0069878

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 6/6/06 INITIAL/DATE
Jeanette Duncan	H9-02	___NB 6/6/06 INITIAL/DATE

RECEIVED
JUN 2 2 2006
EDMC

COMMENTS:

SDG _K0238____ SAF-RC-047

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 100-K Elevated

LIONVILLE LABORATORY INC.

RECEIVED MAY 2006

30 May 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 #	0603L498
SDG #	K0238
SAF #	RC-047
Date Received	3/13/06
# Samples	7
Mat\rix	Other Solid
Volatiles	
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11807	001	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11807	001 MS	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11807	001 MSD	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11863	002	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11864	003	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11865	004	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11866	005	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11867	006	SO	06LE0222	02/23/06	03/22/06	04/25/06
J11868	007	SO	06LE0222	02/23/06	03/22/06	04/25/06

LAB QC:

SBLKWL	MB1	S	06LE0222	N/A	03/22/06	04/24/06
SBLKWL	MB1 BS	S	06LE0222	N/A	03/22/06	04/24/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L498
SDG/SAF # K0238/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-13-2006

SEMIVOLATILE

Seven (7) solid (fish) samples were collected on 02-23-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 03-22-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-24,25-2006.

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

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

2. The sample results were reported on a wet-weight basis. The samples were GPDd and used the reduced sample volume for the extraction due to the nature of the sample matrix. A copy of the Sample Extraction Record has been enclosed.

3. Samples were received outside the extraction holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

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

5. All surrogate recoveries were within acceptance criteria.

6. One hundred twenty-one (121) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria.

   Sixty-one (61) of sixty-four (64) blank spike recoveries were outside acceptance criteria. The sample J11807 will be re-extracted, analyzed and submitted under separate cover. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. The method blank contained the common laboratory contaminants Bis (2-Ethylhexyl) phthalate and Di-n-butylphthalate at levels less than the CRQL. The method blank also contained the target compound 4-Methylphenol at a level less than the CRQL.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 3 4 pages.

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

LIONVILLE LABORATORY INC.

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").

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.

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/30/02
Date

som\gorup\data\bna\mu-hanford\0603-498.doc

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Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06M5176

Initiator: Robert Carter
Date: 5/26/06
Client: TNU Hanford RCCMP

Batch: 06U3498
Samples: 001, 001S, 001T, 002, B6
Method: SW846/MCAWW/CLP/

Parameter: 06254
Matrix: Solid
Prep Batch: 06LE022

1. Reason for SDR

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

b. General Discrepancy

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

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

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

(1) 001, 002 appears to have large no. of target cpds present spike levels
(2) Samples extracted at hold (13 days) client requested analysis priority order
(3) 001S, 001T - low spikes
(4) B6 low spikes

2. Known or Probable Causes(s)

(1) possible spike! possible carryover on GC/MS? possible sample mixup?
(2) Samples received past hold (14 days)
(3) matrix effect! loss on GPC/extraction? possible sample mixup?
(4) loss on GPC/extraction? possible sample mixup?

3. Discussion and Proposed Action Other Description:

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
✓ Re-extract 001, 001S, 001T, 002
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 5/26/06

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

Reextracted batch 06LE0350 5/26/06

5. Final Action...signature/date: 5/26/06 Other Explanation:

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

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

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

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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: 05/26/06 08:14

RFW Batch Number: **0603L498** Client: **TNUHANFORD RC-047 K0238** Work Order: 11343606001 Page: 1a

000000008

	Cust ID:	J11807		J11807		J11807		J11863		J11864		J11865	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	0.800		0.800		0.800		0.800		0.800		0.800	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	45	%	53	%	52	%	45	%	42	%	38	%
	2-Fluorobiphenyl	51	%	59	%	58	%	50	%	45	%	44	%
	Terphenyl-d14	57	%	72	%	71	%	67	%	63	%	45	%
	Phenol-d5	52	%	60	%	59	%	51	%	48	%	40	%
	2-Fluorophenol	48	%	60	%	56	%	49	%	46	%	38	%
	2,4,6-Tribromophenol	64	%	72	%	70	%	69	%	65	%	45	%
		fl		fl		fl		fl		fl		fl	
Phenol		12000		0 *	%	38 *	%	19000		4600	U	4400	U
bis(2-Chloroethyl)ether		12000		0 *	%	34 *	%	17000		4600	U	4400	U
2-Chlorophenol		12000		0 *	%	37 *	%	18000		4600	U	4400	U
1,3-Dichlorobenzene		10000		0 *	%	33 *	%	15000		4600	U	4400	U
1,4-Dichlorobenzene		10000		0 *	%	32 *	%	15000		4600	U	4400	U
1,2-Dichlorobenzene		10000		0 *	%	31 *	%	15000		4600	U	4400	U
2-Methylphenol		11000		1 *	%	36 *	%	17000		4600	U	4400	U
2,2'-oxybis(1-Chloropropane)		12000		0 *	%	39 *	%	19000		4600	U	4400	U
4-Methylphenol		20000	B	21 *	%	63	%	37000	B	10000	B	16000	B
N-Nitroso-di-n-propylamine		12000		0 *	%	36 *	%	18000		4600	U	4400	U
Hexachloroethane		10000		0 *	%	30 *	%	15000		4600	U	4400	U
Nitrobenzene		11000		0 *	%	33 *	%	17000		4600	U	4400	U
Isophorone		12000		0 *	%	36 *	%	18000		4600	U	4400	U
2-Nitrophenol		12000		1 *	%	41 *	%	18000		4600	U	4400	U
2,4-Dimethylphenol		8100		9 *	%	48 *	%	19000		4600	U	4400	U
bis(2-Chloroethoxy)methane		12000		0 *	%	37 *	%	18000		4600	U	4400	U
2,4-Dichlorophenol		12000		0 *	%	38 *	%	19000		4600	U	4400	U
1,2,4-Trichlorobenzene		11000		0 *	%	35 *	%	16000		4600	U	4400	U
Naphthalene		11000		0 *	%	37 *	%	17000		4600	U	4400	U
4-Chloroaniline		13000		0 *	%	29	%	17000		4600	U	4400	U
Hexachlorobutadiene		11000		1 *	%	37 *	%	17000		4600	U	4400	U
4-Chloro-3-methylphenol		10000		0 *	%	33 *	%	17000		4600	U	4400	U
2-Methylnaphthalene		11000		0 *	%	38 *	%	18000		4600	U	4400	U
Hexachlorocyclopentadiene		7300		0 *	%	0 *	%	6600	U	4600	U	4400	U
2,4,6-Trichlorophenol		13000		1 *	%	44	%	21000		4600	U	4400	U
2,4,5-Trichlorophenol		11000		3 *	%	39 *	%	19000		12000	U	11000	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 1b

Cust ID:	J11807		J11807		J11807		J11863		J11864		J11865	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	12000		0 *	%	37 *	%	18000		4600	U	4400	U
2-Nitroaniline	15000		2 *	%	42 *	%	25000		2700	J	11000	U
Dimethylphthalate	12000		0 *	%	38 *	%	20000		4600	U	4400	U
Acenaphthylene	12000		0 *	%	38 *	%	19000		4600	U	4400	U
2,6-Dinitrotoluene	13000		0 *	%	38 *	%	20000		4600	U	4400	U
3-Nitroaniline	17000		0 *	%	46 *	%	27000		12000	U	11000	U
Acenaphthene	12000		0 *	%	39 *	%	19000		4600	U	4400	U
2,4-Dinitrophenol	10000	U	0 *	%	59	%	17000	U	12000	U	11000	U
4-Nitrophenol	10000	U	1 *	%	5 *	%	17000	U	12000	U	11000	U
Dibenzofuran	12000		0 *	%	38 *	%	19000		4600	U	4400	U
2,4-Dinitrotoluene	13000		0 *	%	39 *	%	21000		4600	U	4400	U
Diethylphthalate	13000		0 *	%	38 *	%	21000		4600	U	4400	U
4-Chlorophenyl-phenylether	12000		0 *	%	38 *	%	19000		4600	U	4400	U
Fluorene	12000		0 *	%	38 *	%	19000		4600	U	4400	U
4-Nitroaniline	14000		0 *	%	36 *	%	26000		12000	U	11000	U
4,6-Dinitro-2-methylphenol	8700	J	4 *	%	40	%	17000		12000	U	11000	U
N-Nitrosodiphenylamine (1)	9700		0 *	%	29 *	%	16000		4600	U	4400	U
4-Bromophenyl-phenylether	10000		0 *	%	31 *	%	17000		4600	U	4400	U
Hexachlorobenzene	12000		0 *	%	41 *	%	20000		4600	U	4400	U
Pentachlorophenol	4800	J	0 *	%	0 *	%	2600	J	12000	U	11000	U
Phenanthrene	12000		0 *	%	39 *	%	20000		4600	U	4400	U
Anthracene	12000		0 *	%	38 *	%	20000		4600	U	4400	U
Carbazole	13000		0 *	%	33 *	%	20000		4600	U	4400	U
Di-n-butylphthalate	13000	B	2 *	%	40	%	21000	B	300	JB	420	JB
Fluoranthene	14000		0 *	%	43 *	%	23000		4600	U	4400	U
Pyrene	13000		2 *	%	50	%	24000		4600	U	4400	U
Butylbenzylphthalate	14000		2 *	%	47 *	%	25000		4600	U	4400	U
3,3'-Dichlorobenzidine	8400		0 *	%	5 *	%	7400		860	J	4400	U
Benzo(a)anthracene	13000		0 *	%	41 *	%	21000		4600	U	4400	U
Chrysene	12000		0 *	%	39 *	%	21000		4600	U	4400	U
bis(2-Ethylhexyl)phthalate	14000	B	0 *	%	44 *	%	24000	B	550	JB	570	JB
Di-n-octyl phthalate	14000		1 *	%	48 *	%	25000		4600	U	4400	U
Benzo(b)fluoranthene	14000		0 *	%	47 *	%	25000		4600	U	4400	U
Benzo(k)fluoranthene	12000		1 *	%	37 *	%	20000		4600	U	4400	U
Benzo(a)pyrene	12000		0 *	%	37 *	%	21000		4600	U	4400	U
Indeno(1,2,3-cd)pyrene	13000		0 *	%	30 *	%	20000		4600	U	4400	U
Dibenz(a,h)anthracene	13000		0 *	%	31 *	%	20000		4600	U	4400	U
Benzo(g,h,i)perylene	12000		0 *	%	29 *	%	18000		4600	U	4400	U

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

000000009

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/26/06 08:14

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 2a

000000010

	Cust ID:	J11866	J11867	J11868	SBLKWL	SBLKWL BS
Sample Information	RFW#:	005	006	007	06LK0222-MB1	06LK0222-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	0.800	0.800	0.800	0.800	0.800
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	42 %	48 %	57 %	33 %	47 %
	2-Fluorobiphenyl	48 %	50 %	60 %	34 %	52 %
	Terphenyl-d14	56 %	58 %	68 %	43 %	62 %
	Phenol-d5	42 %	52 %	58 %	34 %	50 %
	2-Fluorophenol	38 %	46 %	53 %	31 %	44 %
	2,4,6-Tribromophenol	55 %	57 %	65 %	44 %	57 %
Phenol		4300 U	6100 U	5600 U	270 U	27 * %
bis(2-Chloroethyl)ether		4300 U	6100 U	5600 U	270 U	26 * %
2-Chlorophenol		4300 U	6100 U	5600 U	270 U	26 * %
1,3-Dichlorobenzene		4300 U	6100 U	5600 U	270 U	24 * %
1,4-Dichlorobenzene		4300 U	6100 U	5600 U	270 U	24 * %
1,2-Dichlorobenzene		4300 U	6100 U	5600 U	270 U	25 * %
2-Methylphenol		4300 U	6100 U	5600 U	270 U	24 * %
2,2'-oxybis(1-Chloropropane)		4300 U	6100 U	5600 U	270 U	25 * %
4-Methylphenol		2700 JB	6900 B	24000 B	250 J	16 * %
N-Nitroso-di-n-propylamine		4300 U	6100 U	5600 U	270 U	27 * %
Hexachloroethane		4300 U	6100 U	5600 U	270 U	24 * %
Nitrobenzene		4300 U	6100 U	5600 U	270 U	26 * %
Isophorone		4300 U	6100 U	5600 U	270 U	28 * %
2-Nitrophenol		4300 U	6100 U	5600 U	270 U	26 * %
2,4-Dimethylphenol		4300 U	6100 U	5600 U	270 U	15 * %
bis(2-Chloroethoxy)methane		4300 U	6100 U	5600 U	270 U	25 * %
2,4-Dichlorophenol		4300 U	6100 U	5600 U	270 U	25 * %
1,2,4-Trichlorobenzene		4300 U	6100 U	5600 U	270 U	25 * %
Naphthalene		4300 U	6100 U	5600 U	270 U	25 * %
4-Chloroaniline		4300 U	6100 U	5600 U	270 U	31 %
Hexachlorobutadiene		4300 U	6100 U	5600 U	270 U	28 * %
4-Chloro-3-methylphenol		4300 U	6100 U	5600 U	270 U	22 * %
2-Methylnaphthalene		4300 U	6100 U	5600 U	270 U	26 * %
Hexachlorocyclopentadiene		4300 U	6100 U	5600 U	270 U	18 * %
2,4,6-Trichlorophenol		4300 U	6100 U	5600 U	270 U	28 %
2,4,5-Trichlorophenol		11000 U	15000 U	14000 U	670 U	22 * %

*= Outside of EPA CLP QC limits.

Cust ID:	J11866		J11867		J11868		SBLKWL		SBLKWL BS	
RFW#:	005		006		007		06LE0222-MB1		06LE0222-MB1	
2-Chloronaphthalene	4300	U	6100	U	5600	U	270	U	27 *	%
2-Nitroaniline	11000	U	2900	J	3600	J	670	U	30 *	%
Dimethylphthalate	4300	U	6100	U	5600	U	270	U	30 *	%
Acenaphthylene	4300	U	6100	U	5600	U	270	U	27 *	%
2,6-Dinitrotoluene	4300	U	6100	U	5600	U	270	U	29 *	%
3-Nitroaniline	11000	U	15000	U	14000	U	670	U	41 *	%
Acenaphthene	4300	U	6100	U	5600	U	270	U	27 *	%
2,4-Dinitrophenol	11000	U	15000	U	14000	U	670	U	0 *	%
4-Nitrophenol	11000	U	15000	U	14000	U	670	U	0 *	%
Dibenzofuran	4300	U	6100	U	5600	U	270	U	28 *	%
2,4-Dinitrotoluene	4300	U	6100	U	5600	U	270	U	30 *	%
Diethylphthalate	4300	U	6100	U	5600	U	270	U	31 *	%
4-Chlorophenyl-phenylether	4300	U	6100	U	5600	U	270	U	28 *	%
Fluorene	4300	U	6100	U	5600	U	270	U	27 *	%
4-Nitroaniline	11000	U	15000	U	14000	U	670	U	33 *	%
4,6-Dinitro-2-methylphenol	11000	U	15000	U	14000	U	670	U	23 *	%
N-Nitrosodiphenylamine (1)	4300	U	6100	U	5600	U	270	U	23 *	%
4-Bromophenyl-phenylether	4300	U	6100	U	5600	U	270	U	25 *	%
Hexachlorobenzene	4300	U	6100	U	5600	U	270	U	29 *	%
Pentachlorophenol	11000	U	15000	U	14000	U	670	U	0 *	%
Phenanthrene	4300	U	6100	U	5600	U	270	U	29 *	%
Anthracene	4300	U	6100	U	5600	U	270	U	29 *	%
Carbazole	4300	U	6100	U	5600	U	270	U	30 *	%
Di-n-butylphthalate	420	JB	440	JB	800	JB	18	J	30 *	%
Fluoranthene	4300	U	6100	U	5600	U	270	U	32 *	%
Pyrene	4300	U	6100	U	5600	U	270	U	31 *	%
Butylbenzylphthalate	4300	U	6100	U	5600	U	270	U	33 *	%
3,3'-Dichlorobenzidine	4300	U	6100	U	5600	U	270	U	41	%
Benzo(a)anthracene	4300	U	6100	U	5600	U	270	U	32 *	%
Chrysene	4300	U	6100	U	5600	U	270	U	31 *	%
bis(2-Ethylhexyl)phthalate	580	JB	680	JB	1000	JB	31	J	32 *	%
Di-n-octyl phthalate	4300	U	6100	U	5600	U	270	U	32 *	%
Benzo(b)fluoranthene	4300	U	6100	U	5600	U	270	U	31 *	%
Benzo(k)fluoranthene	4300	U	6100	U	5600	U	270	U	32 *	%
Benzo(a)pyrene	4300	U	6100	U	5600	U	270	U	30 *	%
Indeno(1,2,3-cd)pyrene	4300	U	6100	U	5600	U	270	U	31 *	%
Dibenz(a,h)anthracene	4300	U	6100	U	5600	U	270	U	33 *	%
Benzo(g,h,i)perylene	4300	U	6100	U	5600	U	270	U	32 *	%

