG/KG	77.6	1.0
		Lithium, Total	3.8	MG/KG	0.03	1.0
		Magnesium, Total	3280	MG/KG	0.98	1.0
		Manganese, Total	250	MG/KG	0.03	1.0
		Molybdenum, Total	0.42	MG/KG	0.29	1.0
		Sodium, Total	91.4	MG/KG	2.5	1.0
		Nickel, Total	7.2	MG/KG	0.24	1.0
		Phosphorus, Total	1250	MG/KG	0.91	1.0
		Lead, Total	3.6	MG/KG	0.31	1.0
		Antimony, Total	0.44 u	MG/KG	0.44	1.0
		Selenium, Total	3.7 u	MG/KG	3.7	1.0
		Silicon, Total	410	MG/KG	2.3	1.0
		Tin, Total	1.1	MG/KG	1.1	1.0
		Strontium, Total	18.0	MG/KG	0.01	1.0
		Thallium, Total	0.70 u	MG/KG	0.70	1.0
		Uranium, Total	0.89 u	MG/KG	0.89	1.0
		Vanadium, Total	34.7	MG/KG	0.09	1.0
		Zinc, Total	36.4	MG/KG	0.16	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J116L6	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	3090	MG/KG	2.9	1.0
		Arsenic, Total	2.1	MG/KG	0.62	1.0
		Boron, Total	1.2	MG/KG	0.24	1.0
		Barium, Total	55.2	MG/KG	0.02	1.0
		Beryllium, Total	0.78	MG/KG	0.02	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Calcium, Total	4620	MG/KG	1.7	1.0
		Cadmium, Total	0.15	MG/KG	0.07	1.0
		Cobalt, Total	5.6	MG/KG	0.14	1.0
		Chromium, Total	5.3	MG/KG	0.13	1.0
		Copper, Total	13.8	MG/KG	0.12	1.0
		Iron, Total	17600	MG/KG	3.5	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	800	MG/KG	78.1	1.0
		Lithium, Total	3.4	MG/KG	0.03	1.0
		Magnesium, Total	3070	MG/KG	0.98	1.0
		Manganese, Total	262	MG/KG	0.03	1.0
		Molybdenum, Total	0.45	MG/KG	0.29	1.0
		Sodium, Total	104	MG/KG	2.5	1.0
		Nickel, Total	7.8	MG/KG	0.24	1.0
		Phosphorus, Total	1260	MG/KG	0.91	1.0
		Lead, Total	10.7	MG/KG	0.31	1.0
		Antimony, Total	0.45 u	MG/KG	0.45	1.0
		Selenium, Total	3.7 u	MG/KG	3.7	1.0
		Silicon, Total	415	MG/KG	2.3	1.0
		Tin, Total	1.1 u	MG/KG	1.1	1.0
		Strontium, Total	17.4	MG/KG	0.01	1.0
		Thallium, Total	0.71 u	MG/KG	0.71	1.0
		Uranium, Total	0.89 u	MG/KG	0.89	1.0
		Vanadium, Total	38.9	MG/KG	0.09	1.0
		Zinc, Total	82.3	MG/KG	0.16	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J116L7	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	3140	MG/KG	3.0	1.0
		Arsenic, Total	2.0	MG/KG	0.63	1.0
		Boron, Total	1.6	MG/KG	0.25	1.0
		Barium, Total	63.8	MG/KG	0.02	1.0
		Beryllium, Total	0.74	MG/KG	0.02	1.0
		Bismuth, Total	0.53 u	MG/KG	0.53	1.0
		Calcium, Total	4740	MG/KG	1.7	1.0
		Cadmium, Total	0.07	MG/KG	0.07	1.0
		Cobalt, Total	5.1	MG/KG	0.14	1.0
		Chromium, Total	7.3	MG/KG	0.13	1.0
		Copper, Total	13.5	MG/KG	0.12	1.0
		Iron, Total	16200	MG/KG	3.6	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	742	MG/KG	79.5	1.0
		Lithium, Total	3.2	MG/KG	0.03	1.0
		Magnesium, Total	2820	MG/KG	1.0	1.0
		Manganese, Total	223	MG/KG	0.03	1.0
		Molybdenum, Total	0.38	MG/KG	0.30	1.0
		Sodium, Total	81.9	MG/KG	2.6	1.0
		Nickel, Total	5.6	MG/KG	0.25	1.0
		Phosphorus, Total	1190	MG/KG	0.93	1.0
		Lead, Total	7.9	MG/KG	0.32	1.0
		Antimony, Total	0.45 u	MG/KG	0.45	1.0
		Selenium, Total	3.8 u	MG/KG	3.8	1.0
		Silicon, Total	425	MG/KG	2.3	1.0
		Tin, Total	1.5	MG/KG	1.1	1.0
		Strontium, Total	19.2	MG/KG	0.01	1.0
		Thallium, Total	0.72 u	MG/KG	0.72	1.0
		Uranium, Total	0.91 u	MG/KG	0.91	1.0
		Vanadium, Total	32.1	MG/KG	0.09	1.0
		Zinc, Total	60.7	MG/KG	0.16	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J11733	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	4000	MG/KG	2.9	1.0
		Arsenic, Total	2.4	MG/KG	0.62	1.0
		Boron, Total	2.0	MG/KG	0.24	1.0
		Barium, Total	70.9	MG/KG	0.02	1.0
		Beryllium, Total	1.0	MG/KG	0.02	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Calcium, Total	5450	MG/KG	1.7	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	6.7	MG/KG	0.14	1.0
		Chromium, Total	9.6	MG/KG	0.13	1.0
		Copper, Total	15.1	MG/KG	0.12	1.0
		Iron, Total	21400	MG/KG	3.5	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	877	MG/KG	78.1	1.0
		Lithium, Total	4.2	MG/KG	0.03	1.0
		Magnesium, Total	3580	MG/KG	0.98	1.0
		Manganese, Total	283	MG/KG	0.03	1.0
		Molybdenum, Total	0.50	MG/KG	0.29	1.0
		Sodium, Total	114	MG/KG	2.5	1.0
		Nickel, Total	7.6	MG/KG	0.24	1.0
		Phosphorus, Total	1370	MG/KG	0.91	1.0
		Lead, Total	9.1	MG/KG	0.31	1.0
		Antimony, Total	0.45 u	MG/KG	0.45	1.0
		Selenium, Total	3.7 u	MG/KG	3.7	1.0
		Silicon, Total	453	MG/KG	2.3	1.0
		Tin, Total	1.1 u	MG/KG	1.1	1.0
		Strontium, Total	21.9	MG/KG	0.01	1.0
		Thallium, Total	0.71 u	MG/KG	0.71	1.0
		Uranium, Total	0.89 u	MG/KG	0.89	1.0
		Vanadium, Total	50.4	MG/KG	0.09	1.0
		Zinc, Total	74.1	MG/KG	0.16	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0130-MB1	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	2.9 u	MG/KG	2.9	1.0
		Arsenic, Total	0.61 u	MG/KG	0.61	1.0
		Boron, Total	0.24 u	MG/KG	0.24	1.0
		Barium, Total	0.02 u	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.51 u	MG/KG	0.51	1.0
		Calcium, Total	1.6 u	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.13 u	MG/KG	0.13	1.0
		Copper, Total	0.12 u	MG/KG	0.12	1.0
		Iron, Total	3.5 u	MG/KG	3.5	1.0
		Potassium, Total	77.1 u	MG/KG	77.1	1.0
		Lithium, Total	0.04	MG/KG	0.03	1.0
		Magnesium, Total	0.97 u	MG/KG	0.97	1.0
		Manganese, Total	0.03 u	MG/KG	0.03	1.0
		Molybdenum, Total	0.29 u	MG/KG	0.29	1.0
		Sodium, Total	2.5 u	MG/KG	2.5	1.0
		Nickel, Total	0.24 u	MG/KG	0.24	1.0
		Phosphorus, Total	0.90 u	MG/KG	0.90	1.0
		Lead, Total	0.34	MG/KG	0.31	1.0
		Antimony, Total	0.44 u	MG/KG	0.44	1.0
		Selenium, Total	3.6 u	MG/KG	3.6	1.0
		Silicon, Total	2.3 u	MG/KG	2.3	1.0
		Tin, Total	1.4	MG/KG	1.1	1.0
		Strontium, Total	0.01 u	MG/KG	0.01	1.0
		Thallium, Total	0.70 u	MG/KG	0.70	1.0
		Uranium, Total	0.88 u	MG/KG	0.88	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	0.16 u	MG/KG	0.16	1.0
BLANK1	06C0036-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J11298	Silver, Total	4.7	0.07u	5.3	88.7	1.0
		Aluminum, Total	6280	6090	211	88.3*	1.0
		Arsenic, Total	188	4.6	211	86.9	1.0
		Boron, Total	90.9	0.81	106	85.2	1.0
		Barium, Total	259	61.9	211	93.3	1.0
		Beryllium, Total	5.8	0.55	5.3	99.0	1.0
		Bismuth, Total	480	0.54u	528	90.8	1.0
		Calcium, Total	6470	3530	2640	111.3	1.0
		Cadmium, Total	6.6	1.4	5.3	98.1	1.0
		Cobalt, Total	55.8	5.8	52.9	94.5	1.0
		Chromium, Total	40.1	19.3	21.1	98.6	1.0
		Copper, Total	44.6	19.9	26.4	93.6	1.0
		Iron, Total	15800	15500	106	264.2*	1.0
		Mercury, Total	0.18	0.02	0.14	106.9	1.0
		Potassium, Total	3050	876	2640	82.3	1.0
		Lithium, Total	113	8.0	106	99.4	1.0
		Magnesium, Total	5830	3790	2640	77.3	1.0
		Manganese, Total	298	250	52.9	90.0*	1.0
		Molybdenum, Total	101	0.50	106	94.8	1.0
		Sodium, Total	2440	135	2640	87.3	1.0
		Nickel, Total	62.7	13.6	52.9	92.8	1.0
		Phosphorus, Total	1360	710	528	122.0	1.0
		Lead, Total	77.2	33.6	52.9	82.4	1.0
		Antimony, Total	27.7	0.47u	52.9	52.4	1.0
		Selenium, Total	194	3.9 u	211	91.9	1.0
		Silicon, Total	1270	804	106	438.0*	1.0
		Tin, Total	100	1.2	106	93.5	1.0
		Strontium, Total	121	20.7	106	94.5	1.0
		Thallium, Total	183	0.75u	211	86.8	1.0
		Uranium, Total	233	0.94u	~~528~~ 2641	~~44.1~~ 88.2	1.0
		Vanadium, Total	81.2	30.6	52.9	95.7	1.0
		Zinc, Total	313	286	52.9	49.3*	1.0

