0076845

SAF-RC-088
618-7 Burial Ground – Other Liquids
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 4/1/08 Initials/Date
Kathy Wendt	H4-21	KW 4/1/08 Initials/Date

COMMENTS:

SDG K1139 SAF-RC-087

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
APR 10 2008
EDMC

EBERLINE
SERVICES

RECEIVED
MAR 2008

March 24, 2008

Ms. Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R8-03-050-7781, SDG K1139

Dear Ms. Kessner:

Enclosed are the data reports for one solid (other solid) sample designated under SAF No. RC-088 received at Eberline Services on March 11, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

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 K1139 was composed of one solid (other solid) sample designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Liquids.

Note: the sample was oily dirt and was therefore treated as a solid (other solid).

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on March 20, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 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

03/24/08
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 K1139

SDG	7781
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG K1139

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	12
Method Summaries	14
Report Guides	22
End of Section	36

Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	03/20/08

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1139

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 03/20/08

SDG 7781
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K1139

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 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

LAB SAMPLE SUMMARY

SDG 7781
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K1139

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R803050-01	J169N3	618-7 Burial Ground-drum	SOLID		RC-088	RC-088-003	03/04/08 14:40
R803050-02	Lab Control Sample		SOLID		RC-088		
R803050-03	Method Blank		SOLID		RC-088		
R803050-04	Duplicate (R803050-01)	618-7 Burial Ground-drum	SOLID		RC-088		03/04/08 14:40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

SDG 7781
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1139

: 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
'81	RC-088-003	J169N3	SOLID	100.0	863 g		03/11/08	7	R803050-01	7781-001
		Method Blank	SOLID						R803050-03	7781-003
		Lab Control Sample	SOLID						R803050-02	7781-002
		Duplicate (R803050-01)	SOLID	100.0	863 g		03/11/08	7	R803050-04	7781-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

SDG 7781
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1139

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6148-036	5.0	1			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6148-036	5.0	1			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	6148-036	5.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6148-036	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6148-036	10.0	1			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-036	20.0	1			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-036	15.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6148-036	15.0	1			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 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

SDG 7781
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1139

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
303050-01	J169N3			7781-001	93A/93		03/18/08	03/18/08	BW	Gross Alpha in Solids
03/04/08	618-7 Burial Ground-drum		SOLID	7781-001	93B/93		03/18/08	03/18/08	BW	Gross Beta in Solids
03/11/08	RC-088-003	RC-088		7781-001	AM		03/19/08	03/19/08	BW	Americium 241 in Solids
				7781-001	GAM		03/13/08	03/20/08	MWT	Gamma Scan
				7781-001	PU		03/19/08	03/19/08	BW	Plutonium, Isotopic in Solids
				7781-001	SR		03/18/08	03/19/08	BW	Total Strontium in Solids
				7781-001	TH		03/19/08	03/20/08	BW	Thorium, Isotopic in Solids
				7781-001	U		03/19/08	03/19/08	BW	Uranium, Isotopic in Solids
303050-02	Lab Control Sample			7781-002	93A/93		03/18/08	03/18/08	BW	Gross Alpha in Solids
			SOLID	7781-002	93B/93		03/18/08	03/18/08	BW	Gross Beta in Solids
		RC-088		7781-002	AM		03/19/08	03/19/08	BW	Americium 241 in Solids
				7781-002	GAM		03/13/08	03/20/08	MWT	Gamma Scan
				7781-002	PU		03/19/08	03/19/08	BW	Plutonium, Isotopic in Solids
				7781-002	SR		03/18/08	03/20/08	BW	Total Strontium in Solids
				7781-002	TH		03/19/08	03/20/08	BW	Thorium, Isotopic in Solids
				7781-002	U		03/19/08	03/19/08	BW	Uranium, Isotopic in Solids
303050-03	Method Blank			7781-003	93A/93		03/18/08	03/18/08	BW	Gross Alpha in Solids
			SOLID	7781-003	93B/93		03/18/08	03/18/08	BW	Gross Beta in Solids
		RC-088		7781-003	AM		03/19/08	03/19/08	BW	Americium 241 in Solids
				7781-003	GAM		03/13/08	03/20/08	MWT	Gamma Scan
				7781-003	PU		03/19/08	03/19/08	BW	Plutonium, Isotopic in Solids
				7781-003	SR		03/18/08	03/20/08	BW	Total Strontium in Solids
				7781-003	TH		03/19/08	03/20/08	BW	Thorium, Isotopic in Solids
				7781-003	U		03/19/08	03/19/08	BW	Uranium, Isotopic in Solids
303050-04	Duplicate (R803050-01)			7781-004	93A/93		03/18/08	03/18/08	BW	Gross Alpha in Solids
03/04/08	618-7 Burial Ground-drum		SOLID	7781-004	93B/93		03/18/08	03/18/08	BW	Gross Beta in Solids
03/11/08		RC-088		7781-004	AM		03/19/08	03/19/08	BW	Americium 241 in Solids
				7781-004	GAM		03/14/08	03/20/08	MWT	Gamma Scan
				7781-004	PU		03/19/08	03/19/08	BW	Plutonium, Isotopic in Solids
				7781-004	SR		03/18/08	03/20/08	BW	Total Strontium in Solids
				7781-004	TH		03/19/08	03/20/08	BW	Thorium, Isotopic in Solids
				7781-004	U		03/19/08	03/19/08	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

SDG 7781
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K1139

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
AM	RC-088	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	1			1	1	1	4
GAM	RC-088	Gamma Scan	GAMMA_GS	1			1	1	1	4
PU	RC-088	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	1			1	1	1	4
SR	RC-088	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TH	RC-088	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	1			1	1	1	4
U	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	1			1	1	1	4
TOTALS				8			8	8	8	32

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

7781-003 Method Blank

METHOD BLANK

SDG	7781	Client/Case no	Hanford	SDG K1139	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R803050-03	Client sample id	Method Blank		
Dept sample id	7781-003	Material/Matrix		SOLID	
		SAF No	RC-088		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.918	3.7	8.21	10.0	U	93A
Gross Beta	12587-47-2	-0.887	3.1	5.70	15.0	U	93B
Total Strontium	SR-RAD	-0.080	0.12	0.282	1.00	U	SR
Americium 241	14596-10-2	0.184	0.37	0.589	1.00	U	AM
Thorium 228	14274-82-9	-0.045	0.27	0.557	1.00	U	TH
Thorium 230	14269-63-7	0.271	0.36	0.433	1.00	U	TH
Thorium 232	TH-232	0	0.090	0.346	1.00	U	TH
Uranium 233/234	U-233/234	0.042	0.083	0.318	1.00	U	U
Uranium 235	15117-96-1	0.101	0.10	0.385	1.00	U	U
Uranium 238	U-238	0.042	0.083	0.318	1.00	U	U
Plutonium 238	13981-16-3	-0.035	0.21	0.474	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.071	0.271	1.00	U	PU
Potassium 40	13966-00-2	U		0.672		U	GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.100	U	GAM
Radium 226	13982-63-3	U		0.061	0.100	U	GAM
Radium 228	15262-20-1	U		0.119	0.200	U	GAM
Europium 152	14683-23-9	U		0.070	0.100	U	GAM
Europium 154	15585-10-1	U		0.075	0.100	U	GAM
Europium 155	14391-16-3	U		0.058	0.100	U	GAM
Thorium 228	14274-82-9	U		0.043		U	GAM
Thorium 232	TH-232	U		0.119		U	GAM
Uranium 235	15117-96-1	U		0.107		U	GAM
Uranium 238	U-238	U		3.08		U	GAM
Americium 241	14596-10-2	U		0.024		U	GAM