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11807

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L498-001

Sample wt/vol: 1.92 (g/mL) G

Lab File ID: J042410

Level: (low/med) LOW

Date Received: 03/13/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/24/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 71-43-2	BENZENE	5.020	200000	JN
2.	UNKNOWN	7.744	100000	J
3.	UNKNOWN	8.417	30000	J
4.	UNKNOWN	8.593	30000	J
5.	UNKNOWN	39.128	90000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11863

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L498-002

Sample wt/vol: 1.21 (g/mL) G

Lab File ID: J042413

Level: (low/med) LOW

Date Received: 03/13/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/24/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 71-43-2	BENZENE	5.020	200000	JN
2.	UNKNOWN	8.013	300000	J
3.	UNKNOWN	8.644	70000	J
4.	UNKNOWN	9.100	100000	J
5.	UNKNOWN	39.159	80000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11864

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L498-003

Sample wt/vol: 1.73 (g/mL) G

Lab File ID: J042414

Level: (low/med) LOW

Date Received: 03/13/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/24/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.826	100000	J
2.	UNKNOWN	8.116	200000	J
3.	UNKNOWN	8.665	50000	J
4.	UNKNOWN	8.955	30000	J
5.	UNKNOWN	39.180	50000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11865

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L498-004

Sample wt/vol: 1.80 (g/mL) G

Lab File ID: N042411

Level: (low/med) LOW

Date Received: 03/13/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/24/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

GPC Cleanup: (Y/N) Y

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.081	50000	J
2.	UNKNOWN	4.962	80000	J
3.	UNKNOWN	5.204	40000	J
4.	UNKNOWN	20.672	100000	J
5.	UNKNOWN	27.780	200000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11866

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L498-005

Sample wt/vol: 1.86 (g/mL) G

Lab File ID: N042412

Level: (low/med) LOW

Date Received: 03/13/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/24/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.383	30000	J
2.	UNKNOWN	12.735	50000	J
3.	UNKNOWN	19.359	50000	J
4.	UNKNOWN	20.672	100000	J
5.	UNKNOWN	27.754	200000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11867

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L498-006

Sample wt/vol: 1.32 (g/mL) G

Lab File ID: D042509

Level: (low/med) LOW

Date Received: 03/13/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/25/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.777	90000	JA
2.	UNKNOWN	6.665	400000	J
3.	UNKNOWN	7.560	200000	J
4.	UNKNOWN	7.931	200000	J
5.	UNKNOWN	37.561	300000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11868

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L498-007

Sample wt/vol: 1.42 (g/mL) G

Lab File ID: D042510

Level: (low/med) LOW

Date Received: 03/13/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/25/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.983	800000	J
2.	UNKNOWN	7.758	300000	J
3.	UNKNOWN	8.043	200000	J
4.	UNKNOWN	21.962	200000	J
5.	UNKNOWN	37.587	400000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKWL

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

Client: TNUHANFORD RC-047 K0238

Matrix: (soil/water) SOIL

Lab Sample ID: 06LE0222-MB1

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

Lab File ID: J042409

Level: (low/med) LOW

Date Received: 03/22/06

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

Date Extracted: 03/22/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/24/06

Injection Volume: 2.0(uL)

Dilution Factor: 0.800

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.847	10000	J
2.	UNKNOWN	15.478	2000	J
3.	UNKNOWN	16.493	2000	J
4.	UNKNOWN	23.182	2000	J
5.	UNKNOWN	39.138	9000	J

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

000000020

Extract. Date: 03/22/06 Extraction Batch No: 06LE0222 Analyst: MF Method: ****

Test: O625 Cleanup Date: Analyst: Client: TNUHANFORD RC-047 K0238

LIMS Report Date: 04/27/06 Solvent: DCM Adsorbent:

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0603L498-	TNUHANFORD RC-047 K0238										
001 H	J11807		1.92	1.0		0.4		1.0	Y	0.00	208.3
001 HS	J11807		1.86	1.0	1.0	0.4		1.0	Y	0.00	215.1
001 HT	J11807		1.46	1.0	1.0	0.4		1.0	Y	0.00	274.0
002 H	J11863		1.21	1.0		0.4		1.0	Y	0.00	330.6
003 H	J11864		1.73	1.0		0.4		1.0	Y	0.00	231.2
004 H	J11865		1.80	1.0		0.4		1.0	Y	0.00	222.2
005 H	J11866		1.86	1.0		0.4		1.0	Y	0.00	215.1
006 H	J11867		1.32	1.0		0.4		1.0	Y	0.00	303.0
007 H	J11868		1.42	1.0		0.4		1.0	Y	0.00	281.7
06LE0222-MB1 H	SBLKWL		30.0	1.0		0.4		1.0	Y	100.00	13.33
06LE0222-MB1 HS	SBLKWL		30.0	1.0	1.0	0.4		1.0	Y	100.00	13.33

Comments:
Surrogate: 500 UL ESU BNA 89915403 @100-150 UG/ML
Spike: 750 UL BNA LCS SPIKE 86950915B

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
updated Final volume	Rx 4/27/06				

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/22/06 Extraction Batch No: 06LE0222 Analyst: MF Method: **** SOX 3540

Test: 0625 Cleanup Date: Analyst: Client: TNUHANFORD RC-047 K0238

LIMS Report Date: 04/24/06 Solvent: DCM Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0603L498-	TNUHANFORD RC-047 K0238										
001 H	J11807		1.92	1.0		.4		1.0	Y		208.3
001 HS	J11807		1.86	1.0	1.0	.4		1.0	Y		215.1
001 HT	J11807		1.46	1.0	1.0	.4		1.0	Y		274.0
002 H	J11863		1.21	1.0		.4		1.0	Y		330.6
003 H	J11864		1.73	1.0		.4		1.0	Y		231.2
004 H	J11865		1.80	1.0		.4		1.0	Y		222.2
005 H	J11866		1.86	1.0		.4		1.0	Y		215.1
006 H	J11867		1.32	1.0		.4		1.0	Y		303.0
007 H	J11868		1.42	1.0		.4		1.0	Y		281.7
06LE0222-MB1 H	SBLKWL		30.0	1.0		.4		1.0	Y	100.00	13.33
06LE0222-MB1 HS	SBLKWL		30.0	1.0	1.0	.4		1.0	Y	100.00	13.33

Comments:
Surrogate: 500 UL ESU BNA 89915403 @100-150 UG/ML
Spike: 750 UL BNA LCS SPIKE 86950915B

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	4/24/06 0630	[illegible]	4/24/06 0700	Analysis

000000021

Lionville Laboratory Use Only

06031498

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU-HANFORD SAFA RC.047

Est. Final Proj. Sampling Date:

Project #: 11343-006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Std Del: Std TAT: 30 Days

Date Rec'd: 3/13/06 Date Due: 4/12/06

Refrigerator #			A-1														
#/Type Container	Liquid		2														
	Solid		2-1								W/B						
Volume	Liquid										N/A						
	Solid		250-1								S						
Preservatives			—1														
ANALYSES REQUESTED →			ORGANIC								INORG						
			VOA	BNA	Pest/PCB	Herb					TCP Metal	CN					
			Lionville Laboratory Use Only														
				002254	000814 OPCB						METALS①						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J 11807			SOLID	2-23-06	1545		1	✓					✓					
002	63					1330		1	✓					✓					
003	64					1400		1	✓					✓					
004	65					1430		1	✓					✓					
005	66					1500		1	✓					✓					
006	67					1515		1	✓					✓					
007	68					1530		1	✓					✓					

Special Instructions: SOLID = Composite of Fish.

STRONG ODOR

METALS① = HSL + B, Li, Mo, Sn, Si, Ti, U, P, Zr, Bi

RUN MATRIX QC

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

Relinquished by	Received by	Date	Time
[signature]	[signature]	3/13/06	1100

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"			

ORIGINAL REWRITTEN

000000022

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-137	Page 1 of 1

Collector: TILLER, B. 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: 300 AREA ELEVATED, SAMPLE 4	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRA56520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A060308	Bill of Ladine/Air Bill No.: See OSPC	

0000000023

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ JB 2/14/06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	~~0~~ 1 JB 2/14/06	1	~~1~~ 0 JB 2/14/06	0	0	0				
Volume	750g	5g	15g	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)				

Sample No.	Matrix *	Sample Date	Sample Time								
J11807	OTHER SOLID	2-23-06	1545	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: R.L. Stoffler	Date/Time: 0745 2-27-06
Relinquished By/Removed From: R.L. Stoffler	Date/Time: 1600 2-27-06	Received By/Stored In: Fed Ex	Date/Time
Relinquished By/Removed From: Fed Ex	Date/Time	Received By/Stored In:	Date/Time: 02/28/06 9:20
Relinquished By/Removed From: Alex Rellensal	Date/Time: 3/10/06 16:00	Received By/Stored In:	Date/Time
Relinquished By/Removed From:	Date/Time: 3-13-06 1100	Received By/Stored In:	Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS JB 2/14/06

NOTE: Eberline- perform Gamma Spec. ~~Iso-Uranium and Iso-Strontium~~ then tranship to Lionville Labs, if possible maintain 4 C cooling. Weiss upon receipt. BOTTLE

NOTE: Lionville- contact ~~Ricky~~ JOAN KESSNER JB 2/14/06

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-047-141	Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 1		SAF No.: RC-047
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11863	OTHER SOLID	2-23-06	1330	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD — Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 2-23-06 1630	
Relinquished By/Removed From: EAS LOCKED STORAGE — Date/Time: 2-27-06 0745	Received By/Stored In: RE Stoffler — Date/Time: 2-27-06 0745	
Relinquished By/Removed From: RE Stoffler — Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex — Date/Time:	
Relinquished By/Removed From: Fed Ex — Date/Time:	Received By/Stored In: — Date/Time: 03/28/06 9:30	
Relinquished By/Removed From: Alex Kelley — Date/Time: 3/10/06 16:00	Received By/Stored In: — Date/Time:	
Relinquished By/Removed From: — Date/Time: 3-13-06 1100	Received By/Stored In: — Date/Time: 3-13-06 1100	

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Wanso~~ upon receipt.

JOAN KESSNER 4/2/2006

Matrix *

SoSoil
SESediment
SOSolid
SlSludge
W = Water
OOil
AAir
DSDrum Solids
DLDrum Liquids
TTissue
WIWipe
LiLiquid
VeVegetation
XOther

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-047-142	Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 2	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

00000025

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool, 4C ~~None~~ AH 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			

Sample No.	Matrix *	Sample Date	Sample Time									
J11864	OTHER SOLID	2-23-06	1400	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 2-27-06 0745	Received By/Stored In: RZ Stoffer Date/Time: 2-27-06 0745
Relinquished By/Removed From: RZ Stoffer Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex Date/Time:
Relinquished By/Removed From: Fed Ex Date/Time:	Received By/Stored In: Date/Time: 03/28/06 9:730
Relinquished By/Removed From: Date/Time: 3/10/06 16:00	Received By/Stored In: Date/Time:
Relinquished By/Removed From: Date/Time: 3-13-06 1100	Received By/Stored In: Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weise~~ JOAN KESSNER upon receipt.

AH 21406

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-047-143	Page 1 of 1

Collector TILLER, B. 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 100-K ELEVATED, SAMPLE 3		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-052	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060308		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4 C	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11865	OTHER SOLID	2-23-06	1430	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In EAS LOCKED STORAGE — Date/Time 2-23-06 1630
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0745 2-27-06	Received By/Stored In R2 Steffler — Date/Time 0745 2-27-06
Relinquished By/Removed From R2 Steffler	Date/Time 1600 2-27-06	Received By/Stored In FED EX — Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In — Date/Time 03/28/06 9:20
Relinquished By/Removed From Alex Kelley	Date/Time 3/10/06 16:00	Received By/Stored In — Date/Time
Relinquished By/Removed From	Date/Time 3-13-06 1100	Received By/Stored In — Date/Time 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. 1 MAR 2006

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wt=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-047-144	Page 1 of 1

Collector: TILLER, B. 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: ELEVATED #4 100-K ~~LOW SAMPLE T~~	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11866	OTHER SOLID	2-23-06	1500	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	Received By/Stored In: EAS LOCKED STORAGE	2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Received By/Stored In: RZ Stoffler	2-27-06 0745
Relinquished By/Removed From: RZ Stoffler	Received By/Stored In: Fed Ex	2-27-06 1600
Relinquished By/Removed From: Fed Ex	Received By/Stored In:	03/08/06 9:20
Relinquished By/Removed From: Alex Delivery	Received By/Stored In:	3/10/06 16:00
Relinquished By/Removed From: Fed Ex	Received By/Stored In:	3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. JPO 2/28/06

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; Vs=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-047-145	Page 1 of 1

Collector: TILLER, B. 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: 100-K ~~LOW, SAMPLE 2~~ ELEVATED #5	SAF No.: RC-047	
Ice Chest No.: AFS-07-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			

Sample No.	Matrix *	Sample Date	Sample Time									
J11867	OTHER SOLID	2-23-06	1515	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Stellic	2-27-06 0745
RZ Stellic	2-27-06 1600	Fed EX	2-27-06
Fed EX			07/28/06 9:20
Alex Ellwood	3/10/06 16:02		
Fed Ex	3-13-06 1600		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOANKESSNER upon receipt.

A/A 21406

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-047-146	Page 1 of 1

Collector: TILLER, B. 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: 100-K LOW, SAMPLE	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			

Sample No.	Matrix *	Sample Date	Sample Time									
J11868	OTHER SOLID	2-23-06	1530	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: RZ Stiffler
Relinquished By/Removed From: RZ Stiffler	Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In:	Date/Time: 07/28/06 9:20
Relinquished By/Removed From:	Date/Time: 3/10/06 16:00	Received By/Stored In:	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 3-13-06 1100	Received By/Stored In:	Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. 214-06

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)

Eberline Srvces CHAIN OF CUSTODY ORD # R6-02-194

03/10/06 11:40:13 WORK ID: SAF# RC-047 SDG# K0238

RCVD: 02/28/06 DUE: 04/14/06 KEEP: 04/14/07 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS					
01A-X	J11807	SCA-2	DISPOS	E009	E046	E090	E094	E129
01B-X	J11807 MS	SCA-2	E009	E046	E090	E094	E129	
01C-X	J11807 DUP	SCA-2	E009	E046	E090	E094	E129	
02A-X	J11863	SCA-2	DISPOS	E009	E046	E090	E094	E129
03A-X	J11864	SCA-2	DISPOS	E009	E046	E090	E094	E129
04A-X	J11865	SCA-2	DISPOS	E009	E046	E090	E094	E129
05A-X	J11866	SCA-2	DISPOS	E009	E046	E090	E094	E129
06A-X	J11867	SCA-2	DISPOS	E009	E046	E090	E094	E129
07A-X	J11868	SCA-2	DISPOS	E009	E046	E090	E094	E129

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Alex Kilmartin	3/10/06	LIONVILLE	3/10/06		
Ed Ea	3/13/06	[illegible]	3/13/06		

ORDER FROM Eberline Services/Richmond
Analytical Services
2030 Wright Avenue
Richmond, CA 94804-0040
ATTEN Purchasing
PHONE 510-235-2633

INVOICE TO Eberline Services/Richmond
Analytical Services
2030 Wright Avenue
Richmond, CA 94804-0040
ATTEN Purchasing
PHONE 510-235-2633

Yamamoto
AUTHORIZED BY

ORDER TO Lionville Laboratory, Inc.
208 Welsh Pool Road
Lionville, PA 19353

ATTEN Orlette Johnson

Please telephone our Sample Control Department immediately if any problems are encountered in the receipt or the analysis of the samples listed below.

This Purchase Order authorizes LvLI to perform all work listed on the enclosed COC. Alterations to work requested can only be made by Eberline Services or the appropriate Hanford client.

