0069874

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

COMMENTS:

SDG _K0236___ SAF-RC-047

Rad only Chem only X Rad & Chem

X Complete Partial

RECEIVED
JUN 2 2 2006
EDMC

Waste Site: 100-D

EBERLINE
SERVICES

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 R6-02-177-7394, SDG K0236

Dear Ms. Kessner:

Enclosed is the data report for six solid (other solid) samples designated under SAF No. RC-047 received at Eberline Services on February 24, 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 K0236 was composed of six solid (other solid) samples designated under SAF No. RC-047 with a Project Designation of: 100 & 300 Area Component of the RCBRA Sediment and Ti.

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

2.0 ANALYSIS NOTES

2.1 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.2 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.4 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

4/14/06

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 K0236

SDG	7394
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K0236

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

About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	8
Lab Control Samples	9
Duplicates	10
Data Sheets	11
Method Summaries	17
Report Guides	24
End of Section	38

Prepared by

Reviewed by

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

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0236

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 04/11/06

SDG 7394
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K0236

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.

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

SDG 7394
Contact Melissa C. Mannion

SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0236

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J11873	100-D #1	SOLID		R602177-01	RC-047	RC-047-151	02/22/06 13:00
J11874	100-D #2	SOLID		R602177-02	RC-047	RC-047-152	02/22/06 13:30
J11875	100-D #3	SOLID		R602177-03	RC-047	RC-047-153	02/22/06 14:00
J11876	100-D #4	SOLID		R602177-04	RC-047	RC-047-154	02/20/06 15:30
J11877	100-D #5	SOLID		R602177-05	RC-047	RC-047-155	02/20/06 16:00
J11878	100-D #6	SOLID		R602177-06	RC-047	RC-047-156	02/20/06 16:30
Method Blank		SOLID		R602177-08	RC-047		
Lab Control Sample		SOLID		R602177-07	RC-047		
Duplicate (R602177-04)	100-D #4	SOLID		R602177-09	RC-047		02/20/06 15:30

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

EBERLINE SERVICES/RICHMOND

SDG 7394
Contact Melissa C. Mannion

SAMPLE DELIVERY GROUP K0236

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0236

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
7394	RC-047-151	J11873	SOLID	100.0	73.1 g		02/24/06	2	R602177-01	7394-001
	RC-047-152	J11874	SOLID	100.0	66.0 g		02/24/06	2	R602177-02	7394-002
	RC-047-153	J11875	SOLID	100.0	58.4 g		02/24/06	2	R602177-03	7394-003
	RC-047-154	J11876	SOLID	100.0	109.0 g		02/24/06	4	R602177-04	7394-004
	RC-047-155	J11877	SOLID	100.0	112.4 g		02/24/06	4	R602177-05	7394-005
	RC-047-156	J11878	SOLID	100.0	116.0 g		02/24/06	4	R602177-06	7394-006
		Method Blank	SOLID						R602177-08	7394-008
		Lab Control Sample	SOLID						R602177-07	7394-007
		Duplicate (R602177-04)	SOLID	100.0	109.0 g		02/24/06	4	R602177-09	7394-009

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

SDG 7394
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0236

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
TH	SOLID	Thorium, Isotopic in Solids	7169-180	5.0	6			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	7169-180	5.0	6			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	7169-180	10.0	6			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7169-180	15.0	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 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

SDG 7394
Contact Melissa C. Mannion

WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0236

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
J11873			R602177-01	7394-001	GAM		03/02/06	03/07/06	CSS	Gamma Scan
100-D #1		SOLID	02/22/06	7394-001	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
RC-047-151	RC-047		02/24/06	7394-001	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-001	U		03/28/06	04/06/06	MWT	Uranium, Isotopic in Solids
J11874			R602177-02	7394-002	GAM		03/02/06	03/07/06	CSS	Gamma Scan
100-D #2		SOLID	02/22/06	7394-002	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
RC-047-152	RC-047		02/24/06	7394-002	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-002	U		03/28/06	04/06/06	MWT	Uranium, Isotopic in Solids
J11875			R602177-03	7394-003	GAM		03/03/06	03/07/06	CSS	Gamma Scan
100-D #3		SOLID	02/22/06	7394-003	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
RC-047-153	RC-047		02/24/06	7394-003	TH		03/30/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-003	U		03/28/06	04/06/06	MWT	Uranium, Isotopic in Solids
J11876			R602177-04	7394-004	GAM		03/03/06	03/07/06	CSS	Gamma Scan
100-D #4		SOLID	02/20/06	7394-004	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
RC-047-154	RC-047		02/24/06	7394-004	TH		03/30/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-004	U		03/28/06	04/06/06	MWT	Uranium, Isotopic in Solids
J11877			R602177-05	7394-005	GAM		03/06/06	03/07/06	CSS	Gamma Scan
100-D #5		SOLID	02/20/06	7394-005	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
RC-047-155	RC-047		02/24/06	7394-005	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-005	U		03/28/06	04/06/06	MWT	Uranium, Isotopic in Solids
J11878			R602177-06	7394-006	GAM		03/06/06	03/07/06	CSS	Gamma Scan
100-D #6		SOLID	02/20/06	7394-006	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
RC-047-156	RC-047		02/24/06	7394-006	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-006	U		03/28/06	04/06/06	MWT	Uranium, Isotopic in Solids
Method Blank			R602177-08	7394-008	GAM		03/06/06	03/07/06	CSS	Gamma Scan
		SOLID		7394-008	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
	RC-047			7394-008	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-008	U		03/29/06	04/06/06	MWT	Uranium, Isotopic in Solids
Lab Control Sample			R602177-07	7394-007	GAM		03/06/06	03/07/06	CSS	Gamma Scan
		SOLID		7394-007	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
	RC-047			7394-007	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-007	U		03/28/06	04/06/06	MWT	Uranium, Isotopic in Solids

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

SDG 7394
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0236

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Duplicate (R602177-04)			R602177-09	7394-009	GAM		03/06/06	03/07/06	CSS	Gamma Scan
100-D #4		SOLID	02/20/06	7394-009	SR		03/27/06	03/30/06	MWT	Total Strontium in Solids
	RC-047		02/24/06	7394-009	TH		04/03/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7394-009	U		03/29/06	04/06/06	MWT	Uranium, Isotopic in Solids

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	RC-047	Gamma Scan	GAMMA_GS	6			1	1	1	9
SR	RC-047	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	6			1	1	1	9
TH	RC-047	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	6			1	1	1	9
U	RC-047	Uranium, Isotopic in Solids	UISO_PLATE_AEA	6			1	1	1	9
TOTALS				24			4	4	4	36

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-08 **Method Blank**

METHOD BLANK

SDG	7394	Client/Case no	Hanford SDG K0236
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602177-08	Client sample id	Method Blank
Dept sample id	7394-008	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
Total Strontium	SR-RAD	-0.064	0.14	0.30	1.0	U	SR
Thorium 228	14274-82-9	0.114	0.23	0.44	1.0	U	TH
Thorium 230	14269-63-7	-0.113	0.11	0.43	1.0	U	TH
Thorium 232	TH-232	0	0.11	0.43	1.0	U	TH
Uranium 233/234	U-233/234	0	0.052	0.20	1.0	U	U
Uranium 235	15117-96-1	0	0.063	0.24	1.0	U	U
Uranium 238	U-238	0	0.052	0.20	1.0	U	U
Potassium 40	13966-00-2	U		0.90		U	GAM
Cobalt 60	10198-40-0	U		0.080	0.050	U	GAM
Cesium 137	10045-97-3	U		0.073	0.10	U	GAM
Radium 226	13982-63-3	U		0.13	0.10	U	GAM
Radium 228	15262-20-1	U		0.33	0.20	U	GAM
Europium 152	14683-23-9	U		0.17	0.10	U	GAM
Europium 154	15585-10-1	U		0.22	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	U		0.11		U	GAM
Thorium 232	TH-232	U		0.33		U	GAM
Uranium 235	15117-96-1	U		0.22		U	GAM
Uranium 238	U-238	U		7.6		U	GAM
Americium 241	14596-10-2	U		0.069		U	GAM
Beryllium 7	13966-02-4	U		0.48		U	GAM
Ruthenium 106	13967-48-1	U		0.64		U	GAM
Antimony 125	14234-35-6	U		0.16		U	GAM
Cesium 134	13967-70-9	U		0.085		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

QC-BLANK #56284

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-07

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7394

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0236

Contract No. 630

Lab sample id R602177-07

Dept sample id 7394-007

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
Total Strontium	10.6	0.59	0.26	1.0		SR	9.82	0.39	108	81-119	80-120
Thorium 230	40.4	4.5	0.34	1.0		TH	40.4	1.6	100	81-119	80-120
Uranium 233/234	18.8	1.6	0.68	1.0		U	18.6	0.74	101	84-116	80-120
Uranium 235	14.3	1.3	0.13	1.0		U	15.1	0.60	95	84-116	80-120
Uranium 238	18.8	1.5	0.65	1.0		U	20.2	0.81	93	86-114	80-120
Cobalt 60	4.10	0.32	0.16	0.050		GAM	4.17	0.17	98	74-126	80-120
Cesium 137	4.27	0.29	0.21	0.10		GAM	4.26	0.17	100	75-125	80-120

100&300Area Compnt RCBRA Sediment&Ti

QC-LCS #56283

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-09 J11876

DUPLICATE

SDG	7394			Client/Case no	Hanford SDG K0236
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R602177-09	Lab sample id	R602177-04	Client sample id	J11876
Dept sample id	7394-009	Dept sample id	7394-004	Location/Matrix	100-D #4 SOLID
		Received	02/24/06	Collected/Weight	02/20/06 15:30 109.0 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-047-154 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
Total Strontium	0.063	0.15	0.29	1.0	U	SR	-0.023	0.12	0.26	U	-		0.9
Thorium 228	0.176	0.35	0.56	1.0	U	TH	-0.081	0.082	0.39	U	-		1.4
Thorium 230	-0.058	0.23	0.45	1.0	U	TH	0	0.16	0.31	U	-		0.4
Thorium 232	0	0.12	0.45	1.0	U	TH	0.081	0.16	0.31	U	-		0.8
Uranium 233/234	0	0.050	0.19	1.0	U	U	-0.016	0.033	0.12	U	-		0.5
Uranium 235	0.030	0.061	0.23	1.0	U	U	0	0.040	0.15	U	-		0.8
Uranium 238	0.025	0.050	0.19	1.0	U	U	0.016	0.033	0.12	U	-		0.3
Potassium 40	1.63	0.77	0.52			GAM	2.69	0.59	0.40		49	75	2.0
Cobalt 60	U		0.047	0.050	U	GAM	U		0.040	U	-		0.2
Cesium 137	U		0.047	0.10	U	GAM	U		0.039	U	-		0.3
Radium 226	U		0.095	0.10	U	GAM	U		0.067	U	-		0.5
Radium 228	U		0.20	0.20	U	GAM	U		0.21	U	-		0.1
Europium 152	U		0.12	0.10	U	GAM	U		0.095	U	-		0.3
Europium 154	U		0.16	0.10	U	GAM	U		0.12	U	-		0.4
Europium 155	U		0.12	0.10	U	GAM	U		0.10	U	-		0.3
Thorium 228	U		0.071		U	GAM	U		0.093	U	-		0.4
Thorium 232	U		0.20		U	GAM	U		0.21	U	-		0.1
Uranium 235	U		0.19		U	GAM	U		0.14	U	-		0.4
Uranium 238	U		6.2		U	GAM	U		4.9	U	-		0.3
Americium 241	U		0.20		U	GAM	U		0.16	U	-		0.3
Beryllium 7	U		0.42		U	GAM	U		0.29	U	-		0.5
Ruthenium 106	U		0.40		U	GAM	U		0.30	U	-		0.4
Antimony 125	U		0.12		U	GAM	U		0.087	U	-		0.4
Cesium 134	U		0.053		U	GAM	U		0.042	U	-		0.3

100&300Area Compnt RCBRA Sediment&Ti

QC-DUP#4 56285

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-01 **J11873**

DATA SHEET

SDG	7394	Client/Case no	Hanford	SDG K0236	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602177-01	Client sample id	J11873		
Dept sample id	7394-001	Location/Matrix	100-D #1	SOLID	
Received	02/24/06	Collected/Weight	02/22/06 13:00	73.1 g	
% solids	100.0	Custody/SAF No	RC-047-151	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.020	0.14	0.29	1.0	U	SR
Thorium 228	14274-82-9	0	0.22	0.53	1.0	U	TH
Thorium 230	14269-63-7	0	0.22	0.42	1.0	U	TH
Thorium 232	TH-232	0	0.11	0.42	1.0	U	TH
Uranium 233/234	U-233/234	0.101	0.10	0.19	1.0	U	U
Uranium 235	15117-96-1	0.061	0.061	0.23	1.0	U	U
Uranium 238	U-238	0.151	0.10	0.19	1.0	U	U
Potassium 40	13966-00-2	2.34	0.96	0.75			GAM
Cobalt 60	10198-40-0	U		0.065	0.050	U	GAM
Cesium 137	10045-97-3	U		0.065	0.10	U	GAM
Radium 226	13982-63-3	U		0.12	0.10	U	GAM
Radium 228	15262-20-1	U		0.28	0.20	U	GAM
Europium 152	14683-23-9	U		0.15	0.10	U	GAM
Europium 154	15585-10-1	U		0.21	0.10	U	GAM
Europium 155	14391-16-3	U		0.16	0.10	U	GAM
Thorium 228	14274-82-9	U		0.090		U	GAM
Thorium 232	TH-232	U		0.28		U	GAM
Uranium 235	15117-96-1	U		0.24		U	GAM
Uranium 238	U-238	U		8.9		U	GAM
Americium 241	14596-10-2	U		0.26		U	GAM
Beryllium 7	13966-02-4	U		0.50		U	GAM
Ruthenium 106	13967-48-1	U		0.54		U	GAM
Antimony 125	14234-35-6	U		0.15		U	GAM
Cesium 134	13967-70-9	U		0.070		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-02 **J11874**

DATA SHEET

SDG	7394	Client/Case no	Hanford	SDG K0236	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602177-02	Client sample id	J11874		
Dept sample id	7394-002	Location/Matrix	100-D #2	SOLID	
Received	02/24/06	Collected/Weight	02/22/06 13:30	66.0 g	
% solids	100.0	Custody/SAF No	RC-047-152	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.060	0.16	0.34	1.0	U	SR
Thorium 228	14274-82-9	0	0.13	0.51	1.0	U	TH
Thorium 230	14269-63-7	-0.133	0.13	0.51	1.0	U	TH
Thorium 232	TH-232	0	0.13	0.51	1.0	U	TH
Uranium 233/234	U-233/234	0.035	0.070	0.13	1.0	U	U
Uranium 235	15117-96-1	0	0.042	0.16	1.0	U	U
Uranium 238	U-238	0.017	0.035	0.13	1.0	U	U
Potassium 40	13966-00-2	U		2.5		U	GAM
Cobalt 60	10198-40-0	U		0.12	0.050	U	GAM
Cesium 137	10045-97-3	U		0.094	0.10	U	GAM
Radium 226	13982-63-3	U		0.19	0.10	U	GAM
Radium 228	15262-20-1	U		0.41	0.20	U	GAM
Europium 152	14683-23-9	U		0.21	0.10	U	GAM
Europium 154	15585-10-1	U		0.27	0.10	U	GAM
Europium 155	14391-16-3	U		0.21	0.10	U	GAM
Thorium 228	14274-82-9	U		0.12		U	GAM
Thorium 232	TH-232	U		0.41		U	GAM
Uranium 235	15117-96-1	U		0.28		U	GAM
Uranium 238	U-238	U		9.9		U	GAM
Americium 241	14596-10-2	U		0.27		U	GAM
Beryllium 7	13966-02-4	U		0.60		U	GAM
Ruthenium 106	13967-48-1	U		0.63		U	GAM
Antimony 125	14234-35-6	U		0.18		U	GAM
Cesium 134	13967-70-9	U		0.10		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-03 **J11875**