corrected within pw 4/13/06

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J11298	Silver, Total	0.07u	0.07u	NC	1.0
		Aluminum, Total	6090	5290	14.0	1.0
		Arsenic, Total	4.6	4.7	2.2	1.0
		Boron, Total	0.81	0.71	13.6	1.0
		Barium, Total	61.9	60.9	1.6	1.0
		Beryllium, Total	0.55	0.49	12.3	1.0
		Bismuth, Total	0.54u	0.54u	NC	1.0
		Calcium, Total	3530	3260	7.9	1.0
		Cadmium, Total	1.4	1.4	0.00	1.0
		Cobalt, Total	5.8	5.2	10.9	1.0
		Chromium, Total	19.3	17.2	11.5	1.0
		Copper, Total	19.9	19.3	3.1	1.0
		Iron, Total	15500	13500	13.5	1.0
		Mercury, Total	0.02	0.03	7.7	1.0
		Potassium, Total	876	769	12.9	1.0
		Lithium, Total	8.0	6.8	16.2	1.0
		Magnesium, Total	3790	3320	13.3	1.0
		Manganese, Total	250	232	7.6	1.0
		Molybdenum, Total	0.50	0.56	11.5	1.0
		Sodium, Total	135	110	20.8	1.0
		Nickel, Total	13.6	12.6	7.6	1.0
		Phosphorus, Total	710	680	4.3	1.0
		Lead, Total	33.6	31.8	5.5	1.0
		Antimony, Total	0.47u	0.47u	NC	1.0
		Selenium, Total	3.9 u	3.9 u	NC	1.0
		Silicon, Total	804	959	17.7	1.0
		Tin, Total	1.2	1.1 u	~~NC~~ 200	1.0
		Strontium, Total	20.7	19.5	6.0	1.0
		Thallium, Total	0.75u	0.75u	NC	1.0
		Uranium, Total	0.94u	0.94u	NC	1.0
		Vanadium, Total	30.6	26.5	14.4	1.0
		Zinc, Total	286	270	5.9	1.0

correct entry [illegible] 4/5/06

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/05/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	06L0130-LC1	Silver, LCS	47.1	50.0	MG/KG	94.2
		Aluminum, LCS	467	500	MG/KG	93.4
		Arsenic, LCS	876	1000	MG/KG	87.6
		Boron, LCS	449	500	MG/KG	89.7
		Barium, LCS	475	500	MG/KG	95.1
		Beryllium, LCS	24.6	25.0	MG/KG	98.4
		Bismuth, LCS	479	500	MG/KG	95.9
		Calcium, LCS	2380	2500	MG/KG	95.4
		Cadmium, LCS	23.7	25.0	MG/KG	94.8
		Cobalt, LCS	241	250	MG/KG	96.4
		Chromium, LCS	50.0	50.0	MG/KG	100
		Copper, LCS	121	125	MG/KG	96.8
		Iron, LCS	491	500	MG/KG	98.3
		Potassium, LCS	2260	2500	MG/KG	90.5
		Lithium, LCS	483	500	MG/KG	96.6
		Magnesium, LCS	2290	2500	MG/KG	91.7
		Manganese, LCS	75.2	75.0	MG/KG	100.3
		Molybdenum, LCS	495	500	MG/KG	99.0
		Sodium, LCS	2260	2500	MG/KG	90.5
		Nickel, LCS	190	200	MG/KG	94.9
		Phosphorus, LCS	457	500	MG/KG	91.4
		Lead, LCS	233	250	MG/KG	93.2
		Antimony, LCS	277	300	MG/KG	92.4
		Selenium, LCS	925	1000	MG/KG	92.5
		Silicon, LCS	317	500	MG/KG	63.4
		Tin, LCS	487	500	MG/KG	97.5
		Strontium, LCS	473	500	MG/KG	94.6
		Thallium, LCS	911	1000	MG/KG	91.1
		Uranium, LCS	235	~~500~~ 250 *	MG/KG	* ~~47.0~~ 94.1
		Vanadium, LCS	247	250	MG/KG	98.9
		Zinc, LCS	92.5	100	MG/KG	92.5
LCS1	06C0036-LC1	Mercury, LCS	6.8	6.2	MG/KG	110.0

* correction
pw 4/5/06

Lionville Laboratory Use Only

06021325

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford RC-047

Est. Final Proj. Sampling Date:

Project #: 11343-666-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: Std Del: Std TAT: 30 Days

Date Rec'd: 2.23.06 Date Due: 3/25/06

		A	B		C	D		E		F				
Refrigerator #		6	6		6	6		6		6				
#/Type Container	Liquid													
	Solid	1gl	1gl		1gl	1gl		1pl		1gl				
Volume	Liquid													
	Solid	60	60		60	60		125		60				
Preservatives		—	—		—	—		—		—				
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	TPH-DRO TPH-GRO	PCB		INORG: (3) Metal Hg	CN	TPH (Total) 418.1			
Lionville Laboratory Use Only			C625H	C608H		CDRO CGRO	OPCB		METALS		IPHC			

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	C625H	C608H	CDRO CGRO	OPCB	METALS		IPHC
001	J11298			SO	2.21.06	1100	X	X	X	X	X	X	X
002	J11299					1200	X	X	X	X	X	2-23-06	X
003	J11280					1300	X	X	X	X	X		X
004	J11281					1400	X	X	X	X	X		X
005	J11666					1445	X	X	X	X	X		X
006	J11667					1530	X	X	X	X	X		X
007	J11733					1630	X	X	X	X	X		X

Special Instructions:

METALS = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U

Run Matrix QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
FedEx	[illegible]	2.23.06	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-047-18	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 1, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 AID 13100	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11298	OTHER SOLID	2-21-06	1100				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 1900 2-21-06
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 0830 2-22-06	Received By/Stored In: RZ Steffler R.J. Steffler Date/Time: 0830 2-22-06
Relinquished By/Removed From: RZ Steffler R.J. Steffler Date/Time: 1600 2-22-06	Received By/Stored In: Fed Ex Date/Time:
Relinquished By/Removed From: Fed Ex Date/Time: 2-23-06 0915	Received By/Stored In: [signature] Date/Time: 2-23-06 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:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}

(2) Strontium-89,90 – Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}

(3) 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}; Mercury - 7471 - (CV)

Matrix *

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 4/12/06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES KLONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	
Sample No. / Matrix * / Sample Date / Sample Time										
J11299 / OTHER SOLID / 2-21-06 / 1200				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In D. Smith Date/Time 2-23-06 0815
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 3, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596-7 2/21/06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE — Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler — Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler R.J. Steffler	Date/Time 1600 2-22-06	Received By/Stored In FedEx — Date/Time
Relinquished By/Removed From FedEx	Date/Time 2-23-06 0915	Received By/Stored In N. Smith — Date/Time 2-23-06 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

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 4, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 [illegible] 131 06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B1	OTHER SOLID	2-21-06	1400				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-21-06 1900	EAS LOCKED STORAGE	2-21-06 1900
EAS LOCKED STORAGE	2-22-06 0830	RZ Steffler R.J. Steffler	2-22-06 0830
RZ Steffler R.J. Steffler	2-22-06 1600 WCH	Fed Ex	
Fed Ex	2-23-06 0915	D. [illegible]	2-23-06 0915
			2-23-06

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr ☑SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J116L6 / OTHER SOLID / 2-21-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From [signature] Date/Time 1900 JAMES BERNHARD 2-21-06	Received By/Stored In [signature] Date/Time 1900 EAS LOCKED STORAGE 2-21-06
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-22-06	Received By/Stored In [signature] Date/Time 0830 RZ Stiffler R.J. Stiffler 2-22-06
Relinquished By/Removed From Date/Time 1600 RZ Stiffler R.J. Stiffler 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In [signature] Date/Time 2-23-06 0915
Relinquished By/Removed From Date/Time	Received By/Stored In [signature] 2-23 Date/Time
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr & SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J116L7	OTHER SOLID	2-21-06	1530			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0930 2-22-06	Received By/Stored In RZ Stoffler R.J. Stoffler Date/Time 0930 2-22-06	
Relinquished By/Removed From RZ Stoffler R.J. Stoffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2.23.06 0915	Received By/Stored In W. Miller Date/Time 2.23.06 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	

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: ~~REF~~ , SEDIMENT JEE 2-21-06 Cr #8		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality: ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		

Sample No.	Matrix *	Sample Date	Sample Time										
J11733	OTHER SOLID	2-21-06	1630			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By/Removed From: JAMES BERNHARD Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 1900 2-21-06		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
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 0830 2-22-06	Received By/Stored In: RZ Steffler R.J. Steffler Date/Time: 0830 2-22-06		
Relinquished By/Removed From: RZ Steffler R.J. Steffler Date/Time: 1600 WCH 2-22-06	Received By/Stored In: Fed Ex Date/Time:		
Relinquished By/Removed From: Fed Ex Date/Time: 2.23.06 0915	Received By/Stored In: [signature] Date/Time: 2.23.06 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:		

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

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Date: 2.23.06

Purchase Order / Project# / SAF# / SOW# / Release #: RC.047

LvLI Batch # : 06021325

Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7918 6832 442	
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 1.2 °C		Cooler # AFS-04-120	
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	

SR-002-B

LVLI LIONVILLE LABORATORY INC.