TH

FRACTION	TEST	DESCRIPTION	UNITS	DUE DATE	COST
01A	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
01B	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
01C	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
02A	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
03A	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
04A	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
05A	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00

FRACTION	TEST	DESCRIPTION	UNITS	DUE DATE	COST
05A (continued)					
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
06A	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00
07A	E009	ICP Metals-6010 (TAL List)	Please Advise	04/14/06	0.00
	E046	Mercury-7471	Please Advise	04/14/06	0.00
	E090	Pesticides-8081 (TCL)	Please Advise	04/14/06	0.00
	E094	PCBs-8082 (Aroclors)	Please Advise	04/14/06	0.00
	E129	Semi Vols-8270(TCL)	Please Advise	04/14/06	0.00

TOTAL CHARGE NOT TO EXCEED $0.00

 Eberline Srvces WORK SHEET ORD # R6-02-194

CLIENT: WES_HANFORD CON: MCM CAT: ENVMWT RCVD: 02/28/06 DUE: 04/14/06

PROJ: WHC_WCH 02/28/06 15:31:43 STAT: TRANSMITTED 02/28/06

DASH	SAMPLE IDENTIFICATION	STORED	DEPT	START	DUE BY	TESTS, FRACTIONS /				
01A-X	J11807	SCA-2	EN	02/28	02/28	DISPOS				
			SU WT	03/05	04/14	E009	E046	E090	E094	E129
01B-X	J11807 MS	SCA-2	SU WT	03/05	04/14	E009	E046	E090	E094	E129
01C-X	J11807 DUP	SCA-2	SU WT	03/05	04/14	E009	E046	E090	E094	E129
02A-X	J11863	SCA-2	EN	02/28	02/28	DISPOS				
			SU WT	03/05	04/14	E009	E046	E090	E094	E129
03A-X	J11864	SCA-2	EN	02/28	02/28	DISPOS				
			SU WT	03/05	04/14	E009	E046	E090	E094	E129
04A-X	J11865	SCA-2	EN	02/28	02/28	DISPOS				
			SU WT	03/05	04/14	E009	E046	E090	E094	E129
05A-X	J11866	SCA-2	EN	02/28	02/28	DISPOS				
			SU WT	03/05	04/14	E009	E046	E090	E094	E129
06A-X	J11867	SCA-2	EN	02/28	02/28	DISPOS				
			SU WT	03/05	04/14	E009	E046	E090	E094	E129
07A-X	J11868	SCA-2	EN	02/28	02/28	DISPOS				
			SU WT	03/05	04/14	E009	E046	E090	E094	E129

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 3/13/06

~~Purchase Order~~ / Project# / ~~SAF#~~ / SOW# / Release #: RC-047

LvLI Batch # : 0603L498 **Sample Custodian:** D. Dunaway

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx	Airbill# 7914 0311 9689	
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 4.9 °C		Cooler # AFS-04-052
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.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11807	001	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11807	001 MS	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11807	001 MSD	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11863	002	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11864	003	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11865	004	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11866	005	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11867	006	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11868	007	SO	06LE0221	02/23/06	03/22/06	04/02/06
LAB QC:						
PBLKEG	MB1	S	06LE0221	N/A	03/22/06	04/02/06
PBLKEG	MB1	S		N/A	03/22/06	04/13/06
PBLKEG	MB1 BS	S	06LE0221	N/A	03/22/06	04/02/06
PBLKEG	MB1 BS	S		N/A	03/22/06	04/13/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L498
SDG/SAF # K0238/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-13-2006

CHLORINATED PESTICIDES

Seven (7) solid samples were collected on 02-23-2006.

The samples and their associated QC samples were extracted on 03-22-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 04-02,13-2006. 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. The Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy, with the exception of some discrepancies, which have been recorded on the Sample Receipt Checklist. Samples were received out of hold.

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

3. The samples were extracted 15 days outside of recommended hold time.

4. The samples and their associated QC samples received Florisil and Copper-Sulfur cleanups according to Lionville Laboratory SOPs based on SW846 methods 3620B and 3660A respectively.

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

6. All surrogate recoveries were within acceptance criteria.

7. All blank spike recoveries were within acceptance criteria in the pre-Florisil cleanup. Three (3) of forty (40) blank spike recoveries were outside acceptance criteria in the Florisil cleanup fraction.

8. Six (6) of forty (40) matrix spike recoveries were outside acceptance criteria in the Florisil cleaned fraction.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 16 pages.

9. All samples required instrument dilution due to chromatographic anomalies. The reporting limits were adjusted to reflect the necessary dilution.

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/21/06
Date

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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.

Pesticide/PCBs by GC, CLP List

Report Date: 04/19/06 09:04

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 1

0000000005

	Cust ID:	J11807	J11807	J11807	J11863	J11864	J11865
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	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
Surrogate:	Tetrachloro-m-xylene	110 %	102 %	98 %	113 %	114 %	105 %
	Decachlorobiphenyl	104 %	101 %	93 %	110 %	111 %	103 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		41 U	78 %	89 %	29 U	33 U	29 U
gamma-BHC (Lindane)		41 U	84 %	95 %	29 U	33 U	29 U
Beta-BHC		41 U	76 %	87 %	29 U	33 U	29 U
Heptachlor		41 U	89 %	99 %	29 U	33 U	29 U
Delta-BHC		41 U	61 %	71 %	29 U	33 U	29 U
Aldrin		41 U	84 %	94 %	29 U	33 U	29 U
Heptachlor epoxide		41 U	83 %	93 %	29 U	33 U	29 U
gamma-Chlordane		41 U	76 %	86 %	29 U	33 U	29 U
Endosulfan I		41 U	81 %	91 %	29 U	33 U	29 U
alpha-Chlordane		41 U	79 %	89 %	29 U	33 U	29 U
4,4'-DDE		30 J	90 %	101 %	6.4 J	7.2 J	24 J
Dieldrin		41 U	85 %	96 %	29 U	33 U	29 U
Endrin		41 U	93 %	105 %	29 U	33 U	29 U
4,4'-DDD		41 U	99 %	110 %	29 U	33 U	6.4 J
Endosulfan II		41 U	67 %	74 %	29 U	33 U	29 U
4,4'-DDT		41 U	84 %	95 %	29 U	33 U	29 U
Endrin aldehyde		41 U	12 * %	14 * %	29 U	33 U	29 U
Endosulfan sulfate		41 U	36 * %	37 * %	29 U	33 U	29 U
Methoxychlor		41 U	79 %	88 %	29 U	33 U	29 U
Endrin ketone		41 U	53 * %	55 * %	29 U	33 U	29 U
Toxaphene		410 U	380 U	330 U	290 U	330 U	290 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

4/19/06

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/19/06 09:04

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 2

000000006

	Cust ID:	J11866		J11867		J11868		PBLKEG		PBLKEG RE		PBLKEG BS	
Sample Information	RFW#:	005		006		007		06LE0221-MB1		06LE0221-MB1		06LE0221-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	104	%	98	%	98	%	96	%	100	%	101	%
	Decachlorobiphenyl	102	%	103	%	96	%	91	%	101	%	93	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		38	U	34	U	25	U	1.7	U	1.7	U	78	%
gamma-BHC (Lindane)		38	U	34	U	25	U	1.7	U	1.7	U	83	%
Beta-BHC		38	U	34	U	25	U	1.7	U	1.7	U	80	%
Heptachlor		38	U	34	U	25	U	1.7	U	1.7	U	84	%
Delta-BHC		38	U	34	U	25	U	1.7	U	1.7	U	61	%
Aldrin		38	U	34	U	25	U	1.7	U	1.7	U	84	%
Heptachlor epoxide		38	U	34	U	25	U	1.7	U	1.7	U	80	%
gamma-Chlordane		38	U	34	U	25	U	1.7	U	1.7	U	80	%
Endosulfan I		38	U	34	U	25	U	1.7	U	1.7	U	84	%
alpha-Chlordane		38	U	34	U	25	U	1.7	U	1.7	U	81	%
4,4'-DDE		10	J	34	U	8.1	J	1.7	U	1.7	U	85	%
Dieldrin		38	U	34	U	25	U	1.7	U	1.7	U	82	%
Endrin		38	U	34	U	25	U	1.7	U	1.7	U	81	%
4,4'-DDD		38	U	34	U	25	U	1.7	U	1.7	U	89	%
Endosulfan II		38	U	34	U	25	U	1.7	U	1.7	U	64	%
4,4'-DDT		38	U	34	U	25	U	1.7	U	1.7	U	78	%
Endrin aldehyde		38	U	34	U	25	U	1.7	U	1.7	U	24 *	%
Endosulfan sulfate		38	U	34	U	25	U	1.7	U	1.7	U	28 *	%
Methoxychlor		38	U	34	U	25	U	1.7	U	1.7	U	63	%
Endrin ketone		38	U	34	U	5.0	J	1.7	U	1.7	U	48 *	%
Toxaphene		380	U	340	U	250	U	17	U	17	U	17	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: 04/19/06 09:04

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 3

000000007

Cust ID: **PBLKEG BS**

Sample Information		
	RFW#:	**06LE0221-MB1**
	Matrix:	SOIL
	D.F.:	1.00
	Units:	UG/KG

Surrogate:	Tetrachloro-m-xylene	102	%
	Decachlorobiphenyl	107	%

Alpha-BHC	100	%
gamma-BHC (Lindane)	99	%
Beta-BHC	93	%
Heptachlor	96	%
Delta-BHC	87	%
Aldrin	99	%
Heptachlor epoxide	97	%
gamma-Chlordane	96	%
Endosulfan I	97	%
alpha-Chlordane	96	%
4,4'-DDE	94	%
Dieldrin	100	%
Endrin	104	%
4,4'-DDD	98	%
Endosulfan II	100	%
4,4'-DDT	102	%
Endrin aldehyde	91	%
Endosulfan sulfate	98	%
Methoxychlor	104	%
Endrin ketone	99	%
Toxaphene	17	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

0603L498

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU-HANFORD SAFA RC-047

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 3/13/06 Date Due: 4/12/06

Refrigerator #		A-1																
#/Type Container	Liquid																	
	Solid	2	1								W							
Volume	Liquid										B							
	Solid	250	1								N/A							
Preservatives		—	1															
ANALYSES REQUESTED →		ORGANIC									INORG							
		VOA	BNA	Pest/PCB	Herb						TCP Metal Hg	CN						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
									002254	060814 OPCB					METALS①					
S - Soil	001	J 11807			SOLID	2-28-06	1545		1	✓					✓					
SE - Sediment	002	63					1330		1	✓					✓					
SO - Solid	003	64					1400		1	✓					✓					
SL - Sludge	004	65					1430		1	✓					✓					
W - Water	005	66					1500		1	✓					✓					
O - Oil	006	67					1515		1	✓					✓					
A - Air	007	68					1530		1	✓					✓					
DS - Drum Solids																				
DL - Drum Liquids																				
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

Special Instructions: SOLID = Composite of Fish.

STRONG ODOR

METALS① = HSL + B, Li, Mo, Sn, Si, Ti, U, P, Zr, Bi

RUN MATRIX QC

DATE/REVISIONS:

1. ~~0608Hj~~ 0608Hv
2. OPCB R
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/13/06	1100

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-047-137	Page 1 of 1

Collector: TILLER, B. 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: 300 AREA ELEVATED, SAMPLE 4	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ 1/0 2/14/06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	~~0~~ 1 1/0 2/14/06	1	~~2~~ 0 1/0 2/14/06	0	0	0					
Volume	750g	5g	15g	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)					
Sample No.	Matrix *	Sample Date	Sample Time								
J11807	OTHER SOLID	2-23-06	1545	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: R Stoffler	Date/Time: 2-27-06 0745
Relinquished By/Removed From: R Stoffler	Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In:	Date/Time: 02/28/06 9:20
Relinquished By/Removed From:	Date/Time: 3/10/06 16:00	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time: 3-13-06 1100	Received By/Stored In:	Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS 1/0 2/14/06 BOTTLE

NOTE: Eberline- perform Gamma Spec, ~~Iso Uranium and Iso Strontium~~ then tranship to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact Richr JOAN Weissupon receipt.

KESSNER 1/0 2/14/06

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
Xe=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-047-141	Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 1	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11863	OTHER SOLID	2-23-06	1330	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: RZ Stiffler	Date/Time: 2-27-06 0745
Relinquished By/Removed From: RZ Stiffler	Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In:	Date/Time: 02/28/06 9:20
Relinquished By/Removed From:	Date/Time: 3/10/06 16:00	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time: 3-13-06 1100	Received By/Stored In:	Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ upon receipt.

JOAN KESSNER

Matrix *

SaSoil
SESediment
SOSolid
SlSludge
W = Water
OiOil
AirAir
DSDrum Solids
DLDrum Liquids
TsTissue
WiWipe
LiLiquid
VgVegetation
XoOther

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-047-142	Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 2	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEB OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool 4C ~~None~~ AA 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			
Sample No.	Matrix *	Sample Date	Sample Time							
J11864	OTHER SOLID	2-23-06	1400	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: FAS LOCKED STORAGE	Date/Time: 2-23-06 1630
Relinquished By/Removed From: FAS LOCKED STORAGE	Date/Time: 0745 2-27-06	Received By/Stored In: RZ Stiffler	Date/Time: 0745 2-27-06
Relinquished By/Removed From: RZ Stiffler	Date/Time: 1600 2-27-06	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In:	Date/Time: 03/06/06 9:30
Relinquished By/Removed From: Alex Kelley	Date/Time: 3/10/06 16:00	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time: 3-13-06 1100	Received By/Stored In:	Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline - perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville - contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

AA 21406

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-047-143	Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 3	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C Now	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11865	OTHER SOLID	2-23-06	1430	X	X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Steffler	2-27-06 0745
RZ Steffler	2-27-06 1600	Fed EX	
Fed EX			03/28/06 9:30
	3/10/06 16:00		
	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact Rich Weiss upon receipt.

JOAN KESSNER 2/28/06

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-047-144	Page 1 of 1

Collector: TILLER, B. 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: ELEVATED #4 100-K ~~LOW SAMPLER~~	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-159	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool 4C None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			

SAMPLE ANALYSIS				Gamma Spec - (Full List)	Carbon-14	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)			
Sample No.	Matrix *	Sample Date	Sample Time										
J11866	OTHER SOLID	2-23-06	1500	X	X	X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Stiller	2-27-06 0745
RZ Stiller	2-27-06 1600	Fed Ex	
Fed Ex			02/28/06 9:20
Alex Kelsey	3/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

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, Li=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-047-145	Page 1 of 1
Collector: TILLER, B. 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: ELEVATOR #5 100-K ~~LOW, SAMPLE 2~~	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597 ~~5~~ 7-21-06; COA: BESRAS6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060208	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ 4/4 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			

Sample No.	Matrix *	Sample Date	Sample Time									
J11867	OTHER SOLID	2-23-06	1515	X	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	0745 2-27-06	RE Stoffler	0745 2-27-06
RE Stoffler	1600 2-27-06	FED EX	
FED EX			02/28/06 9:20
Alex Bellenti	3/10/06 16:00		
FED EX	3-13-06 1600		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ upon receipt.

JOANKESSNER 4/4 21406

Matrix *

SoBul
SE=Sediment
SO=Solid
St=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
LaLiquid
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-047-146	Page 1 of 1

Collector: TILLER, B. 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: 100-K LOW; SAMPLE	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-15977	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ AH 2/14/06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11868	OTHER SOLID	2-23-06	1530	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-23-06 1630	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 2-27-06 0745	Received By/Stored In: RE Stiffler, Date/Time 2-27-06 0745	
Relinquished By/Removed From: RE Stiffler, Date/Time 2-27-06 1600	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: Fed Ex, Date/Time	Received By/Stored In: [illegible], Date/Time 07/28/06 9:22	
Relinquished By/Removed From: [illegible], Date/Time 3/10/06 16:00	Received By/Stored In: Date/Time	
Relinquished By/Removed From: Fed Ex, Date/Time 3-13-06 1100	Received By/Stored In: [illegible], Date/Time 3-13-06 1100	

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weise~~ JOAN KEDSNER upon receipt. AH 2/14/06

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)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 3/13/06

~~Purchase Order~~ / Project# / ~~SAF#~~ / SOW# / Release #: RC-047

LvLI Batch # : 0603L498 **Sample Custodian:** J. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered ~~or~~ Shipped — Carrier FedEx — Airbill# 7914 0311 9689

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 4.9 °C		Cooler # AFS-04-052	
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 LABORATORIES INC

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11807	001	SO	06LE0221	02/23/06	03/22/06	03/31/06
J11807	001 MS	SO	06LE0221	02/23/06	03/22/06	03/31/06
J11807	001 MSD	SO	06LE0221	02/23/06	03/22/06	03/31/06
J11863	002	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11864	003	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11865	004	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11866	005	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11867	006	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11868	007	SO	06LE0221	02/23/06	03/22/06	04/01/06

LAB QC:

PBLKEG	MB1	S	06LE0221	N/A	03/22/06	03/31/06
PBLKEG	MB1 BS	S	06LE0221	N/A	03/22/06	03/31/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L498
SDG/SAF # K0238/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-13-2006

PCB

Seven (7) solid samples were collected on 02-23-2006.

The samples and their associated QC samples were extracted on 03-22-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-31-2006 and 04-01-2006. 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 received outside the extraction 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.