618-7 Burial Ground

QC-BLANK #65048

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

7781-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7781

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1139

Contract No. 630

Lab sample id R803050-02

Dept sample id 7781-002

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-088

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
Gross Alpha	106	17	11.1	10.0		93A	102	4.1	104	60-140	70-130
Gross Beta	88.0	7.5	5.90	15.0		93B	93.7	3.7	94	75-125	80-120
Total Strontium	9.76	0.50	0.252	1.00		SR	9.37	0.37	104	81-119	80-120
Americium 241	18.9	2.5	0.440	1.00		AM	20.4	0.82	93	79-121	80-120
Thorium 230	36.5	4.5	0.384	1.00		TH	36.4	1.5	100	79-121	80-120
Uranium 233/234	18.4	2.2	0.961	1.00		U	18.6	0.74	99	80-120	80-120
Uranium 235	14.5	1.8	0.253	1.00		U	15.1	0.60	96	80-120	80-120
Uranium 238	19.9	2.3	0.924	1.00		U	20.2	0.81	99	80-120	80-120
Plutonium 238	22.7	2.6	0.437	1.00		PU	23.4	0.94	97	81-119	80-120
Plutonium 239/240	27.2	3.0	0.272	1.00		PU	26.4	1.1	103	80-120	80-120
Cobalt 60	0.825	0.040	0.029	0.050		GAM	0.838	0.034	98	76-124	80-120
Cesium 137	0.940	0.036	0.029	0.100		GAM	0.887	0.035	106	75-125	80-120

618-7 Burial Ground

QC-LCS #65047

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

7781-004 J169N3

DUPLICATE

SDG	7781			Client/Case no	Hanford SDG K1139
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R803050-04	Lab sample id	R803050-01	Client sample id	J169N3
Dept sample id	7781-004	Dept sample id	7781-001	Location/Matrix	618-7 Burial Ground-drum SOLID
		Received	03/11/08	Collected/Weight	03/04/08 14:40 863 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-003 RC-088

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
Gross Alpha	20.7	7.4	6.53	10.0		93A	23.1	7.7	5.62		11	85	0.4
Gross Beta	20.2	4.3	5.58	15.0		93B	16.8	5.4	7.61		18	64	0.9
Total Strontium	0.002	0.15	0.250	1.00	U	SR	-0.080	0.15	0.259	U	-		0.8
Americium 241	0.035	0.14	0.334	1.00	U	AM	0	0.14	0.258	U	-		0.4
Thorium 228	0.428	0.38	0.584	1.00	U	TH	0.757	0.45	0.596		56	150	1.1
Thorium 230	0.617	0.38	0.363	1.00		TH	0.800	0.45	0.426		26	125	0.6
Thorium 232	0.712	0.39	0.363	1.00		TH	0.623	0.36	0.340		13	120	0.3
Uranium 233/234	6.56	1.1	0.232	1.00		U	7.05	1.0	0.204		7	34	0.6
Uranium 235	0.404	0.22	0.281	1.00		U	0.419	0.26	0.246		4	125	0.1
Uranium 238	6.28	1.0	0.232	1.00		U	6.28	0.96	0.204		0	35	0
Plutonium 238	-0.080	0.16	0.444	1.00	U	PU	0	0.12	0.277	U	-		0.8
Plutonium 239/240	0	0.080	0.307	1.00	U	PU	-0.029	0.058	0.221	U	-		0.6
Potassium 40	7.97	0.50	0.254			GAM	7.52	0.32	0.159		6	34	0.5
Cobalt 60	U		0.028	0.050	U	GAM	U		0.015	U	-		0.8
Cesium 137	U		0.025	0.100	U	GAM	U		0.016	U	-		0.6
Radium 226	0.273	0.056	0.049	0.100		GAM	0.245	0.034	0.034		11	50	0.7
Radium 228	0.453	0.097	0.100	0.200		GAM	0.428	0.059	0.060		6	50	0.3
Europium 152	U		0.068	0.100	U	GAM	U		0.045	U	-		0.6
Europium 154	U		0.081	0.100	U	GAM	U		0.043	U	-		0.8
Europium 155	U		0.070	0.100	U	GAM	U		0.057	U	-		0.3
Thorium 228	0.414	0.033	0.033			GAM	0.375	0.023	0.023		10	35	0.8
Thorium 232	0.453	0.097	0.100			GAM	0.428	0.059	0.060		6	50	0.3
Uranium 235	0.378	0.097	0.128			GAM	0.272	0.073	0.099		33	65	1.5
Uranium 238	9.63	3.2	3.32			GAM	7.48	1.7	1.85		25	71	1.1
Americium 241	U		0.049		U	GAM	U		0.061	U	-		0.3

618-7 Burial Ground

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

7781-004 J169N3

DUPLICATE, cont.

SDG	7781			Client/Case no	Hanford SDG K1139
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R803050-04	Lab sample id	R803050-01	Client sample id	J169N3
Dept sample id	7781-004	Dept sample id	7781-001	Location/Matrix	618-7 Burial Ground-drum SOLID
		Received	03/11/08	Collected/Weight	03/04/08 14:40 863 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-003 RC-088

QC-DUP#1 65049

Note: Sample treated as an other solid - oily dirt

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

7781-001 J169N3

DATA SHEET

SDG	7781	Client/Case no	Hanford	SDG K1139	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R803050-01	Client sample id	J169N3		
Dept sample id	7781-001	Location/Matrix	618-7 Burial Ground-drum	SOLID	
Received	03/11/08	Collected/Weight	03/04/08 14:40	863 g	
% solids	100.0	Custody/SAF No	RC-088-003	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	23.1	7.7	5.62	10.0		93A
Gross Beta	12587-47-2	16.8	5.4	7.61	15.0		93B
Total Strontium	SR-RAD	-0.080	0.15	0.259	1.00	U	SR
Americium 241	14596-10-2	0	0.14	0.258	1.00	U	AM
Thorium 228	14274-82-9	0.757	0.45	0.596	1.00		TH
Thorium 230	14269-63-7	0.800	0.45	0.426	1.00		TH
Thorium 232	TH-232	0.623	0.36	0.340	1.00		TH
Uranium 233/234	U-233/234	7.05	1.0	0.204	1.00		U
Uranium 235	15117-96-1	0.419	0.26	0.246	1.00		U
Uranium 238	U-238	6.28	0.96	0.204	1.00		U
Plutonium 238	13981-16-3	0	0.12	0.277	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.029	0.058	0.221	1.00	U	PU
Potassium 40	13966-00-2	7.52	0.32	0.159			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.100	U	GAM
Radium 226	13982-63-3	0.245	0.034	0.034	0.100		GAM
Radium 228	15262-20-1	0.428	0.059	0.060	0.200		GAM
Europium 152	14683-23-9	U		0.045	0.100	U	GAM
Europium 154	15585-10-1	U		0.043	0.100	U	GAM
Europium 155	14391-16-3	U		0.057	0.100	U	GAM
Thorium 228	14274-82-9	0.375	0.023	0.023			GAM
Thorium 232	TH-232	0.428	0.059	0.060			GAM
Uranium 235	15117-96-1	0.272	0.073	0.099			GAM
Uranium 238	U-238	7.48	1.7	1.85			GAM
Americium 241	14596-10-2	U		0.061		U	GAM

618-7 Burial Ground

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

7781-001 J169N3

DATA SHEET, cont

SDG	7781	Client/Case no	Hanford	SDG K1139
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R803050-01	Client sample id	J169N3	
Dept sample id	7781-001	Location/Matrix	618-7 Burial Ground-drum	SOLID
Received	03/11/08	Collected/Weight	03/04/08 14:40	863 g
% solids	100.0	Custody/SAF No	RC-088-003	RC-088

Note: Sample treated as an other solid - oily dirt

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test	AM
Matrix	SOLID
SDG	7781
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K1139

ESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
:eparation batch 6148-036						
:03050-01			7781-001	J169N3	U	
:03050-02			7781-002	LCS (QC ID=65047)	ok	
:03050-03			7781-003	BLK (QC ID=65048)	U	
:03050-04			7781-004	Duplicate (R803050-01)	-	U
›minal values and limits from method				RDLs (pCi/g)	1.00	

.8-7 Burial Ground

.ETHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6148-036			2σ prep error 5.0 % Reference Lab Notebook #6148, pg. 36													
303050-01			J169N3	0.258	0.500			88		108			15	03/19/08	03/19	SS-055
303050-02			LCS (QC ID=65047)	0.440	0.500			48		108				03/19/08	03/19	SS-061
303050-03			BLK (QC ID=65048)	0.589	0.500			38		103				03/19/08	03/19	SS-061
303050-04			Duplicate (R803050-01) (QC ID=65049)	0.334	0.500			78		109			15	03/19/08	03/19	SS-063
›minal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	0.405	± 0.287
FOR 4 SAMPLES	YIELD	63	± 48