RECEIVED
APR 2006

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11298						
% SOLIDS	001	SO	06L%S016	02/21/06	02/26/06	02/27/06
PETROLEUM HYDROCARBO	001	SO	06LHC021	02/21/06	03/08/06	03/10/06
J11299						
% SOLIDS	002	SO	06L%S016	02/21/06	02/26/06	02/27/06
PETROLEUM HYDROCARBO	002	SO	06LHC022	02/21/06	03/16/06	03/17/06
PETROLEUM HYDROCARBO	002 REP	SO	06LHC022	02/21/06	03/16/06	03/17/06
PETROLEUM HYDROCARBO	002 MS	SO	06LHC022	02/21/06	03/16/06	03/17/06
J112B0						
% SOLIDS	003	SO	06L%S016	02/21/06	02/26/06	02/27/06
PETROLEUM HYDROCARBO	003	SO	06LHC022	02/21/06	03/16/06	03/17/06
J112B1						
% SOLIDS	004	SO	06L%S016	02/21/06	02/26/06	02/27/06
PETROLEUM HYDROCARBO	004	SO	06LHC022	02/21/06	03/16/06	03/17/06
J116L6						
% SOLIDS	005	SO	06L%S016	02/21/06	02/26/06	02/27/06
PETROLEUM HYDROCARBO	005	SO	06LHC022	02/21/06	03/16/06	03/17/06
J116L7						
% SOLIDS	006	SO	06L%S016	02/21/06	02/26/06	02/27/06
PETROLEUM HYDROCARBO	006	SO	06LHC022	02/21/06	03/16/06	03/17/06
J11733						
% SOLIDS	007	SO	06L%S016	02/21/06	02/26/06	02/27/06
PETROLEUM HYDROCARBO	007	SO	06LHC022	02/21/06	03/16/06	03/17/06

LAB QC:

PETROLEUM HYDROCARBO	MB1	S	06LHC021	N/A	03/08/06	03/10/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0235

DATE RECEIVED: 02/23/06 LVL LOT # :0602L325

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PETROLEUM HYDROCARBO	MB1 BS	S	06LHC021	N/A	03/08/06	03/10/06
PETROLEUM HYDROCARBO	MB1	S	06LHC022	N/A	03/16/06	03/17/06
PETROLEUM HYDROCARBO	MB1 BS	S	06LHC022	N/A	03/16/06	03/17/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-047 K0235
LVL#: 0602L325

W.O.#: 11343-606-001-9999-00
Date Received: 02-23-06

INORGANIC NARRATIVE

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

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

   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 met LvLI's sample acceptance policy.

5. The method blanks for Petroleum Hydrocarbons (PHC) were within the method criteria.

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

7. The matrix spike recovery for PHC was within the 75-125% control limits.

8. The replicate analysis for PHC was within the 20% Relative Percent Difference (RPD) control limit.

9. Results for solid samples are reported on a dry 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

3/31/06
Date

njp\i02-325

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.

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

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 (mod.)	✓ EPA 418.1 (mod.)
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: **Method:**

Other: **Method**

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 03/30/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11298	% Solids	91.0		%	0.01	1.0
		Petroleum Hydrocarbons	146	u	MG/KG	146	1.0
-002	J11299	% Solids	91.2		%	0.01	1.0
		Petroleum Hydrocarbons	146	u	MG/KG	146	1.0
-003	J112B0	% Solids	95.7		%	0.01	1.0
		Petroleum Hydrocarbons	139	u	MG/KG	139	1.0
-004	J112B1	% Solids	95.5		%	0.01	1.0
		Petroleum Hydrocarbons	139	u	MG/KG	139	1.0
-005	J116L6	% Solids	95.8		%	0.01	1.0
		Petroleum Hydrocarbons	138	u	MG/KG	138	1.0
-006	J116L7	% Solids	94.2		%	0.01	1.0
		Petroleum Hydrocarbons	141	u	MG/KG	141	1.0
-007	J11733	% Solids	95.8		%	0.01	1.0
		Petroleum Hydrocarbons	139	u	MG/KG	139	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/30/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	06LHC021-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0
BLANK10	06LHC022-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/30/06

CLIENT: TNUHANFORD RC-047 K0235

LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J11299	Petroleum Hydrocarbons	709	48.7		614	107.5	1.0
BLANK10	06LHC021-MB1	Petroleum Hydrocarbons	595	133	u	560	106.2	1.0
BLANK10	06LHC022-MB1	Petroleum Hydrocarbons	641	133	u	560	114.5	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/30/06

CLIENT: TNUHANFORD RC-047 K0235 LVL LOT #: 0602L325

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT		REPLICATE		RPD	DILUTION FACTOR(REP)
-002REP	J11299	Petroleum Hydrocarbons	146	u	146	u	NC	1.0

Lionville Laboratory Use Only
0602L325

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC 10

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford RC.047
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: Orlette Johnson
QC: Spec Del: Std TAT: 30 Days
Date Rec'd: 2.23.06 Date Due: 3/25/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid / Solid	1gl	1gl	1gl	1gl	1pl	1gl
Volume	Liquid / Solid	60	60	60	60	125	60
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC: VOA, BNA	Pest/PCB, Herb	TPH-DRO, TPH-GRO	PCB	INORG: (S) Metal Hg, CN	TPH (Total) 418.1

Lionville Laboratory Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608H		ODRO OGRO	OPCB		METALS(S)		IPHC
001	J11298			SO	2.21.06	1100	X	X		X	X		X	X	X
002	J11299					1200	X	X		X	X		X	2.23.06	X
003	J112B0					1300	X	X		X	X		X		X
004	J112B1					1400	X	X		X	X		X		X
005	J116L6					1445	X	X		X	X		X		X
006	J116L7					1530	X	X		X	X		X		X
007	J11733					1630	X	X		X	X		X		X

Special Instructions:

METALS(S) = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, Ll

Run Matrix QC

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

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	2.23.06	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-047-18	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 1, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 AID 15100	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality: ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11298	OTHER SOLID	2-21-06	1100				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 1900 2-21-06
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 0830 2-22-06	Received By/Stored In: RZ Steffler R.J. Steffler Date/Time: 0830 2-22-06
Relinquished By/Removed From: RZ Steffler R.J. Steffler Date/Time: 1600 WCH 2-22-06	Received By/Stored In: Fed EX Date/Time:
Relinquished By/Removed From: Fed EX Date/Time: 2-23-06 0915	Received By/Stored In: [signature] Date/Time: 2-23-06 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:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 HP 13/06	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11299	OTHER SOLID	2-21-06	1200				X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler	Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler R.J. Steffler	Date/Time 1600 2-22-06	Received By/Stored In Fed EX	Date/Time
Relinquished By/Removed From Fed EX	Date/Time 2-23-06 0915	Received By/Stored In D. Smith	Date/Time 2-23-06 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

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 3, SEDIMENT		SAF No.: RC-047
Ice Chest No.: AFS-04-120	Field Logbook No.: EL-1596 7 [illegible] 1310 C	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060292		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-21-06 1900	EAS LOCKED STORAGE	2-21-06 1900
EAS LOCKED STORAGE	2-22-06 0830	R2 Steffler R.J. Steffler	2-22-06 0830
R2 Steffler R.J. Steffler	2-22-06 1600 WCH	Fed Ex	
Fed Ex	2-23-06 0915	[illegible]	2-23-06 0915

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

Matrix *
S=Soil
SE=Sediment
SO=Solid
St=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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 4, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1596 7 of 13	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B1	OTHER SOLID	2-21-06	1400				X	X	X	X	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler	0830 2-22-06
RZ Steffler	1600 WCH 2-22-06	FedEx	
FedEx	2-23-06 0915	D. Miller	2-23-06 0915
			2-23-06

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238)
(2) Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)
(3) 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); Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES ALLIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J116L6 / OTHER SOLID / 2-21-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From [signature] Date/Time 1900 JAMES BERNHARD 2-21-06	Received By/Stored In [signature] Date/Time 1900 EAS LOCKED STORAGE 2-21-06
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-22-06	Received By/Stored In RZ Stiffler [signature] Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Stiffler [signature] Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From Fed Ex Date/Time 2-23-06 0915	Received By/Stored In [signature] Date/Time 2-23-06 0915
Relinquished By/Removed From Date/Time	Received By/Stored In [signature] 2-23-06 Date/Time
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS