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

4/19/6
Date

som\r:\group\data\pest\tmu hanford\0603-498.pcbs

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/13/06 17:16

RFW Batch Number: **0603L498** Client: **TNUHANFORD RC-047 K0238** Work Order: 11343606001 Page: 1

0000000005

	Cust ID:	J11807		J11807		J11807		J11863		J11864		J11865	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		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	
Surrogate:	Tetrachloro-m-xylene	118	%	89	%	101	%	116	%	112	%	115	%
	Decachlorobiphenyl	115	%	87	%	99	%	115	%	120	%	118	%
Aroclor-1016		330	U	74	%	87	%	230	U	260	U	230	U
Aroclor-1221		330	U	240	U	330	U	230	U	260	U	230	U
Aroclor-1232		330	U	240	U	330	U	230	U	260	U	230	U
Aroclor-1242		330	U	240	U	330	U	230	U	260	U	230	U
Aroclor-1248		330	U	240	U	330	U	230	U	260	U	230	U
Aroclor-1254		330	U	240	U	330	U	230	U	260	U	230	U
Aroclor-1260		330	U	80	%	94	%	230	U	260	U	230	U

	Cust ID:	J11866		J11867		J11868		PBLKEG		PBLKEG BS	
Sample Information	RFW#:	005		006		007		06LE0221-MB1		06LE0221-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	114	%	115	%	109	%	101	%	109	%
	Decachlorobiphenyl	111	%	113	%	105	%	96	%	106	%
Aroclor-1016		310	U	270	U	200	U	13	U	87	%
Aroclor-1221		310	U	270	U	200	U	13	U	13	U
Aroclor-1232		310	U	270	U	200	U	13	U	13	U
Aroclor-1242		310	U	270	U	200	U	13	U	13	U
Aroclor-1248		310	U	270	U	200	U	13	U	13	U
Aroclor-1254		310	U	270	U	200	U	13	U	13	U
Aroclor-1260		310	U	270	U	200	U	13	U	94	%

4/13/6

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

06031498

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNU-HANFORD SAFA RC.047

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC SPC Del Std TAT 30 Days

Date Rec'd 3/13/06 Date Due 4/12/06

Refrigerator #		A-1															
#/Type Container	Liquid																
	Solid	2															
Volume	Liquid																
	Solid	250															
Preservatives																	
ANALYSES REQUESTED		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				RCP Metals	CN							
Lionville Laboratory Use Only			0608H	0608H OPCB					METALS(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		BNA	Pest/PCB					METALS(1)					
001	11807			SOLID	2-23-06	1545		1	✓					✓					
002	63					1530		1	✓					✓					
003	64					1400		1	✓					✓					
004	65					1430		1	✓					✓					
005	66					1500		1	✓					✓					
006	67					1515		1	✓					✓					
007	68					1530		1	✓					✓					

Special Instructions: SOLID = Composite of Fish.

STRONG ODOR

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

RUN MATRIX QC

DATE/REVISIONS:

1. 0608H; 0608HV
2. OPCB R
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/13/06	1100

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-047-137

Collector: TILLER, B 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: 300 AREA ELEVATED, SAMPLE 4		SAF No.: RC-047
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ JP 2/14/06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	~~0~~ 1 JP 2/14/06	1	~~1~~ 0 JP 2/14/06	0	0	0					
Volume	750g	5g	15g	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)					
Sample No.	Matrix *	Sample Date	Sample Time								
J11807	OTHER SOLID	2-23-06	1545	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD		2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE		2-27-06 0745	RZ Stiffler	2-27-06 0745
Relinquished By/Removed From: RZ Stiffler		2-27-06 1600	Fed Ex	
Relinquished By/Removed From: FED EX				02/28/06 9:20
Relinquished By/Removed From: Alex		3/10/06 16:00		
Relinquished By/Removed From:		3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS JP 2/14/06 BOTTLE

NOTE: Eberline - perform Gamma Spec, ~~Iso-Uranium and Iso-Strontium~~ then tranship to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville - contact Rich JOAN

Weigh upon receipt.

KESSNER JP 2/14/06

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-047-141	Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 1	SAF No.: RC-047	
Ice Chest No.: AFS - 04 - 052	Field Logbook No.: EL-1592	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			

Sample No.	Matrix *	Sample Date	Sample Time									
J11863	OTHER SOLID	2-23-06	1330	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 2-27-06 0745	Received By/Stored In: RZ Stiffler, Date/Time 2-27-06 0745
Relinquished By/Removed From: RZ Stiffler, Date/Time 2-27-06 1600	Received By/Stored In: Fed Ex, Date/Time
Relinquished By/Removed From: Fed Ex, Date/Time	Received By/Stored In: FW, Date/Time 07/28/06 9:20
Relinquished By/Removed From: Date/Time 3/10/06 16:00	Received By/Stored In: Date/Time
Relinquished By/Removed From: Date/Time 3-13-06 1100	Received By/Stored In: Date/Time 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weise~~ JOAN KESSNER upon receipt.

Matrix *

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

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

BHI-EE-011 (09/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-142 | Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 2		SAF No.: RC-047
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool 4C ~~None~~ JH 2/14/06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			

Sample No.	Matrix *	Sample Date	Sample Time									
J11664	OTHER SOLID	2-23-06	1400	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD; Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE; Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE; Date/Time: 2-27-06 0745	Received By/Stored In: RZ Stoffler; Date/Time: 0745 2-27-06
Relinquished By/Removed From: RZ Stoffler; Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex; Date/Time:
Relinquished By/Removed From: Fed Ex; Date/Time:	Received By/Stored In: [illegible]; Date/Time: 03/28/06 9:30
Relinquished By/Removed From: Alex Kelley; Date/Time: 3/10/06 16:00	Received By/Stored In: ; Date/Time:
Relinquished By/Removed From: Fed Ex; Date/Time: 3-13-06 1100	Received By/Stored In: [illegible]; Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. JH 2/14/06

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-047-143

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 3	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-159	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: 1060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4 C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No. / Matrix * / Sample Date / Sample Time											
J11865 / OTHER SOLID / 2-23-06 / 1430	X	X	X								

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD; Date/Time 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE; Date/Time 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE; Date/Time 0745 2-27-06	Received By/Stored In: RE Stoffler; Date/Time 0745 2-27-06
Relinquished By/Removed From: RE Stoffler; Date/Time 1600 2-27-06	Received By/Stored In: Fed Ex; Date/Time
Relinquished By/Removed From: Fed Ex; Date/Time	Received By/Stored In: 03/28/06 9:20
Relinquished By/Removed From: 3/10/06 16:00	Received By/Stored In: Date/Time
Relinquished By/Removed From: 3-13-06 1100	Received By/Stored In: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. 4/28/2006

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

SHI-SE-011 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-144 | Page 1 of 1

Collector: TILLER, B. 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: ELEVATED #4 100-K ~~LOW, SAMPLET~~	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11866	OTHER SOLID	2-23-06	1500	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: R.J. Stiller — Date/Time: 2-27-06 0745
Relinquished By/Removed From: R.J. Stiller	Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In: [illegible] — Date/Time: 02/28/06 9:20
Relinquished By/Removed From: Alex Kelsey	Date/Time: 3/10/06 16:00	Received By/Stored In: — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 3-13-06 1100	Received By/Stored In: [illegible] — Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

JAN 21406

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
Li=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-047-145

Collector: TILLER, B. 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: ELEVATED #5 100-K ~~LOW, SAMPLE 2~~	SAF No.: RC-047	
Ice Chest No.: AFS-07-052	Field Logbook No.: FL-1597 JBB 2-27-06 ~~JBB 21406~~	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

00000001012

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ JH 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11867	OTHER SOLID	2-23-06	1515	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 2-27-06 0745	Received By/Stored In: RZ Stoffle, Date/Time 2-27-06 0745
Relinquished By/Removed From: RZ Stoffle, Date/Time 2-27-06 1600	Received By/Stored In: Fed EX, Date/Time
Relinquished By/Removed From: Fed EX, Date/Time	Received By/Stored In: 02/28/06 9:20
Relinquished By/Removed From: Alex Kilewitz, Date/Time 3/10/06 16:00	Received By/Stored In: Date/Time
Relinquished By/Removed From: Fed Ex, Date/Time 3-13-06 1100	Received By/Stored In: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then transfer bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rick Weiss~~ JOAN KESSNER upon receipt. JH 21406

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-047-146

Collector: TILLER, B. 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: 100-K LOW, SAMPLE		SAF No.: RC-047
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Carbon-14	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)			
J11868	OTHER SOLID	2-23-06	1530	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Steffler	2-27-06 0745
RZ Steffler	2-27-06 1600	Fed Ex	
Fed Ex			07/28/06 9:20
	8/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weine~~ JOAN KESSNER upon receipt.

AH 21406

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: 3/13/06

~~Purchase Order~~ / Project# / ~~SAF#~~ / SOW# / Release #: RC-047

LvLI Batch # : 0603L498

Sample Custodian: T. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx	Airbill# 7914 0311 9689	
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 4.9 °C		Cooler # AFS-04-052
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.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

RECEIVED MAY 2006

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11807						
SILVER, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
SILVER, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
SILVER, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
ALUMINUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
ALUMINUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
ALUMINUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
ARSENIC, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
ARSENIC, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
ARSENIC, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
BERYLLIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
BERYLLIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
BISMUTH, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
BISMUTH, TOTAL REP	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
BISMUTH, TOTAL SPIKE	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
CALCIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
CALCIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
CALCIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
CADMIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
CADMIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
CADMIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
COPPER, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
COPPER, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
MERCURY, TOTAL	001	SO	06C0046	02/23/06	03/14/06	03/15/06
MERCURY, TOTAL	001 REP	SO	06C0046	02/23/06	03/14/06	03/15/06
MERCURY, TOTAL	001 MS	SO	06C0046	02/23/06	03/14/06	03/15/06
POTASSIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
POTASSIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
POTASSIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
LITHIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
LITHIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
LITHIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
MAGNESIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
MAGNESIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
MOLYBDENUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
MOLYBDENUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
SODIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
SODIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
SODIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
NICKEL, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
NICKEL, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
NICKEL, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
PHOSPHORUS, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
PHOSPHORUS, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
LEAD, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
LEAD, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
LEAD, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
SILICON, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
SILICON, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
SILICON, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
TIN, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
TIN, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
TIN, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	001	SO	06L0170	02/23/06	03/17/06	03/24/06
ZIRCONIUM, TOTAL	001 REP	SO	06L0170	02/23/06	03/17/06	03/24/06
ZIRCONIUM, TOTAL	001 MS	SO	06L0170	02/23/06	03/17/06	03/24/06
J11863						
SILVER, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
ALUMINUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
ARSENIC, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
BISMUTH, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
CALCIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
CADMIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COBALT, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
COPPER, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
MERCURY, TOTAL	002	SO	06C0046	02/23/06	03/14/06	03/15/06
POTASSIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
LITHIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
SODIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
NICKEL, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
LEAD, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
SILICON, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
TIN, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	002	SO	06L0170	02/23/06	03/17/06	03/24/06
J11864						
SILVER, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
ALUMINUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
ARSENIC, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
BISMUTH, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
CALCIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
CADMIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
MERCURY, TOTAL	003	SO	06C0046	02/23/06	03/14/06	03/15/06
POTASSIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
LITHIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
SODIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
NICKEL, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
LEAD, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
SILICON, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
TIN, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	003	SO	06L0170	02/23/06	03/17/06	03/24/06
J11865						
SILVER, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
ALUMINUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
ARSENIC, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
BISMUTH, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
CALCIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
CADMIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
COPPER, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	004	SO	06C0046	02/23/06	03/14/06	03/15/06
POTASSIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
LITHIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
SODIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
NICKEL, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
LEAD, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
SILICON, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
TIN, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	004	SO	06L0170	02/23/06	03/17/06	03/24/06
J11866						
SILVER, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
ALUMINUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
ARSENIC, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
BISMUTH, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
CALCIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
CADMIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
COPPER, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
MERCURY, TOTAL	005	SO	06C0046	02/23/06	03/14/06	03/15/06
POTASSIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LITHIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
SODIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
NICKEL, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
LEAD, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
SILICON, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
TIN, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	005	SO	06L0170	02/23/06	03/17/06	03/24/06
J11867						
SILVER, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
ALUMINUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
ARSENIC, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
BISMUTH, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
CALCIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
CADMIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
COPPER, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
MERCURY, TOTAL	006	SO	06C0046	02/23/06	03/14/06	03/15/06
POTASSIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
LITHIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
SODIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
NICKEL, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
LEAD, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
SILICON, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
TIN, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	006	SO	06L0170	02/23/06	03/17/06	03/24/06
J11868						
SILVER, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
ALUMINUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
ARSENIC, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
BORON, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
BARIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
BISMUTH, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
CALCIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
CADMIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
COBALT, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
CHROMIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
COPPER, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
IRON, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
MERCURY, TOTAL	007	SO	06C0046	02/23/06	03/14/06	03/15/06
POTASSIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
LITHIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
MANGANESE, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
NICKEL, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
LEAD, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
ANTIMONY, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
SELENIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
SILICON, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06
TIN, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
TITANIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
THALLIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
URANIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
VANADIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
ZINC, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	007	SO	06L0170	02/23/06	03/17/06	03/24/06

LAB QC:

SILVER LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
SILVER, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
ALUMINUM LABORTORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
ALUMINUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
ARSENIC LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
ARSENIC, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
BORON LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
BORON, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
BARIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
BARIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
BERYLLIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
BERYLLIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
BISMUTH, LCS	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
BISMUTH, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
CALCIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
CALCIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
CADMIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
CADMIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
COBALT LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
COBALT, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
CHROMIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
COPPER LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
COPPER, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
IRON LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
IRON, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
MERCURY LABORATORY	LC1 BS	S	06C0046	N/A	03/14/06	03/15/06
MERCURY, TOTAL	MB1	S	06C0046	N/A	03/14/06	03/15/06
POTASSIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
POTASSIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
LITHIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
LITHIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
MAGNESIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
MAGNESIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
MANGANESE LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
MANGANESE, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
MOLYBDENUM LABORATOR	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
MOLYBDENUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
SODIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
SODIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
NICKEL LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
NICKEL, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
PHOSPHORUS LCS	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
PHOSPHORUS, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
LEAD LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
LEAD, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
ANTIMONY LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
ANTIMONY, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
SELENIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
SELENIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
SILICON LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
SILICON, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06
TIN LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
TIN, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
TITANIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
TITANIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
THALLIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
THALLIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
URANIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
URANIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
VANADIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
VANADIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
ZINC LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/29/06
ZINC, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/29/06
ZIRCONIUM LABORATORY	LC1 BS	S	06L0170	N/A	03/17/06	03/24/06
ZIRCONIUM, TOTAL	MB1	S	06L0170	N/A	03/17/06	03/24/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-047
LVL#: 0604L498
SDG/SAF#: K0238/RC-047

W.O.#: 11343-606-001-9999-00
Date Received: 03-13-06

METALS CASE NARRATIVE

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

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

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

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples in this batch were composed of fish, and were reported on a wet weight (as-received) basis.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of the ending CCV's in file TA0329C. All samples were were rerun in file TA0330B

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

6. 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.

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

8. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon at 54.5%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

9. The matrix spike (MS) recoveries for 3 analytes were outside the 75-125% control limits.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 36 pages.

Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J11807	Calcium	40,000	95.1
	Phosphorous	10,000	90.3
	Zirconium	200	97.2

11. The duplicate analyses for 13 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. 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.