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test PU Matrix SOLID
SDG 7781
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1139

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
:eparation batch 6148-036								
:03050-01			7781-001	J169N3	U		U	
:03050-02			7781-002	LCS (QC ID=65047)	ok		ok	
:03050-03			7781-003	BLK (QC ID=65048)	U		U	
:03050-04			7781-004	Duplicate (R803050-01)	-	U	-	U
›minal values and limits from method				RDLs (pCi/g)	1.00		1.00	
.8-7 Burial Ground								

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6148-036			2σ prep error 5.0 % Reference Lab Notebook #6148, pg. 36													
‹03050-01			J169N3	0.277	0.500			62		130			15	03/19/08	03/19	SS-064
‹03050-02			LCS (QC ID=65047)	0.437	0.500			61		110				03/19/08	03/19	SS-035
‹03050-03			BLK (QC ID=65048)	0.474	0.500			59		110				03/19/08	03/19	SS-036
‹03050-04			Duplicate (R803050-01) (QC ID=65049)	0.444	0.500			55		110			15	03/19/08	03/19	SS-038
›minal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.408 ± 0.178
YIELD 59 ± 6

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test TH Matrix SOLID
SDG 7781
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1139

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
:eparation batch 6148-036					
103050-01			7781-001	J169N3	0.800
103050-02			7781-002	LCS (QC ID=65047)	ok
103050-03			7781-003	BLK (QC ID=65048)	U
103050-04			7781-004	Duplicate (R803050-01)	ok
ominal values and limits from method				RDLs (pCi/g)	1.00

18-7 Burial Ground

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6148-036			2σ prep error 5.0 % Reference Lab Notebook #6148, pg. 36													
103050-01			J169N3	0.596	0.250			65		152			15	03/19/08	03/19	SS-055
103050-02			LCS (QC ID=65047)	0.384	0.250			70		154				03/19/08	03/19	SS-032
103050-03			BLK (QC ID=65048)	0.557	0.250			67		154				03/19/08	03/19	SS-033
103050-04			Duplicate (R803050-01) (QC ID=65049)	0.584	0.250			72		152			15	03/19/08	03/19	SS-028
ominal values and limits from method				1.00	0.250			20-105		150			180			

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 FOR 4 SAMPLES
MDA 0.530 ± 0.198
YIELD 68 ± 6

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test U Matrix SOLID
SDG 7781
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1139

ESULTS

B MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
eparation batch 6148-036											
03050-01			7781-001	J169N3	7.05	0.419	6.28	112	23	7	4
03050-02			7781-002	LCS (QC ID=65047)	ok	ok	ok				
03050-03			7781-003	BLK (QC ID=65048)	U	U	U				
03050-04			7781-004	Duplicate (R803050-01)	ok	ok	ok	104	24	6	4
minal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
8-7 Burial Ground								Averages 108		7	

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6148-036			2σ prep error 5.0 % Reference Lab Notebook #6148, pg. 36													
03050-01			J169N3	0.246	0.500			84		108			15	03/18/08	03/19	SS-056
03050-02			LCS (QC ID=65047)	0.961	0.500			91		109				03/18/08	03/19	SS-065
03050-03			BLK (QC ID=65048)	0.385	0.500			61		109				03/18/08	03/19	SS-066
03050-04			Duplicate (R803050-01) (QC ID=65049)	0.281	0.500			87		103			15	03/19/08	03/19	SS-062
minal values and limits from method				1.00	0.500			20-105		100	100		180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.468 ± 0.668
YIELD 81 ± 27

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test SR Matrix SOLID
SDG 7781
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K1139

ESULTS

ıB ıMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
:eparation batch 6148-036					
:03050-01			7781-001	J169N3	U
:03050-02			7781-002	LCS (QC ID=65047)	ok
:03050-03			7781-003	BLK (QC ID=65048)	U
:03050-04			7781-004	Duplicate (R803050-01)	- U

›minal values and limits from method RDLs (pCi/g) 1.00

.8-7 Burial Ground

ETHOD PERFORMANCE

ıB ıMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
:eparation batch 6148-036 2σ prep error 10.0 % Reference Lab Notebook #6148, pg. 36																
ı03050-01			J169N3	0.259	1.00			100		200			14	03/18/08	03/18	GRB-219
ı03050-02			LCS (QC ID=65047)	0.252	1.00			97		200				03/18/08	03/18	GRB-220
ı03050-03			BLK (QC ID=65048)	0.282	1.00			96		100				03/18/08	03/18	GRB-224
ı03050-04			Duplicate (R803050-01) (QC ID=65049)	0.250	1.00			102		200			14	03/18/08	03/18	GRB-207
›minal values and limits from method				1.00	1.00			30-105		100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.261 ± 0.029
YIELD 99 ± 6

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test 93A Matrix SOLID
SDG 7781
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1139

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
:eparation batch 6148-036					
:03050-01	93		7781-001	J169N3	23.1
:03050-02	93		7781-002	LCS (QC ID=65047)	ok
:03050-03	93		7781-003	BLK (QC ID=65048)	U
:03050-04	93		7781-004	Duplicate (R803050-01)	ok
›minal values and limits from method				RDLs (pCi/g)	10.0

.8-7 Burial Ground

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6148-036			2σ prep error 20.0 % Reference Lab Notebook #6148, pg. 36													
:03050-01	93		J169N3	5.62	0.100			45		100			14	03/17/08	03/18	GRB-114
:03050-02	93		LCS (QC ID=65047)	11.1	0.100			61		100				03/17/08	03/18	GRB-115
:03050-03	93		BLK (QC ID=65048)	8.21	0.100			61		100				03/17/08	03/18	GRB-210
:03050-04	93		Duplicate (R803050-01) (QC ID=65049)	6.53	0.100			44		100			14	03/17/08	03/18	GRB-211
›minal values and limits from method				10.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 7.86 ± 4.82
RESIDUE 53 ± 19

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test 93B Matrix SOLID
SDG 7781
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1139

ESULTS

LB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
:eparation batch 6148-036					
:03050-01	93		7781-001	J169N3	16.8
:03050-02	93		7781-002	LCS (QC ID=65047)	ok
:03050-03	93		7781-003	BLK (QC ID=65048)	U
:03050-04	93		7781-004	Duplicate (R803050-01)	ok
ominal values and limits from method				RDLs (pCi/g)	15.0
:8-7 Burial Ground					

:ETHOD PERFORMANCE

LB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6148-036			2σ prep error 15.0 % Reference Lab Notebook #6148, pg. 36													
303050-01	93		J169N3	7.61	0.100			45		100			14	03/17/08	03/18	GRB-114
303050-02	93		LCS (QC ID=65047)	5.90	0.100			61		100				03/17/08	03/18	GRB-115
303050-03	93		BLK (QC ID=65048)	5.70	0.100			61		100				03/17/08	03/18	GRB-210
303050-04	93		Duplicate (R803050-01) (QC ID=65049)	5.58	0.100			44		100			14	03/17/08	03/18	GRB-211
ominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	6.20	±	1.90
	RESIDUE	53	±	19

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1139

Test GAM Matrix SOLID
SDG 7781
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1139

ESULTS

LB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
:eparation batch 6148-036								
:03050-01			7781-001	J169N3	U		U	
:03050-02			7781-002	LCS (QC ID=65047)	ok		ok	
:03050-03			7781-003	BLK (QC ID=65048)	U		U	
:03050-04			7781-004	Duplicate (R803050-01)	-	U	-	U
›minal values and limits from method				RDLs (pCi/g)	0.050		0.100	
.8-7 Burial Ground								

.ETHOD PERFORMANCE

LB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6148-036			2σ prep error 15.0 % Reference Lab Notebook #6148, pg. 36													
‡03050-01			J169N3	4.04	265					760			9	03/13/08	03/13	JR,02,00
‡03050-02			LCS (QC ID=65047)	0.029	265					760				03/13/08	03/13	JR,04,00
‡03050-03			BLK (QC ID=65048)	6.54	265					761				03/13/08	03/13	JR,06,00
‡03050-04			Duplicate (R803050-01) (QC ID=65049)	7.11	265					439			10	03/13/08	03/14	JR,07,00
›minal values and limits from method				0.050	265					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 4.43 ± 6.45
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/20/08

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1139

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 03/20/08

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1139

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 03/20/08

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1139

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 03/20/08

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1139

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 03/20/08

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 7781
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1139

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.