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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr & SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J116L7 / OTHER SOLID / 2-21-06 / 1530			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD		1900 2-21-06
Received By/Stored In EAS LOCKED STORAGE		1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE		0830 2-22-06
Received By/Stored In RZ Steffler	R.J. Steffler	0830 2-22-06
Relinquished By/Removed From RZ Steffler	R.J. Steffler	1600 2-22-06
Received By/Stored In Fed Ex		
Relinquished By/Removed From Fed Ex		2-23-06 0915
Received By/Stored In		2-23-06 0915
Relinquished By/Removed From		
Received By/Stored In		
Relinquished By/Removed From		
Received By/Stored In		

SPECIAL INSTRUCTIONS

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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location ~~REF~~, SEDIMENT SEE 2-21-06 Cr #8		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-120	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060292		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11733 / OTHER SOLID / 2-21-06 / 1630			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
Relinquished By/Removed From	EAS LOCKED STORAGE	0830 2-22-06	RZ Steffler R.J. Steffler	0830 2-22-06
Relinquished By/Removed From	RZ Steffler R.J. Steffler	1600 WCH 2-22-06	Fed Ex	
Relinquished By/Removed From	Fed Ex	2-23-06 0915	W. Smith	2-23-06 0915
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

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)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 2.23.06

Purchase Order / Project# / SAF#/ SOW# / Release #: RC.047

LvLI Batch # : 0602L325 **Sample Custodian:** N D Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7918 6832 442	
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 1.2 °C		Cooler # AFS-04.120	
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	

SR-002-B

LVLI LIONVILLE LABORATORY INC

EBERLINE
SERVICES

RECEIVED
APR 2006

April 14, 2006

Ms. Joan Kessner
Washington Closure Hanford
3190 George Washington Way
MSIN H9-02
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R6-02-162-7393, SDG K0235

Dear Ms. Kessner:

Enclosed is the data report for seven solid (other solid) samples designated under SAF No. RC-047 received at Eberline Services on February 23, 2006. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K0235 was composed of seven solid (other solid) samples designated under SAF No. RC-047 with a Project Designation of: 100 & 300 Area Component of the RCBRA Sediment and Ti.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on April 11, 2006.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.1 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.2 Isotopic Thorium Analysis

The relative percent difference in the original and duplicate Th-232 result was 125%, greater than the 3σ limit of 114%, and the DER was 3.3.

No other problems were encountered during the course of the analyses.

2.3 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.4 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

4/14/6

Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K0235

SDG	7393
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K0235

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	04/11/06

SDG 7393
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0235

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/11/06

SDG 7393
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0235

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

SDG 7393
Contact Melissa C. Mannion

SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0235

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J11298	Cr 1, SEDIMENT	SOLID		R602162-01	RC-047	RC-047-18	02/21/06 11:00
J11299	Cr 2, SEDIMENT	SOLID		R602162-02	RC-047	RC-047-19	02/21/06 12:00
J112B0	Cr 3, SEDIMENT	SOLID		R602162-03	RC-047	RC-047-20	02/21/06 13:00
J112B1	Cr 4, SEDIMENT	SOLID		R602162-04	RC-047	RC-047-21	02/21/06 14:00
J116L6	Cr 7, SEDIMENT	SOLID		R602162-05	RC-047	RC-047-35	02/21/06 14:45
J116L7	Cr 8, SEDIMENT	SOLID		R602162-06	RC-047	RC-047-35	02/21/06 15:30
J11733	Cr 8, SEDIMENT	SOLID		R602162-07	RC-047	RC-047-99	02/21/06 16:30
Method Blank		SOLID		R602162-09	RC-047		
Lab Control Sample		SOLID		R602162-08	RC-047		
Duplicate (R602162-04)	Cr 4, SEDIMENT	SOLID		R602162-10	RC-047		02/21/06 14:00

Lab id EBRLNE
Protocol Hanford
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Form DVD-CS
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SDG 7393
Contact Melissa C. Mannion

SAMPLE DELIVERY GROUP K0235

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0235

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7393	RC-047-18	J11298	SOLID	100.0	556 g		02/23/06	2	R602162-01	7393-001
	RC-047-19	J11299	SOLID	100.0	501 g		02/23/06	2	R602162-02	7393-002
	RC-047-20	J112B0	SOLID	100.0	921 g		02/23/06	2	R602162-03	7393-003
	RC-047-21	J112B1	SOLID	100.0	1080 g		02/23/06	2	R602162-04	7393-004
	RC-047-35	J116L6	SOLID	100.0	684 g		02/23/06	2	R602162-05	7393-005
		J116L7	SOLID	100.0	616 g		02/23/06	2	R602162-06	7393-006
	RC-047-99	J11733	SOLID	100.0	704 g		02/23/06	2	R602162-07	7393-007
		Method Blank	SOLID						R602162-09	7393-009
		Lab Control Sample	SOLID						R602162-08	7393-008
		Duplicate (R602162-04)	SOLID	100.0	1080 g		02/23/06	2	R602162-10	7393-010

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SAMPLE DELIVERY GROUP K0235

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PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0235

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
TH	SOLID	Thorium, Isotopic in Solids	7131-101	5.0	7			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	7131-101	5.0	7			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	7131-101	10.0	7			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7131-101	15.0	7			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Solids	7131-101	10.0	4			1	1	1/1		

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

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Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

SDG 7393
Contact Melissa C. Mannion

WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0235

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
J11298			R602162-01	7393-001	C		04/03/06	04/06/06	MWT	Carbon 14 in Solids
Cr 1, SEDIMENT		SOLID	02/21/06	7393-001	GAM		03/25/06	03/30/06	CSS	Gamma Scan
RC-047-18	RC-047		02/23/06	7393-001	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
				7393-001	TH		04/04/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-001	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids
J11299			R602162-02	7393-002	C		04/03/06	04/06/06	MWT	Carbon 14 in Solids
Cr 2, SEDIMENT		SOLID	02/21/06	7393-002	GAM		03/27/06	03/30/06	CSS	Gamma Scan
RC-047-19	RC-047		02/23/06	7393-002	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
				7393-002	TH		04/07/06	04/10/06	MWT	Thorium, Isotopic in Solids
				7393-002	U		03/27/06	03/27/06	MWT	Uranium, Isotopic in Solids
J112B0			R602162-03	7393-003	C		04/03/06	04/06/06	MWT	Carbon 14 in Solids
Cr 3, SEDIMENT		SOLID	02/21/06	7393-003	GAM		03/27/06	03/30/06	CSS	Gamma Scan
RC-047-20	RC-047		02/23/06	7393-003	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
				7393-003	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-003	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids
J112B1			R602162-04	7393-004	C		04/03/06	04/06/06	MWT	Carbon 14 in Solids
Cr 4, SEDIMENT		SOLID	02/21/06	7393-004	GAM		03/28/06	03/30/06	CSS	Gamma Scan
RC-047-21	RC-047		02/23/06	7393-004	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
				7393-004	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-004	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids
J116L6			R602162-05	7393-005	GAM		03/28/06	03/30/06	CSS	Gamma Scan
Cr 7, SEDIMENT		SOLID	02/21/06	7393-005	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
RC-047-35	RC-047		02/23/06	7393-005	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-005	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids
J116L7			R602162-06	7393-006	GAM		03/28/06	03/30/06	CSS	Gamma Scan
Cr 8, SEDIMENT		SOLID	02/21/06	7393-006	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
RC-047-35	RC-047		02/23/06	7393-006	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-006	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids
J11733			R602162-07	7393-007	GAM		03/28/06	03/30/06	CSS	Gamma Scan
Cr 8, SEDIMENT		SOLID	02/21/06	7393-007	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
RC-047-99	RC-047		02/23/06	7393-007	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-007	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

SDG 7393
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0235

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Method Blank			R602162-09	7393-009	C		04/03/06	04/06/06	MWT	Carbon 14 in Solids
		SOLID		7393-009	GAM		03/28/06	03/30/06	CSS	Gamma Scan
	RC-047			7393-009	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
				7393-009	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-009	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids
Lab Control Sample			R602162-08	7393-008	C		04/03/06	04/06/06	MWT	Carbon 14 in Solids
		SOLID		7393-008	GAM		03/28/06	03/30/06	CSS	Gamma Scan
	RC-047			7393-008	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
				7393-008	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-008	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids
Duplicate (R602162-04)			R602162-10	7393-010	C		04/03/06	04/06/06	MWT	Carbon 14 in Solids
Cr 4, SEDIMENT		SOLID	02/21/06	7393-010	GAM		03/29/06	03/30/06	CSS	Gamma Scan
	RC-047		02/23/06	7393-010	SR		03/24/06	03/28/06	MWT	Total Strontium in Solids
				7393-010	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7393-010	U		03/25/06	03/27/06	MWT	Uranium, Isotopic in Solids

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
C	RC-047	Carbon 14 in Solids	C14_COX_LSC	4			1	1	1	7
GAM	RC-047	Gamma Scan	GAMMA_GS	7			1	1	1	10
SR	RC-047	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	7			1	1	1	10
TH	RC-047	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	7			1	1	1	10
U	RC-047	Uranium, Isotopic in Solids	UISO_PLATE_AEA	7			1	1	1	10
TOTALS				32			5	5	5	47

Lab id EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-09 **Method Blank**