13. 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.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/26/04
Date

jjw/m03-498

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#: 06032498

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	X6010B [1]		__200.7 [1]			__1620	__99
Boron	X6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	X6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [3]	__245.5 [3]			__99
Molybdenum	X6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	X6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	X6010B		__200.7				__99
Titanium	X6010B		__200.7				__99
Uranium	X6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	X6010B [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 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11807	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	14.5	MG/KG	2.2	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	3.6	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	7810	MG/KG	2.1	1.0
		Cadmium, Total	0.12	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.39	MG/KG	0.12	1.0
		Copper, Total	2.4	MG/KG	0.21	1.0
		Iron, Total	38.2	MG/KG	0.51	1.0
		Mercury, Total	0.03	MG/KG	0.02	1.0
		Potassium, Total	2370	MG/KG	73.4	1.0
		Lithium, Total	0.06	MG/KG	0.03	1.0
		Magnesium, Total	269	MG/KG	3.7	1.0
		Manganese, Total	4.7	MG/KG	0.30	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1170	MG/KG	2.4	1.0
		Nickel, Total	0.60	MG/KG	0.23	1.0
		Phosphorus, Total	5360	MG/KG	0.86	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.72	MG/KG	0.45	1.0
		Silicon, Total	28.3	MG/KG	0.85	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	0.77	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.84 u	MG/KG	0.84	1.0
		Vanadium, Total	0.1	MG/KG	0.09	1.0
		Zinc, Total	36.1	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J11863	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	21.6	MG/KG	2.2	1.0
		Arsenic, Total	0.65	MG/KG	0.58	1.0
		Boron, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	5.6	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	13700	MG/KG	2.1	1.0
		Cadmium, Total	0.21	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.61	MG/KG	0.12	1.0
		Copper, Total	1.7	MG/KG	0.21	1.0
		Iron, Total	50.4	MG/KG	0.51	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Potassium, Total	2370	MG/KG	73.4	1.0
		Lithium, Total	0.08	MG/KG	0.03	1.0
		Magnesium, Total	372	MG/KG	3.7	1.0
		Manganese, Total	6.7	MG/KG	0.30	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1360	MG/KG	2.4	1.0
		Nickel, Total	2.2	MG/KG	0.23	1.0
		Phosphorus, Total	8590	MG/KG	0.86	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	1.0	MG/KG	0.45	1.0
		Silicon, Total	36.6	MG/KG	0.85	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	1.1	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.94	MG/KG	0.84	1.0
		Vanadium, Total	0.14	MG/KG	0.09	1.0
		Zinc, Total	32.5	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J11864	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	52.1	MG/KG	2.2	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	6.2	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	14900	MG/KG	2.1	1.0
		Cadmium, Total	0.41	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.66	MG/KG	0.12	1.0
		Copper, Total	2.3	MG/KG	0.21	1.0
		Iron, Total	134	MG/KG	0.51	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Potassium, Total	2310	MG/KG	73.4	1.0
		Lithium, Total	0.11	MG/KG	0.03	1.0
		Magnesium, Total	375	MG/KG	3.7	1.0
		Manganese, Total	11.3	MG/KG	0.30	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1300	MG/KG	2.4	1.0
		Nickel, Total	4.4	MG/KG	0.23	1.0
		Phosphorus, Total	9270	MG/KG	0.86	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.89	MG/KG	0.45	1.0
		Silicon, Total	44.7	MG/KG	0.85	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	3.5	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.84 u	MG/KG	0.84	1.0
		Vanadium, Total	0.27	MG/KG	0.09	1.0
		Zinc, Total	37.3	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11865	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	26.9	MG/KG	2.3	1.0
		Arsenic, Total	0.59 u	MG/KG	0.59	1.0
		Boron, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	4.5	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	15300	MG/KG	2.1	1.0
		Cadmium, Total	0.20	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.52	MG/KG	0.12	1.0
		Copper, Total	1.8	MG/KG	0.21	1.0
		Iron, Total	65.4	MG/KG	0.52	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Potassium, Total	2320	MG/KG	74.1	1.0
		Lithium, Total	0.08	MG/KG	0.03	1.0
		Magnesium, Total	379	MG/KG	3.8	1.0
		Manganese, Total	7.1	MG/KG	0.31	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1300	MG/KG	2.4	1.0
		Nickel, Total	2.0	MG/KG	0.23	1.0
		Phosphorus, Total	8560	MG/KG	0.86	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.63	MG/KG	0.45	1.0
		Silicon, Total	33.3	MG/KG	0.86	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	1.6	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.85 u	MG/KG	0.85	1.0
		Vanadium, Total	0.17	MG/KG	0.09	1.0
		Zinc, Total	28.4	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J11866	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	53.1	MG/KG	2.2	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	4.3	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	10600	MG/KG	2.1	1.0
		Cadmium, Total	0.20	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.55	MG/KG	0.12	1.0
		Copper, Total	2.1	MG/KG	0.21	1.0
		Iron, Total	120	MG/KG	0.51	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	2390	MG/KG	73.4	1.0
		Lithium, Total	0.19	MG/KG	0.03	1.0
		Magnesium, Total	328	MG/KG	3.7	1.0
		Manganese, Total	7.8	MG/KG	0.30	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1240	MG/KG	2.4	1.0
		Nickel, Total	1.6	MG/KG	0.23	1.0
		Phosphorus, Total	6960	MG/KG	0.86	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.81	MG/KG	0.45	1.0
		Silicon, Total	47.6	MG/KG	0.85	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	4.7	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.84 u	MG/KG	0.84	1.0
		Vanadium, Total	0.21	MG/KG	0.09	1.0
		Zinc, Total	27.8	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J11867	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	13.0	MG/KG	2.2	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	4.6	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	8310	MG/KG	2.1	1.0
		Cadmium, Total	0.11	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.35	MG/KG	0.12	1.0
		Copper, Total	2.0	MG/KG	0.21	1.0
		Iron, Total	39.8	MG/KG	0.51	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	1650	MG/KG	73.4	1.0
		Lithium, Total	0.04	MG/KG	0.03	1.0
		Magnesium, Total	262	MG/KG	3.7	1.0
		Manganese, Total	9.1	MG/KG	0.30	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	811	MG/KG	2.4	1.0
		Nickel, Total	0.97	MG/KG	0.23	1.0
		Phosphorus, Total	5110	MG/KG	0.86	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.60	MG/KG	0.45	1.0
		Silicon, Total	26.0	MG/KG	0.85	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	0.69	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.84 u	MG/KG	0.84	1.0
		Vanadium, Total	0.10	MG/KG	0.09	1.0
		Zinc, Total	25.5	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J11868	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	25.8	MG/KG	2.2	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	4.1	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.48 u	MG/KG	0.48	1.0
		Calcium, Total	8970	MG/KG	2.1	1.0
		Cadmium, Total	0.22	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.41	MG/KG	0.12	1.0
		Copper, Total	3.3	MG/KG	0.21	1.0
		Iron, Total	55.6	MG/KG	0.51	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	2030	MG/KG	72.7	1.0
		Lithium, Total	0.05	MG/KG	0.03	1.0
		Magnesium, Total	245	MG/KG	3.7	1.0
		Manganese, Total	5.4	MG/KG	0.30	1.0
		Molybdenum, Total	0.27 u	MG/KG	0.27	1.0
		Sodium, Total	1050	MG/KG	2.4	1.0
		Nickel, Total	1.7	MG/KG	0.23	1.0
		Phosphorus, Total	5920	MG/KG	0.85	1.0
		Lead, Total	0.30	MG/KG	0.29	1.0
		Antimony, Total	0.41 u	MG/KG	0.41	1.0
		Selenium, Total	0.44 u	MG/KG	0.44	1.0
		Silicon, Total	35.4	MG/KG	0.84	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	1.4	MG/KG	0.03	1.0
		Thallium, Total	0.66 u	MG/KG	0.66	1.0
		Uranium, Total	0.83 u	MG/KG	0.83	1.0
		Vanadium, Total	0.13	MG/KG	0.08	1.0
		Zinc, Total	29.2	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0170-MB1	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	2.4 u	MG/KG	2.4	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	2.2 u	MG/KG	2.2	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	0.22 u	MG/KG	0.22	1.0
		Iron, Total	0.96	MG/KG	0.54	1.0
		Potassium, Total	77.1 u	MG/KG	77.1	1.0
		Lithium, Total	0.05	MG/KG	0.03	1.0
		Magnesium, Total	3.9 u	MG/KG	3.9	1.0
		Manganese, Total	0.32 u	MG/KG	0.32	1.0
		Molybdenum, Total	0.29 u	MG/KG	0.29	1.0
		Sodium, Total	2.7	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	0.31 u	MG/KG	0.31	1.0
		Antimony, Total	0.44 u	MG/KG	0.44	1.0
		Selenium, Total	0.47 u	MG/KG	0.47	1.0
		Silicon, Total	1.5	MG/KG	0.89	1.0
		Tin, Total	1.1 u	MG/KG	1.1	1.0
		Titanium, Total	0.03	MG/KG	0.03	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
		Zirconium, Total	1.1 u	MG/KG	1.1	1.0
BLANK1	06C0046-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J11807	Silver, Total	4.5	0.07u	4.8	93.8	1.0
		Aluminum, Total	191	14.5	190	92.5	1.0
		Arsenic, Total	177	0.58u	190	92.9	1.0
		Boron, Total	88.1	0.23u	95.2	92.5	1.0
		Barium, Total	185	3.6	190	95.1	1.0
		Beryllium, Total	4.2	0.02u	4.8	87.5	1.0
		Bismuth, Total	460	0.49u	476	96.7	1.0
		Calcium, Total	13300	7810	2380	229.2	1.0
		Cadmium, Total	4.5	0.12	4.8	91.2	1.0
		Cobalt, Total	43.7	0.13u	47.6	91.8	1.0
		Chromium, Total	18.3	0.39	19.0	94.2	1.0
		Copper, Total	23.5	2.4	23.8	88.7	1.0
		Iron, Total	141	38.2	95.2	108.2	1.0
		Mercury, Total	0.18	0.03	0.16	98.1	1.0
		Potassium, Total	4390	2370	2380	84.9	1.0
		Lithium, Total	106	0.06	95.2	110.8	1.0
		Magnesium, Total	2320	269	2380	86.1	1.0
		Manganese, Total	43.6	4.7	47.6	81.7	1.0
		Molybdenum, Total	88.2	0.28u	95.2	92.6	1.0
		Sodium, Total	3240	1170	2380	87.2	1.0
		Nickel, Total	44.9	0.60	47.6	93.1	1.0
		Phosphorus, Total	7390	5360	476	427.7*	1.0
		Lead, Total	44.8	0.30u	47.6	94.1	1.0
		Antimony, Total	43.8	0.42u	47.6	92.0	1.0
		Selenium, Total	172	0.72	190	89.9	1.0
		Silicon, Total	139	28.3	95.2	116.0	1.0
		Tin, Total	81.0	1.0 u	95.2	85.1	1.0
		Titanium, Total	90.0	0.77	95.2	93.7	1.0
		Thallium, Total	178	0.67u	190	93.7	1.0
		Uranium, Total	226	0.84u	238	94.9	1.0
		Vanadium, Total	43.9	0.1	47.6	92.0	1.0
		Zinc, Total	83.2	36.1	47.6	98.9	1.0
		Zirconium, Total	118	1.0 u	476	24.7	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J11807	Silver, Total	0.07u	0.07u	NC	1.0
		Aluminum, Total	14.5	20.2	32.9	1.0
		Arsenic, Total	0.58u	0.64	~~NC~~ 20.0 corrected entry JMH 4/24/06	1.0
		Boron, Total	0.23u	0.23u	NC	1.0
		Barium, Total	3.6	4.9	30.6	1.0
		Beryllium, Total	0.02u	0.02u	NC	1.0
		Bismuth, Total	0.49u	0.49u	NC	1.0
		Calcium, Total	7810	11400	37.4	1.0
		Cadmium, Total	0.12	0.13	4.0	1.0
		Cobalt, Total	0.13u	0.13u	NC	1.0
		Chromium, Total	0.39	0.49	22.9	1.0
		Copper, Total	2.4	2.3	4.3	1.0
		Iron, Total	38.2	86.8	77.8	1.0
		Mercury, Total	0.03	0.02	31.1	1.0
		Potassium, Total	2370	2520	6.1	1.0
		Lithium, Total	0.06	0.11	64.5	1.0
		Magnesium, Total	269	326	19.3	1.0
		Manganese, Total	4.7	5.0	6.2	1.0
		Molybdenum, Total	0.28u	0.28u	NC	1.0
		Sodium, Total	1170	1290	9.9	1.0
		Nickel, Total	0.60	0.80	28.9	1.0
		Phosphorus, Total	5360	7340	31.3	1.0
		Lead, Total	0.30u	0.30u	NC	1.0
		Antimony, Total	0.42u	0.42u	NC	1.0
		Selenium, Total	0.72	0.99	31.4	1.0
		Silicon, Total	28.3	32.3	13.2	1.0
		Tin, Total	1.0 u	1.0 u	NC	1.0
		Titanium, Total	0.77	1.2	44.1	1.0
		Thallium, Total	0.67u	0.67u	NC	1.0
		Uranium, Total	0.84u	0.85u	NC	1.0
		Vanadium, Total	0.1	0.13	27.4	1.0
		Zinc, Total	36.1	37.7	4.3	1.0
		Zirconium, Total	1.0 u	1.0 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/24/06

CLIENT: TNUHANFORD RC-047 K0238 LVL LOT #: 0603L498

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	06L0170-LC1	Silver, LCS	49.9	50.0	MG/KG	99.8
		Aluminum, LCS	440	500	MG/KG	87.9
		Arsenic, LCS	894	1000	MG/KG	89.4
		Boron, LCS	454	500	MG/KG	90.9
		Barium, LCS	490	500	MG/KG	97.9
		Beryllium, LCS	22.9	25.0	MG/KG	91.6
		Bismuth, LCS	482	500	MG/KG	96.3
		Calcium, LCS	2050	2500	MG/KG	82.1
		Cadmium, LCS	24.0	25.0	MG/KG	96.0
		Cobalt, LCS	247	250	MG/KG	98.8
		Chromium, LCS	49.7	50.0	MG/KG	99.4
		Copper, LCS	114	125	MG/KG	91.4
		Iron, LCS	432	500	MG/KG	86.3
		Potassium, LCS	2270	2500	MG/KG	90.6
		Lithium, LCS	511	500	MG/KG	102.2
		Magnesium, LCS	2160	2500	MG/KG	86.4
		Manganese, LCS	63.6	75.0	MG/KG	84.8
		Molybdenum, LCS	490	500	MG/KG	98.1
		Sodium, LCS	2280	2500	MG/KG	91.1
		Nickel, LCS	196	200	MG/KG	97.8
		Phosphorus, LCS	448	500	MG/KG	89.5
		Lead, LCS	239	250	MG/KG	95.7
		Antimony, LCS	280	300	MG/KG	93.2
		Selenium, LCS	862	1000	MG/KG	86.2
		Silicon, LCS	272	500	MG/KG	54.5
		Tin, LCS	490	500	MG/KG	97.9
		Titanium, LCS	488	500	MG/KG	97.6
		Thallium, LCS	946	1000	MG/KG	94.6
		Uranium, LCS	240	250	MG/KG	95.9
		Vanadium, LCS	251	250	MG/KG	100.4
		Zinc, LCS	95.2	100	MG/KG	95.2
		Zirconium, LCS	452	500	MG/KG	90.5
LCS1	06C0046-LC1	Mercury, LCS	6.8	6.2	MG/KG	110.3

Lionville Laboratory Use Only

06031498

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVL

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNU-HANFORD SAFA RC-047

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 3/13/06 Date Due 4/12/06

Refrigerator #		A-1															
#/Type Container	Liquid									W							
	Solid	2	1							B							
Volume	Liquid									N/A							
	Solid	250	1							S							
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					TCP Metals	CN						
		Lionville Laboratory Use Only															
			060254	060814 OPCB						METALS(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	VOA	BNA	Pest/PCB	Herb				TCP Metals	CN						
001	J 11807			SOLID	3-13-06	1545		1	✓					✓							
002	63					1330		1	✓					✓							
003	64					1400		1	✓					✓							
004	65					1420		1	✓					✓							
005	66					1500		1	✓					✓							
006	67					1515		1	✓					✓							
007	68					1530		1	✓					✓							

Special Instructions: SOLID = Composite of Fish

STRONG ODOR

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

RUN MATRIX QC

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

Relinquished by	Received by	Date	Time
[signature]	[signature]	3/13/06	1100

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"			

ORIGINAL REWRITTEN

000000027

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-137	Page 1 of 1

Collector: TILLER, B. 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: 300 AREA ELEVATED, SAMPLE 4	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ JH 2/14/06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	~~2~~ 1 JH 2/14/06	1	~~2~~ 0 JH 2/14/06	0	0	0				
Volume	750g	5g	15g	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 (FCL)				

Sample No.	Matrix *	Sample Date	Sample Time										
J11807	OTHER SOLID	2-23-06	1545	X	X								

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	R2 Stiffler	2-27-06 0745
R2 Stiffler	2-27-06 1600	Fed Ex	
Fed Ex		MFM	02/28/06 9:20
Alex Kleinsal	3/10/06 16:00		
[illegible]	3-13-06 1100	[illegible]	3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec, ~~Iso Uranium and Iso Strontium~~ then transship to Lionville Labs, if possible maintain 4 C cooling. JH 2/14/06 BOTH

NOTE: Lionville- contact ~~Rich~~ JOAN Weisrupon receipt.

KESSNER JH 2/14/06

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-047-141	Page 1 of 1

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 1	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597 SP DA 2-23-06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ DA 2-24-06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Carbon-14	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)			
J11863	OTHER SOLID	2-23-06	1330	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Stiffler	2-27-06 0745
RZ Stiffler	2-27-06 1600	Fed Ex	
Fed Ex		FW	07/28/06 9:20
Alex Kelley	3/10/06 16:00		
[illegible]	3-13-06 1100	[illegible]	3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline - perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ upon receipt.