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1139

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 03/20/08

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1139

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 03/20/08

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 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1139

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 03/20/08

SDG 7781
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K1139

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/20/08

SDG 7781
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1139

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 03/20/08

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-003	Page 1 of 1

Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums) K1139 (7781)		SAF No.: RC-088
Price Code: 9G	Data Turnaround: 15 Days		
Ice Chest No.: SML-531	Field Logbook No.: EL-1395-12	COA: RG61872000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080212		Bill of Lading/Air Bill No.: Stcasfc

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	P	P	P					
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	1					
Volume	~~125mL~~ 250	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					
Sample No. / Matrix * / Sample Date / Sample Time										
J169N3 / OTHER ~~LIQUID~~ (solid MCM 3/28/8) / 3/4/08 / 1440	X	X	X	X	X					
~~J169N4 / OTHER LIQUID~~										

RT 3/4/08

DL 3/3/08

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: B Lawrence — Date/Time: 3-4-08 1500	Received By/Stored In: RT Coffman / RT Coffman 3/4/08 — Date/Time: 1500
Relinquished By/Removed From: RT Coffman / RT Coffman 3/4/08 — Date/Time: 1615	Received By/Stored In: M Stankovich 3/4/08 — Date/Time: 1615
Relinquished By/Removed From: M Stankovich 3/10/08 — Date/Time: 1500	Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: FED EX — Date/Time:	Received By/Stored In: Alex Kellum — Date/Time: 3/11/08 10:00
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha: Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: WC HANFORD City: RICHLAND State: WA

Date/Time received: 3/11/08 10:00 CoC No. RC-088-003

Container I.D. No: SML-53 Requested TAT (Days): 15 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: 1 Sample Matrix: OTHER SOLID

7 Number of containers per sample: 1 (Or see CoC)

8 Samples are in correct container: Yes [✓] No [ ]

9 Paperwork agrees with samples? Yes [✓] No [ ]

10 Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels: [✓]

11 Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]

12 Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____

13 Describe any anomalies:

14 Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____

15 Inspected by: fk Date: 3/11/08 Time: 11:10

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe
J169N3	<60						

Ion Chamber Ser. No: _____ Calibration date: _____

Alpha Meter Ser. No: _____ Calibration date: _____

Beta/Gamma Meter Ser. No: 100482 Calibration date: 9 may 2007

LvLI
LIONVILLE LABORATORY INC.

31 March 2008

RECEIVED APR 2008

Joan Kessner
WC-Hanford
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0803L731
SDG #	K1139
SAF #	RC-088
Date Received	3/11/08
# Samples	3
Matrix	OTHER LIQUID
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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-088 K1139

RECEIVED 2008

DATE RECEIVED: 03/11/08 LVL LOT # 08031L731

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N3	001	SO	08LE0130	03/04/08	03/12/08	03/20/08
J169N3	001 MS	SO	08LE0130	03/04/08	03/12/08	03/20/08
J169N3	001 MSD	SO	08LE0130	03/04/08	03/12/08	03/20/08
LAB QC:						
SBLKTI	MB1	S	08LE0130	N/A	03/12/08	03/18/08
SBLKTI	MB1 BS	S	08LE0130	N/A	03/12/08	03/18/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0802L731
SDG/SAF # K1139 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 03-11-2008

SEMIVOLATILE

One (1) solid sample was collected on 03-04-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 01-16-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Client Specified Semivolatile target compounds on 03-18,20-2008.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. The results for solid samples were reported on an 'as-received basis'.

2. The sample was extracted and analyzed within holding time.

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

4. Samples extracted with a reduced initial volume (2-grams). Reporting limits have been adjusted to reflect the reduced initial volume. The extracted sample J169N3, J169N3 MS, and J169N3 MSD required a 5-fold dilution.

5. One (1) of thirty (30) surrogate recoveries were outside acceptance criteria. However, surrogate recovery acceptance criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).

6. Sixteen (16) of one hundred and twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Five (5) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

r:\group\data\2008\bna\tnu\0802-731ksol1.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

LIONVILLE LABORATORY INC.

8. The method blank was below the reporting limit for all target compounds.

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

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

11. 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").

12. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Jain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/24/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08M5041

Initiator: Robert Carter
Date: 3/21/08
Client: TNU Hanford RC080

Batch: 08U3L731
Samples: MS, MSD, BS
Method: SW846/MCAWW/CLP/

Parameter: 6025H
Matrix: Solid
Prep Batch: 08LE0130

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)

Several spike recoveries outside QC criteria in MS/MSD BS

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: Nurate

__ 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: 3/21/08

__ 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: 3-24-08 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

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0803L731 Client: TNUHANFORD RC-088 K1139 Work Order: 11343606001 Report Date: 03/21/08 11:53 Page: 1a

	Cust ID:	J169N3	J169N3	J169N3	SBLKTI	SBLKTI BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0130-MB1	08LE0130-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	5.00	5.00	5.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	26 %	51 %	67 %	62 %	57 %
	2-Fluorobiphenyl	39 %	68 %	78 %	65 %	76 %
	Terphenyl-d14	50 %	62 %	62 %	76 %	81 %
	Phenol-d5	27 %	54 %	65 %	60 %	68 %
	2-Fluorophenol	24 * %	50 %	60 %	63 %	69 %
	2,4,6-Tribromophenol	25 %	70 %	76 %	41 %	42 %
Phenol		25000 U	54 %	74 %	330 U	70 %
bis(2-Chloroethyl)ether		25000 U	49 * %	59 %	330 U	59 %
2-Chlorophenol		25000 U	52 %	69 %	330 U	68 %
1,3-Dichlorobenzene		25000 U	46 * %	64 %	330 U	60 %
1,4-Dichlorobenzene		25000 U	49 * %	62 %	330 U	59 %
1,2-Dichlorobenzene		25000 U	53 %	66 %	330 U	63 %
2-Methylphenol		25000 U	57 * %	66 %	330 U	68 %
2,2'-oxybis(1-Chloropropane)		25000 U	52 %	60 %	330 U	59 %
3/4 Methylphenol		25000 U	57 * %	68 %	330 U	72 %
N-Nitroso-di-n-propylamine		25000 U	53 %	58 %	330 U	65 %
Hexachloroethane		25000 U	50 %	55 %	330 U	58 %
Nitrobenzene		25000 U	53 %	62 %	330 U	51 %
Isophorone		25000 U	58 * %	73 %	330 U	60 %
2-Nitrophenol		25000 U	51 %	64 %	330 U	57 %
2,4-Dimethylphenol		25000 U	40 * %	57 %	330 U	54 %
bis(2-Chloroethoxy)methane		25000 U	53 %	66 %	330 U	54 %
2,4-Dichlorophenol		25000 U	56 %	70 %	330 U	57 %
1,2,4-Trichlorobenzene		25000 U	53 * %	67 %	330 U	54 * %
Naphthalene		25000 U	55 %	65 %	330 U	52 %
4-Chloroaniline		25000 U	38 %	53 %	330 U	54 %
Hexachlorobutadiene		25000 U	57 %	72 %	330 U	59 %
4-Chloro-3-methylphenol		25000 U	54 * %	64 %	330 U	63 %
2-Methylnaphthalene		25000 U	55 * %	68 %	330 U	59 * %
Hexachlorocyclopentadiene		25000 U	9 * %	20 %	330 U	66 %
2,4,6-Trichlorophenol		25000 U	65 %	68 %	330 U	50 %
2,4,5-Trichlorophenol		62000 U	58 %	72 %	830 U	67 %