METHOD BLANK

SDG	7393	Client/Case no	Hanford SDG K0235
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602162-09	Client sample id	Method Blank
Dept sample id	7393-009	Material/Matrix	SOLID
		SAF No	RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.16	2.0	3.3	50	U	C
Total Strontium	SR-RAD	-0.009	0.14	0.29	1.0	U	SR
Thorium 228	14274-82-9	0	0.10	0.38	1.0	U	TH
Thorium 230	14269-63-7	0.248	0.30	0.38	1.0	U	TH
Thorium 232	TH-232	0.050	0.10	0.38	1.0	U	TH
Uranium 233/234	U-233/234	0	0.048	0.18	1.0	U	U
Uranium 235	15117-96-1	0.029	0.059	0.22	1.0	U	U
Uranium 238	U-238	0	0.048	0.18	1.0	U	U
Potassium 40	13966-00-2	U		0.23		U	GAM
Cobalt 60	10198-40-0	U		0.010	0.050	U	GAM
Cesium 137	10045-97-3	U		0.010	0.10	U	GAM
Radium 226	13982-63-3	U		0.019	0.10	U	GAM
Radium 228	15262-20-1	U		0.041	0.20	U	GAM
Europium 152	14683-23-9	U		0.022	0.10	U	GAM
Europium 154	15585-10-1	U		0.023	0.10	U	GAM
Europium 155	14391-16-3	U		0.025	0.10	U	GAM
Thorium 228	14274-82-9	U		0.012		U	GAM
Thorium 232	TH-232	U		0.041		U	GAM
Uranium 235	15117-96-1	U		0.031		U	GAM
Uranium 238	U-238	U		1.0		U	GAM
Americium 241	14596-10-2	U		0.041		U	GAM
Beryllium 7	13966-02-4	U		0.059		U	GAM
Ruthenium 106	13967-48-1	U		0.066		U	GAM
Antimony 125	14234-35-6	U		0.021		U	GAM
Cesium 134	13967-70-9	U		0.015		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

QC-BLANK #56303

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-08

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7393

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0235

Contract No. 630

Lab sample id R602162-08

Dept sample id 7393-008

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-047

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	2160	14	3.5	50		C	2130	85	101	84-116	80-120
Total Strontium	11.3	0.57	0.22	1.0		SR	10.8	0.43	105	81-119	80-120
Thorium 230	40.0	5.1	0.44	1.0		TH	44.4	1.8	90	81-119	80-120
Uranium 233/234	19.7	1.9	0.86	1.0		U	19.3	0.77	102	82-118	80-120
Uranium 235	15.1	1.6	0.20	1.0		U	15.7	0.63	96	82-118	80-120
Uranium 238	20.3	2.0	0.82	1.0		U	21.0	0.84	97	83-117	80-120
Cobalt 60	0.588	0.049	0.028	0.050		GAM	0.591	0.024	99	74-126	80-120
Cesium 137	0.664	0.044	0.034	0.10		GAM	0.606	0.024	110	72-128	80-120

100&300Area Compnt RCBRA Sediment&Ti

QC-LCS #56302

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-10 J112B1

DUPLICATE

SDG	7393			Client/Case no	Hanford SDG K0235
Contact	Melissa C. Mannion			Contract	No. 630
DUPLICATE		ORIGINAL			
Lab sample id	R602162-10	Lab sample id	R602162-04	Client sample id	J112B1
Dept sample id	7393-010	Dept sample id	7393-004	Location/Matrix	Cr 4, SEDIMENT SOLID
		Received	02/23/06	Collected/Weight	02/21/06 14:00 1080 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-047-21 RC-047

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Carbon 14	234	4.4	2.7	50		C	230	4.4	2.7		2	22	0.2
Total Strontium	-0.098	0.17	0.37	1.0	U	SR	0.024	0.12	0.23	U	-		1.2
Thorium 228	0.572	0.32	0.24	1.0		TH	0.346	0.35	0.55	U	49	155	1.0
Thorium 230	0.443	0.26	0.24	1.0		TH	0.172	0.35	0.44	U	88	213	1.2
Thorium 232	0.253	0.19	0.24	1.0		TH	1.09	0.47	0.44		125	114	3.3
Uranium 233/234	0.417	0.21	0.16	1.0		U	0.513	0.22	0.21		21	99	0.6
Uranium 235	0.025	0.050	0.19	1.0	U	U	0.098	0.13	0.25	U	-		1.0
Uranium 238	0.375	0.17	0.16	1.0		U	0.324	0.16	0.21		15	101	0.4
Potassium 40	9.50	0.35	0.16			GAM	9.47	0.24	0.12		0	33	0
Cobalt 60	U		0.017	0.050	U	GAM	U		0.011	U	-		0.6
Cesium 137	U		0.017	0.10	U	GAM	U		0.011	U	-		0.6
Radium 226	0.402	0.035	0.034	0.10		GAM	0.382	0.021	0.020		5	35	0.4
Radium 228	0.578	0.072	0.071	0.20		GAM	0.559	0.050	0.049		3	39	0.3
Europium 152	U		0.037	0.10	U	GAM	U		0.025	U	-		0.5
Europium 154	U		0.055	0.10	U	GAM	U		0.036	U	-		0.6
Europium 155	U		0.070	0.10	U	GAM	U		0.045	U	-		0.6
Thorium 228	0.518	0.022	0.021			GAM	0.510	0.014	0.014		2	33	0.1
Thorium 232	0.578	0.072	0.071			GAM	0.559	0.050	0.049		3	39	0.3
Uranium 235	U		0.072		U	GAM	U		0.052	U	-		0.4
Uranium 238	U		2.0		U	GAM	U		1.5	U	-		0.4
Americium 241	U		0.13		U	GAM	U		0.087	U	-		0.5
Beryllium 7	U		0.17		U	GAM	U		0.11	U	-		0.6
Ruthenium 106	U		0.13		U	GAM	U		0.084	U	-		0.6
Antimony 125	U		0.035		U	GAM	U		0.022	U	-		0.6
Cesium 134	U		0.021		U	GAM	U		0.014	U	-		0.5

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-10 J112B1

DUPLICATE, cont.

SDG	7393			Client/Case no	Hanford SDG K0235
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R602162-10	Lab sample id	R602162-04	Client sample id	J112B1
Dept sample id	7393-010	Dept sample id	7393-004	Location/Matrix	Cr 4, SEDIMENT SOLID
		Received	02/23/06	Collected/Weight	02/21/06 14:00 1080 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-047-21 RC-047

QC-DUP#4 56304

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-01 **J11298**

DATA SHEET

SDG	7393	Client/Case no	Hanford	SDG K0235	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602162-01	Client sample id	J11298		
Dept sample id	7393-001	Location/Matrix	Cr 1, SEDIMENT	SOLID	
Received	02/23/06	Collected/Weight	02/21/06 11:00	556 g	
% solids	100.0	Custody/SAF No	RC-047-18	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.143	1.6	2.6	50	U	C
Total Strontium	SR-RAD	0.001	0.10	0.21	1.0	U	SR
Thorium 228	14274-82-9	0.799	0.50	0.47	1.0		TH
Thorium 230	14269-63-7	0.489	0.37	0.47	1.0		TH
Thorium 232	TH-232	0.856	0.50	0.47	1.0		TH
Uranium 233/234	U-233/234	0.574	0.25	0.19	1.0		U
Uranium 235	15117-96-1	0	0.060	0.23	1.0	U	U
Uranium 238	U-238	0.474	0.20	0.19	1.0		U
Potassium 40	13966-00-2	25.3	1.3	0.36			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	0.520	0.044	0.043	0.10		GAM
Radium 226	13982-63-3	1.11	0.073	0.063	0.10		GAM
Radium 228	15262-20-1	1.45	0.16	0.14	0.20		GAM
Europium 152	14683-23-9	U		0.085	0.10	U	GAM
Europium 154	15585-10-1	U		0.12	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Thorium 228	14274-82-9	1.69	0.078	0.071			GAM
Thorium 232	TH-232	1.45	0.16	0.14			GAM
Uranium 235	15117-96-1	U		0.14		U	GAM
Uranium 238	U-238	U		4.0		U	GAM
Americium 241	14596-10-2	U		0.30		U	GAM
Beryllium 7	13966-02-4	U		0.34		U	GAM
Ruthenium 106	13967-48-1	U		0.28		U	GAM
Antimony 125	14234-35-6	U		0.075		U	GAM
Cesium 134	13967-70-9	U		0.044		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
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Report date	04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-02 J11299