JOAN KESSNER 4/2/06

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-047-142

Collector: TILLER, B. 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: 100-K ELEVATED, SAMPLE 2		SAF No.: RC-047
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ AA 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11864	OTHER SOLID	2-23-06	1400	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In: FAS LOCKED STORAGE — Date/Time 2-23-06 1630
Relinquished By/Removed From: FAS LOCKED STORAGE	Date/Time 2-27-06 0745	Received By/Stored In: RZ Stiffler — Date/Time 2-27-06 0745
Relinquished By/Removed From: RZ Stiffler	Date/Time 2-27-06 1600	Received By/Stored In: Fed Ex — Date/Time
Relinquished By/Removed From: Fed Ex	Date/Time	Received By/Stored In: [illegible] — Date/Time 03/08/06 9:30
Relinquished By/Removed From: [illegible]	Date/Time 3/10/06 16:00	Received By/Stored In: — Date/Time
Relinquished By/Removed From: Fed Ex	Date/Time 3-13-06 1100	Received By/Stored In: [illegible] — Date/Time 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline - perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville - contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. AA 21406

Matrix *

SoSoil
SESediment
SOSolid
SlSludge
W = Water
O=Oil
AirAir
DSDrum Solids
DLDrum Liquids
TTissue
WIWipe
LLiquid
VVegetation
XOther

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-047-143	Page 1 of 1

Collector TILLER, B. 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 100-K ELEVATED, SAMPLE 3		SAF No. RC-047
Ice Chest No. AFS-04-052	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060308		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4 C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11865	OTHER SOLID	2-23-06	1430	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 2-23-06 1630	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-23-06 1630
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 2-27-06 0725	Received By/Stored In RE Stoffer Date/Time 2-27-06 0725
Relinquished By/Removed From RE Stoffer Date/Time 2-27-06 1600	Received By/Stored In Fed EX Date/Time
Relinquished By/Removed From Fed EX Date/Time	Received By/Stored In MFM Date/Time 03/28/06 9:20
Relinquished By/Removed From Alex Elliott Date/Time 3/10/06 16:00	Received By/Stored In Date/Time
Relinquished By/Removed From Fed Ex Date/Time 3-13-06 1100	Received By/Stored In Date/Time 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. 4/4/2006

Matrix *

Soil=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-047-144	Page 1 of 1

Collector: TILLER, B. 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: ELEVATED #4 100-K ~~LOW SAMPLE~~	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597 SEH 2-23-06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

SAMPLE ANALYSIS												
Preservation				COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container				G/P	G/P	G/P	G/P	aG	aG	aG		
No. of Container(s)				1	1	1	0	0	0	0		
Volume				750g	2g	5g	15g	50g	50g	50g		
				Gamma Spec - (Full List)	Carbon-14	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)		
Sample No.	Matrix *	Sample Date	Sample Time									
J11866	OTHER SOLID	2-23-06	1500	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: RZ Stoffler	Date/Time: 2-27-06 0745
Relinquished By/Removed From: RZ Stoffler	Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In:	Date/Time: 02/28/06 9:20
Relinquished By/Removed From: Alex Delivery	Date/Time: 3/10/06 16:00	Received By/Stored In:	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 3-13-06 1100	Received By/Stored In:	Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then transship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. JPD 2-14-06

Matrix *
Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Lq=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-047-145	Page 1 of 1

Collector: TILLER, B. 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: 100-K ~~LOW, SAMPLE 2~~ ELEVATED #5	SAF No.: RC-047	
Ice Chest No.: AFS-07-052	Field Logbook No.: EL-1597 SEB 7-27-06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

0000000033

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ A/H 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11867	OTHER SOLID	2-23-06	1515	X	X	X					

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Stoffler	2-27-06 0745
RZ Stoffler	2-27-06 1600 WCH	FED EX	
FED EX			07/28/06 9:20
Alex Kilwith	3/10/06 16:00		
Fed Ex	3-13-06 1600		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rick Morse~~ JOANKESSNER upon receipt. A/H 21406

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Ti=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-047-146	Page 1 of 1

Collector: TILLER, B. 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: 100-K LOW, SAMPLE	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11868	OTHER SOLID	2-23-06	1530	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time 2-27-06 0745	Received By/Stored In: RZ Stiffler
Relinquished By/Removed From: RZ Stiffler	Date/Time 2-27-06 1600	Received By/Stored In: Fed Ex
Relinquished By/Removed From: Fed Ex	Date/Time	Received By/Stored In: 07/28/06 9:22
Relinquished By/Removed From:	Date/Time 8/10/06 16:00	Received By/Stored In:
Relinquished By/Removed From:	Date/Time 3-13-06 1100	Received By/Stored In: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

AH 21406

Matrix *

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

SDG# K0238 1 of 14

Eberline Srvces

CHAIN OF CUSTODY ORD # R6-02-194

03/10/06 11:40:13

WORK ID: SAF# RC-047 SDG# K0238

RCVD: 02/28/06 DUE: 04/14/06

KEEP: 04/14/07 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS					
01A-X	J11807	SCA-2	DISPOS	E009	E046	E090	E094	E129
01B-X	J11807 MS	SCA-2	E009	E046	E090	E094	E129	
01C-X	J11807 DUP	SCA-2	E009	E046	E090	E094	E129	
02A-X	J11863	SCA-2	DISPOS	E009	E046	E090	E094	E129
03A-X	J11864	SCA-2	DISPOS	E009	E046	E090	E094	E129
04A-X	J11865	SCA-2	DISPOS	E009	E046	E090	E094	E129
05A-X	J11866	SCA-2	DISPOS	E009	E046	E090	E094	E129
06A-X	J11867	SCA-2	DISPOS	E009	E046	E090	E094	E129
07A-X	J11868	SCA-2	DISPOS	E009	E046	E090	E094	E129

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Alex Kelmichael	3/10/06	LIONVILLE	3/10/06		
F.D. Eo	3/13/06	[illegible]	3/13/06		

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 3/13/06

~~Purchase Order~~ / Project# / ~~SAF#~~ / SOW# / Release #: RC-047

LvLI Batch # : 0603L498 **Sample Custodian:** J. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FEDEX		Airbill# 7914 0311 9689	
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 4.9 °C		Cooler # AFS-04-052	
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 R6-02-193-7396, SDG K0238

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 28, 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 Mannion

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 K0238 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 13, 2006.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 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 — 4/14/6

Melissa C. Mannion
Senior Program Manager

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 K0238

SDG	7396
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K0238

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	04/13/06

SDG 7396
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/13/06

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.

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

SDG 7396
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0238

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R602193-01	J11807	300 Area Elevated-Smpl 4	SOLID		RC-047	RC-047-137	02/23/06 15:45
R602193-02	J11863	100-K Elevated-Sample 1	SOLID		RC-047	RC-047-141	02/23/06 13:30
R602193-03	J11864	100-K Elevated-Sample 2	SOLID		RC-047	RC-047-142	02/23/06 14:00
R602193-04	J11865	100-K Elevated-Sample 3	SOLID		RC-047	RC-047-143	02/23/06 14:30
R602193-05	J11866	100-K Elevated-Sample 4	SOLID		RC-047	RC-047-144	02/23/06 15:00
R602193-06	J11867	100-K Elevated-Sample 5	SOLID		RC-047	RC-047-145	02/23/06 15:15
R602193-07	J11868	100-K Low, Sample 1	SOLID		RC-047	RC-047-146	02/23/06 15:30
R602193-08	Lab Control Sample		SOLID		RC-047		
R602193-09	Method Blank		SOLID		RC-047		
R602193-10	Duplicate (R602193-03)	100-K Elevated-Sample 2	SOLID		RC-047		02/23/06 14:00

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

QC SUMMARY

SDG 7396
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K0238

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
7396	RC-047-137	J11807	SOLID	100.0	65.7 g		02/28/06	5	R602193-01	7396-001
	RC-047-141	J11863	SOLID	100.0	56.1 g		02/28/06	5	R602193-02	7396-002
	RC-047-142	J11864	SOLID	100.0	60.5 g		02/28/06	5	R602193-03	7396-003
	RC-047-143	J11865	SOLID	100.0	60.1 g		02/28/06	5	R602193-04	7396-004
	RC-047-144	J11866	SOLID	100.0	65.4 g		02/28/06	5	R602193-05	7396-005
	RC-047-145	J11867	SOLID	100.0	60.5 g		02/28/06	5	R602193-06	7396-006
	RC-047-146	J11868	SOLID	100.0	38.0 g		02/28/06	5	R602193-07	7396-007
		Method Blank	SOLID						R602193-09	7396-009
		Lab Control Sample	SOLID						R602193-08	7396-008
		Duplicate (R602193-03)	SOLID	100.0	60.5 g		02/28/06	5	R602193-10	7396-010

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

SDG 7396
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0238

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	7131-103	5.0	7			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	7131-103	5.0	7			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	7131-103	10.0	7			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7131-103	15.0	7			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Solids	7131-103	10.0	6			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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

SDG 7396
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0238

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R602193-01	J11807			7396-001	GAM		03/07/06	03/10/06	MWT	Gamma Scan
02/23/06	300 Area Elevated-Smpl 4		SOLID	7396-001	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
02/28/06	RC-047-137	RC-047		7396-001	TH		04/10/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-001	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-02	J11863			7396-002	C		04/05/06	04/13/06	MWT	Carbon 14 in Solids
02/23/06	100-K Elevated-Sample 1		SOLID	7396-002	GAM		03/07/06	03/10/06	MWT	Gamma Scan
02/28/06	RC-047-141	RC-047		7396-002	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-002	TH		04/07/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-002	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-03	J11864			7396-003	C		04/05/06	04/13/06	MWT	Carbon 14 in Solids
02/23/06	100-K Elevated-Sample 2		SOLID	7396-003	GAM		03/07/06	03/10/06	MWT	Gamma Scan
02/28/06	RC-047-142	RC-047		7396-003	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-003	TH		04/07/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-003	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-04	J11865			7396-004	C		04/06/06	04/13/06	MWT	Carbon 14 in Solids
02/23/06	100-K Elevated-Sample 3		SOLID	7396-004	GAM		03/07/06	03/10/06	MWT	Gamma Scan
02/28/06	RC-047-143	RC-047		7396-004	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-004	TH		04/07/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-004	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-05	J11866			7396-005	C		04/06/06	04/13/06	MWT	Carbon 14 in Solids
02/23/06	100-K Elevated-Sample 4		SOLID	7396-005	GAM		03/08/06	03/10/06	MWT	Gamma Scan
02/28/06	RC-047-144	RC-047		7396-005	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-005	TH		04/07/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-005	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-06	J11867			7396-006	C		04/06/06	04/13/06	MWT	Carbon 14 in Solids
02/23/06	100-K Elevated-Sample 5		SOLID	7396-006	GAM		03/08/06	03/10/06	MWT	Gamma Scan
02/28/06	RC-047-145	RC-047		7396-006	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-006	TH		04/07/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-006	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

SDG 7396
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0238

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R602193-07	J11868			7396-007	C		04/06/06	04/13/06	MWT	Carbon 14 in Solids
02/23/06	100-K Low, Sample 1		SOLID	7396-007	GAM		03/08/06	03/10/06	MWT	Gamma Scan
02/28/06	RC-047-146	RC-047		7396-007	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-007	TH		04/07/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-007	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-08	Lab Control Sample			7396-008	C		04/06/06	04/13/06	MWT	Carbon 14 in Solids
			SOLID	7396-008	GAM		03/10/06	03/10/06	MWT	Gamma Scan
		RC-047		7396-008	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-008	TH		04/08/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-008	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-09	Method Blank			7396-009	C		04/05/06	04/13/06	MWT	Carbon 14 in Solids
			SOLID	7396-009	GAM		03/10/06	03/10/06	MWT	Gamma Scan
		RC-047		7396-009	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-009	TH		04/08/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-009	U		04/01/06	04/13/06	MWT	Uranium, Isotopic in Solids
R602193-10	Duplicate (R602193-03)			7396-010	C		04/05/06	04/13/06	MWT	Carbon 14 in Solids
02/23/06	100-K Elevated-Sample 2		SOLID	7396-010	GAM		03/10/06	03/10/06	MWT	Gamma Scan
02/28/06		RC-047		7396-010	SR		03/28/06	04/13/06	MWT	Total Strontium in Solids
				7396-010	TH		04/10/06	04/13/06	MWT	Thorium, Isotopic in Solids
				7396-010	U		04/01/06	04/13/06	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	6			1	1	1	9
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				34			5	5	5	49

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-009 **Method Blank**

METHOD BLANK

SDG	7396	Client/Case no	Hanford	SDG K0238	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602193-09	Client sample id	Method Blank		
Dept sample id	7396-009	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	7.80	12	21	50	U	C
Total Strontium	SR-RAD	-0.054	0.11	0.25	1.0	U	SR
Thorium 228	14274-82-9	0.108	0.22	0.41	1.0	U	TH
Thorium 230	14269-63-7	-0.054	0.21	0.41	1.0	U	TH
Thorium 232	TH-232	0	0.11	0.41	1.0	U	TH
Uranium 233/234	U-233/234	0	0.071	0.27	1.0	U	U
Uranium 235	15117-96-1	0.043	0.086	0.33	1.0	U	U
Uranium 238	U-238	0	0.071	0.27	1.0	U	U
Potassium 40	13966-00-2	U		5.9		U	GAM
Cobalt 60	10198-40-0	U		0.50	0.050	U	GAM
Cesium 137	10045-97-3	U		0.22	0.10	U	GAM
Radium 226	13982-63-3	U		0.42	0.10	U	GAM
Radium 228	15262-20-1	U		1.0	0.20	U	GAM
Europium 152	14683-23-9	U		0.48	0.10	U	GAM
Europium 154	15585-10-1	U		0.66	0.10	U	GAM
Europium 155	14391-16-3	U		0.49	0.10	U	GAM
Thorium 228	14274-82-9	U		0.27		U	GAM
Thorium 232	TH-232	U		1.0		U	GAM
Uranium 235	15117-96-1	U		0.65		U	GAM
Uranium 238	U-238	U		24		U	GAM
Americium 241	14596-10-2	U		0.61		U	GAM
Beryllium 7	13966-02-4	U		1.3		U	GAM
Ruthenium 106	13967-48-1	U		1.5		U	GAM
Antimony 125	14234-35-6	U		0.44		U	GAM
Cesium 134	13967-70-9	U		0.27		U	GAM

100 & 300 Area Component - RCBRA

QC-BLANK #56329

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-008

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7396

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0238

Contract No. 630

Lab sample id R602193-08

Dept sample id 7396-008

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	12500	83	20	50		C	12800	510	98	84-116	80-120
Total Strontium	9.90	0.56	0.24	1.0		SR	9.82	0.39	101	82-118	80-120
Thorium 230	41.2	5.1	0.41	1.0		TH	40.4	1.6	102	79-121	80-120
Uranium 233/234	17.7	2.0	0.97	1.0		U	18.6	0.74	95	81-119	80-120
Uranium 235	15.8	1.8	0.24	1.0		U	15.1	0.60	105	80-120	80-120
Uranium 238	20.9	2.2	0.93	1.0		U	20.2	0.81	104	81-119	80-120
Cobalt 60	7.99	0.45	0.28	0.050		GAM	7.99	0.32	100	75-125	80-120
Cesium 137	8.05	0.37	0.29	0.10		GAM	8.12	0.32	99	76-124	80-120

100 & 300 Area Component - RCBRA

QC-LCS #56328

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-010

J11864

DUPLICATE

SDG	7396			Client/Case no	Hanford SDG K0238
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R602193-10	Lab sample id	R602193-03	Client sample id	J11864
Dept sample id	7396-010	Dept sample id	7396-003	Location/Matrix	100-K Elevated-Sample 2 SOLID
		Received	02/28/06	Collected/Weight	02/23/06 14:00 60.5 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-047-142 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	-9.26	10	17	50	U	C	-8.13	10	17	U	-		0.2
Total Strontium	-0.021	0.12	0.26	1.0	U	SR	-0.072	0.13	0.27	U	-		0.6
Thorium 228	0	0.33	1.3	1.0	U	TH	0	0.12	0.47	U	-		0
Thorium 230	-0.164	0.33	1.3	1.0	U	TH	0	0.24	0.46	U	-		0.8
Thorium 232	0	0.33	1.3	1.0	U	TH	0	0.12	0.46	U	-		0
Uranium 233/234	0.036	0.071	0.27	1.0	U	U	0.113	0.15	0.29	U	-		0.9
Uranium 235	0	0.086	0.33	1.0	U	U	0	0.091	0.35	U	-		0
Uranium 238	0.036	0.071	0.27	1.0	U	U	0	0.075	0.29	U	-		0.7
Potassium 40	U		2.8		U	GAM	U		4.2	U	-		0.5
Cobalt 60	U			0.050		GAM	U		0.18	U	0	212	0
Cesium 137	U		0.12	0.10	U	GAM	U		0.14	U	-		0.2
Radium 226	U		0.22	0.10	U	GAM	U		0.30	U	-		0.4
Radium 228	U		0.50	0.20	U	GAM	U		0.67	U	-		0.4
Europium 152	U		0.29	0.10	U	GAM	U		0.33	U	-		0.2
Europium 154	U		0.39	0.10	U	GAM	U		0.43	U	-		0.1
Europium 155	U		0.26	0.10	U	GAM	U		0.33	U	-		0.3
Thorium 228	U		0.17		U	GAM	U		0.19	U	-		0.2
Thorium 232	U		0.50		U	GAM	U		0.67	U	-		0.4
Uranium 235	U		0.39		U	GAM	U		0.44	U	-		0.2
Uranium 238	U		13		U	GAM	U		16	U	-		0.3
Americium 241	U		0.28		U	GAM	U		0.39	U	-		0.5
Beryllium 7	U		0.98		U	GAM	U		1.0	U	-		0
Ruthenium 106	U		1.1		U	GAM	U		1.1	U	-		0
Antimony 125	U		0.28		U	GAM	U		0.30	U	-		0.1
Cesium 134	U		0.13		U	GAM	U		0.17	U	-		0.4

100 & 300 Area Component - RCBRA

Lab id	EBRLNE
Protocol	Hanford
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Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-010

J11864

DUPLICATE, cont.