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J169N3		J169N3		J169N3		SBLKTI		SBLKTI BS	
RFW#:	001		001 MS		001 MSD		08LE0130-MB1		08LE0130-MB1	
2-Chloronaphthalene	25000	U	65	%	75	%	330	U	70	%
2-Nitroaniline	62000	U	75	%	70	%	830	U	76	%
Dimethylphthalate	25000	U	69	%	78	%	330	U	73	%
Acenaphthylene	25000	U	66	%	73	%	330	U	71	%
2,6-Dinitrotoluene	25000	U	72	%	78	%	330	U	71	%
3-Nitroaniline	62000	U	81	%	97	%	830	U	80	%
Acenaphthene	25000	U	64	%	67	%	330	U	69	%
2,4-Dinitrophenol	62000	U	6 *	%	5 *	%	830	U	5 *	%
4-Nitrophenol	62000	U	30 *	%	63	%	830	U	60	%
Dibenzofuran	25000	U	67	%	72	%	330	U	72	%
2,4-Dinitrotoluene	25000	U	68	%	77	%	330	U	76	%
Diethylphthalate	25000	U	66	%	72	%	330	U	71	%
4-Chlorophenyl-phenylether	25000	U	60	%	65	%	330	U	70	%
Fluorene	25000	U	62	%	69	%	330	U	71	%
4-Nitroaniline	62000	U	65	%	83	%	830	U	74	%
4,6-Dinitro-2-methylphenol	62000	U	51	%	54	%	830	U	14 *	%
N-Nitrosodiphenylamine (1)	25000	U	60	%	72	%	330	U	63	%
4-Bromophenyl-phenylether	25000	U	64	%	70	%	330	U	70	%
Hexachlorobenzene	25000	U	67	%	81	%	330	U	87	%
Pentachlorophenol	62000	U	38	%	43	%	830	U	27 *	%
Phenanthrene	25000	U	69	%	80	%	330	U	74	%
Anthracene	25000	U	69	%	77	%	330	U	77	%
Carbazole	25000	U	77	%	85	%	330	U	84	%
Di-n-butylphthalate	25000	U	60	%	73	%	330	U	78	%
Fluoranthene	25000	U	59	%	78	%	330	U	84	%
Pyrene	25000	U	62	%	63	%	330	U	75	%
Butylbenzylphthalate	25000	U	63	%	67	%	330	U	73	%
3,3'-Dichlorobenzidine	25000	U	72	%	98	%	330	U	78	%
Benzo(a)anthracene	25000	U	68	%	72	%	330	U	75	%
Chrysene	25000	U	73	%	78	%	330	U	76	%
bis(2-Ethylhexyl)phthalate	4400	J	47 *	%	60	%	330	U	74	%
Di-n-octyl phthalate	1500	J	41 *	%	50	%	330	U	71	%
Benzo(b)fluoranthene	25000	U	63	%	73	%	330	U	76	%
Benzo(k)fluoranthene	25000	U	61	%	72	%	330	U	75	%
Benzo(a)pyrene	25000	U	65	%	81	%	330	U	77	%
Indeno(1,2,3-cd)pyrene	25000	U	75	%	88	%	330	U	69	%
Dibenz(a,h)anthracene	25000	U	76	%	89	%	330	U	67	%
Benzo(g,h,i)perylene	25000	U	82	%	95	%	330	U	67	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J169N3

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

Client: TNUHANFORD RC-088 K1139

Matrix: (soil/water) SOLID

Lab Sample ID: 0803L731-001

Sample wt/vol: 2.00 (g/mL) G

Lab File ID: N032008

Level: (low/med) LOW

Date Received: 03/11/08

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

Date Extracted: 03/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/20/08

Injection Volume: 2.0(uL)

Dilution Factor: 5.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.586	200000	JB
2.	UNKNOWN	25.876	60000	J
3.	UNKNOWN	26.652	20000	J
4.	UNKNOWN	26.826	20000	J
5.	UNKNOWN	29.188	20000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTI

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

Client: TNUHANFORD RC-088 K1139

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0130-MB1

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

Lab File ID: N031809

Level: (low/med) LOW

Date Received: 03/12/08

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

Date Extracted: 03/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/18/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.834	200	J
2.	ALDOL CONDENSATE	5.252	90	JA
3.	UNKNOWN	5.845	70000	J
4.	UNKNOWN	19.991	400	J

onville Laboratory Use Only

8031731

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000012

ent INU HANFORD RC-088

. Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager O Johnson

SW846 Del STD TAT 15 days

e Rec'd 3-11-08 Date Due 3-26-08

Refrigerator #			A														
#/Type Container	Liquid		3														
	Solid		1G														
Volume			250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Metal Hg	CN	TWT					
			Lionville Laboratory Use Only														
				M625H	OPCB					Met ①		IIGN					

TRIX DES: Boil Sediment Solid Sludge Water Oil Air Drum Solids Drum Liquids EP/TCLP Leachate Wipe Other Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
	001	J169N3	✓	✓	X	3/4/08	1440		X	X				X		X			

ecial Instructions: X = ~~other liquid~~ SOLID 3/11/08

met ① = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
		3/11/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-003	Page 1 of 1

Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: ERC-02-003	Field Logbook No.: EL-1395-12	COA: RG61872000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080195		Bill of Lading/Air Bill No.: See OSPC

Price Code: 9G

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None
Type of Container	aG	aG	P	P	P
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	1
Volume	~~125mL~~ 250	125mL	125mL	60mL	500mL
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.

RTC 3/4/08

Sample No.	Matrix *	Sample Date	Sample Time										
169N3	OTHER LIQUID	3/4/08	1440	X	X	X	X						
~~169N4~~	~~OTHER LIQUID~~									DL 3/3/08			

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Lawrence	1500 3-4-08	RTCoffman / RTCoffman	1500 3/4/08
RTCoffman / RTCoffman	1615 3/4/08	MS Ankovich	1615 3/4/08
MS Ankovich	well 1800 3/4/08	Fed Ex	
Fed Ex	3-4-08 0940	Ted Hemanz	3-4-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

FCH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 3/11/08

Project/SAF/SOW/Release #: RC-088

LvLI Batch #: 08031731 **Sample Custodian:** [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 8409 4572 1070
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.4	°C	Cooler # ERC-02-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☑ No	COC Indicates other liquid but sums to Soil
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
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 that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☑ N/A 3-11-08

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY, INC.

SR-002-B.doc

RECEIVED
APR 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1139

DATE RECEIVED: 03/11/08 LVL LOT # 08031731

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N3	001	SO	08LE0131	03/04/08	03/12/08	03/14/08
J169N3	001 MS	SO	08LE0131	03/04/08	03/12/08	03/14/08
J169N3	001 MSD	SO	08LE0131	03/04/08	03/12/08	03/14/08

LAB QC:

PBLKNY	MB1	S	08LE0131	N/A	03/12/08	03/14/08
PBLKNY	MB1 BS	S	08LE0131	N/A	03/12/08	03/14/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0803L731
SDG/SAF # K1139 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 03-11-2008

PCB

One (1) solid sample was collected on 03-04-2008.

The sample and its associated QC samples were extracted on 03-12-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-14-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the 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. Samples were extracted and analyzed within required holding time
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

k:\group\data\pest\tnu\0803-731ksol1.pcb.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.

LIONVILLE LABORATORY INC.

9. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/19/08
Date

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

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.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 03/16/08 06:38

RFW Batch Number: **0803L731** Client: **TNUHANFORD RC-088 K1139** Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J169N3	J169N3	J169N3	PBLKNY	PBLKNY BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0131-MB1	08LE0131-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	63 %	76 %	75 %	98 %	94 %
	Decachlorobiphenyl	60 %	66 %	65 %	100 %	104 %
		fl	fl	fl	fl	fl
Aroclor-1016		80 U	76 %	76 %	13 U	76 %
Aroclor-1221		80 U	80 U	80 U	13 U	13 U
Aroclor-1232		80 U	80 U	80 U	13 U	13 U
Aroclor-1242		80 U	80 U	80 U	13 U	13 U
Aroclor-1248		80 U	80 U	80 U	13 U	13 U
Aroclor-1254		970	NR	NR	13 U	13 U
Aroclor-1260		360	I %	I %	13 U	83 %

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.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/12/08 Extraction Batch No: 08LE0131 Analyst: MF Method: **** SOX3540