DATA SHEET

SDG	7394	Client/Case no	Hanford	SDG K0236	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602177-03	Client sample id	J11875		
Dept sample id	7394-003	Location/Matrix	100-D #3	SOLID	
Received	02/24/06	Collected/Weight	02/22/06 14:00	58.4 g	
% solids	100.0	Custody/SAF No	RC-047-153	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.048	0.16	0.34	1.0	U	SR
Thorium 228	14274-82-9	0	0.098	0.38	1.0	U	TH
Thorium 230	14269-63-7	-0.098	0.20	0.37	1.0	U	TH
Thorium 232	TH-232	0.049	0.098	0.37	1.0	U	TH
Uranium 233/234	U-233/234	-0.019	0.038	0.15	1.0	U	U
Uranium 235	15117-96-1	0.023	0.047	0.18	1.0	U	U
Uranium 238	U-238	0	0.038	0.15	1.0	U	U
Potassium 40	13966-00-2	U		2.7		U	GAM
Cobalt 60	10198-40-0	U		0.11	0.050	U	GAM
Cesium 137	10045-97-3	U		0.094	0.10	U	GAM
Radium 226	13982-63-3	U		0.18	0.10	U	GAM
Radium 228	15262-20-1	U		0.42	0.20	U	GAM
Europium 152	14683-23-9	U		0.21	0.10	U	GAM
Europium 154	15585-10-1	U		0.27	0.10	U	GAM
Europium 155	14391-16-3	U		0.21	0.10	U	GAM
Thorium 228	14274-82-9	U		0.11		U	GAM
Thorium 232	TH-232	U		0.42		U	GAM
Uranium 235	15117-96-1	U		0.28		U	GAM
Uranium 238	U-238	U		10		U	GAM
Americium 241	14596-10-2	U		0.26		U	GAM
Beryllium 7	13966-02-4	U		0.62		U	GAM
Ruthenium 106	13967-48-1	U		0.66		U	GAM
Antimony 125	14234-35-6	U		0.18		U	GAM
Cesium 134	13967-70-9	U		0.11		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-04 **J11876**

DATA SHEET

SDG	7394	Client/Case no	Hanford	SDG K0236	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602177-04	Client sample id	J11876		
Dept sample id	7394-004	Location/Matrix	100-D #4	SOLID	
Received	02/24/06	Collected/Weight	02/20/06 15:30	109.0 g	
% solids	100.0	Custody/SAF No	RC-047-154	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.023	0.12	0.26	1.0	U	SR
Thorium 228	14274-82-9	-0.081	0.082	0.39	1.0	U	TH
Thorium 230	14269-63-7	0	0.16	0.31	1.0	U	TH
Thorium 232	TH-232	0.081	0.16	0.31	1.0	U	TH
Uranium 233/234	U-233/234	-0.016	0.033	0.12	1.0	U	U
Uranium 235	15117-96-1	0	0.040	0.15	1.0	U	U
Uranium 238	U-238	0.016	0.033	0.12	1.0	U	U
Potassium 40	13966-00-2	2.69	0.59	0.40			GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.039	0.10	U	GAM
Radium 226	13982-63-3	U		0.067	0.10	U	GAM
Radium 228	15262-20-1	U		0.21	0.20	U	GAM
Europium 152	14683-23-9	U		0.095	0.10	U	GAM
Europium 154	15585-10-1	U		0.12	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Thorium 228	14274-82-9	U		0.093		U	GAM
Thorium 232	TH-232	U		0.21		U	GAM
Uranium 235	15117-96-1	U		0.14		U	GAM
Uranium 238	U-238	U		4.9		U	GAM
Americium 241	14596-10-2	U		0.16		U	GAM
Beryllium 7	13966-02-4	U		0.29		U	GAM
Ruthenium 106	13967-48-1	U		0.30		U	GAM
Antimony 125	14234-35-6	U		0.087		U	GAM
Cesium 134	13967-70-9	U		0.042		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-05 J11877

DATA SHEET

SDG	7394	Client/Case no	Hanford	SDG K0236	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602177-05	Client sample id	J11877		
Dept sample id	7394-005	Location/Matrix	100-D #5	SOLID	
Received	02/24/06	Collected/Weight	02/20/06 16:00	112.4 g	
% solids	100.0	Custody/SAF No	RC-047-155	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.011	0.12	0.20	1.0	U	SR
Thorium 228	14274-82-9	0.108	0.22	0.52	1.0	U	TH
Thorium 230	14269-63-7	0.107	0.22	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	0.029	0.11	1.0	U	U
Uranium 235	15117-96-1	0.017	0.035	0.13	1.0	U	U
Uranium 238	U-238	0.014	0.029	0.11	1.0	U	U
Potassium 40	13966-00-2	U		2.1		U	GAM
Cobalt 60	10198-40-0	U		0.084	0.050	U	GAM
Cesium 137	10045-97-3	U		0.069	0.10	U	GAM
Radium 226	13982-63-3	U		0.14	0.10	U	GAM
Radium 228	15262-20-1	U		0.31	0.20	U	GAM
Europium 152	14683-23-9	U		0.15	0.10	U	GAM
Europium 154	15585-10-1	U		0.22	0.10	U	GAM
Europium 155	14391-16-3	U		0.16	0.10	U	GAM
Thorium 228	14274-82-9	U		0.085		U	GAM
Thorium 232	TH-232	U		0.31		U	GAM
Uranium 235	15117-96-1	U		0.21		U	GAM
Uranium 238	U-238	U		8.0		U	GAM
Americium 241	14596-10-2	U		0.20		U	GAM
Beryllium 7	13966-02-4	U		0.48		U	GAM
Ruthenium 106	13967-48-1	U		0.52		U	GAM
Antimony 125	14234-35-6	U		0.14		U	GAM
Cesium 134	13967-70-9	U		0.10		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

R602177-06 **J11878**

DATA SHEET

SDG	7394	Client/Case no	Hanford	SDG K0236	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602177-06	Client sample id	J11878		
Dept sample id	7394-006	Location/Matrix	100-D #6	SOLID	
Received	02/24/06	Collected/Weight	02/20/06 16:30	116.0 g	
% solids	100.0	Custody/SAF No	RC-047-156	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.054	0.14	0.30	1.0	U	SR
Thorium 228	14274-82-9	0	0.11	0.41	1.0	U	TH
Thorium 230	14269-63-7	0.107	0.32	0.51	1.0	U	TH
Thorium 232	TH-232	0	0.11	0.41	1.0	U	TH
Uranium 233/234	U-233/234	0.019	0.038	0.15	1.0	U	U
Uranium 235	15117-96-1	0	0.046	0.18	1.0	U	U
Uranium 238	U-238	0.038	0.038	0.15	1.0	U	U
Potassium 40	13966-00-2	U		2.1		U	GAM
Cobalt 60	10198-40-0	U		0.062	0.050	U	GAM
Cesium 137	10045-97-3	U		0.063	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		0.14	0.10	U	GAM
Europium 154	15585-10-1	U		0.18	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Thorium 228	14274-82-9	U		0.088		U	GAM
Thorium 232	TH-232	U		0.32		U	GAM
Uranium 235	15117-96-1	U		0.24		U	GAM
Uranium 238	U-238	U		7.7		U	GAM
Americium 241	14596-10-2	U		0.20		U	GAM
Beryllium 7	13966-02-4	U		0.47		U	GAM
Ruthenium 106	13967-48-1	U		0.47		U	GAM
Antimony 125	14234-35-6	U		0.13		U	GAM
Cesium 134	13967-70-9	U		0.075		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

Test TH Matrix SOLID
SDG 7394
Contact Melissa C. Mannion

METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0236

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Thorium 230	
Preparation batch 7169-180						
J11873	R602177-01			7394-001	U	
J11874	R602177-02			7394-002	U	
J11875	R602177-03			7394-003	U	
J11876	R602177-04			7394-004	U	
J11877	R602177-05			7394-005	U	
J11878	R602177-06			7394-006	U	
Method Blank	R602177-08			7394-008	U	
Lab Control Sample	R602177-07			7394-007	ok	
Duplicate (R602177-04)	R602177-09			7394-009	-	U

Nominal values and limits from method RDLs (pCi/g) 1.0
100&300Area Compnt RCBRA Sediment&Ti

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	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 7169-180	2σ prep error 5.0 %			Reference Lab Notebook No. 7162 pg.180												
J11873	R602177-01			0.53	0.250			58		172			40	03/29/06	04/03	SS-039
J11874	R602177-02			0.51	0.250			52		172			40	03/29/06	04/03	SS-040
J11875	R602177-03			0.38	0.250			72		169			36	03/29/06	03/30	SS-040
J11876	R602177-04			0.39	0.250			76		169			38	03/29/06	03/30	SS-042
J11877	R602177-05			0.52	0.250			57		172			42	03/29/06	04/03	SS-042
J11878	R602177-06			0.51	0.250			50		202			42	03/29/06	04/03	SS-061
Method Blank	R602177-08			0.44	0.250			50		200				03/29/06	04/03	SS-066
Lab Control Sample	R602177-07			0.34	0.250			61		200				03/29/06	04/03	SS-064
Duplicate (R602177-04)	R602177-09			0.56	0.250			55		166			42	03/29/06	04/03	SS-031
Nominal values and limits from method				1.0	0.250			20-105		150			180			

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

Test TH	Matrix SOLID
SDG 7394	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG K0236	

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	0.46	±	0.16
FOR 9 SAMPLES	YIELD	59	±	19

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

Test U Matrix SOLID
SDG 7394
Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0236

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	1: Uranium 233/234		2: Uranium 235		3: Uranium 238		RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 7169-180														
J11873	R602177-01			7394-001	U		U		U					
J11874	R602177-02			7394-002	U		U		U					
J11875	R602177-03			7394-003	U		U		U					
J11876	R602177-04			7394-004	U		U		U					
J11877	R602177-05			7394-005	U		U		U					
J11878	R602177-06			7394-006	U		U		U					
Method Blank	R602177-08			7394-008	U		U		U					
Lab Control Sample	R602177-07			7394-007	ok		ok		ok					
Duplicate (R602177-04)	R602177-09			7394-009	-	U	-	U	-	U				
Nominal values and limits from method				RDLs (pCi/g)	1.0		1.0		1.0		100		4	
100&300Area Compnt RCBRA Sediment&Ti											Averages			

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7169-180	2σ prep error 5.0 %			Reference Lab Notebook No. 7162 pg.180												
J11873	R602177-01			0.23	0.500			49		207			34	03/27/06	03/28	SS-027
J11874	R602177-02			0.16	0.500			68		207			34	03/27/06	03/28	SS-028
J11875	R602177-03			0.18	0.500			65		207			34	03/27/06	03/28	SS-031
J11876	R602177-04			0.15	0.500			76		208			36	03/27/06	03/28	SS-032
J11877	R602177-05			0.13	0.500			78		206			36	03/27/06	03/28	SS-035
J11878	R602177-06			0.18	0.500			56		206			36	03/27/06	03/28	SS-036
Method Blank	R602177-08			0.24	0.500			63		155				03/27/06	03/29	SS-027
Lab Control Sample	R602177-07			0.68	0.500			90		207				03/27/06	03/28	SS-039
Duplicate (R602177-04)	R602177-09			0.23	0.500			63		155			37	03/27/06	03/29	SS-028
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

Test	U
Matrix	SOLID
SDG	7394
Contact	Melissa C. Mannion

METHOD SUMMARY, cont.

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0236

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	0.24	±	0.34
FOR 9 SAMPLES	YIELD	68	±	25

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

Test SR Matrix SOLID
SDG 7394
Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K0236

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium
Preparation batch 7169-180					
J11873	R602177-01			7394-001	U
J11874	R602177-02			7394-002	U
J11875	R602177-03			7394-003	U
J11876	R602177-04			7394-004	U
J11877	R602177-05			7394-005	U
J11878	R602177-06			7394-006	U
Method Blank	R602177-08			7394-008	U
Lab Control Sample	R602177-07			7394-007	ok
Duplicate (R602177-04)	R602177-09			7394-009	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
100&300Area Compnt RCBRA Sediment&Ti

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7169-180 2σ prep error 10.0 % Reference Lab Notebook No. 7162 pg.180																
J11873	R602177-01			0.29	1.00			91		106			33	03/27/06	03/27	GRB-228
J11874	R602177-02			0.34	1.00			91		100			33	03/27/06	03/27	GRB-229
J11875	R602177-03			0.34	1.00			91		100			33	03/27/06	03/27	GRB-231
J11876	R602177-04			0.26	1.00			94		100			35	03/27/06	03/27	GRB-232
J11877	R602177-05			0.20	1.00			91		239			35	03/27/06	03/27	GRB-204
J11878	R602177-06			0.30	1.00			91		100			35	03/27/06	03/27	GRB-221
Method Blank	R602177-08			0.30	1.00			92		100				03/27/06	03/27	GRB-223
Lab Control Sample	R602177-07			0.26	1.00			93		100				03/27/06	03/27	GRB-217
Duplicate (R602177-04)	R602177-09			0.29	1.00			91		100			35	03/27/06	03/27	GRB-224
Nominal values and limits from method				1.0	1.00			30-105		100			180			

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

Test SR	Matrix SOLID
SDG 7394	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K0236	

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	0.29	±	0.087
FOR 9 SAMPLES	YIELD	92	±	2

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

Test GAM Matrix SOLID
SDG 7394
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0236

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60		Cesium 137	
Preparation batch 7169-180								
J11873	R602177-01			7394-001	U		U	
J11874	R602177-02			7394-002	U		U	
J11875	R602177-03			7394-003	U		U	
J11876	R602177-04			7394-004	U		U	
J11877	R602177-05			7394-005	U		U	
J11878	R602177-06			7394-006	U		U	
Method Blank	R602177-08			7394-008	U		U	
Lab Control Sample	R602177-07			7394-007	ok		ok	
Duplicate (R602177-04)	R602177-09			7394-009	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.10	
100&300Area Compnt RCBRA Sediment&Ti								

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7169-180	2σ prep error 15.0 %			Reference Lab Notebook No. 7162 pg.180												
J11873	R602177-01			15	73.1					579			8	03/01/06	03/02	JR,05,00
J11874	R602177-02			23	66.0					579			8	03/01/06	03/02	JR,08,00
J11875	R602177-03			22	58.4					804			9	03/01/06	03/03	JR,08,00
J11876	R602177-04			9.4	109					754			11	03/01/06	03/03	JR,05,00
J11877	R602177-05			17	112					404			14	03/01/06	03/06	JR,08,00
J11878	R602177-06			15	116					408			14	03/01/06	03/06	JR,02,00
Method Blank	R602177-08			19	58.0					448				03/01/06	03/06	JR,07,00
Lab Control Sample	R602177-07			0.16	58.0					404				03/01/06	03/06	JR,03,00
Duplicate (R602177-04)	R602177-09			12	109					409			14	03/01/06	03/06	JR,05,00
Nominal values and limits from method				0.050	58.0					100			180			

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

AVERAGES ± 2 SD FOR 9 SAMPLES
MDA 15 ± 14
YIELD ____ ± ____

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

SDG	7394
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG K0236

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	04/11/06

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0236

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 04/11/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0236

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0236

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 04/11/06

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0236

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).