DATA SHEET

SDG	7393	Client/Case no	Hanford	SDG K0235	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602162-02	Client sample id	J11299		
Dept sample id	7393-002	Location/Matrix	Cr 2, SEDIMENT	SOLID	
Received	02/23/06	Collected/Weight	02/21/06 12:00	501 g	
% solids	100.0	Custody/SAF No	RC-047-19	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	80.4	3.0	2.8	50		C
Total Strontium	SR-RAD	-0.006	0.10	0.22	1.0	U	SR
Thorium 228	14274-82-9	0.798	0.39	0.36	1.0		TH
Thorium 230	14269-63-7	0.641	0.38	0.29	1.0		TH
Thorium 232	TH-232	0.791	0.38	0.29	1.0		TH
Uranium 233/234	U-233/234	0.516	0.23	0.22	1.0		U
Uranium 235	15117-96-1	0.035	0.069	0.27	1.0	U	U
Uranium 238	U-238	0.286	0.17	0.22	1.0		U
Potassium 40	13966-00-2	13.9	0.64	0:15			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	0.290	0.020	0.018	0.10		GAM
Radium 226	13982-63-3	0.603	0.035	0.028	0.10		GAM
Radium 228	15262-20-1	0.761	0.072	0.063	0.20		GAM
Europium 152	14683-23-9	U		0.037	0.10	U	GAM
Europium 154	15585-10-1	U		0.045	0.10	U	GAM
Europium 155	14391-16-3	U		0.046	0.10	U	GAM
Thorium 228	14274-82-9	0.660	0.023	0.018			GAM
Thorium 232	TH-232	0.761	0.072	0.063			GAM
Uranium 235	15117-96-1	U		0.054		U	GAM
Uranium 238	U-238	U		2.4		U	GAM
Americium 241	14596-10-2	U		0.078		U	GAM
Beryllium 7	13966-02-4	U		0.15		U	GAM
Ruthenium 106	13967-48-1	U		0.11		U	GAM
Antimony 125	14234-35-6	U		0.034		U	GAM
Cesium 134	13967-70-9	U		0.020		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/11/06

E B E R L I N E S E R V I C E S / R I C H M O N D

SAMPLE DELIVERY GROUP K0235

R602162-03 **J112B0**

D A T A S H E E T

SDG	7393	Client/Case no	Hanford	SDG_K0235	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602162-03	Client sample id	J112B0		
Dept sample id	7393-003	Location/Matrix	Cr 3, SEDIMENT	SOLID	
Received	02/23/06	Collected/Weight	02/21/06 13:00	921 g	
% solids	100.0	Custody/SAF No	RC-047-20	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	3.61	1.8	2.8	50		C
Total Strontium	SR-RAD	0.005	0.10	0.21	1.0	U	SR
Thorium 228	14274-82-9	0.572	0.51	0.61	1.0	U	TH
Thorium 230	14269-63-7	0.443	0.38	0.48	1.0	U	TH
Thorium 232	TH-232	0.443	0.38	0.48	1.0	U	TH
Uranium 233/234	U-233/234	0.479	0.22	0.17	1.0		U
Uranium 235	15117-96-1	0.026	0.053	0.20	1.0	U	U
Uranium 238	U-238	0.479	0.22	0.17	1.0		U
Potassium 40	13966-00-2	20.7	1.1	0.15			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	0.060	0.020	0.019	0.10		GAM
Radium 226	13982-63-3	0.772	0.040	0.026	0.10		GAM
Radium 228	15262-20-1	1.14	0.082	0.066	0.20		GAM
Europium 152	14683-23-9	U		0.038	0.10	U	GAM
Europium 154	15585-10-1	U		0.049	0.10	U	GAM
Europium 155	14391-16-3	U		0.078	0.10	U	GAM
Thorium 228	14274-82-9	1.10	0.032	0.022			GAM
Thorium 232	TH-232	1.14	0.082	0.066			GAM
Uranium 235	15117-96-1	U		0.13		U	GAM
Uranium 238	U-238	U		5.3		U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM
Beryllium 7	13966-02-4	U		0.16		U	GAM
Ruthenium 106	13967-48-1	U		0.12		U	GAM
Antimony 125	14234-35-6	U		0.035		U	GAM
Cesium 134	13967-70-9	U		0.024		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-04 **J112B1**

DATA SHEET

SDG	7393	Client/Case no	Hanford SDG K0235
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602162-04	Client sample id	J112B1
Dept sample id	7393-004	Location/Matrix	Cr 4, SEDIMENT SOLID
Received	02/23/06	Collected/Weight	02/21/06 14:00 1080 g
% solids	100.0	Custody/SAF No	RC-047-21 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	230	4.4	2.7	50		C
Total Strontium	SR-RAD	0.024	0.12	0.23	1.0	U	SR
Thorium 228	14274-82-9	0.346	0.35	0.55	1.0	U	TH
Thorium 230	14269-63-7	0.172	0.35	0.44	1.0	U	TH
Thorium 232	TH-232	1.09	0.47	0.44	1.0		TH
Uranium 233/234	U-233/234	0.513	0.22	0.21	1.0		U
Uranium 235	15117-96-1	0.098	0.13	0.25	1.0	U	U
Uranium 238	U-238	0.324	0.16	0.21	1.0		U
Potassium 40	13966-00-2	9.47	0.24	0.12			GAM
Cobalt 60	10198-40-0	U		0.011	0.050	U	GAM
Cesium 137	10045-97-3	U		0.011	0.10	U	GAM
Radium 226	13982-63-3	0.382	0.021	0.020	0.10		GAM
Radium 228	15262-20-1	0.559	0.050	0.049	0.20		GAM
Europium 152	14683-23-9	U		0.025	0.10	U	GAM
Europium 154	15585-10-1	U		0.036	0.10	U	GAM
Europium 155	14391-16-3	U		0.045	0.10	U	GAM
Thorium 228	14274-82-9	0.510	0.014	0.014			GAM
Thorium 232	TH-232	0.559	0.050	0.049			GAM
Uranium 235	15117-96-1	U		0.052		U	GAM
Uranium 238	U-238	U		1.5		U	GAM
Americium 241	14596-10-2	U		0.087		U	GAM
Beryllium 7	13966-02-4	U		0.11		U	GAM
Ruthenium 106	13967-48-1	U		0.084		U	GAM
Antimony 125	14234-35-6	U		0.022		U	GAM
Cesium 134	13967-70-9	U		0.014		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-05 J116L6

DATA SHEET

SDG	7393	Client/Case no	Hanford SDG K0235
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602162-05	Client sample id	J116L6
Dept sample id	7393-005	Location/Matrix	Cr 7, SEDIMENT SOLID
Received	02/23/06	Collected/Weight	02/21/06 14:45 684 g
% solids	100.0	Custody/SAF No	RC-047-35 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.404	0.18	0.27	1.0		SR
Thorium 228	14274-82-9	0.941	0.50	0.38	1.0		TH
Thorium 230	14269-63-7	0.839	0.50	0.38	1.0		TH
Thorium 232	TH-232	1.09	0.50	0.38	1.0		TH
Uranium 233/234	U-233/234	0.504	0.18	0.14	1.0		U
Uranium 235	15117-96-1	0.087	0.087	0.17	1.0	U	U
Uranium 238	U-238	0.414	0.18	0.14	1.0		U
Potassium 40	13966-00-2	20.6	1.4	0.28			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	0.217	0.022	0.023	0.10		GAM
Radium 226	13982-63-3	0.900	0.064	0.051	0.10		GAM
Radium 228	15262-20-1	1.32	0.12	0.10	0.20		GAM
Europium 152	14683-23-9	U		0.067	0.10	U	GAM
Europium 154	15585-10-1	U		0.080	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Thorium 228	14274-82-9	1.23	0.047	0.037			GAM
Thorium 232	TH-232	1.32	0.12	0.10			GAM
Uranium 235	15117-96-1	U		0.12		U	GAM
Uranium 238	U-238	U		3.2		U	GAM
Americium 241	14596-10-2	U		0.25		U	GAM
Beryllium 7	13966-02-4	U		0.29		U	GAM
Ruthenium 106	13967-48-1	U		0.21		U	GAM
Antimony 125	14234-35-6	U		0.061		U	GAM
Cesium 134	13967-70-9	U		0.035		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-06 J116L7

DATA SHEET

SDG	7393	Client/Case no	Hanford SDG_K0235
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602162-06	Client sample id	J116L7
Dept sample id	7393-006	Location/Matrix	Cr 8, SEDIMENT SOLID
Received	02/23/06	Collected/Weight	02/21/06 15:30 616 g
% solids	100.0	Custody/SAF No	RC-047-35 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.004	0.17	0.35	1.0	U	SR
Thorium 228	14274-82-9	0.422	0.42	0.67	1.0	U	TH
Thorium 230	14269-63-7	0.280	0.28	0.54	1.0	U	TH
Thorium 232	TH-232	0.350	0.28	0.54	1.0	U	TH
Uranium 233/234	U-233/234	0.541	0.19	0.14	1.0		U
Uranium 235	15117-96-1	0	0.045	0.17	1.0	U	U
Uranium 238	U-238	0.672	0.23	0.14	1.0		U
Potassium 40	13966-00-2	11.5	0.56	0.16			GAM
Cobalt 60	10198-40-0	U		0.017	0.050	U	GAM
Cesium 137	10045-97-3	0.131	0.020	0.020	0.10		GAM
Radium 226	13982-63-3	0.478	0.037	0.032	0.10		GAM
Radium 228	15262-20-1	0.640	0.087	0.082	0.20		GAM
Europium 152	14683-23-9	U		0.042	0.10	U	GAM
Europium 154	15585-10-1	U		0.052	0.10	U	GAM
Europium 155	14391-16-3	U		0.052	0.10	U	GAM
Thorium 228	14274-82-9	0.560	0.024	0.021			GAM
Thorium 232	TH-232	0.640	0.087	0.082			GAM
Uranium 235	15117-96-1	U		0.061		U	GAM
Uranium 238	U-238	U		2.8		U	GAM
Americium 241	14596-10-2	U		0.089		U	GAM
Beryllium 7	13966-02-4	U		0.17		U	GAM
Ruthenium 106	13967-48-1	U		0.12		U	GAM
Antimony 125	14234-35-6	U		0.039		U	GAM
Cesium 134	13967-70-9	U		0.023		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