Test: OPCB Cleanup Date: 03/13/08 Analyst: MF Client: TNU-HANFORD RC-088

LIMS Report Date: 03/13/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

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
0803L731-	TNU-HANFORD RC-088										
001	J169N3		5.0	1.0		10		1.0	N	0.0	2000.0
001 -S	J169N3		5.0	1.0	1.0	10		1.0	N	0.0	2000.0
001 -T	J169N3		5.0	1.0	1.0	10		1.0	N	0.0	2000.0
08LE0131-MB1	PBLKNY		30.0	1.0		10		1.0	N	100.00	333.3
08LE0131-MB1 -S	PBLKNY		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments: OILY SAMPLE
Surrogate: 250 UL OLM PSURR 89916404
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	3/13/08 1205	SZ	3/13/08 1305	GC

000000006

Lionville Laboratory Use Only

08031731

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: TNU HANFORD RC-088

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: ~~15~~ 7 days

Date Rec'd: 3-11-08 Date Due: ~~3-26-08~~ 3-18-08

Refrigerator #		A 3
#/Type Container	Liquid	1G
	Solid	
Volume		250
Preservatives		

ANALYSES REQUESTED →

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	~~Pest~~/PCB	Herb			INORG Metal Hg	CN	TEW.T.					
								Lionville Laboratory Use Only													
									0625H	OPCB				Met①		IIGN					
S- Soil	001	J169N3	✓	✓	X	3/4/08	1440		X	X				X		X					
SE- Sediment																					
SQ- Solid																					
SL- Sludge																					
W- Water																					
O- Oil																					
A- Air																					
DS- Drum Solids																					
DL- Drum Liquids																					
L- EP/TCLP Leachate																					
WI- Wipe																					
X- Other																					
F- Fish																					

Special Instructions: X = ~~other liquid~~ SOLID HW 3-11-08

met① = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/11/08	0940

Relinquished by	Received by	Date	Time

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

0000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-003	Page 1 of 1

Collector R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9G	Data Turnaround 15 Days
Project Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088		
Ice Chest No. ERC-02-003	Field Logbook No. EL-1395-12	COA RG61872000	Method of Shipment Fed Ex		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A080195		Bill of Lading/Air Bill No. Ser Ospc		

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None		
Type of Container	aG	aG	P	P	P		
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	1		
Volume	~~125mL~~ 250	125mL	125mL	60mL	500mL		
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.	RC 3/4/08	

Sample No.	Matrix *	Sample Date	Sample Time										
J169N3	OTHER LIQUID	3/4/08	1440	X	X	X	X						
~~J169N4~~	~~OTHER LIQUID~~									BL 3/3/08			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From Blawrence	Date/Time 1500 3-4-08	Received By/Stored In RTCoffman / RTCoffman	Date/Time 1500 3/4/08
Relinquished By/Removed From RTCoffman / RTCoffman	Date/Time 1615 3/4/08	Received By/Stored In mstankovich	Date/Time 1615 3/4/08
Relinquished By/Removed From mstankovich	Date/Time 1800 3/10/08	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 3-11-08 0940	Received By/Stored In [illegible]	Date/Time 3-11-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

WCH-EE-011

000000008

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 3/11/08

LvLI Batch #: 08031731

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 8409 4572 1070
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.4°	°C	Cooler # ERC-02-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☑ No COC indicates other liquid but sent to Soil	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
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 that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☑ N/A 3-11-08

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1139

RECEIVED
APR 2008

DATE RECEIVED: 03/11/08 LVL LOT # :08031L031

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N3						
SILVER, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
SILVER, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
SILVER, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
ALUMINUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
ALUMINUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
ALUMINUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
ARSENIC, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
ARSENIC, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
ARSENIC, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
BARIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
BARIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
BARIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
BERYLLIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
BERYLLIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
BERYLLIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
CALCIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
CALCIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
CALCIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
CADMIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
CADMIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
CADMIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
COBALT, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
COBALT, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
COBALT, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
CHROMIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
CHROMIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
CHROMIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
COPPER, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
COPPER, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
COPPER, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
IRON, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
IRON, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
IRON, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
MERCURY, TOTAL	001	SO	08C0048	03/04/08	03/18/08	03/18/08
MERCURY, TOTAL	001 REP	SO	08C0048	03/04/08	03/18/08	03/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1139

DATE RECEIVED: 03/11/08 LVL LOT # :0803L731

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	001 MS	SO	08C0048	03/04/08	03/18/08	03/18/08
POTASSIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
POTASSIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
POTASSIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
MAGNESIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
MAGNESIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
MAGNESIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
MANGANESE, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
MANGANESE, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
MANGANESE, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
SODIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
SODIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
SODIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
NICKEL, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
NICKEL, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
NICKEL, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
LEAD, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
LEAD, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
LEAD, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
ANTIMONY, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
ANTIMONY, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
ANTIMONY, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
SELENIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
SELENIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
SELENIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
TIN, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
TIN, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
TIN, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
THALLIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
THALLIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
THALLIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
VANADIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
VANADIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
VANADIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
ZINC, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08
ZINC, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
ZINC, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08
ZIRCONIUM, TOTAL	001	SO	08L0101	03/04/08	03/14/08	03/17/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1139

DATE RECEIVED: 03/11/08 LVL LOT # :0803L731

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM, TOTAL	001 REP	SO	08L0101	03/04/08	03/14/08	03/17/08
ZIRCONIUM, TOTAL	001 MS	SO	08L0101	03/04/08	03/14/08	03/17/08

AB QC:

SILVER LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
SILVER, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
ALUMINUM LABORTORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
ALUMINUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
ARSENIC LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
ARSENIC, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
BARIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
BARIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
BERYLLIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
CALCIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
CALCIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
CADMIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
CADMIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
COBALT LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
COBALT, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
CHROMIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
CHROMIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
COPPER LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
COPPER, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
IRON LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
IRON, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
MERCURY LABORATORY	LC1 BS	S	08C0048	N/A	03/18/08	03/18/08
MERCURY, TOTAL	MB1	S	08C0048	N/A	03/18/08	03/18/08
POTASSIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
POTASSIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
MAGNESIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
MANGANESE LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
MANGANESE, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
SODIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
SODIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
NICKEL LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1139

DATE RECEIVED: 03/11/08 LVL LOT # :0803L731

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NICKEL, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
LEAD LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
LEAD, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
ANTIMONY LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
ANTIMONY, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
SELENIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
SELENIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
TIN LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
TIN, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
THALLIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
THALLIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
VANADIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
VANADIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
ZINC LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
ZINC, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0101	N/A	03/14/08	03/17/08
ZIRCONIUM, TOTAL	MB1	S	08L0101	N/A	03/14/08	03/17/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088
LVL#: 0803L731
SDG/SAF#: K1139/RC-088

W.O.#: 11343-606-001-9999-00
Date Received: 03-11-08

METALS CASE NARRATIVE

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

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

1. This narrative covers the analysis of 1 solid sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary. The sample is reported on a wet weight, 'as-received' basis.

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

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

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

6. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

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

9. The matrix spike (MS) recoveries for 8 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial

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 19 pages.

dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J169N3	Aluminum	22,000	93.7
	Chromium	600	101.2
	Iron	42,000	93.6
	Manganese	2,000	103.8
	Nickel	600	104.0
	Lead	1,100	103.4
	Antimony	100	106.6
	Zinc	1,100	95.3