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

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 7394
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0236

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 04/11/06

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0236

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

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0236

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
Form DVD-RG
Version 3.06
Report date 04/11/06

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0236

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits

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

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.

SDG 7394
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0236

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

SDG 7394
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K0236

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.

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-151	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-D #1 K0236 (7394)	SAF No.: RC-047	
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060307		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~~ Hg ≤ 1406	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)	1	1	0	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											
J11873 / OTHER SOLID / 2-22-06 / 1300	X	X									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	2-22-06 1730	Received By/Stored In: EAS LOCKED STORAGE	2-22-06 1730
Relinquished By/Removed From: EAS LOCKED STORAGE	2-23-06 0830	Received By/Stored In: RZ Stiffler RJ Stiffler	2-23-06 0830
Relinquished By/Removed From: RZ Stiffler RJ Stiffler	2-23-06 1600 WCH	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: FED EX		Received By/Stored In: Alex Kellum	2/24/06 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

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 Hg ≤ 1406

MCM 3/23/06

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-152	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-D #2 K0236 (7394)		SAF No.: RC-047	Air Quality ☐	
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX		
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060307		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	aG	aG	aG					
No. of Container(s)	1	1	0	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											
J11874 / OTHER SOLID / 2-22-06 / 1330	X	X									

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time 2-22-06 1730	Received By/Stored In: EAS LOCKED STORAGE — Date/Time 2-22-06 1730
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time 2-23 06 0830	Received By/Stored In: RZ Stoffler RJ Stoffl — Date/Time 2-23 06 0830
Relinquished By/Removed From: RZ Stoffler RJ Stoffl	Date/Time 2-23 06 1600 WCH	Received By/Stored In: FED EX — Date/Time
Relinquished By/Removed From: FED EX	Date/Time	Received By/Stored In: Alex Kelly — Date/Time 2/24/06 10:00
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

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 J/J 21406

mcm 3/23/6

Matrix *

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-153	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-D #3 K0236 (7394)		**SAF No.** RC-047
Ice Chest No. AFS-04-037	**Field Logbook No.** EL-1597	**COA** BESRAS6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	**Offsite Property No.** A060307		**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 2/24/06	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)	1	1	0	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**								
J11875	OTHER SOLID	2-22-06	1400	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD ~~EAS LOCKED STORAGE~~	2-22-06 1730	EAS LOCKED STORAGE	2-22-06 1730
EAS LOCKED STORAGE	2-23-06 0830	RZ Stoffler	2-23-06 0870
RZ Stoffler	2-23-06 1600	Fed Ex	2/24/06
FED EX		Alex Kelleny	2/24/06

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 2/24/06

gamma - Sb125, Be7, Co134, Ru106

MCM 3/23/6

Matrix *

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-154	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-D #4 K0236 (7594)	SAF No.: RC-047	
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060307	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	aG	aG	aG					
No. of Container(s)	1	1	0	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											
J11876 / OTHER SOLID / 2-20-06 / 1530	X	X									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD		2-20-06 1800
Received By/Stored In: EAS LOCKED STORAGE		2-20-06 1800
Relinquished By/Removed From: EAS LOCKED STORAGE		2-23-06 0930
Received By/Stored In: RZ Stoffler		2-23-06 0930
Relinquished By/Removed From: RZ Stoffler	WCH	2-23-06 1600
Received By/Stored In: Fed Ex		
Relinquished By/Removed From: FED EX		
Received By/Stored In: Alex Kellell		2/24/06 10:00
Relinquished By/Removed From		
Received By/Stored In		
Relinquished By/Removed From		
Received By/Stored In		

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

mcm 3/23/6

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-047-155	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-D #5 K0236 (7394)		**SAF No.** RC-047	**Air Quality** ☐	
Ice Chest No. AFS-04-037	**Field Logbook No.** EL-1597	**COA** BESRAS6520	**Method of Shipment** FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A060307		**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~~ AJB 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)	1	1	0	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**											
J11877 / OTHER SOLID / 2-20-06 / 1600	X	X									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From JAMES BERNHARD	2-20-06 1800	Received By/Stored In EAS LOCKED STORAGE	2-20-06 1800
Relinquished By/Removed From EAS LOCKED STORAGE	2-23-06 0830	Received By/Stored In RC Steffler RJ Steffler	2-23-06 0830
Relinquished By/Removed From RC Steffler RJ Steffler	2-23-06 1600 WCH	Received By/Stored In Fed Ex	
Relinquished By/Removed From FED EX		Received By/Stored In Alex Kennel	2/24/06 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

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 AJB 2/14/06

mcm 3/23/06

Matrix *

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-156	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-D #6 K0236 (7394)	SAF No.: RC-047	
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060307		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	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	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											
J11878 / OTHER SOLID / 2-20-06 / 1630	X	X									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	2-20-06 1500	Received By/Stored In: EAS LOCKED STORAGE	2-20-06 1800
Relinquished By/Removed From: EAS LOCKED STORAGE	2-23-06 0830	Received By/Stored In: RZ Steffler	2-23-06 0830
Relinquished By/Removed From: RZ Steffler	2-23-06 1600	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: FED EX		Received By/Stored In: Alex Killeen	2/24/06 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

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 AH 2/14/06

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)

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: WC. HANFORD City RICHLAND State WA

Date/Time received 2/24/06 10:00 CoC No. RC-047-151-156

Container I.D. No. AFS-04-037 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [ ] N/A
6. Number of samples in shipping container: 6 Sample Matrix OTHER SOLID
7. Number of containers per sample: 2 ~~1~~ (Or see CoC _____)
8. Samples are in correct container 2/24/06 AK Yes [✓] No [ ]
9. Paperwork agrees with samples? Yes [✓] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
11. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by AK Date: 2/24/06 Time: 10:50

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____
Alpha Meter Ser. No. _____ Calibration date _____
Beta/Gamma Meter Ser. No. _____ Calibration date _____

LIONVILLE LABORATORY INC.

30 May 2006

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

RECEIVED
MAY 2006

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 #	0603L444
SDG #	K0236
SAF #	RC-047
Date Received	3/8/06
# Samples	6
Matrix	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

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11873	001	SO	06LE0218	02/22/06	03/21/06	04/13/06
J11873	001 MS	SO	06LE0218	02/22/06	03/21/06	04/13/06
J11873	001 MSD	SO	06LE0218	02/22/06	03/21/06	04/12/06
J11874	002	SO	06LE0218	02/22/06	03/21/06	04/12/06
J11874	002 01	SO	06LE0218	02/22/06	03/21/06	04/13/06
J11875	003	SO	06LE0218	02/22/06	03/21/06	04/12/06
J11875	003 01	SO	06LE0218	02/22/06	03/21/06	04/13/06
J11876	004	SO	06LE0218	02/20/06	03/21/06	04/12/06
J11877	005	SO	06LE0218	02/20/06	03/21/06	04/12/06
J11878	006	SO	06LE0218	02/20/06	03/21/06	04/13/06

LAB QC:

SBLKVY	MB1	S	06LE0218	N/A	03/21/06	04/12/06
SBLKVY	MB1 BS	S	06LE0218	N/A	03/21/06	04/12/06

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L444
SDG/SAF # K0236/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-08-2006

SEMIVOLATILE

Six (6) solid (fish) samples were collected on 02-20,22-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 03-21-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-12,13-2006.

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. Samples J11875 and J11874 required 2 and 3-fold dilution respectively due to high levels of target compounds. Sample J11875 will be re-extracted, analyzed and reported under separate cover due to large number of target compounds at spiking level. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. Ten (10) of seventy-two (72) surrogate recoveries were outside acceptance criteria. The surrogate recovery criteria were not met for samples J11873 MSD and J11877. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. One hundred fourteen (114) of one hundred twenty-eight (128) matrix spike recoveries were outside 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 3 2 pages.

Thirteen (13) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

8. The method blank contained the common laboratory contaminants Diethylphthalate, Bis (2-Ethylhexyl) phthalate and Di-n-butylphthalate at levels less than the CRQL.

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

10. 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").

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

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

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/30/06
Date

som-group-data\bma\tnu-hanford\0603-444.doc

Laboratory Sample Discrepancy Report (SDR)

SDR #: 06MS130

Initiator: Robert Carden
Date: 4/19/06
Client: TNU Hanford Group

Batch: 06G3444
Samples: ALL
Method: SW846/MCAWW/CLP/

Parameter: 8250H
Matrix: Solid
Prep Batch: 06LE0218

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) Samples extracted out of hold (23 days & 25 days)
(2) 001 MSD - 2 base surrogates outside QC limits (ok in ms)
(3) 005 - 2 base surrogates outside QC limits
(4) 001 MS/001 MSD - most of spike recoveries outside of QC limits
(5) 005 - several spike recoveries outside of QC limits - surrogates appear ok
(6) 003 appears to have large no. of target cmpds present at spike levels

All samples appear low/low

2. Known or Probable Causes(s)

(1) Samples 1-3 received last of hold, samples 4-6 received out of hold (2 days out), client requested analysis prior to by order
(2)(3)(4) possible matrix effect (extracts are composite of tissue)? possible lot/charring interference clamp (GPC)?
(5) Some cmpds poor chromatographic responders others sporadic
(6) possible spiked? possible carryover in GPC? possible sample mix-up?

3. Discussion and Proposed Action Other Description:

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
✓ Re-extract 003
__ 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 06LE0359 5/4/06

5. Final Action...signature/date: 5/24/06 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	(1)	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

00000004

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: 05/25/06 14:13

RFW Batch Number: **0603L444** Client: **TNUHANFORD RC-047 K0236** Work Order: 11343606001 Page: 1a

	Cust ID:	J11873	J11873	J11873	J11874	J11874	J11875
Sample Information	RFW#:	001	001 MS	001 MSD	002	002 DL	003
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	0.800	0.800	0.800	0.800	2.40	0.800
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	25 %	35 %	21 * %	39 %	44 %	28 %
	2-Fluorobiphenyl	29 * %	38 %	25 * %	42 %	44 %	30 %
	Terphenyl-d14	34 %	44 %	26 %	53 %	57 %	36 %
	Phenol-d5	27 %	37 %	25 %	42 %	46 %	65 %
	2-Fluorophenol	25 %	33 %	22 * %	40 %	44 %	55 %
	2,4,6-Tribromophenol	30 %	42 %	31 %	51 %	52 %	62 %
		fl	fl	fl	fl	fl	fl
Phenol		4200 U	40 * %	28 * %	250 J	13000 U	13000
bis(2-Chloroethyl)ether		4200 U	39 * %	26 * %	4500 U	13000 U	4200 U
2-Chlorophenol		4200 U	39 * %	26 * %	4500 U	13000 U	8200
1,3-Dichlorobenzene		4200 U	35 * %	24 * %	4500 U	13000 U	8600
1,4-Dichlorobenzene		4200 U	35 * %	23 * %	4500 U	13000 U	8900
1,2-Dichlorobenzene		4200 U	35 * %	24 * %	4500 U	13000 U	8200
2-Methylphenol		4200 U	38 * %	30 * %	4500 U	13000 U	10000
2,2'-oxybis(1-Chloropropane)		4200 U	45 * %	25 * %	4500 U	13000 U	4200 U
4-Methylphenol		25000	67 %	26 * %	71000 E	70000 D	51000 E
N-Nitroso-di-n-propylamine		4200 U	40 * %	27 * %	4500 U	13000 U	4200 U
Hexachloroethane		4200 U	28 * %	21 * %	4500 U	13000 U	8100
Nitrobenzene		4200 U	37 * %	22 * %	4500 U	13000 U	4200 U
Isophorone		4200 U	42 * %	26 * %	4500 U	13000 U	4200 U
2-Nitrophenol		4200 U	39 * %	24 * %	4500 U	13000 U	4200 U
2,4-Dimethylphenol		4200 U	42 * %	26 * %	4500 U	13000 U	2900 J
bis(2-Chloroethoxy)methane		4200 U	40 %	23 * %	4500 U	13000 U	4200 U
2,4-Dichlorophenol		4200 U	40 * %	25 * %	4500 U	13000 U	12000
1,2,4-Trichlorobenzene		4200 U	36 * %	22 * %	4500 U	13000 U	8800
Naphthalene		4200 U	38 * %	22 * %	4500 U	13000 U	3100 J
4-Chloroaniline		4200 U	39 %	27 %	4500 U	13000 U	1200 J
Hexachlorobutadiene		4200 U	37 * %	24 * %	4500 U	13000 U	900 J
4-Chloro-3-methylphenol		4200 U	30 * %	19 * %	4500 U	13000 U	12000
2-Methylnaphthalene		4200 U	40 * %	25 * %	4500 U	13000 U	250 J
Hexachlorocyclopentadiene		4200 U	0 * %	0 * %	4500 U	13000 U	4200 U
2,4,6-Trichlorophenol		4200 U	42 %	28 %	4500 U	13000 U	7900
2,4,5-Trichlorophenol		10000 U	32 * %	21 * %	11000 U	34000 U	12000

*= Outside of EPA CLP QC limits.