SDG	7396			Client/Case no	Hanford SDG K0238
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R602193-10	Lab sample id	R602193-03	Client sample id	J11864
Dept sample id	7396-010	Dept sample id	7396-003	Location/Matrix	100-K Elevated-Sample 2 SOLID
		Received	02/28/06	Collected/Weight	02/23/06 14:00 60.5 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-047-142 RC-047

QC-DUP#3 56330

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-001 J11807

DATA SHEET

SDG	7396	Client/Case no	Hanford SDG K0238
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602193-01	Client sample id	J11807
Dept sample id	7396-001	Location/Matrix	300 Area Elevated-Smpl 4 SOLID
Received	02/28/06	Collected/Weight	02/23/06 15:45 65.7 g
% solids	100.0	Custody/SAF No	RC-047-137 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.075	0.15	0.28	1.0	U	SR
Thorium 228	14274-82-9	0.303	0.30	0.58	1.0	U	TH
Thorium 230	14269-63-7	0.075	0.30	0.57	1.0	U	TH
Thorium 232	TH-232	0	0.15	0.57	1.0	U	TH
Uranium 233/234	U-233/234	0	0.071	0.27	1.0	U	U
Uranium 235	15117-96-1	0	0.086	0.33	1.0	U	U
Uranium 238	U-238	0	0.071	0.27	1.0	U	U
Potassium 40	13966-00-2	U		4.0		U	GAM
Cobalt 60	10198-40-0	U		0.12	0.050	U	GAM
Cesium 137	10045-97-3	U		0.12	0.10	U	GAM
Radium 226	13982-63-3	U		0.28	0.10	U	GAM
Radium 228	15262-20-1	U		0.62	0.20	U	GAM
Europium 152	14683-23-9	U		0.26	0.10	U	GAM
Europium 154	15585-10-1	U		0.35	0.10	U	GAM
Europium 155	14391-16-3	U		0.34	0.10	U	GAM
Thorium 228	14274-82-9	U		0.18		U	GAM
Thorium 232	TH-232	U		0.62		U	GAM
Uranium 235	15117-96-1	U		0.48		U	GAM
Uranium 238	U-238	U		15		U	GAM
Americium 241	14596-10-2	U		0.40		U	GAM
Beryllium 7	13966-02-4	U		0.89		U	GAM
Ruthenium 106	13967-48-1	U		0.93		U	GAM
Antimony 125	14234-35-6	U		0.25		U	GAM
Cesium 134	13967-70-9	U		0.14		U	GAM

100 & 300 Area Component - RCBRA

Lab id	EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-002 J11863

DATA SHEET

SDG	7396	Client/Case no	Hanford SDG K0238
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602193-02	Client sample id	J11863
Dept sample id	7396-002	Location/Matrix	100-K Elevated-Sample 1 SOLID
Received	02/28/06	Collected/Weight	02/23/06 13:30 56.1 g
% solids	100.0	Custody/SAF No	RC-047-141 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	0.538	12	20	50	U	C
Total Strontium	SR-RAD	-0.078	0.13	0.29	1.0	U	SR
Thorium 228	14274-82-9	0.158	0.32	0.51	1.0	U	TH
Thorium 230	14269-63-7	-0.053	0.21	0.40	1.0	U	TH
Thorium 232	TH-232	0.053	0.11	0.40	1.0	U	TH
Uranium 233/234	U-233/234	0	0.049	0.19	1.0	U	U
Uranium 235	15117-96-1	0.030	0.060	0.23	1.0	U	U
Uranium 238	U-238	0	0.049	0.19	1.0	U	U
Potassium 40	13966-00-2	U		3.0		U	GAM
Cobalt 60	10198-40-0	U		0.14	0.050	U	GAM
Cesium 137	10045-97-3	U		0.14	0.10	U	GAM
Radium 226	13982-63-3	U		0.24	0.10	U	GAM
Radium 228	15262-20-1	U		0.48	0.20	U	GAM
Europium 152	14683-23-9	U		0.31	0.10	U	GAM
Europium 154	15585-10-1	U		0.36	0.10	U	GAM
Europium 155	14391-16-3	U		0.30	0.10	U	GAM
Thorium 228	14274-82-9	U		0.17		U	GAM
Thorium 232	TH-232	U		0.48		U	GAM
Uranium 235	15117-96-1	U		0.44		U	GAM
Uranium 238	U-238	U		16		U	GAM
Americium 241	14596-10-2	U		0.30		U	GAM
Beryllium 7	13966-02-4	U		1.1		U	GAM
Ruthenium 106	13967-48-1	U		1.1		U	GAM
Antimony 125	14234-35-6	U		0.30		U	GAM
Cesium 134	13967-70-9	U		0.15		U	GAM

100 & 300 Area Component - RCBRA

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-003 J11864

DATA SHEET

SDG	7396	Client/Case no	Hanford SDG K0238
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602193-03	Client sample id	J11864
Dept sample id	7396-003	Location/Matrix	100-K Elevated-Sample 2 SOLID
Received	02/28/06	Collected/Weight	02/23/06 14:00 60.5 g
% solids	100.0	Custody/SAF No	RC-047-142 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	-8.13	10	17	50	U	C
Total Strontium	SR-RAD	-0.072	0.13	0.27	1.0	U	SR
Thorium 228	14274-82-9	0	0.12	0.47	1.0	U	TH
Thorium 230	14269-63-7	0	0.24	0.46	1.0	U	TH
Thorium 232	TH-232	0	0.12	0.46	1.0	U	TH
Uranium 233/234	U-233/234	0.113	0.15	0.29	1.0	U	U
Uranium 235	15117-96-1	0	0.091	0.35	1.0	U	U
Uranium 238	U-238	0	0.075	0.29	1.0	U	U
Potassium 40	13966-00-2	U		4.2		U	GAM
Cobalt 60	10198-40-0	U		0.18	0.050	U	GAM
Cesium 137	10045-97-3	U		0.14	0.10	U	GAM
Radium 226	13982-63-3	U		0.30	0.10	U	GAM
Radium 228	15262-20-1	U		0.67	0.20	U	GAM
Europium 152	14683-23-9	U		0.33	0.10	U	GAM
Europium 154	15585-10-1	U		0.43	0.10	U	GAM
Europium 155	14391-16-3	U		0.33	0.10	U	GAM
Thorium 228	14274-82-9	U		0.19		U	GAM
Thorium 232	TH-232	U		0.67		U	GAM
Uranium 235	15117-96-1	U		0.44		U	GAM
Uranium 238	U-238	U		16		U	GAM
Americium 241	14596-10-2	U		0.39		U	GAM
Beryllium 7	13966-02-4	U		1.0		U	GAM
Ruthenium 106	13967-48-1	U		1.1		U	GAM
Antimony 125	14234-35-6	U		0.30		U	GAM
Cesium 134	13967-70-9	U		0.17		U	GAM

100 & 300 Area Component - RCBRA

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

SAMPLE DELIVERY GROUP K0238

7396-004 J11865

DATA SHEET

SDG	7396	Client/Case no	Hanford	SDG K0238	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602193-04	Client sample id	J11865		
Dept sample id	7396-004	Location/Matrix	100-K Elevated-Sample 3	SOLID	
Received	02/28/06	Collected/Weight	02/23/06 14:30	60.1 g	
% solids	100.0	Custody/SAF No	RC-047-143	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	-1.56	7.7	13	50	U	C
Total Strontium	SR-RAD	-0.025	0.12	0.26	1.0	U	SR
Thorium 228	14274-82-9	0	0.11	0.40	1.0	U	TH
Thorium 230	14269-63-7	-0.052	0.21	0.40	1.0	U	TH
Thorium 232	TH-232	0	0.10	0.40	1.0	U	TH
Uranium 233/234	U-233/234	0	0.069	0.26	1.0	U	U
Uranium 235	15117-96-1	0	0.083	0.32	1.0	U	U
Uranium 238	U-238	0.034	0.069	0.26	1.0	U	U
Potassium 40	13966-00-2	U		2.9		U	GAM
Cobalt 60	10198-40-0	U		0.066	0.050	U	GAM
Cesium 137	10045-97-3	U		0.073	0.10	U	GAM
Radium 226	13982-63-3	U		0.14	0.10	U	GAM
Radium 228	15262-20-1	U		0.32	0.20	U	GAM
Europium 152	14683-23-9	U		0.18	0.10	U	GAM
Europium 154	15585-10-1	U		0.21	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Thorium 228	14274-82-9	U		0.11		U	GAM
Thorium 232	TH-232	U		0.32		U	GAM
Uranium 235	15117-96-1	U		0.28		U	GAM
Uranium 238	U-238	U		9.5		U	GAM
Americium 241	14596-10-2	U		0.30		U	GAM
Beryllium 7	13966-02-4	U		0.58		U	GAM
Ruthenium 106	13967-48-1	U		0.62		U	GAM
Antimony 125	14234-35-6	U		0.17		U	GAM
Cesium 134	13967-70-9	U		0.086		U	GAM

100 & 300 Area Component - RCBRA

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-005 J11866

DATA SHEET

SDG	7396	Client/Case no	Hanford SDG K0238
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602193-05	Client sample id	J11866
Dept sample id	7396-005	Location/Matrix	100-K Elevated-Sample 4 SOLID
Received	02/28/06	Collected/Weight	02/23/06 15:00 65.4 g
% solids	100.0	Custody/SAF No	RC-047-144 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	-2.39	6.4	11	50	U	C
Total Strontium	SR-RAD	0.069	0.15	0.28	1.0	U	SR
Thorium 228	14274-82-9	0.046	0.19	0.44	1.0	U	TH
Thorium 230	14269-63-7	-0.046	0.18	0.35	1.0	U	TH
Thorium 232	TH-232	0	0.092	0.35	1.0	U	TH
Uranium 233/234	U-233/234	0	0.071	0.27	1.0	U	U
Uranium 235	15117-96-1	0	0.086	0.33	1.0	U	U
Uranium 238	U-238	0	0.071	0.27	1.0	U	U
Potassium 40	13966-00-2	U		3.6		U	GAM
Cobalt 60	10198-40-0	U		0.12	0.050	U	GAM
Cesium 137	10045-97-3	U		0.11	0.10	U	GAM
Radium 226	13982-63-3	U		0.25	0.10	U	GAM
Radium 228	15262-20-1	U		0.55	0.20	U	GAM
Europium 152	14683-23-9	U		0.24	0.10	U	GAM
Europium 154	15585-10-1	U		0.32	0.10	U	GAM
Europium 155	14391-16-3	U		0.28	0.10	U	GAM
Thorium 228	14274-82-9	U		0.16		U	GAM
Thorium 232	TH-232	U		0.55		U	GAM
Uranium 235	15117-96-1	U		0.41		U	GAM
Uranium 238	U-238	U		13		U	GAM
Americium 241	14596-10-2	U		0.36		U	GAM
Beryllium 7	13966-02-4	U		0.83		U	GAM
Ruthenium 106	13967-48-1	U		0.84		U	GAM
Antimony 125	14234-35-6	U		0.23		U	GAM
Cesium 134	13967-70-9	U		0.14		U	GAM

100 & 300 Area Component - RCBRA

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

7396-006 J11867

DATA SHEET

SDG	7396	Client/Case no	Hanford	SDG K0238	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602193-06	Client sample id	J11867		
Dept sample id	7396-006	Location/Matrix	100-K Elevated-Sample 5	SOLID	
Received	02/28/06	Collected/Weight	02/23/06 15:15	60.5 g	
% solids	100.0	Custody/SAF No	RC-047-145	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	-3.11	9.2	16	50	U	C
Total Strontium	SR-RAD	-0.090	0.13	0.29	1.0	U	SR
Thorium 228	14274-82-9	0.130	0.52	1.0	1.0	U	TH
Thorium 230	14269-63-7	0.647	0.53	0.99	1.0	U	TH
Thorium 232	TH-232	0	0.26	0.99	1.0	U	TH
Uranium 233/234	U-233/234	0	0.075	0.29	1.0	U	U
Uranium 235	15117-96-1	0	0.091	0.35	1.0	U	U
Uranium 238	U-238	0	0.075	0.29	1.0	U	U
Potassium 40	13966-00-2	U		3.9		U	GAM
Cobalt 60	10198-40-0	U		0.23	0.050	U	GAM
Cesium 137	10045-97-3	U		0.14	0.10	U	GAM
Radium 226	13982-63-3	U		0.28	0.10	U	GAM
Radium 228	15262-20-1	U		0.63	0.20	U	GAM
Europium 152	14683-23-9	U		0.30	0.10	U	GAM
Europium 154	15585-10-1	U		0.43	0.10	U	GAM
Europium 155	14391-16-3	U		0.32	0.10	U	GAM
Thorium 228	14274-82-9	U		0.18		U	GAM
Thorium 232	TH-232	U		0.63		U	GAM
Uranium 235	15117-96-1	U		0.42		U	GAM
Uranium 238	U-238	U		16		U	GAM
Americium 241	14596-10-2	U		0.40		U	GAM
Beryllium 7	13966-02-4	U		1.0		U	GAM
Ruthenium 106	13967-48-1	U		1.0		U	GAM
Antimony 125	14234-35-6	U		0.29		U	GAM
Cesium 134	13967-70-9	U		0.16		U	GAM

100 & 300 Area Component - RCBRA

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

SAMPLE DELIVERY GROUP K0238

7396-007 J11868

DATA SHEET

SDG	7396	Client/Case no	Hanford SDG_K0238
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602193-07	Client sample id	J11868
Dept sample id	7396-007	Location/Matrix	100-K Low, Sample 1 SOLID
Received	02/28/06	Collected/Weight	02/23/06 15:30 38.0 g
% solids	100.0	Custody/SAF No	RC-047-146 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	0.327	5.9	9.8	50	U	C
Total Strontium	SR-RAD	-0.058	0.12	0.27	1.0	U	SR
Thorium 228	14274-82-9	0.108	0.43	1.0	1.0	U	TH
Thorium 230	14269-63-7	0.108	0.43	0.82	1.0	U	TH
Thorium 232	TH-232	0	0.22	0.82	1.0	U	TH
Uranium 233/234	U-233/234	0	0.091	0.35	1.0	U	U
Uranium 235	15117-96-1	0.055	0.11	0.42	1.0	U	U
Uranium 238	U-238	0	0.091	0.35	1.0	U	U
Potassium 40	13966-00-2	U		4.7		U	GAM
Cobalt 60	10198-40-0	U		0.25	0.050	U	GAM
Cesium 137	10045-97-3	U		0.20	0.10	U	GAM
Radium 226	13982-63-3	U		0.38	0.10	U	GAM
Radium 228	15262-20-1	U		0.88	0.20	U	GAM
Europium 152	14683-23-9	U		0.43	0.10	U	GAM
Europium 154	15585-10-1	U		0.61	0.10	U	GAM
Europium 155	14391-16-3	U		0.43	0.10	U	GAM
Thorium 228	14274-82-9	U		0.26		U	GAM
Thorium 232	TH-232	U		0.88		U	GAM
Uranium 235	15117-96-1	U		0.68		U	GAM
Uranium 238	U-238	U		23		U	GAM
Americium 241	14596-10-2	U		0.44		U	GAM
Beryllium 7	13966-02-4	U		1.4		U	GAM
Ruthenium 106	13967-48-1	U		1.8		U	GAM
Antimony 125	14234-35-6	U		0.47		U	GAM
Cesium 134	13967-70-9	U		0.21		U	GAM

100 & 300 Area Component - RCBRA

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test	TH
Matrix	SOLID
SDG	7396
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0238

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230	
Preparation batch 7131-103						
R602193-01			7396-001	J11807	U	
R602193-02			7396-002	J11863	U	
R602193-03			7396-003	J11864	U	
R602193-04			7396-004	J11865	U	
R602193-05			7396-005	J11866	U	
R602193-06			7396-006	J11867	U	
R602193-07			7396-007	J11868	U	
R602193-08			7396-008	LCS (QC ID=56328)	ok	
R602193-09			7396-009	BLK (QC ID=56329)	U	
R602193-10			7396-010	Duplicate (R602193-03)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.0