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

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/19/08
Date

jjw/m02-635

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

he following methods are used as reference for the digestion and analysis of samples contained within th
ot#: 0803L731

eaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
luminum	✓6010B		__200.7				__99
ntimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
rsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
arium	✓6010B		__200.7				__99
eryllium	✓6010B		__200.7				__99
ismuth	__6010B [1]		__200.7 [1]			__1620	__99
oron	__6010B		__200.7				__99
admium	✓6010B	__7131A [5]	__200.7	__213.2			__99
alcium	✓6010B		__200.7				__99
hromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
obalt	✓6010B		__200.7				__99
opper	✓6010B	__7211 [5]	__200.7	__220.2			__99
ron	✓6010B		__200.7				__99
ead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
ithium	__6010B	__7430 [4]	__200.7			__1620	__99
agnesium	✓6010B		__200.7				__99
anganese	✓6010B		__200.7				__99
ercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
olybdenum	__6010B		__200.7				__99
ickel	✓6010B		__200.7				__99
otassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
are Earths	__6010B [1]		__200.7 [1]			__1620	__99
elenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
ilicon	__6010B [1]		__200.7			__1620	__99
ilica	__6010B		__200.7			__1620	__99
ilver	✓6010B	__7761 [5]	__200.7	__272.2			__99
odium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
trontium	__6010B		__200.7				__99
hallium	✓6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
in	✓6010B		__200.7				__99
itanium	__6010B		__200.7				__99
ranium	__6010B [1]		__200.7 [1]			__1620	__99
anadium	✓6010B		__200.7				__99
inc	✓6010B		__200.7				__99
irconium	✓6010B [1]		__200.7 [1]			__1620	__99

ther:_____ Method:_____

L-WI-013/M-03/01
000000007

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 03/18/08

CLIENT: TNUHANFORD RC-088 K1139 LVL LOT #: 0803L731

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J169N3	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	5950	MG/KG	3.3	1.0
		Arsenic, Total	1.7	MG/KG	0.41	1.0
		Barium, Total	62.0	MG/KG	0.08	1.0
		Beryllium, Total	0.24	MG/KG	0.04	1.0
		Calcium, Total	7280	MG/KG	3.3	1.0
		Cadmium, Total	0.51	MG/KG	0.04	1.0
		Cobalt, Total	6.1	MG/KG	0.16	1.0
		Chromium, Total	47.9	MG/KG	0.16	1.0
		Copper, Total	21.4	MG/KG	0.16	1.0
		Iron, Total	19800	MG/KG	3.7	1.0
		Mercury, Total	0.14	MG/KG	0.04	5.0
		Potassium, Total	721	MG/KG	3.3	1.0
		Magnesium, Total	3140	MG/KG	2.0	1.0
		Manganese, Total	242	MG/KG	0.03	1.0
		Sodium, Total	205	MG/KG	1.6	1.0
		Nickel, Total	22.0	MG/KG	0.16	1.0
		Lead, Total	83.9	MG/KG	0.25	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0
		Tin, Total	1.9	MG/KG	0.49	1.0
		Thallium, Total	0.49 u	MG/KG	0.49	1.0
		Vanadium, Total	49.0	MG/KG	0.11	1.0
		Zinc, Total	230	MG/KG	0.49	1.0
		Zirconium, Total	21.5	MG/KG	4.1	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/18/08

CLIENT: TNUHANFORD RC-088 K1139 LVL LOT #: 0803L731

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08LC101-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	6.2	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.12	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	7.7	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	4.8	MG/KG	4.5	1.0
		Potassium, Total	4.0 u	MG/KG	4.0	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.04	MG/KG	0.04	1.0
		Sodium, Total	4.0	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Tin, Total	0.70	MG/KG	0.60	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.60 u	MG/KG	0.60	1.0
		Zirconium, Total	5.0 u	MG/KG	5.0	1.0
BLANK1	08C0048-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/18/08

CLIENT: TNUHANFORD RC-088 K1139 LVL LOT #: 0803L731

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J169N3	Silver, Total	3.5	0.08u	4.0	87.5	1.0
		Aluminum, Total	5420	5950	160	-330. *	1.0
		Arsenic, Total	143	1.7	160	88.4	1.0
		Barium, Total	196	62.0	160	84.0	1.0
		Beryllium, Total	3.9	0.24	4.0	91.0	1.0
		Calcium, Total	9080	7280	2000	90.5	1.0
		Cadmium, Total	3.9	0.51	4.0	84.7	1.0
		Cobalt, Total	41.8	6.1	40.0	89.2	1.0
		Chromium, Total	49.8	47.9	16.0	11.9	1.0
		Copper, Total	36.7	21.4	20.0	76.5	1.0
		Iron, Total	16900	19800	80.0	-3500. *	1.0
		Mercury, Total	0.26	0.14	0.14	90.4	5.0
		Potassium, Total	2530	721	2000	90.3	1.0
		Magnesium, Total	4870	3140	2000	86.7	1.0
		Manganese, Total	262	242	40.0	50.7*	1.0
		Sodium, Total	2030	205	2000	91.3	1.0
		Nickel, Total	48.7	22.0	40.0	66.8	1.0
		Lead, Total	138	83.9	40.0	136.5	1.0
		Antimony, Total	21.8	0.25u	40.0	54.5	1.0
		Selenium, Total	122	0.49u	160	76.6	1.0
		Tin, Total	72.7	1.9	80.0	88.5	1.0
		Thallium, Total	141	0.49u	160	88.3	1.0
		Vanadium, Total	81.3	49.0	40.0	80.8	1.0
		Zinc, Total	183	230	40.0	-120. *	1.0
		Zirconium, Total	198	21.5	200	88.3	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/18/08

CLIENT: TNUHANFORD RC-088 K1139 LVL LOT #: 0803L731

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J169N3	Silver, Total	0.08u	0.08u	NC	1.0
		Aluminum, Total	5950	5850	1.6	1.0
		Arsenic, Total	1.7	2.2	25.6	1.0
		Barium, Total	62.0	59.8	3.6	1.0
		Beryllium, Total	0.24	0.26	8.0	1.0
		Calcium, Total	7280	8330	13.5	1.0
		Cadmium, Total	0.51	0.40	25.4	1.0
		Cobalt, Total	6.1	6.9	12.3	1.0
		Chromium, Total	47.9	68.8	35.8	1.0
		Copper, Total	21.4	26.4	20.9	1.0
		Iron, Total	19800	19800	0.10	1.0
		Mercury, Total	0.14	0.09	46.0	5.0
		Potassium, Total	721	792	9.3	1.0
		Magnesium, Total	3140	3360	6.9	1.0
		Manganese, Total	242	249	3.1	1.0
		Sodium, Total	205	201	2.3	1.0
		Nickel, Total	22.0	21.7	1.4	1.0
		Lead, Total	83.9	225	91.3	1.0
		Antimony, Total	0.25u	0.28	NC	1.0
		Selenium, Total	0.49u	0.49u	NC	1.0
		Tin, Total	1.9	1.7	11.1	1.0
		Thallium, Total	0.49u	0.49u	NC	1.0
		Vanadium, Total	49.0	49.4	0.81	1.0
		Zinc, Total	230	192	18.1	1.0
		Zirconium, Total	21.5	26.4	20.5	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 03/18/08

CLIENT: TNUHANFORD RC-088 K1139 LVL LOT #: 0803L731

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0101-LC1	Silver, LCS	47.1	50.0	MG/KG	94.2
		Aluminum, LCS	494	500	MG/KG	98.9
		Arsenic, LCS	924	1000	MG/KG	92.4
		Barium, LCS	467	500	MG/KG	93.5
		Beryllium, LCS	23.8	25.0	MG/KG	95.2
		Calcium, LCS	2410	2500	MG/KG	96.4
		Cadmium, LCS	23.6	25.0	MG/KG	94.4
		Cobalt, LCS	239	250	MG/KG	95.5
		Chromium, LCS	47.8	50.0	MG/KG	95.6
		Copper, LCS	128	125	MG/KG	102.8
		Iron, LCS	475	500	MG/KG	94.9
		Potassium, LCS	2270	2500	MG/KG	90.6
		Magnesium, LCS	2330	2500	MG/KG	93.2
		Manganese, LCS	73.2	75.0	MG/KG	97.6
		Sodium, LCS	2210	2500	MG/KG	88.6
		Nickel, LCS	189	200	MG/KG	94.6
		Lead, LCS	239	250	MG/KG	95.6
		Antimony, LCS	280	300	MG/KG	93.2
		Selenium, LCS	897	1000	MG/KG	89.7
		Tin, LCS	478	500	MG/KG	95.5
		Thallium, LCS	931	1000	MG/KG	93.1
		Vanadium, LCS	237	250	MG/KG	94.7
		Zinc, LCS	98.4	100	MG/KG	98.4
		Zirconium, LCS	235	250	MG/KG	94.1
LCS1	08C0048-LC1	Mercury, LCS	4.7	4.7	MG/KG	100.8

Lionville Laboratory Incorporated Logbook #: 440

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 0810101
Date/Time Initiated: 03/14/08 11:30
Date/Time Completed: 03/14/08 15:20
Analyst(s): PMP
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See Backlog

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 90°

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
(3050B)
3051
CLP ILMO3.0
ILMO4.0
(TNU)

DW 200.7 (1994)
200.9
3113B
MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)
SM 3030C (NC)
Other Teflon