R602162-07 J11733

DATA SHEET

SDG	7393	Client/Case no	Hanford	SDG K0235	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602162-07	Client sample id	J11733		
Dept sample id	7393-007	Location/Matrix	Cr 8, SEDIMENT	SOLID	
Received	02/23/06	Collected/Weight	02/21/06 16:30	704 g	
% solids	100.0	Custody/SAF No	RC-047-99	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.020	0.15	0.30	1.0	U	SR
Thorium 228	14274-82-9	0.734	0.67	0.89	1.0	U	TH
Thorium 230	14269-63-7	0.732	0.54	0.51	1.0		TH
Thorium 232	TH-232	0.266	0.27	0.51	1.0	U	TH
Uranium 233/234	U-233/234	0.482	0.20	0.15	1.0		U
Uranium 235	15117-96-1	0.024	0.049	0.19	1.0	U	U
Uranium 238	U-238	0.482	0.20	0.15	1.0		U
Potassium 40	13966-00-2	10.2	0.34	0.17			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	0.105	0.012	0.014	0.10		GAM
Radium 226	13982-63-3	0.514	0.035	0.033	0.10		GAM
Radium 228	15262-20-1	0.650	0.069	0.070	0.20		GAM
Europium 152	14683-23-9	U		0.035	0.10	U	GAM
Europium 154	15585-10-1	U		0.052	0.10	U	GAM
Europium 155	14391-16-3	U		0.053	0.10	U	GAM
Thorium 228	14274-82-9	0.567	0.019	0.018			GAM
Thorium 232	TH-232	0.650	0.069	0.070			GAM
Uranium 235	15117-96-1	U		0.055		U	GAM
Uranium 238	U-238	U		2.0		U	GAM
Americium 241	14596-10-2	U		0.055		U	GAM
Beryllium 7	13966-02-4	U		0.15		U	GAM
Ruthenium 106	13967-48-1	U		0.12		U	GAM
Antimony 125	14234-35-6	U		0.034		U	GAM
Cesium 134	13967-70-9	U		0.020		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test TH Matrix SOLID
SDG 7393
Contact Melissa C. Mannion

METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0235

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Thorium 230
Preparation batch 7131-101					
J11298	R602162-01			7393-001	0.489
J11299	R602162-02			7393-002	0.641
J112B0	R602162-03			7393-003	U
J112B1	R602162-04			7393-004	U
J116L6	R602162-05			7393-005	0.839
J116L7	R602162-06			7393-006	U
J11733	R602162-07			7393-007	0.732
Method Blank	R602162-09			7393-009	U
Lab Control Sample	R602162-08			7393-008	ok
Duplicate (R602162-04)	R602162-10			7393-010	ok
Nominal values and limits from method				RDLs (pCi/g)	1.0

100&300Area Compnt RCBRA Sediment&Ti

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7131-101	2σ prep error 5.0 %			Reference Lab Notebook 7131 pg. 101												
J11298	R602162-01			0.47	0.250			45		158			42	03/31/06	04/04	SS-038
J11299	R602162-02			0.36	0.250			86		164			45	03/31/06	04/07	SS-032
J112B0	R602162-03			0.61	0.250			49		172			41	03/31/06	04/03	SS-031
J112B1	R602162-04			0.55	0.250			53		172			41	03/31/06	04/03	SS-032
J116L6	R602162-05			0.38	0.250			60		172			41	03/31/06	04/03	SS-033
J116L7	R602162-06			0.67	0.250			44		173			41	03/31/06	04/03	SS-034
J11733	R602162-07			0.89	0.250			39		171			41	03/31/06	04/03	SS-035
Method Blank	R602162-09			0.38	0.250			53		172				03/31/06	04/03	SS-037
Lab Control Sample	R602162-08			0.44	0.250			45		172				03/31/06	04/03	SS-036
Duplicate (R602162-04)	R602162-10			0.24	0.250			80		172			41	03/31/06	04/03	SS-038
Nominal values and limits from method				1.0	0.250			20-105		150			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test	TH
Matrix	SOLID
SDG	7393
Contact	Melissa C. Mannion

METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0235

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	0.50	±	0.37
FOR 10 SAMPLES	YIELD	55	±	31

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test U Matrix SOLID
SDG 7393
Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0235

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 7131-101											
J11298	R602162-01			7393-001	0.574	U	0.474	121	73	0	13
J11299	R602162-02			7393-002	0.516	U	0.286	180	134	12	25
J112B0	R602162-03			7393-003	0.479	U	0.479	100	65	5	11
J112B1	R602162-04			7393-004	0.513	U	0.324	158	104	30	43
J116L6	R602162-05			7393-005	0.504	U	0.414	122	69	21	23
J116L7	R602162-06			7393-006	0.541	U	0.672	81	39	0	7
J11733	R602162-07			7393-007	0.482	U	0.482	100	59	5	10
Method Blank	R602162-09			7393-009	U	U	U				
Lab Control Sample	R602162-08			7393-008	ok	ok	ok				
Duplicate (R602162-04)	R602162-10			7393-010	ok	- U	ok	111	75	7	14
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0	1.0	100		4	
100&300Area Compnt RCBRA Sediment&Ti								Averages 122		10	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7131-101	2σ prep error 5.0 %			Reference Lab Notebook 7131 pg. 101												
J11298	R602162-01			0.23	0.500			74		165			32	03/24/06	03/25	SS-063
J11299	R602162-02			0.27	0.500			82		117			34	03/24/06	03/27	SS-065
J112B0	R602162-03			0.20	0.500			75		165			32	03/24/06	03/25	SS-065
J112B1	R602162-04			0.25	0.500			62		165			32	03/24/06	03/25	SS-066
J116L6	R602162-05			0.17	0.500			87		162			32	03/24/06	03/25	SS-027
J116L7	R602162-06			0.17	0.500			82		162			32	03/24/06	03/25	SS-028
J11733	R602162-07			0.19	0.500			80		162			32	03/24/06	03/25	SS-031
Method Blank	R602162-09			0.22	0.500			65		163				03/24/06	03/25	SS-033
Lab Control Sample	R602162-08			0.86	0.500			74		162				03/24/06	03/25	SS-032
Duplicate (R602162-04)	R602162-10			0.19	0.500			80		163			32	03/24/06	03/25	SS-034
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test	U
Matrix	SOLID
SDG	7393
Contact	Melissa C. Mannion

METHOD SUMMARY, cont.

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0235

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 10 SAMPLES				
	MDA	0.28	±	0.42
	YIELD	76	±	16

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test SR Matrix SOLID
SDG 7393
Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K0235

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium
Preparation batch 7131-101					
J11298	R602162-01			7393-001	U
J11299	R602162-02			7393-002	U
J112B0	R602162-03			7393-003	U
J112B1	R602162-04			7393-004	U
J116L6	R602162-05			7393-005	0.404
J116L7	R602162-06			7393-006	U
J11733	R602162-07			7393-007	U
Method Blank	R602162-09			7393-009	U
Lab Control Sample	R602162-08			7393-008	ok
Duplicate (R602162-04)	R602162-10			7393-010	- U
Nominal values and limits from method				RDLs (pCi/g)	1.0

100&300Area Compnt RCBRA Sediment&Ti

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7131-101	2σ prep error 10.0 % Reference Lab Notebook 7131 pg. 101															
J11298	R602162-01			0.21	1.00			95		100			31	03/24/06	03/24	GRB-222
J11299	R602162-02			0.22	1.00			98		100			31	03/24/06	03/24	GRB-223
J112B0	R602162-03			0.21	1.00			98		100			31	03/24/06	03/24	GRB-224
J112B1	R602162-04			0.23	1.00			98		100			31	03/24/06	03/24	GRB-225
J116L6	R602162-05			0.27	1.00			96		100			31	03/24/06	03/24	GRB-226
J116L7	R602162-06			0.35	1.00			96		100			31	03/24/06	03/24	GRB-223
J11733	R602162-07			0.30	1.00			96		100			31	03/24/06	03/24	GRB-227
Method Blank	R602162-09			0.29	1.00			95		100				03/24/06	03/24	GRB-203
Lab Control Sample	R602162-08			0.22	1.00			94		100				03/24/06	03/24	GRB-228
Duplicate (R602162-04)	R602162-10			0.37	1.00			95		100			31	03/24/06	03/24	GRB-227
Nominal values and limits from method				1.0	1.00			30-105		100			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test SR	Matrix SOLID
SDG 7393	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K0235	

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD	MDA	0.27	±	0.12
FOR 10 SAMPLES	YIELD	96	±	3

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test GAM Matrix SOLID
SDG 7393
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0235

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60		Cesium 137	
Preparation batch 7131-101								
J11298	R602162-01			7393-001	U		0.520	
J11299	R602162-02			7393-002	U		0.290	
J112B0	R602162-03			7393-003	U		0.060	
J112B1	R602162-04			7393-004	U		U	
J116L6	R602162-05			7393-005	U		0.217	
J116L7	R602162-06			7393-006	U		0.131	
J11733	R602162-07			7393-007	U		0.105	
Method Blank	R602162-09			7393-009	U		U	
Lab Control Sample	R602162-08			7393-008	ok		ok	
Duplicate (R602162-04)	R602162-10			7393-010	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.10	
100&300Area Compnt RCBRA Sediment&Ti								