Cust ID:	J11873		J11873		J11873		J11874		J11874		J11875	
RFW#:	001		001 MS		001 MSD		002		002 DL		003	
2-Chloronaphthalene	4200	U	40 *	%	25 *	%	4500	U	13000	U	5100	
2-Nitroaniline	10000	U	46 *	%	31 *	%	11000	U	34000	U	10000	U
Dimethylphthalate	4200	U	43 *	%	28 *	%	4500	U	13000	U	4200	U
Acenaphthylene	4200	U	42 *	%	27 *	%	4500	U	13000	U	4600	
2,6-Dinitrotoluene	4200	U	43 *	%	28 *	%	4500	U	13000	U	4200	U
3-Nitroaniline	10000	U	61	%	32 *	%	11000	U	34000	U	10000	U
Acenaphthene	4200	U	42	%	27 *	%	4500	U	13000	U	2400	J
2,4-Dinitrophenol	10000	U	27	%	20	%	11000	U	34000	U	10000	U
4-Nitrophenol	10000	U	2 *	%	1 *	%	11000	U	34000	U	10000	U
Dibenzofuran	4200	U	42 *	%	27 *	%	4500	U	13000	U	470	J
2,4-Dinitrotoluene	4200	U	44 *	%	29 *	%	4500	U	13000	U	4200	U
Diethylphthalate	4200	U	44 *	%	27 *	%	4500	U	13000	U	4200	U
4-Chlorophenyl-phenylether	4200	U	41 *	%	28 *	%	4500	U	13000	U	4200	U
Fluorene	4200	U	42 *	%	28 *	%	4500	U	13000	U	4200	U
4-Nitroaniline	10000	U	56	%	34 *	%	11000	U	34000	U	10000	U
4,6-Dinitro-2-methylphenol	10000	U	29 *	%	23 *	%	11000	U	34000	U	10000	U
N-Nitrosodiphenylamine (1)	4200	U	35 *	%	22 *	%	4500	U	13000	U	4200	U
4-Bromophenyl-phenylether	4200	U	36 *	%	25 *	%	4500	U	13000	U	4200	U
Hexachlorobenzene	4200	U	42 *	%	28 *	%	4500	U	13000	U	12000	
Pentachlorophenol	10000	U	3 *	%	1 *	%	9300	J	10000	JD	10000	U
Phenanthrene	4200	U	43 *	%	28 *	%	4500	U	13000	U	3000	J
Anthracene	4200	U	43 *	%	28 *	%	4500	U	13000	U	3200	J
Carbazole	4200	U	42 *	%	29 *	%	4500	U	13000	U	13000	
Di-n-butylphthalate	4200	U	45	%	27 *	%	220	JB	13000	U	4200	U
Fluoranthene	4200	U	43 *	%	27 *	%	4500	U	13000	U	3000	J
Pyrene	4200	U	48 *	%	24 *	%	4500	U	13000	U	14000	
Butylbenzylphthalate	4200	U	50	%	25 *	%	4500	U	13000	U	4200	U
3,3'-Dichlorobenzidine	4200	U	43	%	25	%	4500	U	13000	U	4200	U
Benzo(a)anthracene	4200	U	45 *	%	28 *	%	4500	U	13000	U	1600	J
Chrysene	4200	U	44 *	%	28 *	%	4500	U	13000	U	3200	J
bis(2-Ethylhexyl)phthalate	680	JB	47 *	%	25 *	%	740	JB	1100	JBD	490	JB
Di-n-octyl phthalate	4200	U	47 *	%	22 *	%	4500	U	13000	U	4200	U
Benzo(b)fluoranthene	4200	U	45 *	%	24 *	%	4500	U	13000	U	3300	J
Benzo(k)fluoranthene	4200	U	45 *	%	25 *	%	4500	U	13000	U	2100	J
Benzo(a)pyrene	4200	U	44 *	%	25 *	%	4500	U	13000	U	13000	
Indeno(1,2,3-cd)pyrene	4200	U	42 *	%	32 *	%	4500	U	13000	U	10000	
Dibenz(a,h)anthracene	4200	U	43 *	%	32 *	%	4500	U	13000	U	900	J
Benzo(g,h,i)perylene	4200	U	38 *	%	31 *	%	4500	U	13000	U	13000	

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/25/06 14:13

RFW Batch Number: **0603L444** Client: **TNUHANFORD RC-047 K0236** Work Order: 11343606001 Page: 2a

	Cust ID:	J11875	J11876	J11877	J11878	SBLKVY	SBLKVY BS
Sample Information	RFW#:	003 DL	004	005	006	06LE0218-MB1	06LE0218-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.60	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	26 %	29 %	22 * %	24 %	39 %	47 %
	2-Fluorobiphenyl	27 * %	32 %	25 * %	25 * %	40 %	61 %
	Terphenyl-d14	34 %	38 %	30 %	30 %	62 %	69 %
	Phenol-d5	53 %	33 %	25 %	33 %	41 %	61 %
	2-Fluorophenol	47 %	29 %	24 * %	24 * %	38 %	55 %
	2,4,6-Tribromophenol	53 %	36 %	27 %	29 %	47 %	66 %
		fl	fl	fl	fl	fl	fl
Phenol		11000 D	420 J	360 J	4200 U	270 U	57 %
bis(2-Chloroethyl)ether		8300 U	5000 U	5600 U	4200 U	270 U	60 %
2-Chlorophenol		7200 JD	5000 U	5600 U	4200 U	270 U	57 %
1,3-Dichlorobenzene		7800 JD	5000 U	5600 U	4200 U	270 U	53 %
1,4-Dichlorobenzene		7800 JD	5000 U	5600 U	4200 U	270 U	53 %
1,2-Dichlorobenzene		7600 JD	5000 U	5600 U	4200 U	270 U	55 %
2-Methylphenol		9800 D	5000 U	5600 U	4200 U	270 U	59 * %
2,2'-oxybis(1-Chloropropane)		8300 U	5000 U	5600 U	4200 U	270 U	60 %
4-Methylphenol		42000 D	33000	29000	33000	270 U	58 * %
N-Nitroso-di-n-propylamine		8300 U	5000 U	5600 U	4200 U	270 U	58 %
Hexachloroethane		9300 D	5000 U	5600 U	4200 U	270 U	51 %
Nitrobenzene		8300 U	5000 U	5600 U	4200 U	270 U	46 * %
Isophorone		8300 U	5000 U	5600 U	4200 U	270 U	52 * %
2-Nitrophenol		8300 U	5000 U	5600 U	4200 U	270 U	46 * %
2,4-Dimethylphenol		2700 JD	5000 U	5600 U	4200 U	270 U	34 * %
bis(2-Chloroethoxy)methane		8300 U	5000 U	5600 U	4200 U	270 U	48 %
2,4-Dichlorophenol		11000 D	5000 U	5600 U	4200 U	270 U	46 * %
1,2,4-Trichlorobenzene		8200 JD	5000 U	5600 U	4200 U	270 U	43 * %
Naphthalene		2900 JD	5000 U	5600 U	4200 U	270 U	44 %
4-Chloroaniline		1400 JD	5000 U	5600 U	4200 U	270 U	58 %
Hexachlorobutadiene		850 JD	5000 U	5600 U	4200 U	270 U	46 %
4-Chloro-3-methylphenol		12000 D	5000 U	5600 U	4200 U	270 U	43 * %
2-Methylnaphthalene		8300 U	5000 U	5600 U	4200 U	270 U	47 * %
Hexachlorocyclopentadiene		8300 U	5000 U	5600 U	4200 U	270 U	36 %
2,4,6-Trichlorophenol		7100 JD	5000 U	5600 U	4200 U	270 U	60 %
2,4,5-Trichlorophenol		11000 JD	13000 U	14000 U	10000 U	660 U	47 %

*= Outside of EPA CLP QC limits.

Cust ID:	J11875		J11876		J11877		J11878		SBLKVY		SBLKVY BS	
RFW#:	003 DL		004		005		006		06LE0218-MB1		06LE0218-MB1	
2-Chloronaphthalene	4600	JD	5000	U	5600	U	4200	U	270	U	58	%
2-Nitroaniline	21000	U	13000	U	14000	U	10000	U	660	U	68	%
Dimethylphthalate	8300	U	5000	U	5600	U	4200	U	270	U	64	%
Acenaphthylene	4100	JD	5000	U	5600	U	4200	U	270	U	59	* %
2,6-Dinitrotoluene	8300	U	5000	U	5600	U	4200	U	270	U	64	%
3-Nitroaniline	21000	U	13000	U	14000	U	10000	U	660	U	76	%
Acenaphthene	2300	JD	5000	U	5600	U	4200	U	270	U	62	%
2,4-Dinitrophenol	21000	U	13000	U	14000	U	10000	U	660	U	14	* %
4-Nitrophenol	21000	U	13000	U	14000	U	10000	U	660	U	3	* %
Dibenzofuran	450	JD	5000	U	5600	U	4200	U	270	U	60	%
2,4-Dinitrotoluene	8300	U	5000	U	5600	U	4200	U	270	U	68	%
Diethylphthalate	8300	U	5000	U	5600	U	4200	U	140	J	60	%
4-Chlorophenyl-phenylether	8300	U	5000	U	5600	U	4200	U	270	U	58	%
Fluorene	8300	U	5000	U	5600	U	4200	U	270	U	60	%
4-Nitroaniline	21000	U	13000	U	14000	U	10000	U	660	U	72	%
4,6-Dinitro-2-methylphenol	21000	U	13000	U	14000	U	10000	U	660	U	62	%
N-Nitrosodiphenylamine (1)	8300	U	5000	U	5600	U	4200	U	270	U	54	%
4-Bromophenyl-phenylether	8300	U	5000	U	5600	U	4200	U	270	U	57	%
Hexachlorobenzene	11000	D	5000	U	5600	U	4200	U	270	U	64	%
Pentachlorophenol	21000	U	13000	U	2200	J	10000	U	660	U	34	%
Phenanthrene	3000	JD	5000	U	5600	U	4200	U	270	U	63	%
Anthracene	3000	JD	5000	U	5600	U	4200	U	270	U	64	%
Carbazole	12000	D	5000	U	5600	U	4200	U	270	U	64	%
Di-n-butylphthalate	8300	U	260	JB	5600	U	210	JB	22	J	67	%
Fluoranthene	2800	JD	5000	U	5600	U	4200	U	270	U	68	%
Pyrene	12000	D	5000	U	5600	U	4200	U	270	U	63	%
Butylbenzylphthalate	8300	U	5000	U	5600	U	4200	U	270	U	67	%
3,3'-Dichlorobenzidine	8300	U	5000	U	5600	U	4200	U	270	U	74	%
Benzo(a)anthracene	1600	JD	5000	U	5600	U	4200	U	270	U	69	%
Chrysene	3100	JD	5000	U	5600	U	4200	U	270	U	67	%
bis(2-Ethylhexyl)phthalate	730	JBD	940	JB	610	JB	480	JB	120	J	66	%
Di-n-octyl phthalate	8300	U	5000	U	5600	U	4200	U	270	U	64	%
Benzo(b)fluoranthene	2700	JD	5000	U	5600	U	4200	U	270	U	66	%
Benzo(k)fluoranthene	2100	JD	5000	U	5600	U	4200	U	270	U	62	%
Benzo(a)pyrene	11000	D	5000	U	5600	U	4200	U	270	U	64	%
Indeno(1,2,3-cd)pyrene	9800	D	5000	U	5600	U	4200	U	270	U	80	%
Dibenz(a,h)anthracene	1100	JD	5000	U	5600	U	4200	U	270	U	79	%
Benzo(g,h,i)perylene	13000	D	5000	U	5600	U	4200	U	270	U	78	%

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11873

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-001

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

Lab File ID: J041213

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/13/06

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	8.375	500000	J
2.	UNKNOWN	8.893	90000	J
3.	UNKNOWN	9.224	100000	J
4.	UNKNOWN	10.591	90000	J
5.	UNKNOWN	23.368	100000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11874

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-002

Sample wt/vol: 1.79 (g/mL) G

Lab File ID: J041208

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/12/06

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	8.644	900000	J
2.	UNKNOWN	9.535	300000	J
3.	UNKNOWN	10.767	200000	J
4.	UNKNOWN	23.202	200000	J
5.	UNKNOWN	23.306	200000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11874DL

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-002 DL

Sample wt/vol: 1.79 (g/mL) G

Lab File ID: N041307

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/13/06

Injection Volume: 2.0(uL)

Dilution Factor: 2.40

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

Number TICs found: 0

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

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11875

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-003

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

Lab File ID: J041209

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/12/06

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	8.406	400000	J
2.	UNKNOWN	9.307	200000	J
3.	UNKNOWN	10.788	300000	J
4.	UNKNOWN	16.866	300000	J
5.	UNKNOWN	39.573	200000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11875DL

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-003 DL

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

Lab File ID: N041308

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/13/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.60

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

Number TICs found: 0

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

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

FORM 1 SV-TIC RFW (v3.3)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11876

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-004

Sample wt/vol: 1.59 (g/mL) G

Lab File ID: J041210

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/12/06

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	8.002	200000	J
2.	UNKNOWN	8.354	300000	J
3.	UNKNOWN	9.296	200000	J
4.	UNKNOWN	10.798	300000	J
5.	UNKNOWN	39.532	100000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11877

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-005

Sample wt/vol: 1.43 (g/mL) G

Lab File ID: J041211

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/12/06

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	8.012	200000	J
2.	UNKNOWN	8.261	300000	J
3.	UNKNOWN	9.214	200000	J
4.	UNKNOWN	10.725	200000	J
5.	UNKNOWN	39.501	90000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11878

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOLID

Lab Sample ID: 0603L444-006

Sample wt/vol: 1.91 (g/mL) G

Lab File ID: J041212

Level: (low/med) LOW

Date Received: 03/08/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/13/06

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	8.095	200000	J
2.	UNKNOWN	8.375	300000	J
3.	UNKNOWN	8.861	80000	J
4.	UNKNOWN	9.276	200000	J
5.	UNKNOWN	16.834	200000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKVY

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

Client: TNUHANFORD RC-047 K0236

Matrix: (soil/water) SOIL

Lab Sample ID: 06LE0218-MB1

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

Lab File ID: N041204

Level: (low/med) LOW

Date Received: 03/21/06

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

Date Extracted: 03/21/06

Concentrated Extract Volume: 500(uL)

Date Analyzed: 04/12/06

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	23.226	400	J
2.	UNKNOWN	25.281	300	J
3.	UNKNOWN	26.559	400	J
4.	UNKNOWN	28.174	600	J
5.	UNKNOWN	32.466	500	J

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/21/06 Extraction Batch No: 06LE0218 Analyst: MF Method: ****

Test: O625 Cleanup Date: Analyst: Client: TNUHANFORD RC-047 K0218

LIMS Report Date: 04/13/06 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	% Solid	C/D FACTOR
0602L288-	TNUHANFORD RC-047 K0218										
001 H	J117R6		1.24	1.0		0.4		1.0	Y	19.90	1621.0
001 HS	J117R6		1.43	1.0	1.0	0.4		1.0	Y	19.90	1405.6
001 HT	J117R6		1.43	1.0	1.0	0.4		1.0	Y	19.90	1405.6
002 H	J117R7		1.97	1.0		0.4		1.0	Y	20.71	980.4
0602L299-	TNUHANFORD RC-047 K0229										
001 H	J117R5		1.23	1.0		0.4		1.0	Y	0.00	325.2
001 HS	J117R5		1.41	1.0	1.0	0.4		1.0	Y	0.00	283.7
001 HT	J117R5		1.36	1.0	1.0	0.4		1.0	Y	0.00	294.1
0603L379-	TNUHANFORD RC-047 K0229										
001 H	J117R3		1.61	1.0		0.4		1.0	Y	0.00	248.4
001 HS	J117R3		1.28	1.0	1.0	0.4		1.0	Y	0.00	312.5
001 HT	J117R3		1.43	1.0	1.0	0.4		1.0	Y	0.00	279.7
002 H	J117R4		1.68	1.0		0.4		1.0	Y	0.00	238.1
003 H	J117R5		1.14	1.0		0.4		1.0	Y	0.00	350.9
004 H	J117R8		1.41	1.0		0.4		1.0	Y	0.00	283.7
005 H	J117R9		1.77	1.0		0.4		1.0	Y	0.00	226.0
006 H	J11869		1.80	1.0		0.4		1.0	Y	0.00	222.2
007 H	J11870		1.76	1.0		0.4		1.0	Y	0.00	227.3
008 H	J11871		1.62	1.0		0.4		1.0	Y	0.00	246.9
009 H	J11872		1.27	1.0		0.4		1.0	Y	0.00	315.0
0603L444-	TNUHANFORD RC-047 K0236										
001 H	J11873		1.92	1.0		0.4		1.0	Y	0.00	208.3
001 HS	J11873		1.43	1.0	1.0	0.4		1.0	Y	0.00	279.7

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
			M	4/13/06 1400	Change split multiplier to 1.0

Change finalized. [illegible]

000000021

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 03/21/06 Extraction Batch No: 06LE0218 Analyst: MF Method: ****

Test: O625 Cleanup Date: Analyst: Client: TNUHANFORD RC-047 K0218

LIMS Report Date: 04/13/06 Solvent: DCM Adsorbent:

000000022

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	C/D FACTOR
0603L444-	TNUHANFORD RC-047 K0236										
001 HT	J11873		1.42	1.0	1.0	0.4		1.0	Y	0.00	281.7
002 H	J11874		1.79	1.0		0.4		1.0	Y	0.00	223.5
003 H	J11875		1.92	1.0		0.4		1.0	Y	0.00	208.3
004 H	J11876		1.59	1.0		0.4		1.0	Y	0.00	251.6
005 H	J11877		1.43	1.0		0.4		1.0	Y	0.00	279.7
006 H	J11878		1.91	1.0		0.4		1.0	Y	0.00	209.4
06LE0218-MB1 H			30.0	1.0		0.4		1.0	Y	100.00	13.3
06LE0218-MB1 HS			30.0	1.0	1.0	0.4		1.0	Y	100.00	13.3