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
08032731-001		1.22gm	100ml	<2	TO	Coarse	Black / Rocks	N/A	N/A
-001R		1.22							
⊗ -001S	1.0ml	1.25							
08032693-004		1.08							
0810101-MB1		1.00					Boiling chips		
⊗ -LC1	1.0ml	1.00							

Pmp
03-14-08

Spiking IDs:
MS #: 8100-04-01
-02
-03
6072-078-07
LCS #: 6072-078-08
-09
-10
-11

Reagent IDs:
HNO_3 E22071
HCL E45047
H_2O_2 E44A06
1:1 HNO_3 9789-070-06
1:1 HCL

File ID#: IC010101
IC010102

LIMS Transfer: (Y) N Update

Data Review By/Date: 3/19/08

⊗ Also spiked 0.250ml of 6072-076-05, (2L)
6072-076-07, (P-)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: CLD
Date 3/18/08
Start Time/Temp: 1200 | 91°
End Time/Temp: 1320 | 97°

Instrument ID HG3.1/3.2
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0048
Worksheet: HG-031801/02
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	K35			10mL	50mL	
0.2 µg/L	55	0.100				
1.0	CB	0.500				
2.0	411	1.000				
5.0	508	2.500				
10.0	DR	5.000				
ICV	AP	0.125	2.5			
CCV	P18	0.250	5.0			
ICB/CCB	AHA					% SOL
MB1	WN			0.30		PBS148 100.0
LCS1	ET	*	*	0.30		LCSS148
0803L737-001	616			0.37		
001R	818			0.31		
001S	IV	0.500	1.0	0.37		
0803L726-001	41			0.34		R 96.73
002	GR			0.38		96.31
003	ZB			0.34		96.08
004	CX			0.33		96.80

CLD 3/18/08

Standard:	ID	Prep Date/Time
ICAL/MS	R16072-75-07B	3/18/08 1050
ICV/CCV/LCS	US 6072-75-08A	

Reviewed By/Date: [signature] 3/19/08

see book # 936K for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

Lionville Laboratory Use Only

08031731

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: TNU HANFORD RC-088

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: 7 days

Date Rec'd: 3-11-08 Date Due: 3-26-08 (18)

Refrigerator #			A													
#/Type Container	Liquid		3													
	Solid		1G													
Volume			250													
Preservatives																
ANALYSES REQUESTED			ORGANIC							INORG						
			VOA	BNA	Pest/PCB	Herb				Metal Hg	CN					
				N625H	OPCB					Met①		IIGN				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	J169N3	✓	✓	X	3/4/08	1440

Special Instructions: X = ~~OTHER LIQUID~~ SOLID

met① = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/11/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000016

onville Laboratory Use Only

08031731

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000017

ent INL HANFORD RC-088

Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager O Johnson

SW846 Del STD TAT 15 days

te Rec'd 3-11-08 Date Due 3-26-08

Refrigerator #			A														
#/Type Container	Liquid		3														
	Solid		1G														
Volume			250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Metal Hg	CN	TSS					
			Lionville Laboratory Use Only														
				8625H	8PCB					MET(1)		IIGN					

TRIX DES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	J169N3	✓	✓	X	3/4/08	1440		X	X					X		X		

ecial Instructions: X = ~~other liquid~~ SOLID 3-11-08

met(1) = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
		3/11/08	0940

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-003	Page 1 of 1

Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 9G	Data Turnaround: 15 Days		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: ERC-02-003	Field Logbook No.: EL-1395-12	COA: RG61872000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080195		Bill of Lading/Air Bill No.: Ser OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	1	1	1	1						
Volume	~~125mL~~ 250	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.						

RC 3/4/08

Sample No.	Matrix *	Sample Date	Sample Time										
169N3	OTHER LIQUID	3/4/08	1440	X	X	X	X						
~~169N4~~	~~OTHER LIQUID~~									DL 3/3/08			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Lawrence	1500 3-4-08	Received By/Stored In: RTCoffman / RTCoffman	1500 3/4/08
Relinquished By/Removed From: RTCoffman / RTCoffman	1615 3/4/08	Received By/Stored In: MStankovich	1615 3/4/08
Relinquished By/Removed From: MStankovich	1800 3/10/08	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex	3-7-08 0940	Received By/Stored In: Fed Ex	3-7-08 0940
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

FCH-EE-011

000000018

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 3/11/08

LvLI Batch #: 08031731

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 8409 4572 1070
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.4°	°C	Cooler # ERC-02-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☑ No COC indicates other liquid that seems to be soil	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
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 that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☑ N/A 3-11-08

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC

SR-002-B.doc

RECEIVED
APR 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1139

DATE RECEIVED: 03/11/08 LVL LOT # :0803L731

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N3						
IGNITABILITY	001	SO	08LFP006	03/04/08	03/17/08	03/17/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088 K1139
LVL#: 0803L731

W.O.#: 11343-606-001-9999-00
Date Received: 03-11-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 1 solid sample.

2. The sample was prepared and analyzed in accordance with the method checked on the attached glossary.

   LvLI is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvLI certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding time as required by the method and/or contract was met.

4. The result presented in this report is derived from a sample that met LvLI's sample acceptance policy.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/18/08
Date

njp\i03-731

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: **Method:**

Other: **Method**

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Inorganic Data Summary Report
Physical Testing Observation

Client: TNU-HANFORD RC-088 K1139
LVL#: 0803L731

W.O.#: 11343-606-001-9999-00
Date Received: 03-11-08

Analyte:	**Observation:**
Ignitability	Samples J169N3 and J169N3 duplicate did not ignite Sample were heated to approximately 220°F. p-Xylene was used to determined the accuracy of the ignitability apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 81°F.

njp\i03-731pt2

LIONSVILLE LABORATORY INC.

Lionville Laboratory Use Only

08031731

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: INU HANFORD RC-088

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: 15 days

Date Rec'd: 3-11-08 Date Due: 3-26-08

Refrigerator #			A														
#/Type Container	Liquid		3														
	Solid		1G														
Volume			250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Metal Hg	CN	T.W.T.					
			Lionville Laboratory Use Only														
				0625H	OPCB					MetC		IIGN					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J169N3	✓	/	X	3/4/08	1440		X	X					X		X			

Special Instructions: X = ~~other liquid~~ SOLID LW 3-11-08

met ① = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	V. Kennedy	3/11/08	0940

Relinquished by	Received by	Date	Time

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

000000006

Lionville Laboratory Use Only

08031731

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: INL HANFORD RC-088

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: 15 days

Date Rec'd: 3-11-08 Date Due: 3-26-08

Refrigerator #			A														
#/Type Container	Liquid		3														
	Solid		1G														
Volume			250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	~~Pest/~~ PCB	Herb				Metal Hg	CN	TGNT					
			Lionville Laboratory Use Only														
				M625H	OPCB					Met ①		IIGN					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J169N3	✓	✓	X	3/4/08	1440		X	X				X		X				

Special Instructions: X = ~~other liquid~~ SOLID 3-11-08

met ① = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/11/08	0940

Relinquished by	Received by	Date	Time

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

000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-003	Page 1 of 1

Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 9G — Data Turnaround: 15 Days
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)	SAF No.: RC-088	
Ice Chest No.: ERC-02-003	Field Logbook No.: EL-1395-12 — COA: RG61872000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080195	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	1						
Volume	~~125mL~~ 250	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.	RTC 3/4/08					
Sample No.	Matrix *	Sample Date	Sample Time								
J169N3	OTHER LIQUID	3/4/08	1440	X	X	X	X				
~~J169N4~~	~~OTHER LIQUID~~								BL 3/3/08		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BLawrence	3-4-08 1500	RTCoffman / RTCoffman	3/4/08 1500
RTCoffman / RTCoffman	3/4/08 1615	mstankovich	3/4/08 1615
mstankovich	3/10/08 1800	Fed Ex	
Fed Ex	3-14-08 0940		3-14-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

WCH-EE-011

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 3/11/08

LvLI Batch #: 08031731

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 8409 4572 1070
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.4	°C	Cooler # ERC-02-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	COC indicates other liquid but seems to be soil
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
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 that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI LIONVILLE LABORATORY INC.

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