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7131-101	2σ prep error 15.0 % Reference Lab Notebook 7131 pg. 101															
J11298	R602162-01			7.6	458					432			32	03/20/06	03/25	02,02,00
J11299	R602162-02			3.4	407					864			34	03/20/06	03/27	MB,08,00
J112B0	R602162-03			3.4	740					864			34	03/20/06	03/27	02,02,00
J112B1	R602162-04			2.2	767					988			35	03/20/06	03/28	MB,05,00
J116L6	R602162-05			5.6	613					402			35	03/20/06	03/28	02,02,00
J116L7	R602162-06			3.8	523					403			35	03/20/06	03/28	MB,08,00
J11733	R602162-07			3.1	633					989			35	03/20/06	03/28	02,03,00
Method Blank	R602162-09			2.4	406					990				03/20/06	03/28	MB,08,00
Lab Control Sample	R602162-08			0.028	406					403				03/20/06	03/28	01,03,00
Duplicate (R602162-04)	R602162-10			3.5	767					430			36	03/20/06	03/29	MB,05,00
Nominal values and limits from method				0.050	406					100			180			

Lab id EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test GAM	Matrix SOLID
SDG 7393	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG K0235	

PROCEDURES	REFERENCE	GAMMA_GS
	SPP-100	Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD	MDA 3.5	± 4.0
FOR 10 SAMPLES	YIELD	±

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0235

Test C___ Matrix SOLID
SDG 7393
Contact Melissa C. Mannion

METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K0235

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Carbon 14
Preparation batch 7131-101					
J11298	R602162-01			7393-001	U
J11299	R602162-02			7393-002	80.4
J112B0	R602162-03			7393-003	3.61
J112B1	R602162-04			7393-004	230
Method Blank	R602162-09			7393-009	U
Lab Control Sample	R602162-08			7393-008	ok
Duplicate (R602162-04)	R602162-10			7393-010	ok
Nominal values and limits from method				RDLs (pCi/g)	50
100&300Area Compnt RCBRA Sediment&Ti					

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7131-101	2σ prep error 10.0 %				Reference Lab Notebook 7131 pg. 101											
J11298	R602162-01			2.6	0.379			100		100			41	03/31/06	04/03	LSC-004
J11299	R602162-02			2.8	0.363			100		100			41	03/31/06	04/03	LSC-004
J112B0	R602162-03			2.8	0.366			100		100			41	03/31/06	04/03	LSC-004
J112B1	R602162-04			2.7	0.367			100		100			41	03/31/06	04/03	LSC-004
Method Blank	R602162-09			3.3	0.300			100		100				03/31/06	04/03	LSC-004
Lab Control Sample	R602162-08			3.5	0.300			100		100				03/31/06	04/03	LSC-004
Duplicate (R602162-04)	R602162-10			2.7	0.367			100		100			41	03/31/06	04/03	LSC-004
Nominal values and limits from method				50	0.300					25			180			

PROCEDURES REFERENCE C14_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD FOR 7 SAMPLES
MDA 2.9 ± 0.69
YIELD 100 ± 0

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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0235

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
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SDG 7393
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0235

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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REPORT GUIDE

Client Hanford
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Case no SDG K0235

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

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GUIDE, cont.

Client Hanford
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DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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REPORT GUIDE

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Case no SDG K0235

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0235

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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GUIDE, cont.

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Case no SDG K0235

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

SDG 7393
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0235

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/11/06

SDG 7393
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K0235

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/11/06

SDG	7393
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG_K0235

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	04/11/06

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-18	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER; Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N; Data Turnaround: 45 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 1, SEDIMENT K0235 (7393)	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: ERC-99-027	Field Logbook No.: EL-1596 7 AN 13106; COA: BESRAS6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060306	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ RZS 2-22-06
None

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J11298	OTHER SOLID	2-21-06	1100	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD; Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE; Date/Time: 1900 2-21-06
Relinquished By/Removed From: EAS LOCKED STORAGE; Date/Time: 0830 2-22-06	Received By/Stored In: RZ Steffler R.J. Steffler; Date/Time: 0830 2-22-06
Relinquished By/Removed From: RZ Steffler R.J. Steffler; Date/Time: 1600 WCH 2-22-06	Received By/Stored In: Fed Ex; Date/Time:
Relinquished By/Removed From: FED Ex; Date/Time:	Received By/Stored In: Flex Reinhard; Date/Time: 2/23/06 10:00
Relinquished By/Removed From: ; Date/Time:	Received By/Stored In: ; Date/Time:
Relinquished By/Removed From: ; Date/Time:	Received By/Stored In: ; Date/Time:

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-19	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 2, SEDIMENT K0235 (7393)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-99-027	Field Logbook No. EL-1596-7	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060306		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ RZS 2-22-06
None

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1	1		
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time											
J11299 / OTHER SOLID / 2-21-06 / 1200	X	X	X								

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler Date/Time 1600 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In Alex Kellerd Date/Time 2/23/06 10:00
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-20	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 3, SEDIMENT K0235 (7393)		SAF No.: RC-047
Ice Chest No.: ERC-99-027	Field Logbook No.: EL-1596 7 [illegible] 13106	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060306		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ None RZS 2-22-06

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B0	OTHER SOLID	2-21-06	1300	X	X	X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-21-06 1900	EAS LOCKED STORAGE	2-21-06 1900
EAS LOCKED STORAGE	2-22-06 0830	RZ Steffler R.J. Steffler	2-22-06 0830
RZ Steffler R.J. Steffler	2-22-06 1600 WCH	Fed Ex	
FED EX		Flex [illegible]	2/23/06 10:00

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-21	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location Cr 4, SEDIMENT K0235 (7393)		SAF No. RC-047
Ice Chest No. ERC-99-027	Field Logbook No. EL-1596 7/1/13/06	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060306		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ None RZS 2-22-06

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	1	
Volume	750g	5g	5g	15g	50g	50g	50g	50g	50g	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Carbon-14	See item (2) in Special Instructions.	See item (3) in Special Instructions.	PCBs - 8082	Pesticides - 8081	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G	

Sample No.	Matrix *	Sample Date	Sample Time										
J112B1	OTHER SOLID	2-21-06	1400	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1900 2-21-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0830 2-22-06	Received By/Stored In RZ Steffler R.J. Steffler Date/Time 0830 2-22-06
Relinquished By/Removed From RZ Steffler R.J. Steffler Date/Time 1600 WLH 2-22-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In Alex Delaney Date/Time 2/23/06 10:00
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Radium-226, Radium-228, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238}
(2) Strontium-89,90 -- Total Sr; Isotopic Thorium {Thorium-232}; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}
(3) 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}; Mercury - 7471 - (CV)

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-35	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr7 SEDIMENT K0235 (7393)		SAF No.: RC-047
Ice Chest No.: ERC-99-027	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060306		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality: ☐

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ RZS
None 2-22-06

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		

Sample No.	Matrix *	Sample Date	Sample Time										
J116L6	OTHER SOLID	2-21-06	1445	X	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By/Removed From: JAMES BERNHARD Date/Time: 1900 2-21-06	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 1900 2-21-06		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
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 0830 2-22-06	Received By/Stored In: RZ Steffler Date/Time: 0830 2-22-06		
Relinquished By/Removed From: RZ Steffler Date/Time: 1600 WCH 2-22-06	Received By/Stored In: Fed Ex Date/Time:		
Relinquished By/Removed From: FED EX Date/Time:	Received By/Stored In: Alex Kelleel Date/Time: 2/23/06 10:00		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-36	Page 1 of 1

Collector: TILLER ~~JAMES BERNHARD~~	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: Cr 8 SEDIMENT K0235 (7393)	SAF No.: RC-047	
Ice Chest No.: ERC-99-027	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060306	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ None RZS 2-22-06

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J116L7 / OTHER SOLID / 2-21-06 / 1530	X	X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1900 2-21-06	EAS LOCKED STORAGE	1900 2-21-06
EAS LOCKED STORAGE	0830 2-22-06	RZ Stettler	0830 2-22-06
RZ Stettler	1600 2-22-06	Fed Ex	
FED EX		Alex Kellum	2/23/06 10:00

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wl=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)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-99	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0235	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location ~~REF~~, SEDIMENT SEB 2-21-06 Cr #8 (7393)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-99-027	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060306		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ R25 2-22-06
None

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11733 / OTHER SOLID / 2-21-06 / 1630	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JCM JAMES BERNHARD	1900 2-21-06	Received By/Stored In JCM EAS LOCKED STORAGE	1900 2-21-06
Relinquished By/Removed From EAS LOCKED STORAGE	0830 2-22-06	Received By/Stored In RZ Staffler RJ Stuff	0830 2-22-06
Relinquished By/Removed From RZ Staffler RJ Stuff	1600 2-22-06	Received By/Stored In Fed Ex	
Relinquished By/Removed From FED EX		Received By/Stored In Alex Lellel	2/23/06 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
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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)

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: WC HANFORD City RICHLAND State WA

Date/Time received 2/23/06 10:00 CoC No. RC-047-18-21, 35-36, 99

Container I.D. No. ERC-99-027 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [✓]
6. Number of samples in shipping container: 7 Sample Matrix OTHER SOLID
7. Number of containers per sample: _____ (Or see CoC RC-047)
8. Samples are in correct container Yes [✓] No [ ]
9. Paperwork agrees with samples? Yes [✓] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
11. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by AK Date: 2/23/06 Time: 10:50

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____
Alpha Meter Ser. No. _____ Calibration date _____
Beta/Gamma Meter Ser. No. _____ Calibration date _____