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
					change split mult to 1.0
			M	4/13/06 1400	change final volume to 0.4

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/21/06 Extraction Batch No: 06LE0218 Analyst: MF Method: **** SOP 3548

Test: 0625 Cleanup Date: Analyst: Client: TNUHANFORD RC-047 K0218

LIMS Report Date: 04/12/06 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
0602L288-	TNUHANFORD RC-047 K0218										
001 H	J117R6		1.24	1.0		0.5		0.5	N	19.90	1013.1
001 HS	J117R6		1.43	1.0	1.0	0.5		0.5	N	19.90	878.5
001 HT	J117R6		1.43	1.0	1.0	0.5		0.5	N	19.90	878.5
002 H	J117R7		1.97	1.0		0.5		0.5	N	20.71	612.8
0602L299-	TNUHANFORD RC-047 K0229										
001 H	J117R5		1.23	1.0		0.5		0.5	N		203.3
001 HS	J117R5		1.41	1.0	1.0	0.5		0.5	N		177.3
001 HT	J117R5		1.36	1.0	1.0	0.5		0.5	N		183.8
0603L379-	TNUHANFORD RC-047 K0229										
001 H	J117R3		1.61	1.0		0.5		0.5	N		155.3
001 HS	J117R3		1.28	1.0	1.0	0.5		0.5	N		195.3
001 HT	J117R3		1.43	1.0	1.0	0.5		0.5	N		174.8
002 H	J117R4		1.68	1.0		0.5		0.5	N		148.8
003 H	J117R5		1.14	1.0		0.5		0.5	N		219.3
004 H	J117R8		1.41	1.0		0.5		0.5	N		177.3
005 H	J117R9		1.77	1.0		0.5		0.5	N	0.0	141.2
006 H	J11869		1.80	1.0		0.5		0.5	N	0.0	138.9
007 H	J11870		1.76	1.0		0.5		0.5	N	0.0	142.0
008 H	J11871		1.62	1.0		0.5		0.5	N	0.0	154.3
009 H	J11872		1.27	1.0		0.5		0.5	N	0.0	196.8
0603L444-	TNUHANFORD RC-047 K0236										
001 H	J11873		1.92	1.0		0.5		0.5	N	0.0	130.2
001 HS	J11873		1.43	1.0	1.0	0.5		0.5	N	0.0	174.8

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
all	[illegible]	4/12/06 1410	[illegible]	4/12/06 1500	Analysis

0000000?K

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 03/21/06 Extraction Batch No: 06LE0218 Analyst: MF Method: ****SW3540

Test: O625 Cleanup Date: Analyst: Client: TNUHANFORD RC-047 K0218

LIMS Report Date: 04/12/06 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
0603L444-	TNUHANFORD RC-047 K0236										
001 HT	J11873		1.42	1.0	1.0	0.5		0.5	N	0.0	176.1
002 H	J11874		1.79	1.0		0.5		0.5	N	0.0	139.7
003 H	J11875		1.92	1.0		0.5		0.5	N	0.0	130.2
004 H	J11876		1.59	1.0		0.5		0.5	N	0.0	157.2
005 H	J11877		1.43	1.0		0.5		0.5	N	0.0	174.8
006 H	J11878		1.91	1.0		0.5		0.5	N	0.0	130.9
06LE0218-MB1 H	SBLKVY		30.0	1.0		0.5		0.5	N	100.00	8.33
06LE0218-MB1 HS	SBLKVY		30.0	1.0	1.0	0.5		0.5	N	100.00	8.33

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
all	[signature]	4/12/06 1410	[signature]	4/12/06 1500	Analysis

00000024

Lionville Laboratory Use Only

0603L444

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVL

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNLL-HANFORD SAF# RC-047

Est. Final Proj. Sampling Date

Project # 11343-606-001-0999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 3/8/06 Date Due 4/7/06

Refrigerator #		A-1														
#/Type Container	Liquid	2 Gallons														
	Solid	6-1			4				W/							
Volume	Liquid				B											
	Solid	250-1			NA				8oz							
Preservatives		-1			-											
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	TCL 1st			TAL Metal	CN						

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		0625H	0PCB		0608H			METALS						
S - Soil	001	T118 73			X	2-22-06	1300		✓	✓		✓			✓						
SE - Sediment	002	74					1330		✓	✓		✓			✓						
SO - Solid	003	75					1400		✓	✓		✓			✓						
SL - Sludge	004	76				2-23-06	1530		✓	✓		✓			✓						
W - Water	005	77					1600		✓	✓		✓			✓						
O - Oil	006	78					1630		✓	✓		✓			✓						
A - Air																					
DS - Drum Solids																					
DL - Drum Liquids																					
L - EP/TCLP Leachate																					
WI - Wipe																					
X - Other																					
F - Fish																					

Special Instructions: X = MATRIX Composed of FISH

(STRONG ODOR)

Run matrix QC

DATE/REVISIONS:

1. METALS = HSL+B, Li, Mo, Si, Sn, Ti, U, P, Zr, Bi
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/8/06	0920

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"			

ORIGINAL REWRITTEN

000000025

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-151	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 Day
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-D #1 K0236 (7394)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060307		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~~ 4/21/06	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)	1	1	0	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								
J11873	OTHER SOLID	2-22-06	1300	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-22-06 1730	EAS LOCKED STORAGE	2-22-06 1730
EAS LOCKED STORAGE	2-23-06 0830	RZ Steffen	2-23-06 0830
RZ Steffen	2-23-06 1600	Fed Ex	
Fed Ex		Alex Kellum	2/24/06 10:00
Alex Kellum	3/07/06 16:00		
Fed Ex	3-8-06 0930	Hernandez	3-8-06 0930

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. 4/21/06

Matrix *: S=Soil, SE=Sediment, SO=Solid, Sl=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquid, T=Tissue, Wi=Wipe, L=Liquid, 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-047-152

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 RCHRA Sediment and Ti	Sampling Location: 100-D #2 K0236 (7394)		SAF No.: RC-047
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BBSRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060307		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	aG	aG	aG					
No. of Container(s)	1	1	0	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								
J11874	OTHER SOLID	2-22-06	1330	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	Received By/Stored In: EAS LOCKED STORAGE	2-22-06 1730
Relinquished By/Removed From: EAS LOCKED STORAGE	Received By/Stored In: RZ Stoffler RJ Stoffler	2-23-06 0830
Relinquished By/Removed From: RZ Stoffler RJ Stoffler	Received By/Stored In: FED EX	2-23-06 1600
Relinquished By/Removed From: FED EX	Received By/Stored In: Alex Kelly	2/24/06 10:00
Relinquished By/Removed From: Alex Kelly	Received By/Stored In:	3/07/06 16:00
Relinquished By/Removed From: [illegible]	Received By/Stored In: [illegible]	3-8-06 0920

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.

S/A 21406

Matrix *: SeSoil, SEsSediment, SOsSolid, SLsSludge, WsWater, OsOil, AsAir, DSsDrum Solid, DLsDrum Liquid, TsTissue, WIsWipe, LsLiquid, VsVegetation, XsOther

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-047-153	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-D #3 K0236 (7394)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060307		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 2406	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)	1	1	0	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								
J11875	OTHER SOLID	2-22-06	1400	X	X						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
EAS LOCKED STORAGE	2-22-06 1730	EAS LOCKED STORAGE	2-22-06 1730
EAS LOCKED STORAGE	2-23-06 0830	RZ Stoffle	2-23-06 0830
RZ Stoffle	2-23-06 1600	Fed Ex	2/24/06
FED EX		Alex Kelley	2/24/06
Alex Kelley	3/7/06 16:00		
Fed Ex	3-8-06 0930		3-8-06 0930

SPECIAL INSTRUCTIONS

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

NOTE: Lionville- contact ~~Hick/Weiss~~ JOAN KESSNER upon receipt. 4/4 2406

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liquid
T=Tissue
WI=Wipe
L=Liquid
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-047-154	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-D #4 K0236 (7394)	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060307		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~~ MD-CHECK	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)	1	1	0	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								
J11876	OTHER SOLID	2-20-06	1630	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	Received By/Stored In: EAS LOCKED STORAGE	2-20-06 1800
Relinquished By/Removed From: EAS LOCKED STORAGE	Received By/Stored In: RZ Stoffle RJ Stoffle	2-23-06 0830
Relinquished By/Removed From: RZ Stoffle RJ Stoffle	Received By/Stored In: Fed EX	2-23-06 1600
Relinquished By/Removed From: FED EX	Received By/Stored In: Alex Kelleck	2/24/06 10:00
Relinquished By/Removed From: Alex Kelleck	Received By/Stored In:	3/07/06 16:00
Relinquished By/Removed From: Fed Ex	Received By/Stored In:	3-8-06 0900

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 2/14/06

Matrix *: S=Soil, SE=Sediment, SO=Solid, SL=Sludge, W=Water, O=Oil, A=Air, DS=Drum Sol, DL=Drum Liq, 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-047-155

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-D #5 K0236 (7394)		SAF No.: RC-047
Air Quality: ☐			
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060307		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~~ AB 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)	1	1	0	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									
J11877	OTHER SOLID	2-20-06	1600	X	X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-20-06 1800	EAS LOCKED STORAGE	2-20-06 1800
EAS LOCKED STORAGE	2-23-06 0830	RL Steffen	2-23-06 0830
RL Steffen	2-23-06 1600	Fed Ex	
Fed Ex		Alex Kennedy	2/24/06 10:00
Alex Kennedy	3/01/06 16:00		
Fed Ex	3-3-06 0920		3-3-06 0920

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. 3/3 2/14/06

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solid; DL=Drum Liquid; T=Tissue; Wi=Wipe; L=Liquid; 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-047-156

Collector: TILLER, JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days		
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-D #6 K0236 (7394)		SAF No.: RC-047
Air Quality: ☐			
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BBSRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060307		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 2/20/06	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)	1	1	0	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								
J11878	OTHER SOLID	2-20-06	1630	X	X						

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-20-06 1500	EAS LOCKED STORAGE	2-20-06 1800
EAS LOCKED STORAGE	2-23-06 0830	RZ Stoffler	2-23-06 0836
RZ Stoffler	2-23-06 1600	Fed Ex	
FED EX		Alex Kelly	2/24/06 10:00
Alex Kelly	3/07/06 18:00		
Fed Ex	3-8-06 0920	[illegible]	3-8-06 0920

Sign/Print Names

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 4/26/06

Matrix *: S=Soil; SE=Sediment; SO=Solid; SL=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solid; DL=Drum Liquid; T=Tissue; WI=Wipe; L=Liquid; 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:** 3/8/06

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

LvLI Batch # : 06 03 L 444 **Sample Custodian:** C. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier FED EX — Airbill# 7918 8098 2096

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?	Temp 3.4 °C		Cooler # AFS-04-037	
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.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11873	001	SO	06LE0214	02/22/06	03/20/06	03/28/06
J11873	001 MS	SO	06LE0214	02/22/06	03/20/06	03/28/06
J11873	001 MSD	SO	06LE0214	02/22/06	03/20/06	03/28/06
J11874	002	SO	06LE0214	02/22/06	03/20/06	03/28/06
J11875	003	SO	06LE0214	02/22/06	03/20/06	03/28/06
J11876	004	SO	06LE0214	02/20/06	03/20/06	03/28/06
J11877	005	SO	06LE0214	02/20/06	03/20/06	03/28/06
J11878	006	SO	06LE0214	02/20/06	03/20/06	03/28/06

LAB QC:

PBLKEA	MB1	S	06LE0214	N/A	03/20/06	03/28/06
PBLKEA	MB1 BS	S	06LE0214	N/A	03/20/06	03/28/06

JGB 4/17/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L444
SDG/SAF # K0236/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-08-2006

PCB

Six (6) solid samples were collected on 02-20,22-2006.

The samples and their associated QC samples were extracted on 03-20-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-28-2006. 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, with the exception of some discrepancies, which have been recorded on the Sample Receipt Check list. Samples 004,005,006 were received out of hold. Samples 001,002 & 003 were received on the last day of hold.

2. The samples were extracted 12 – 14 days outside of recommended hold time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

3. The samples and their associated QC samples received Florisil, Silica Gel, Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3620B, 3630C, 3660A and 3665A respectively.

4. The Method Blank was below the reporting limits for all target compounds.

5. Seven (7) of twenty (20) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. All blank spike recoveries were within acceptance criteria.

7. One (1) of four (4) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

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

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

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

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

4/21/06
Date

kim\r:\group\data\pest\tmu hanford\0603-444.pcbs

LVLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 066C123

Initiator: John Leck
Date: 4/16/06
Client: TNU

Batch: 0603L444
Samples: 1 MSD, 3, 6
Method: SW846/MCAWW/CLP/

Parameter: PCB
Matrix: soils
Prep Batch: 06LE0214

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)

Surrogates elevated in samples
Aroclor 1260 elevated in MSD.

2. Known or Probable Causes(s)

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

Other Description:
Narrate. No hits found in samples.