100 & 300 Area Component - RCBRA

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	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 7131-103			2σ prep error 5.0 % Reference Lab Notebook 7131 pg. 103													
R602193-01			J11807	0.58	0.250			43		172			46	04/06/06	04/10	SS-066
R602193-02			J11863	0.51	0.250			62		164			43	04/06/06	04/07	SS-034
R602193-03			J11864	0.47	0.250			46		164			43	04/06/06	04/07	SS-037
R602193-04			J11865	0.40	0.250			50		164			43	04/06/06	04/07	SS-038
R602193-05			J11866	0.44	0.250			72		163			43	04/06/06	04/07	SS-039
R602193-06			J11867	1.0	0.250			28		164			43	04/06/06	04/07	SS-040
R602193-07			J11868	1.0	0.250			30		164			43	04/06/06	04/07	SS-042
R602193-08			LCS (QC ID=56328)	0.41	0.250			66		153				04/06/06	04/08	SS-064
R602193-09			BLK (QC ID=56329)	0.41	0.250			69		153				04/06/06	04/08	SS-066
R602193-10			Duplicate (R602193-03) (QC ID=56330)	1.3	0.250			18		173			46	04/06/06	04/10	SS-029
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-LMS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test	TH
Matrix	SOLID
SDG	7396
Contact	Melissa C. Mannion

LAB METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0238

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	0.65	±	0.65
FOR 10 SAMPLES	YIELD	48	±	38

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test U Matrix SOLID
SDG 7396
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0238

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234		2: Uranium 235		3: Uranium 238		RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 7131-103														
R602193-01			7396-001	J11807	U		U		U					
R602193-02			7396-002	J11863	U		U		U					
R602193-03			7396-003	J11864	U		U		U					
R602193-04			7396-004	J11865	U		U		U					
R602193-05			7396-005	J11866	U		U		U					
R602193-06			7396-006	J11867	U		U		U					
R602193-07			7396-007	J11868	U		U		U					
R602193-08			7396-008	LCS (QC ID=56328)	ok		ok		ok					
R602193-09			7396-009	BLK (QC ID=56329)	U		U		U					
R602193-10			7396-010	Duplicate (R602193-03)	-	U	-	U	-	U				
Nominal values and limits from method				RDLs (pCi/g)	1.0		1.0		1.0		100		4	
100 & 300 Area Component - RCBRA											Averages			

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	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 7131-103			2σ prep error 5.0 %	Reference Lab Notebook 7131 pg. 103												
R602193-01			J11807	0.33	0.500			61		119			37	03/31/06	04/01	SS-055
R602193-02			J11863	0.23	0.500			89		119			37	03/31/06	04/01	SS-056
R602193-03			J11864	0.35	0.500			57		119			37	03/31/06	04/01	SS-057
R602193-04			J11865	0.32	0.500			66		120			37	03/31/06	04/01	SS-058
R602193-05			J11866	0.33	0.500			63		119			37	03/31/06	04/01	SS-061
R602193-06			J11867	0.35	0.500			59		119			37	03/31/06	04/01	SS-062
R602193-07			J11868	0.42	0.500			57		119			37	03/31/06	04/01	SS-063
R602193-08			LCS (QC ID=56328)	0.97	0.500			86		119				03/31/06	04/01	SS-064
R602193-09			BLK (QC ID=56329)	0.33	0.500			64		119				03/31/06	04/01	SS-065
R602193-10			Duplicate (R602193-03) (QC ID=56330)	0.33	0.500			59		121			37	03/31/06	04/01	SS-027
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-LMS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test	U
Matrix	SOLID
SDG	7396
Contact	Melissa C. Mannion

LAB METHOD SUMMARY, cont.

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0238

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	MDA	0.40	±	0.41
FOR 10 SAMPLES	YIELD	66	±	23

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test SR Matrix SOLID
SDG 7396
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K0238

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
Preparation batch 7131-103					
R602193-01			7396-001	J11807	U
R602193-02			7396-002	J11863	U
R602193-03			7396-003	J11864	U
R602193-04			7396-004	J11865	U
R602193-05			7396-005	J11866	U
R602193-06			7396-006	J11867	U
R602193-07			7396-007	J11868	U
R602193-08			7396-008	LCS (QC ID=56328)	ok
R602193-09			7396-009	BLK (QC ID=56329)	U
R602193-10			7396-010	Duplicate (R602193-03)	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
100 & 300 Area Component - RCBRA

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	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 7131-103			2σ prep error 10.0 % Reference Lab Notebook 7131 pg. 103													
R602193-01			J11807	0.28	1.00			89		100			33	03/28/06	03/28	GRB-225
R602193-02			J11863	0.29	1.00			93		100			33	03/28/06	03/28	GRB-222
R602193-03			J11864	0.27	1.00			88		100			33	03/28/06	03/28	GRB-227
R602193-04			J11865	0.26	1.00			90		100			33	03/28/06	03/28	GRB-228
R602193-05			J11866	0.28	1.00			91		100			33	03/28/06	03/28	GRB-229
R602193-06			J11867	0.29	1.00			91		100			33	03/28/06	03/28	GRB-231
R602193-07			J11868	0.27	1.00			91		100			33	03/28/06	03/28	GRB-232
R602193-08			LCS (QC ID=56328)	0.24	1.00			93		100				03/28/06	03/28	GRB-229
R602193-09			BLK (QC ID=56329)	0.25	1.00			92		100				03/28/06	03/28	GRB-202
R602193-10			Duplicate (R602193-03) (QC ID=56330)	0.26	1.00			88		100			33	03/28/06	03/28	GRB-203
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-LMS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test SR	Matrix SOLID
SDG 7396	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K0238	

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	±	0.033
FOR 10 SAMPLES	YIELD	91	±	4

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test GAM Matrix SOLID
SDG 7396
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0238

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
Preparation batch 7131-103						
R602193-01			7396-001	J11807	U	U
R602193-02			7396-002	J11863	U	U
R602193-03			7396-003	J11864	U	U
R602193-04			7396-004	J11865	U	U
R602193-05			7396-005	J11866	U	U
R602193-06			7396-006	J11867	U	U
R602193-07			7396-007	J11868	U	U
R602193-08			7396-008	LCS (QC ID=56328)	ok	ok
R602193-09			7396-009	BLK (QC ID=56329)	U	U
R602193-10			7396-010	Duplicate (R602193-03)	ok	- U
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.10
100 & 300 Area Component - RCBRA						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	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 7131-103			2σ prep error 15.0 % Reference Lab Notebook 7131 pg. 103													
R602193-01			J11807	29	60.2					403			12	03/07/06	03/07	JR,02,00
R602193-02			J11863	33	49.7					403			12	03/07/06	03/07	JR,03,00
R602193-03			J11864	35	53.6					401			12	03/07/06	03/07	JR,08,00
R602193-04			J11865	19	53.5					740			12	03/07/06	03/07	JR,05,00
R602193-05			J11866	27	58.3					463			13	03/07/06	03/08	JR,02,00
R602193-06			J11867	32	53.4					463			13	03/07/06	03/08	JR,08,00
R602193-07			J11868	46	30.3					464			13	03/07/06	03/08	JR,03,00
R602193-08			LCS (QC ID=56328)	0.28	30.3					522				03/07/06	03/10	JR,02,00
R602193-09			BLK (QC ID=56329)	52	30.3					522				03/07/06	03/10	JR,08,00
R602193-10			Duplicate (R602193-03) (QC ID=56330)		53.6					418			15	03/07/06	03/10	JR,03,00
Nominal values and limits from method				0.050	30.3					100			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test GAM	Matrix SOLID
SDG 7396	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG K0238	

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

AVERAGES ± 2 SD	MDA 30	± 30
FOR 9 SAMPLES	YIELD	±

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test	C
Matrix	SOLID
SDG	7396
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client	Hanford
Contract	No. 630
Contract	SDG K0238

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Carbon 14	
Preparation batch 7131-103						
R602193-02			7396-002	J11863	U	
R602193-03			7396-003	J11864	U	
R602193-04			7396-004	J11865	U	
R602193-05			7396-005	J11866	U	
R602193-06			7396-006	J11867	U	
R602193-07			7396-007	J11868	U	
R602193-08			7396-008	LCS (QC ID=56328)	ok	
R602193-09			7396-009	BLK (QC ID=56329)	U	
R602193-10			7396-010	Duplicate (R602193-03)	-	U

Nominal values and limits from method RDLs (pCi/g) 50

100 & 300 Area Component - RCBRA

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	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 7131-103			2σ prep error 10.0 % Reference Lab Notebook 7131 pg. 103													
R602193-02			J11863	20	0.0510			100		100			41	04/04/06	04/05	LSC-004
R602193-03			J11864	17	0.0576			100		100			41	04/04/06	04/05	LSC-004
R602193-04			J11865	13	0.0774			100		100			42	04/04/06	04/06	LSC-004
R602193-05			J11866	11	0.0947			100		100			42	04/04/06	04/06	LSC-004
R602193-06			J11867	16	0.0662			100		100			42	04/04/06	04/06	LSC-004
R602193-07			J11868	9.8	0.104			100		100			42	04/04/06	04/06	LSC-004
R602193-08			LCS (QC ID=56328)	20	0.0500			100		100				04/04/06	04/06	LSC-004
R602193-09			BLK (QC ID=56329)	21	0.0500			100		100				04/04/06	04/05	LSC-004
R602193-10			Duplicate (R602193-03) (QC ID=56330)	17	0.0586			100		100			41	04/04/06	04/05	LSC-004
Nominal values and limits from method				50	0.0500					25			180			

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

Test C	Matrix SOLID
SDG 7396	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K0238	

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

AVERAGES ± 2 SD	MDA	16	±	8.1
FOR 9 SAMPLES	YIELD	100	±	0

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/13/06

SDG 7396
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/13/06

SDG 7396
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/13/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0238

SDG 7396
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/13/06

SDG 7396
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0238

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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Protocol Hanford
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Report date 04/13/06

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.

SDG 7396
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GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/13/06

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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
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Contact Melissa C. Mannion

REPORT GUIDE

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Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
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SDG 7396
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0238

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/13/06

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Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0238

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 04/13/06

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Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0238

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 04/13/06

SDG 7396
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0238

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
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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-047-137	Page 1 of 1

Collector TILLER, B 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** 300 AREA ELEVATED, SAMPLE 4 K0238 (7396)	**SAF No.** RC-047	**Air Quality** ☐
Ice Chest No. AFS-04-052	**Field Logbook No.** EL-1597 / **COA** BESRAS6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A060308	**Bill of Lading/Air Bill No.** See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ 1/A 21406	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	~~0~~ 1/A 21406 1	1	~~1~~ 0 1/A 21406	0	0	0				
Volume	750g	5g	15g	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)				
J11807	OTHER SOLID	2-23-06	1545	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In FAS LOCKED STORAGE	Date/Time 2-23-06 1630
Relinquished By/Removed From FAS LOCKED STORAGE	Date/Time 0745 2-27-06	Received By/Stored In RZ Stoffer RZ Stoffer	Date/Time 0745 2-27-06
Relinquished By/Removed From RZ Stoffer RZ Stoffer	Date/Time 1600 2-27-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In MCW	Date/Time 02/28/06 9:20
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

NOTE: Eberline - perform Gamma Spec. ~~Iso Uranium and Iso Strontium~~ 1/A 21406 then tranship BOTTLE to Lionville Labs, if possible maintain 4 C cooling.
NOTE: Lionville - contact ~~Vicki Weiss~~ JOAN KESSNER 1/A 21406 upon receipt.

gamma - Sb125, Be7, Co134, Ru106

mcm 3/23/06

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-047-141	Page 1 of 1

Collector TILLER, B. 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** 100-K ELEVATED, SAMPLE 1 KD238 (7396)	**SAF No.** RC-047	**Air Quality** ☐
Ice Chest No. AFS-04-052	**Field Logbook No.** EL-1597 SFDA 21406 **COA** BESRAS6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A060308	**Bill of Lading/Air Bill No.** SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ JP 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			
Sample No. / **Matrix *** / **Sample Date** / **Sample Time**										
J11863 / OTHER SOLID / 2-23-06 / 1330	X	X	X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	LAS LOCKED STORAGE	2-23-06 1630
LAS LOCKED STORAGE	2-27-06 0745	RZ Stoffler	2-27-06 0745
RZ Stoffler	2-27-06 1600	Fed Ex	
Fed EX			02/28/06 9:20

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. JP 21406

gamma- Sb125, Be7, Co134, Ru106

MCM 3/23/06

Matrix *

SS=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-047-142	Page 1 of 1

Collector TILLER, B. 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** 100-K ELEVATED, SAMPLE 2 K0238 (7316)	**SAF No.** RC-047	**Air Quality** ☐
Ice Chest No. AFS-04-052	**Field Logbook No.** EL-1597 FED 2-27-06	**COA** BESRAS6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** A060308	**Bill of Lading/Air Bill No.** SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool 4C ~~None~~ AJA 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J11864	OTHER SOLID	2-23-06	1400	X	X	X					

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Stoffler	2-27-06 0745
RZ Stoffler	2-27-06 1600	Fed Ex	
Fed Ex		FEM	02/28/06 9:20

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

gamma- Sb125, Be7, Co134, Ru106 AJA 21406

mcm 3/20/06

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-047-143	Page 1 of 1

Collector TILLER, B. 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** 100-K ELEVATED, SAMPLE 3 KD238 (7396)	**SAF No.** RC-047	**Air Quality** ☐
Ice Chest No. AFS-04-052	**Field Logbook No.** EL-159 ~~B~~ 2-27-06 **COA** BESRAS6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES, LIONVILLE	**Offsite Property No.** A060308	**Bill of Lading/Air Bill No.** SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J11865	OTHER SOLID	2-23-06	1430	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 2-23-06 1630	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-23-06 1630
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0745 2-27-06	Received By/Stored In RE Steffler Date/Time 0745 2-27-06
Relinquished By/Removed From RE Steffler Date/Time 1600 2-27-06	Received By/Stored In Fed EX Date/Time
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In Date/Time 03/28/06 9:20
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

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

gamma- Sb125, Be7, Co134, Ru106 1 µA 21406

mcm 3/23/06

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-047-144	Page 1 of 1

Collector TILLER, B. 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** ELEVATED #4 100-K ~~LOW, SAMPLE T~~ K0238 (7396)	**SAF No.** RC-047	**Air Quality** ☐
Ice Chest No. AFS-04-052	**Field Logbook No.** EL-159 **COA** BESRAS6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A060308	**Bill of Lading/Air Bill No.** SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)			
Sample No. / **Matrix *** / **Sample Date** / **Sample Time**										
J11866 / OTHER SOLID / 2-23-06 / 1500	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In EAS LOCKED STORAGE	Date/Time 2-23-06 1630
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0745 2-27-06	Received By/Stored In RZ Steffler	Date/Time 0745 2-27-06
Relinquished By/Removed From RZ Steffler	Date/Time 1600 2-27-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In	Date/Time 02/28/06 9:20
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

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

gamma- Sb125, Be7, Co134, Ru106 JAB 3/14/06

MWM 3/23/06

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-047-145	Page 1 of 1

Collector TILLER, B. 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** ELEVATED #5 100-K ~~LOW, SAMPLE 2~~ K0238 (7396)	**SAF No.** RC-047	**Air Quality** ☐
Ice Chest No. AFS-07-052	**Field Logbook No.** EL-1597 SEE 2-27-06 **COA** BESRAS6520	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES, LIONVILLE	**Offsite Property No.** A060308	**Bill of Lading/Air Bill No.** SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ S/A 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89.90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Merals - 6010 (Full List): Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Sample No. / **Matrix *** / **Sample Date** / **Sample Time**											
J11867 / OTHER SOLID / 2-23-06 / 1515	X	X	X								

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-23-06 1630
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2-27-06 0745	Received By/Stored In RZ Stoffler Date/Time 2-27-06 0745
Relinquished By/Removed From RZ Stoffler WH	Date/Time 2-27-06 1600	Received By/Stored In FED EX Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In Date/Time 02/28/06 9:20
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

NOTE: Eberline - perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.

gamma - Sb125, Be7, Co134, Ru106 S/A 21406

mcm 3/23/6

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-047-146	Page 1 of 1

Collector TILLER, B. 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** 100-K LOW, SAMPLE K0238 (7396)	**SAF No.** RC-047	**Air Quality** [ ]
Ice Chest No. AFS-04-052	**Field Logbook No.** EL-1597	**COA** BESRAS6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A060308		**Bill of Lading/Air Bill No.** SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	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)				
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J11868	OTHER SOLID	2-23-06	1530	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In EAS LOCKED STORAGE — Date/Time 2-23-06 1630
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2-27-06 0745	Received By/Stored In RE Stoffler — Date/Time 2-27-06 0745
Relinquished By/Removed From RE Stoffler	Date/Time 2-27-06 1600	Received By/Stored In Fed Ex — Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In MFW — Date/Time 07/28/06 9:22
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
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.
NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt.
gamma- Sb125, Be7, Co134, Ru106 AM 21406
mcm 3/23/6

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)

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City: RICHLAND State: WA

Date/Time received: 02/28/06 9:30 CoC No: RC-047 (137, 141, 142, 143, 144, 145, 146)

Container I.D. No: PS-04-052 Requested TAT (Days): 45 P.O. Received: Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 7 Sample Matrix: X
7. Number of containers per sample: _____ (Or see CoC X)
8. Samples are in correct container: Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] 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: MEM Date: 02/28/06 Time: 12:30

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 _____