4. Project Manager Instructions...signature/date: _____
__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: _____
__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

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

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

QA-105-A-0805

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 06EX005

Initiator: Martin Ford Batch: 06031444 Parameter: 608/PCB
Date: 4/15/06 Samples: All Matrix: Soil/Solid F.
Client: TND Method: SW846/MCAWW/CLP/ Prep Batch: 06LE214

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
X 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)

Sample extracted for Pest/PCB out of Hold per COC must run metal 1st, 2nd Pest, PCB then BNA

2. Known or Probable Causes(s)

order of analysis

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: _____

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

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

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

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

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

QA-105-A-0805

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/15/06 08:05

RFW Batch Number: 0603L444 Client: TNUHANFORD RC-047 K0236 Work Order: 11343606001 Page: 1

	Cust ID:	J11873		J11873		J11873		J11874		J11875		J11876	
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	92	%	107	%	122 *	%	107	%	120 *	%	101	%
	Decachlorobiphenyl	104	%	119	%	136 *	%	120	%	138 *	%	124 *	%
Aroclor-1016		240	U	98	%	120	%	240	U	220	U	200	U
Aroclor-1221		240	U	260	U	300	U	240	U	220	U	200	U
Aroclor-1232		240	U	260	U	300	U	240	U	220	U	200	U
Aroclor-1242		240	U	260	U	300	U	240	U	220	U	200	U
Aroclor-1248		240	U	260	U	300	U	240	U	220	U	200	U
Aroclor-1254		240	U	260	U	300	U	240	U	220	U	200	U
Aroclor-1260		240	U	123	%	148 *	%	240	U	220	U	200	U

	Cust ID:	J11877		J11878		PBLKEA		PBLKEA BS	
Sample Information	RFW#:	005		006		06LE0214-MB1		06LE0214-MB1	
	Matrix:	SOLID		SOLID		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	103	%	120 *	%	89	%	86	%
	Decachlorobiphenyl	120	%	135 *	%	101	%	96	%
Aroclor-1016		200	U	240	U	13	U	80	%
Aroclor-1221		200	U	240	U	13	U	13	U
Aroclor-1232		200	U	240	U	13	U	13	U
Aroclor-1242		200	U	240	U	13	U	13	U
Aroclor-1248		200	U	240	U	13	U	13	U
Aroclor-1254		200	U	240	U	13	U	13	U
Aroclor-1260		200	U	240	U	13	U	94	%

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

0603L444

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNU-HANFORD SAF# RC-047

Est. Final Proj. Sampling Date

Project # 11343-606-001-0999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 3/8/06 Date Due 4/7/06

Refrigerator #		A														
#/Type Container	Liquid	2				4										
	Solid	6														
Volume	Liquid					8										
	Solid	250														
Preservatives						—										
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	TCL/TAL				Metal	CN					

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

Lionville Laboratory Use Only

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	0625H	0608		0608H		METALS
001	T118 73			X	2-22-06	1300	1	✓		✓		✓
002	74					1330	1	✓		✓		✓
003	75					1400	1	✓		✓		✓
004	76				2-22-06	1530	1	✓		✓		✓
005	77					1600	1	✓		✓		✓
006	78					1630	1	✓		✓		✓

Special Instructions: X = MATRIX COMPOSED OF FISH

(STRONG ODOR)

Run Matrix QC

DATE/REVISIONS:

1. METALS = HSL+B,Li,Mo,Si,Sn,Ti,U,P,Zr,Bi
2.
3. ~~0608X~~
4. 0608HV
5. ORCB R
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/8/06	0920

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-047-151	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-D #1 K0236 (7394)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060307		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~~ 4/0 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)	1	1	0	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								
J11873	OTHER SOLID	2-22-06	1300	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	Received By/Stored In EAS LOCKED STORAGE	2-22-06 1730
Relinquished By/Removed From EAS LOCKED STORAGE	Received By/Stored In RZ Stiffler	2-23-06 0830
Relinquished By/Removed From RZ Stiffler	Received By/Stored In Fed Ex	2-23-06 1600
Relinquished By/Removed From FED EX	Received By/Stored In Alex Kellerman	2/24/06 10:00
Relinquished By/Removed From Alex Kellerman	Received By/Stored In	2/07/06 16:00
Relinquished By/Removed From FEDEX	Received By/Stored In V Hernandez	3-8-06 0920

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
4/0 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-047-152	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-D #2 K0286 (7394)	SAP No. RC-047	Air Quality [ ]
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597 COA BESRAS6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060307	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~~ N/A	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)	1	1	0	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								
J11874	OTHER SOLID	2-22-06	1330	X	X						

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From [signature] Date/Time 2-22-06 JAMES BERNHARD 1730	Received By/Stored In [signature] Date/Time 2-22-06 EAS LOCKED STORAGE 1730
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-23-06	Received By/Stored In Date/Time 0830 RZ Steffler RZ Steffler 2-23-06
Relinquished By/Removed From Date/Time 1600 WCH RZ Steffler RZ Steffler 2-23-06	Received By/Stored In Date/Time FED EX
Relinquished By/Removed From Date/Time FED EX	Received By/Stored In Date/Time Alex Kelerly 2/24/06 10:00
Relinquished By/Removed From Date/Time Alex Kelerly 3/07/06 16:00	Received By/Stored In Date/Time
Relinquished By/Removed From Date/Time [signature] 3-8-06 0920	Received By/Stored In Date/Time [signature] 3-8-06 0920

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

S/A 21406

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liquid
T=Tissue
WI=Wipe
L=Liquid
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-047-153	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-D #3 K0236 (7394)	SAF No. RC-047	
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060307	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	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	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											
J11875 / OTHER SOLID / 2-22-06 / 1400	X	X									

CHAIN OF POSSESSION JAMES BERNHARD — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
EAS LOCKED STORAGE	2-22-06 1730	EAS LOCKED STORAGE	2-22-06 1730
EAS LOCKED STORAGE	2-23-06 0830	R2 Stiffler	2-23-06 0830
R2 Stiffler	2-23-06 1600	Fed EX	2/24/06
FED EX		Alex Kelley	2/24/06
Alex Kelley	3/7/06 16:00		
FED EX	3-8-06 0930		3-8-06 0930

SPECIAL INSTRUCTIONS

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

NOTE: Lionville- contact ~~Richard Weiss~~ JOAN KESSNER upon receipt. 4/4 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
La=Latex
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-047-154 | Page 1 of

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-D #4 K0236 (7394)	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060307		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	aG	aG	aG					
No. of Container(s)	1	1	0	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								
J11876	OTHER SOLID	2-20-06	1530	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-20-06 1800	EAS LOCKED STORAGE	2-20-06 1800
EAS LOCKED STORAGE	2-23-06 0930	RZ Steffler	2-23-06 0930
RZ Steffler	2-23-06 1600	Fed Ex	
FED EX		Alex Kellerll	2/24/06 10:00
Alex Kellerll	3/07/06 16:00		
Fed Ex	3-8-06 0900		3-8-06 0900

SPECIAL INSTRUCTIONS

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

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

AD 2/4/06

Matrix *: S=Soil, SE=Sediment, SO=Solid, Sl=Sludge, W=Water, O=Oil, Ar=Air, DS=Drum Solid, DL=Drum Liquid, Tu=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-047-155 | Page 1 of

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-D #5 K0236 (7394)		SAF No.: RC-047
Air Quality: [ ]			
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060307		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 2/21/06	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)	1	1	0	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										
J11877	OTHER SOLID	2-20-06	1600	X	X								

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-20-06 1800	EAS LOCKED STORAGE	2-20-06 1800
EAS LOCKED STORAGE	2-22-06 0830	RL Stetler RJ Stetler	2-22-06 0830
RL Stetler RJ Stetler	2-22-06 1600	Fed Ex	
FED EX		Alex Kennedy	2/24/06 10:00
Alex Kennedy	3/07/06 16:00		
Fed Ex	3-8-06 0920	[illegible]	3-8-06 0920

SPECIAL INSTRUCTIONS

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

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. 1/0 2/10/06

Matrix *: SO=Soil; SE=Sediment; SO=Solid; SL=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solid; DL=Drum Liquid; T=Tissue; W=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-047-156

Collector TILLER, BJAMES 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-D #6 K0236 (7394)		**SAF No.** RC-047
Air Quality [ ]			
Ice Chest No. AFS-04-037	**Field Logbook No.** EL-1597	**COA** BESRAS6520	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A060307		**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	aG	aG	aG				
No. of Container(s)	1	1	0	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										
J11878	OTHER SOLID	2-20-06	1630	X	X								

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-20-06 1500	EAS LOCKED STORAGE	2-20-06 1800
EAS LOCKED STORAGE	2-22-06 0830	RZ Stiffler RZ Stiffler	2-23-06 0830
RZ Stiffler RZ Stiffler	2-23-06 1600	Fed Ex	
FED EX		Alex Kelleny	2/24/06 10:00
Alex Kelleny	3/07/06 15:00		
FED EX	3-8-06 0920	[signature]	3-8-06 0920

SPECIAL INSTRUCTIONS

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

NOTE: Lionville- contact ~~Rick Weissrupon~~ receipt.

JOAN KESSNER 4/26/06

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: TNL - HANFORD **Date:** 3/8/06

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

LvLI Batch # : 06031444 **Sample Custodian:** C. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7918 8298 2091	
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?	Temp 3.4 °C		Cooler # AFS-04-037	
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 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11873	001	SO	06LE0214	02/22/06	03/20/06	03/29/06
J11873	001 MS	SO	06LE0214	02/22/06	03/20/06	03/29/06
J11873	001 MSD	SO	06LE0214	02/22/06	03/20/06	03/29/06
J11874	002	SO	06LE0214	02/22/06	03/20/06	03/29/06
J11875	003	SO	06LE0214	02/22/06	03/20/06	03/29/06
J11876	004	SO	06LE0214	02/20/06	03/20/06	03/29/06
J11877	005	SO	06LE0214	02/20/06	03/20/06	03/30/06
J11878	006	SO	06LE0214	02/20/06	03/20/06	03/30/06

LAB QC:

PBLKEA	MB1	S	06LE0214	N/A	03/20/06	03/29/06
PBLKEA	MB1	S		N/A	03/20/06	04/07/06
PBLKEA	MB1 BS	S	06LE0214	N/A	03/20/06	03/29/06
PBLKEA	MB1 BS	S		N/A	03/20/06	04/07/06

4/13/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L444
SDG/SAF # K0236/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-08-2006

CHLORINATED PESTICIDES

Six (6) solid samples were collected on 02-20,22-2006.

The samples and their associated QC samples were extracted on 03-20-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-29,30-2006 and 04-07-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

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

2. Samples were received outside the extraction holding time.

3. 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.

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

5. All surrogate recoveries were within acceptance criteria.

6. Four (4) of twenty (20) blank spike recoveries were outside acceptance criteria due to the Florisil cleanup. All pre-cleanup spike recoveries were within acceptance criteria.

7. Six (6) of forty (40) matrix spike recoveries were outside acceptance criteria due to the Florisil cleanup.

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

4/18/6
Date

som\r:\group\data\pest\tmu hanford\0603-444s.pst

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/13/06 14:09

RFW Batch Number: 0603L444 Client: TNUHANFORD RC-047 K0236 Work Order: 11343606001 Page: 1

	Cust ID:	J11873	J11873	J11873	J11874	J11875	J11876
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	75 %	88 %	78 %	74 %	89 %	73 %
	Decachlorobiphenyl	87 %	99 %	92 %	89 %	102 %	92 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		29 U	85 %	79 %	30 U	27 U	25 U
gamma-BHC (Lindane)		29 U	93 %	86 %	30 U	27 U	25 U
Beta-BHC		29 U	84 %	78 %	6.5 J	6.6 J	25 U
Heptachlor		29 U	98 %	88 %	30 U	27 U	25 U
Delta-BHC		29 U	66 %	57 %	10 J	14 J	25 U
Aldrin		29 U	96 %	90 %	30 U	27 U	25 U
Heptachlor epoxide		29 U	94 %	83 %	30 U	27 U	25 U
gamma-Chlordane		29 U	88 %	81 %	30 U	27 U	25 U
Endosulfan I		29 U	96 %	90 %	30 U	27 U	25 U
alpha-Chlordane		29 U	88 %	85 %	30 U	27 U	25 U
4,4'-DDE		41	105 %	95 %	18 J	10 J	18 J
Dieldrin		29 U	98 %	91 %	30 U	27 U	25 U
Endrin		29 U	109 %	100 %	30 U	27 U	25 U
4,4'-DDD		29 U	112 %	104 %	30 U	27 U	7.5 J
Endosulfan II		29 U	74 %	63 %	30 U	27 U	25 U
4,4'-DDT		29 U	99 %	90 %	30 U	27 U	25 U
Endrin aldehyde		29 U	14 * %	11 * %	30 U	27 U	25 U
Endosulfan sulfate		29 U	45 * %	31 * %	30 U	27 U	25 U
Methoxychlor		29 U	98 %	84 %	30 U	27 U	25 U
Endrin ketone		29 U	58 * %	44 * %	30 U	27 U	5.5 J
Toxaphene		290 U	250 U	270 U	300 U	270 U	250 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: 04/13/06 14:09

RFW Batch Number: 0603L444 Client: TNUHANFORD RC-047 K0236 Work Order: 11343606001 Page: 2

	Cust ID:	J11877		J11878		PBLKEA		PBLKEA RE		PBLKEA BS		PBLKEA BS	
Sample Information	RFW#:	005		006		06LE0214-MB1		06LE0214-MB1		06LE0214-MB1		06LE0214-MB1	
	Matrix:	SOLID		SOLID		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	75	%	87	%	87	%	85	%	108	%	98	%
	Decachlorobiphenyl	85	%	95	%	94	%	88	%	121	%	105	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		25	U	30	U	1.7	U	1.7	U	94	%	100	%
gamma-BHC (Lindane)		25	U	30	U	1.7	U	1.7	U	99	%	101	%
Beta-BHC		25	U	30	U	1.7	U	1.7	U	94	%	94	%
Heptachlor		25	U	30	U	1.7	U	1.7	U	107	%	98	%
Delta-BHC		25	U	6.7	J	1.7	U	1.7	U	55	%	95	%
Aldrin		25	U	30	U	1.7	U	1.7	U	109	%	100	%
Heptachlor epoxide		25	U	30	U	1.7	U	1.7	U	101	%	99	%
gamma-Chlordane		25	U	30	U	1.7	U	1.7	U	102	%	99	%
Endosulfan I		25	U	30	U	1.7	U	1.7	U	109	%	100	%
alpha-Chlordane		25	U	30	U	1.7	U	1.7	U	104	%	99	%
4,4'-DDE		5.5	J	18	J	1.7	U	1.7	U	115	%	102	%
Dieldrin		25	U	30	U	1.7	U	1.7	U	102	%	103	%
Endrin		25	U	8.5	J	1.7	U	1.7	U	104	%	108	%
4,4'-DDD		25	U	30	U	1.7	U	1.7	U	118	%	106	%
Endosulfan II		25	U	30	U	1.7	U	1.7	U	49 *	%	101	%
4,4'-DDT		25	U	16	J	1.7	U	1.7	U	104	%	101	%
Endrin aldehyde		25	U	30	U	1.7	U	1.7	U	15 *	%	88	%
Endosulfan sulfate		25	U	30	U	1.7	U	1.7	U	12 *	%	99	%
Methoxychlor		25	U	30	U	1.7	U	1.7	U	65	%	112	%
Endrin ketone		25	U	30	U	1.7	U	1.7	U	30 *	%	101	%
Toxaphene		250	U	300	U	17	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

4/17/6

Lionville Laboratory Use Only

0603L444

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNLL-HANFORD SAF# RC-047

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager DJ

QC Spec Del Std TAT 30 Days

Date Rec'd 3/8/06 Date Due 4/7/06

Refrigerator #		A													
#/Type Container	Liquid	2													
	Solid	6													
Volume	Liquid														
	Solid	250													
Preservatives															
ANALYSES REQUESTED →		ORGANIC								INORG					
		VOA	BNA	Pest/PCB	Herb	TCL TCLP				Metal	CN				
Lionville Laboratory Use Only			0625H	OPCB		0608H				METALS					

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	TCL TCLP			Metal	CN				
001	T118 73			X	2-22-06	1300		1	✓		✓			✓					
002	74					1330		1	✓		✓			✓					
003	75					1400		1	✓		✓			✓					
004	76				2-22-06	1530		1	✓		✓			✓					
005	77					1600		1	✓		✓			✓					
006	78					1630		1	✓		✓			✓					

Special Instructions: X = MATRIX COMPOSED OF FISH

(STRONG ODOR)

Run matrix QC

DATE/REVISIONS:

1. METALS (2) = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Zr, Bi
2.
3. ~~0608X~~
4. 0608HV
5. OPCB R
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	3/8/06	0920

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-151	Page 1 of 1

Collector TILLER, B. JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-D #1 K0236 (7394)		SAF No. RC-047
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060307		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Day

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)	1	1	0	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										
J11873	OTHER SOLID	2-22-06	1300	X	X								

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD Date/Time 2-22-06 1730	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-22-06 1730	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 2-23-06 0930	Received By/Stored In RZ Stiffler Date/Time 2-23-06 0930	
Relinquished By/Removed From RZ Stiffler Date/Time 2-23-06 1100	Received By/Stored In FED EX Date/Time	
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In Alex Kilburn Date/Time 2/24/06 10:00	
Relinquished By/Removed From Alex Kilburn Date/Time 2/07/06 16:00	Received By/Stored In Date/Time	
Relinquished By/Removed From FED EX Date/Time 3-8-06 0930	Received By/Stored In Date/Time 3-9-06 0930	

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 2/10/2006

Matrix

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liquid
Te=Textile
Wi=Wipe
Li=Liquid
Ve=Vegetation
X=Other

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

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-152 | Page 1 of

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaro: 45 Da		
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-D #2 K0236 (7394)		SAF No.: RC-047
Air Quality: ☐			
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060307		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~~ N/A	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)	1	1	0	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								
J11874	OTHER SOLID	2-22-06	1330	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-22-06 1730	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-22-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 2-23-06 0830	Received By/Stored In: RZ Stoffler, Date/Time 2-23-06 0830	
Relinquished By/Removed From: RZ Stoffler, Date/Time 2-23-06 1600	Received By/Stored In: FED EX, Date/Time	
Relinquished By/Removed From: FED EX, Date/Time	Received By/Stored In: Alex Kelly, Date/Time 2/24/06 10:00	
Relinquished By/Removed From: Alex Kelly, Date/Time 3/07/06 16:00	Received By/Stored In, Date/Time	
Relinquished By/Removed From: FED EX, Date/Time 3-8-06 0900	Received By/Stored In: [illegible], Date/Time 3-8-06 0900	

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

S/D 21406

Matrix

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum S
DL=Drum L
T=Tissue
Wi=Wipe
L=Liquid
Ve=Vegetatio
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-047-153	Page 1 of

Collector TILLER, B. JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaro 45 Da		
Project Destination 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-D #3 K0236 (7394)		SAF No. RC-047
Air Quality ☐			
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060307		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)	1	1	0	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								
J11875	OTHER SOLID	2-22-06	1400	X	X						

CHAIN OF POSSESSION JAMES BERNHARD — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
EAS LOCKED STORAGE	2-22-06 1730	EAS LOCKED STORAGE	2-22-06 1730
EAS LOCKED STORAGE	2-23-06 0530	R2 Stelle	2-23-06 0570
R2 Stelle	2-23-06 1600	Fed Ex	2/24/06
FED EX		Alex Kelleny	2/24/06
Alex Kelleny	3/7/06 16:00		
FED EX	3-8-06 0570		3-8-06 0930

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: SaSoil, SEaSediment, SOaSolid, SlaSludge, W = Water, OaOil, AaAir, DSaDrum Sc, DLaDrum Li, TaTissue, WIaWipe, LaLiquid, VaVegetation, XaOther

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

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-154 | Page 1 of

Collector: TILLER, B JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turna. 45 Da		
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-D #4 K0236 (7594)	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060307		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	aG	aG	aG					
No. of Container(s)	1	1	0	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										
J11876	OTHER SOLID	2-20-06	1530	X	X								

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-20-06 1800	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-20-06 1800	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 2-23-06 0930	Received By/Stored In: RZ Stoffler R.J. Stoffl, Date/Time 2-23-06 0930	
Relinquished By/Removed From: RZ Stoffler R.J. Stoffl, Date/Time 2-23-06 1600	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: FED EX, Date/Time	Received By/Stored In: Alex Kellerd, Date/Time 2/24/06 10:00	
Relinquished By/Removed From: Alex Kellerd, Date/Time 3/07/06 16:00	Received By/Stored In, Date/Time	
Relinquished By/Removed From: [illegible], Date/Time 3-8-06 0930	Received By/Stored In: [illegible], Date/Time 3-8-06 0930	

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. ~~AD~~ 21406

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

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

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-155

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnar: 45 Da		
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-D #5 K0236 (7394)		SAF No.: RC-047
Air Quality ☐			
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060307		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 Meter AB 2/10/06	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)	1	1	0	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								
J11877	OTHER SOLID	2-20-06	1600	X	X						

CHAIN OF POSSESSION / Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-20-06 1800	EAS LOCKED STORAGE	2-20-06 1800
EAS LOCKED STORAGE	2-23-06 0930	RL Stiffler	2-23-06 0830
RL Stiffler	2-23-06 1600	Fed Ex	
FED EX		Alex Kelmel	2/24/06 10:00
Alex Kelmel	3/07/06 16:00		
Fed Ex	3-8-06 0920		3-8-06 0920

SPECIAL INSTRUCTIONS

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

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

JOAN KESSNER 2/10/06

Matrix

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

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

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-156 | Page 1 of

Collector: TILLER, BJAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Da		
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-D #6 K0236 (7394)		SAF No.: RC-047
Air Quality: [ ]			
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: ETERLINE SERVICES / LIONVILLE	Offsite Property No.: A060307		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~~ 3/2/06	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)	1	1	0	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										
J11878	OTHER SOLID	2-20-06	1630	X	X								

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-20-06 1800	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 2-20-06 1800
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-23-06 0930	Received By/Stored In: RZ Stoffler — Date/Time: 2-23-06 0830
Relinquished By/Removed From: RZ Stoffler	Date/Time: 2-23-06 1600	Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: Alex Kennedy — Date/Time: 2/24/06 10:00
Relinquished By/Removed From: Alex Kennedy	Date/Time: 3/07/06 16:00	Received By/Stored In: — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 3-8-06 0920	Received By/Stored In: V. Hamel — Date/Time: 3-8-06 0920

SPECIAL INSTRUCTIONS

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

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

JOAN KESSNER 3/06-19 06

Matrix: SaSoil, SEaSediment, SOaSolid, SlaSludge, WaWater, OaOil, AaAir, DSaDrum Sc, DLaDrum Lc, TaTissue, WIaWipe, LaLiquid, VaVegetation, XaOther

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: TNC - HANFORD

Date: 3/8/06

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

LvLI Batch # : 06031444

Sample Custodian: C. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7918 8098 2096	
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?	Temp 3.4 °C		Cooler # AFS-04-037	
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 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L446

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11873						
SILVER, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
SILVER, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
SILVER, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
ALUMINUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
ALUMINUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
ALUMINUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
ARSENIC, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
ARSENIC, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
ARSENIC, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
BORON, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
BORON, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
BORON, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
BARIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
BARIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
BARIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
BERYLLIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
BERYLLIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
BERYLLIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
BISMUTH, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
BISMUTH, TOTAL REP	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
BISMUTH, TOTAL SPIKE	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
CALCIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
CALCIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
CALCIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
CADMIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
CADMIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
CADMIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
COBALT, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
COBALT, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
COBALT, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
CHROMIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
CHROMIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
CHROMIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
COPPER, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
COPPER, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
IRON, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
IRON, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
IRON, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
MERCURY, TOTAL	001	SO	06C0046	02/22/06	03/14/06	03/15/06
MERCURY, TOTAL	001 REP	SO	06C0046	02/22/06	03/14/06	03/15/06
MERCURY, TOTAL	001 MS	SO	06C0046	02/22/06	03/14/06	03/15/06
POTASSIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
POTASSIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
POTASSIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
LITHIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
LITHIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
LITHIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
MAGNESIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
MAGNESIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
MAGNESIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
MANGANESE, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
MANGANESE, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
MANGANESE, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
MOLYBDENUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
MOLYBDENUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
SODIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
SODIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
SODIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
NICKEL, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
NICKEL, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
NICKEL, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
PHOSPHORUS, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
PHOSPHORUS, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
PHOSPHORUS, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
LEAD, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
LEAD, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
LEAD, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
ANTIMONY, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
ANTIMONY, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
ANTIMONY, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
SELENIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
SELENIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
SILICON, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
SILICON, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
SILICON, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
TIN, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
TIN, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
TIN, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
TITANIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
TITANIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
TITANIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
THALLIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
THALLIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
THALLIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
URANIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
URANIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
URANIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
VANADIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
VANADIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
VANADIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
ZINC, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/29/06
ZINC, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/29/06
ZINC, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/29/06
ZIRCONIUM, TOTAL	001	SO	06L0170	02/22/06	03/17/06	03/24/06
ZIRCONIUM, TOTAL	001 REP	SO	06L0170	02/22/06	03/17/06	03/24/06
ZIRCONIUM, TOTAL	001 MS	SO	06L0170	02/22/06	03/17/06	03/24/06
J11874						
SILVER, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
ALUMINUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
ARSENIC, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
BORON, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
BARIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
BERYLLIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
BISMUTH, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
CALCIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
CADMIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COBALT, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
CHROMIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
COPPER, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
IRON, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
MERCURY, TOTAL	002	SO	06C0046	02/22/06	03/14/06	03/15/06
POTASSIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
LITHIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
MAGNESIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
MANGANESE, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
SODIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
NICKEL, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
PHOSPHORUS, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
LEAD, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
ANTIMONY, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
SELENIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
SILICON, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
TIN, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
TITANIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
THALLIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
URANIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
VANADIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
ZINC, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/29/06
ZIRCONIUM, TOTAL	002	SO	06L0170	02/22/06	03/17/06	03/24/06
J11875						
SILVER, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
ALUMINUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
ARSENIC, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
BORON, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
BARIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
BERYLLIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
BISMUTH, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
CALCIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
CADMIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
COBALT, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
CHROMIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
IRON, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
MERCURY, TOTAL	003	SO	06C0046	02/22/06	03/14/06	03/15/06
POTASSIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
LITHIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
MAGNESIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
MANGANESE, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
SODIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
NICKEL, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
PHOSPHORUS, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
LEAD, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
ANTIMONY, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
SELENIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
SILICON, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
TIN, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
TITANIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
THALLIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
URANIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
VANADIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
ZINC, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/29/06
ZIRCONIUM, TOTAL	003	SO	06L0170	02/22/06	03/17/06	03/24/06
J11876						
SILVER, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
ALUMINUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
ARSENIC, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
BORON, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
BARIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
BERYLLIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
BISMUTH, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
CALCIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
CADMIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
COBALT, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
CHROMIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
COPPER, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
IRON, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	004	SO	06C0046	02/20/06	03/14/06	03/15/06
POTASSIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
LITHIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
MAGNESIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
MANGANESE, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
SODIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
NICKEL, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
PHOSPHORUS, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
LEAD, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
ANTIMONY, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
SELENIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
SILICON, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
TIN, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
TITANIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
THALLIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
URANIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
VANADIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
ZINC, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/29/06
ZIRCONIUM, TOTAL	004	SO	06L0170	02/20/06	03/17/06	03/24/06
J11877						
SILVER, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
ALUMINUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
ARSENIC, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
BORON, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
BARIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
BERYLLIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
BISMUTH, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
CALCIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
CADMIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
COBALT, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
CHROMIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
COPPER, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
IRON, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
MERCURY, TOTAL	005	SO	06C0046	02/20/06	03/14/06	03/15/06
POTASSIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LITHIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
MAGNESIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
MANGANESE, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
SODIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
NICKEL, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
PHOSPHORUS, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
LEAD, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
ANTIMONY, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
SELENIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
SILICON, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
TIN, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
TITANIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
THALLIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
URANIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
VANADIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
ZINC, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/29/06
ZIRCONIUM, TOTAL	005	SO	06L0170	02/20/06	03/17/06	03/24/06
J11878						
SILVER, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
ALUMINUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
ARSENIC, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
BORON, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
BARIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
BERYLLIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
BISMUTH, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
CALCIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
CADMIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
COBALT, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
CHROMIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
COPPER, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
IRON, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
MERCURY, TOTAL	006	SO	06C0046	02/20/06	03/14/06	03/15/06
POTASSIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
LITHIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
MAGNESIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
MOLYBDENUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
SODIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
NICKEL, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
PHOSPHORUS, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
LEAD, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
ANTIMONY, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
SELENIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
SILICON, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/24/06
TIN, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
TITANIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
THALLIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
URANIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
VANADIUM, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
ZINC, TOTAL	006	SO	06L0170	02/20/06	03/17/06	03/30/06
ZIRCONIUM, TOTAL	006	SO	06L0170	02/20/06	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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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
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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0236

DATE RECEIVED: 03/08/06 LVL LOT # :0603L444

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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
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#: 0603L444
SDG/SAF#: K0236/RC-047

W.O.#: 11343-606-001-9999-00
Date Received: 03-08-06

METALS CASE NARRATIVE

1. This narrative covers the analyses of 6 solid samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were reported from a different instrument for Aluminum, Beryllium, Calcium, Copper, Iron, Potassium, Magnesium, Manganese, Sodium, Phosphorous, Silicon, and Zirconium due to sample matrix.

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

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

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of the ending CCV's in file TA0329C. All samples were surrounded by QC within control, except sample J11878, which was rerun in file TA0330B

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

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

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

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 32 pages.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J11873	Phosphorous	10,000	84.8
	Silicon	100	100.3
	Zirconium	200	96.4

12. The duplicate analyses for 8 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/25/02
Date

jjw/m03-444

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#: 06032444

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

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

Other: Phosphorus 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 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11873	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	6.4	MG/KG	2.3	1.0
		Arsenic, Total	0.59 u	MG/KG	0.59	1.0
		Boron, Total	1.2	MG/KG	0.23	1.0
		Barium, Total	3.1	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	8380	MG/KG	2.1	1.0
		Cadmium, Total	0.10	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.92	MG/KG	0.13	1.0
		Copper, Total	7.3	MG/KG	0.21	1.0
		Iron, Total	28.1	MG/KG	0.52	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	1580	MG/KG	74.9	1.0
		Lithium, Total	0.10	MG/KG	0.03	1.0
		Magnesium, Total	236	MG/KG	3.8	1.0
		Manganese, Total	4.2	MG/KG	0.31	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	752	MG/KG	2.4	1.0
		Nickel, Total	67.1	MG/KG	0.23	1.0
		Phosphorus, Total	5440	MG/KG	0.87	1.0
		Lead, Total	0.67	MG/KG	0.30	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	0.49	MG/KG	0.46	1.0
		Silicon, Total	14.3	MG/KG	0.86	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	0.26	MG/KG	0.03	1.0
		Thallium, Total	0.68 u	MG/KG	0.68	1.0
		Uranium, Total	0.85 u	MG/KG	0.85	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	28.9	MG/KG	0.16	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J11874	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	12.4	MG/KG	2.3	1.0
		Arsenic, Total	0.59 u	MG/KG	0.59	1.0
		Boron, Total	0.30	MG/KG	0.23	1.0
		Barium, Total	3.0	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	7310	MG/KG	2.1	1.0
		Cadmium, Total	0.17	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.44	MG/KG	0.13	1.0
		Copper, Total	3.8	MG/KG	0.21	1.0
		Iron, Total	33.1	MG/KG	0.52	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1690	MG/KG	74.9	1.0
		Lithium, Total	0.07	MG/KG	0.03	1.0
		Magnesium, Total	223	MG/KG	3.8	1.0
		Manganese, Total	5.8	MG/KG	0.31	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	763	MG/KG	2.4	1.0
		Nickel, Total	18.5	MG/KG	0.23	1.0
		Phosphorus, Total	5010	MG/KG	0.87	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	0.51	MG/KG	0.46	1.0
		Silicon, Total	22.8	MG/KG	0.86	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	0.81	MG/KG	0.03	1.0
		Thallium, Total	0.68 u	MG/KG	0.68	1.0
		Uranium, Total	1.1	MG/KG	0.85	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	26.2	MG/KG	0.16	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J11875	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	29.5	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	3.3	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	9620	MG/KG	2.1	1.0
		Cadmium, Total	0.17	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.42	MG/KG	0.12	1.0
		Copper, Total	1.6	MG/KG	0.21	1.0
		Iron, Total	60.2	MG/KG	0.52	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1570	MG/KG	74.1	1.0
		Lithium, Total	0.08	MG/KG	0.03	1.0
		Magnesium, Total	294	MG/KG	3.8	1.0
		Manganese, Total	6.4	MG/KG	0.31	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	764	MG/KG	2.4	1.0
		Nickel, Total	5.4	MG/KG	0.23	1.0
		Phosphorus, Total	6210	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	0.45 u	MG/KG	0.45	1.0
		Silicon, Total	36.4	MG/KG	0.86	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	1.8	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	0.13	MG/KG	0.09	1.0
		Zinc, Total	23.2	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11876	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	16.0	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	3.7	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	9920	MG/KG	2.1	1.0
		Cadmium, Total	0.25	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.53	MG/KG	0.12	1.0
		Copper, Total	1.0	MG/KG	0.21	1.0
		Iron, Total	39.5	MG/KG	0.52	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Potassium, Total	2350	MG/KG	74.1	1.0
		Lithium, Total	0.06	MG/KG	0.03	1.0
		Magnesium, Total	298	MG/KG	3.8	1.0
		Manganese, Total	6.5	MG/KG	0.31	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1040	MG/KG	2.4	1.0
		Nickel, Total	0.23 u	MG/KG	0.23	1.0
		Phosphorus, Total	6850	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	0.45 u	MG/KG	0.45	1.0
		Silicon, Total	25.2	MG/KG	0.86	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	0.86	MG/KG	0.85	1.0
		Vanadium, Total	0.09 u	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 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J11877	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	22.6	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	3.2	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	8180	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	0.35	MG/KG	0.12	1.0
		Copper, Total	1.3	MG/KG	0.21	1.0
		Iron, Total	72.6	MG/KG	0.52	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	2430	MG/KG	74.1	1.0
		Lithium, Total	0.05	MG/KG	0.03	1.0
		Magnesium, Total	344	MG/KG	3.8	1.0
		Manganese, Total	6.1	MG/KG	0.31	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1070	MG/KG	2.4	1.0
		Nickel, Total	0.26	MG/KG	0.23	1.0
		Phosphorus, Total	5670	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	0.45 u	MG/KG	0.45	1.0
		Silicon, Total	25.1	MG/KG	0.86	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	6.0	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	0.16	MG/KG	0.09	1.0
		Zinc, Total	30.4	MG/KG	0.15	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J11878	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	10.2	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	3.9	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	9490	MG/KG	2.1	1.0
		Cadmium, Total	0.11	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.39	MG/KG	0.13	1.0
		Copper, Total	1.5	MG/KG	0.21	1.0
		Iron, Total	28.8	MG/KG	0.52	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	2320	MG/KG	74.9	1.0
		Lithium, Total	0.08	MG/KG	0.03	1.0
		Magnesium, Total	280	MG/KG	3.8	1.0
		Manganese, Total	7.7	MG/KG	0.31	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	984	MG/KG	2.4	1.0
		Nickel, Total	0.27	MG/KG	0.23	1.0
		Phosphorus, Total	6260	MG/KG	0.87	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	0.63	MG/KG	0.46	1.0
		Silicon, Total	20.7	MG/KG	0.86	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	0.65	MG/KG	0.03	1.0
		Thallium, Total	0.68 u	MG/KG	0.68	1.0
		Uranium, Total	0.85 u	MG/KG	0.85	1.0
		Vanadium, Total	0.11	MG/KG	0.09	1.0
		Zinc, Total	23.8	MG/KG	0.16	1.0
		Zirconium, Total	1.0 u	MG/KG	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J11873	Silver, Total	4.4	0.07u	4.8	91.7	1.0
		Aluminum, Total	164	6.4	190	83.0	1.0
		Arsenic, Total	156	0.59u	190	82.1	1.0
		Boron, Total	76.6	1.2	95.2	79.2	1.0
		Barium, Total	172	3.1	190	88.9	1.0
		Beryllium, Total	4.1	0.02u	4.8	85.4	1.0
		Bismuth, Total	421	0.50u	476	88.4	1.0
		Calcium, Total	11100	8380	2380	114.9	1.0
		Cadmium, Total	4.1	0.10	4.8	83.3	1.0
		Cobalt, Total	42.0	0.14u	47.6	88.2	1.0
		Chromium, Total	17.9	0.92	19.0	89.3	1.0
		Copper, Total	28.7	7.3	23.8	89.9	1.0
		Iron, Total	107	28.1	95.2	83.2	1.0
		Mercury, Total	0.15	0.02	0.14	95.6	1.0
		Potassium, Total	3700	1580	2380	89.1	1.0
		Lithium, Total	98.3	0.10	95.2	103.1	1.0
		Magnesium, Total	2230	236	2380	83.8	1.0
		Manganese, Total	44.1	4.2	47.6	83.8	1.0
		Molybdenum, Total	81.2	0.28u	95.2	85.3	1.0
		Sodium, Total	2850	752	2380	88.1	1.0
		Nickel, Total	111	67.1	47.6	92.9	1.0
		Phosphorus, Total	6320	5440	476	185.3*	1.0
		Lead, Total	41.3	0.67	47.6	85.4	1.0
		Antimony, Total	39.4	0.43u	47.6	82.8	1.0
		Selenium, Total	152	0.49	190	79.8	1.0
		Silicon, Total	66.5	14.3	95.2	54.8	1.0
		Tin, Total	75.6	1.0 u	95.2	79.4	1.0
		Titanium, Total	80.7	0.26	95.2	84.5	1.0
		Thallium, Total	161	0.68u	190	84.5	1.0
		Uranium, Total	207	0.85u	238	86.8	1.0
		Vanadium, Total	43.1	0.09u	47.6	90.5	1.0
		Zinc, Total	73.7	28.9	47.6	94.1	1.0
		Zirconium, Total	109	1.0 u	476	22.9	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J11873	Silver, Total	0.07u	0.07u	NC	1.0
		Aluminum, Total	6.4	7.1	10.4	1.0
		Arsenic, Total	0.59u	0.60u	NC	1.0
		Boron, Total	1.2	0.24	132.2	1.0
		Barium, Total	3.1	4.2	30.1	1.0
		Beryllium, Total	0.02u	0.02u	NC	1.0
		Bismuth, Total	0.50u	0.50u	NC	1.0
		Calcium, Total	8380	11100	27.9	1.0
		Cadmium, Total	0.10	0.11	8.4	1.0
		Cobalt, Total	0.14u	0.14u	NC	1.0
		Chromium, Total	0.92	1.1	17.3	1.0
		Copper, Total	7.3	8.9	19.8	1.0
		Iron, Total	28.1	28.0	0.36	1.0
		Mercury, Total	0.02	0.02	17.1	1.0
		Potassium, Total	1580	1530	3.1	1.0
		Lithium, Total	0.10	0.09	9.1	1.0
		Magnesium, Total	236	284	18.4	1.0
		Manganese, Total	4.2	5.2	21.3	1.0
		Molybdenum, Total	0.28u	0.28u	NC	1.0
		Sodium, Total	752	778	3.4	1.0
		Nickel, Total	67.1	65.7	2.1	1.0
		Phosphorus, Total	5440	7070	26.2	1.0
		Lead, Total	0.67	0.73	9.8	1.0
		Antimony, Total	0.43u	0.43u	NC	1.0
		Selenium, Total	0.49	0.46u	~~NC~~ 200	1.0
		Silicon, Total	14.3	17.1	17.8	1.0
		Tin, Total	1.0 u	1.0 u	NC	1.0
		Titanium, Total	0.26	0.51	64.8	1.0
		Thallium, Total	0.68u	0.69u	NC	1.0
		Uranium, Total	0.85u	1.2	~~NC~~ 200	1.0
		Vanadium, Total	0.09u	0.09u	NC	1.0
		Zinc, Total	28.9	31.6	8.9	1.0
		Zirconium, Total	1.0 u	1.0 u	NC	1.0

correct entry AW 4/24/06

correct entry AW 4/24/06

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/20/06

CLIENT: TNUHANFORD RC-047 K0236 LVL LOT #: 0603L444

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: 0603L444

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNLL-HANFORD SAF# RC-047
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-0999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: OJ
QC: Spec Del: Std TAT: 30 Days
Date Rec'd: 3/8/06 Date Due: 4/7/06

Refrigerator #		A														
#/Type Container	Liquid	2														
	Solid	6														
Volume	Liquid															
	Solid	250														
Preservatives																
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	TPC				Metal	CN					
Lionville Laboratory Use Only			0625H	0PCB		0608H				METALS						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0PCB	0608H	METALS
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	001	T118 73			X	2-22-06	1300	1	✓	✓	✓
	002	74					1330	1	✓	✓	✓
	003	75					1400	1	✓	✓	✓
	004	76				2-22-06	1530	1	✓	✓	✓
	005	77					1600	1	✓	✓	✓
	006	78					1630	1	✓	✓	✓

Special Instructions: X = MATRIX Composed of FISH

(STRONG ODOR)

Run matrix QC

DATE/REVISIONS:
1. METALS = HSL+B,Li,Mo,Si,Sn,Ti,U,P,Zr,Bi
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	3/8/06	0920

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-047-151	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-D #1 K0236 (7394)	SAF No.: RC-047	
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A060307	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 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)	1	1	0	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								
J11873	OTHER SOLID	2-22-06	1300	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time 2-22-06 1730	Received By/Stored In: EAS LOCKED STORAGE — Date/Time 2-22-06 1730
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time 2-23-06 0830	Received By/Stored In: RZ Stiffler — Date/Time 2-23-06 0830
Relinquished By/Removed From: RZ Stiffler	Date/Time 2-23-06 1600	Received By/Stored In: Fed Ex — Date/Time
Relinquished By/Removed From: Fed Ex	Date/Time	Received By/Stored In: Alex Kellum — Date/Time 2/24/06 10:00
Relinquished By/Removed From: Alex Kellum	Date/Time 2/07/06 16:00	Received By/Stored In: — Date/Time
Relinquished By/Removed From: Fedex	Date/Time 3-8-06 0930	Received By/Stored In: V Hernandez — Date/Time 3-8-06 0920

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

AH 21406

Matrix *

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

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

BHI-EE-011 (08/29/2006)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-152	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 Turnaro 45 Day
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampline Location 100-D #2 K0236 (7394)		SAF No. RC-047	Air Quality [ ]	
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060307		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~~ JJ 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)	1	1	0	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											
J11874 / OTHER SOLID / 2-22-06 / 1330	X	X									

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 2-22-06 1730	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-22-06 1730
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 2-23-06 0830	Received By/Stored In RZ Steffler RJ Steffler Date/Time 2-23-06 0830
Relinquished By/Removed From RZ Steffler RJ Steffler Date/Time 2-23-06 1600 WCH	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From FED-EX Date/Time	Received By/Stored In Alex Kelly Date/Time 2/24/06 10:00
Relinquished By/Removed From Alex Kelly Date/Time 3/07/06 16:00	Received By/Stored In Date/Time
Relinquished By/Removed From Ed Ec 3-8-06 0920	Received By/Stored In 3-8-06 0920

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

JJ 21406

Matrix

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Sc
DL=Drum Li
T=Tissue
Wi=Wipe
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-047-153	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-D #3 K0236 (7394)	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597; COA: BESRAS6520	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A060307	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 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)	1	1	0	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								
J11875	OTHER SOLID	2-22-06	1400	X	X						

CHAIN OF POSSESSION JAMES BERNHARD — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
EAS LOCKED STORAGE	2-22-06 1730	EAS LOCKED STORAGE	2-22-06 1730
EAS LOCKED STORAGE	2-23-06 0830	R2 Stoffle	2-23-06 0870
R2 Stoffle	2-23 06 1600	FED EX	2/24/06
FED EX		Alex Kelleny	2/24/06
Alex Kelleny	3/7/06 16:00		
FED EX	3-8-06 0970		3-8-06 0970

SPECIAL INSTRUCTIONS

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

NOTE: Lionville- contact ~~Rick Weiss~~ JOAN KESSNER upon receipt. 4/4 2/14/06

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solid; DL=Drum Liquid; T=Tissue; Wi=Wipe; L=Liquid; 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-047-154	Page 1 of 1

Collector TILLER, B. JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Date Turnaro 45 Da
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-D #4 K0236 (7394)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060307		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	aG	aG	aG					
No. of Container(s)	1	1	0	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								
J11876	OTHER SOLID	2-20-06	1530	X	X						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-20-06 1800	Received By/Stored In EAS LOCKED STORAGE — Date/Time 2-20-06 1800
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2-23-06	Received By/Stored In RZ Stoffler — Date/Time 0830 2-23-06
Relinquished By/Removed From RZ Stoffler	Date/Time 1600 2-23-06	Received By/Stored In Fed EX — Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In Alex Kellell — Date/Time 2/24/06 10:00
Relinquished By/Removed From Alex Kellell	Date/Time 3/07/06 16:00	Received By/Stored In — Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 3-8-06 0900	Received By/Stored In — Date/Time 3-8-06 0900

SPECIAL INSTRUCTIONS

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

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

Matrix: S=Soil, SE=Sediment, SO=Solid, SL=Sludge, W=Water, O=Oil, A=Air, DS=Drum S, DL=Drum L, T=Tissue, Wi=Wipe, L=Liquid, V=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-047-155	Page 1 of 1

Collector TILLER, B. JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N Air Quality ☐	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-D #5 K0236 (7394)		SAF No. RC-047		
Ice Chest No. AFS-04-037	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060307		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 Non AB 2/21/06	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)	1	1	0	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								
J11877	OTHER SOLID	2-20-06	1600	X	X						

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From [signature] Date/Time 2-20-06 1800 JAMES BERNHARD	Received By/Stored In [signature] Date/Time 2-20-06 1800 EAS LOCKED STORAGE
Relinquished By/Removed From [signature] Date/Time 0830 EAS LOCKED STORAGE 2-23-06	Received By/Stored In RZ Stiffler RZ Stiffler 2-23-06 Date/Time 0830
Relinquished By/Removed From RZ Stiffler RZ Stiffler Date/Time 1600 2-23-06	Received By/Stored In Fed Ex Date/Time
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In Alex Kelley Date/Time 2/24/06 10:00
Relinquished By/Removed From Alex Kelley Date/Time 3/07/06 16:00	Received By/Stored In Date/Time
Relinquished By/Removed From [signature] Date/Time 3-8-06 0920	Received By/Stored In [signature] Date/Time 3-8-06 0920

SPECIAL INSTRUCTIONS

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

NOTE: Lionville- contact ~~Rick Weise~~ upon receipt.

JOAN KESSNER 2/13/2006

Matrix

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W=Water
O=Oil
A=Air
DS=Drum S
DL=Drum L
T=Tissue
Wi=Wipe
L=Liquid
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-047-156	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-D #6 K0236 (7394)	SAF No.: RC-047	
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060307	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 2-20-06	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)	1	1	0	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								
J11878	OTHER SOLID	2-20-06	1630	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-20-06 1800	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 2-20-06 1800
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-23-06 0830	Received By/Stored In: RZ Stoffler RJ Stoffler	Date/Time: 2-23-06 0830
Relinquished By/Removed From: RZ Stoffler RJ Stoffler	Date/Time: 2-23-06 1600	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: Alex Kilcullen	Date/Time: 2/24/06 10:00
Relinquished By/Removed From: Alex Kilcullen	Date/Time: 3/07/06 15:00	Received By/Stored In:	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 3-8-06 0920	Received By/Stored In: [illegible]	Date/Time: 3-8-06 0920

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 2/24/06

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)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU - HANFORD **Date:** 3/8/06

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

LvLI Batch # : 06031444 **Sample Custodian:** C. Vernandy

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FED EX		Airbill# 7918 8098 2096	
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?	Temp 3.4 °C		Cooler # AFS-04-037	
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