0076743

SAF-RC-032
100-F Remaining Sites Burial Grounds - Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 3/24/08 INITIAL/DATE
Kathy Wendt	H4-21	KW 3/24/08 INITIAL/DATE

COMMENTS:

RECEIVED
APR 0 2 2008
EDMC

SDG K1118 SAF-RC-032

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: **100-F-26:9 OB Verification**

EBERLINE
SERVICES

MAR 2008

March 3, 2008

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

Reference: **P.O. #630**
Eberline Services R8-02-099-7766, SDG K1118

Dear Ms. Kessner:

Enclosed is the data report for ten solid (soil) samples designated under SAF No. RC-032, received at Eberline Services on February 13, 2008. The samples were analyzed according to the accompanying chain-of-custody documents. An additional total strontium analysis was performed on sample J16951.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

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

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1118 was composed of ten solid (soil) samples designated under SAF No. RC-032 with a Project Designation of: 100-F Remaining Sites Burial Grounds-Soil Full Protocol.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on February 20, and March 3, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 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

03/03/08

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 K1118

SDG	7766
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K1118

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

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

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NJ Verville
Prepared by

Melissa Mannion
Reviewed by

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

SDG 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1118

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 03/03/08

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

SDG 7766
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1118

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R802099-01	J16951	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 12:30
R802099-02	J16952	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 12:40
R802099-03	J16953	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 12:50
R802099-04	J16954	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 13:00
R802099-05	J16955	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 13:10
R802099-06	J16956	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 13:15
R802099-07	J16957	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 13:20
R802099-08	J16958	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 13:25
R802099-09	J16959	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 13:30
R802099-10	J16960	100-F-26:9 OB Verificatn	SOLID		RC-032	RC-032-190	02/11/08 13:35
R802099-11	Lab Control Sample		SOLID		RC-032		
R802099-12	Method Blank		SOLID		RC-032		
R802099-13	Duplicate (R802099-04)	100-F-26:9 OB Verificatn	SOLID		RC-032		02/11/08 13:00
R802099-14	Duplicate (R802099-01)	100-F-26:9 OB Verificatn	SOLID		RC-032		02/11/08 12:30

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

SDG 7766
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1118

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7766	RC-032-190	J16951	SOLID	92.4	869 g		02/13/08	2	R802099-01	7766-001
		J16952	SOLID	93.4	799 g		02/13/08	2	R802099-02	7766-002
		J16953	SOLID	95.6	850 g		02/13/08	2	R802099-03	7766-003
		J16954	SOLID	95.1	905 g		02/13/08	2	R802099-04	7766-004
		J16955	SOLID	91.1	806 g		02/13/08	2	R802099-05	7766-005
		J16956	SOLID	91.0	941 g		02/13/08	2	R802099-06	7766-006
		J16957	SOLID	92.9	869 g		02/13/08	2	R802099-07	7766-007
		J16958	SOLID	93.2	824 g		02/13/08	2	R802099-08	7766-008
		J16959	SOLID	90.3	798 g		02/13/08	2	R802099-09	7766-009
		J16960	SOLID	93.6	950 g		02/13/08	2	R802099-10	7766-010
		Method Blank	SOLID						R802099-12	7766-012
		Lab Control Sample	SOLID						R802099-11	7766-011
		Duplicate (R802099-01)	SOLID		869 g		02/13/08	2	R802099-14	7766-014
		Duplicate (R802099-04)	SOLID	95.1	905 g		02/13/08	2	R802099-13	7766-013

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

SDG 7766
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1118

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
SR	SOLID	Total Strontium in Solids	6133-187	10.0	1			1	1	1/1		
Gas Proportional Counting												
82B	SOLID	Gross Beta in Solids	6133-187	15.0	1			1	1	1/1		
93A	SOLID	Gross Alpha in Solids	6133-187	20.0	10			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6133-187	15.0	9			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6133-187	15.0	10			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 03/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

SDG 7766
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1118

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	MATRIX SAF No	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R802099-01	J16951		7766-001	82B/82		02/26/08	02/26/08	BW	Gross Beta in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-001	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/13/08	RC-032-190	RC-032	7766-001	GAM		02/18/08	02/19/08	CSS	Gamma Scan
			7766-001	SR		02/25/08	02/28/08	BW	Total Strontium in Solids
R802099-02	J16952		7766-002	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-002	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-002	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-03	J16953		7766-003	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-003	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-003	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-04	J16954		7766-004	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-004	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-004	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-05	J16955		7766-005	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-005	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-005	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-06	J16956		7766-006	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-006	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-006	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-07	J16957		7766-007	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-007	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-007	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-08	J16958		7766-008	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-008	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-008	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-09	J16959		7766-009	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn	SOLID	7766-009	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032	7766-009	GAM		02/18/08	02/19/08	CSS	Gamma Scan

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

SDG 7766
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K1118

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R802099-10	J16960			7766-010	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn		SOLID	7766-010	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08	RC-032-190	RC-032		7766-010	GAM		02/19/08	02/19/08	CSS	Gamma Scan
R802099-11	Lab Control Sample			7766-011	82B/82		02/26/08	02/26/08	BW	Gross Beta in Solids
			SOLID	7766-011	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
		RC-032		7766-011	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
				7766-011	GAM		02/19/08	02/19/08	CSS	Gamma Scan
				7766-011	SR		02/25/08	02/28/08	BW	Total Strontium in Solids
R802099-12	Method Blank			7766-012	82B/82		02/26/08	02/26/08	BW	Gross Beta in Solids
			SOLID	7766-012	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
		RC-032		7766-012	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
				7766-012	GAM		02/19/08	02/19/08	CSS	Gamma Scan
				7766-012	SR		02/25/08	02/28/08	BW	Total Strontium in Solids
R802099-13	Duplicate (R802099-04)			7766-013	93A/93		02/18/08	02/18/08	BW	Gross Alpha in Solids
02/11/08	100-F-26:9 OB Verificatn		SOLID	7766-013	93B/93		02/18/08	02/18/08	BW	Gross Beta in Solids
02/13/08		RC-032		7766-013	GAM		02/18/08	02/19/08	CSS	Gamma Scan
R802099-14	Duplicate (R802099-01)			7766-014	82B/82		02/26/08	02/26/08	BW	Gross Beta in Solids
02/11/08	100-F-26:9 OB Verificatn		SOLID	7766-014	SR		02/25/08	02/28/08	BW	Total Strontium in Solids
02/13/08		RC-032								

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
82B/82	RC-032	Gross Beta in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
93A/93	RC-032	Gross Alpha in Solids	900.0_ALPHABETA_GPC	10			1	1	1	13
93B/93	RC-032	Gross Beta in Solids	900.0_ALPHABETA_GPC	9			1	1	1	12
GAM	RC-032	Gamma Scan	GAMMA_GS	10			1	1	1	13
SR	RC-032	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TOTALS				31			5	5	5	46

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-012 Method Blank

METHOD BLANK

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-12	Client sample id	Method Blank		
Dept sample id	7766-012	Material/Matrix		SOLID	
		SAF No	RC-032		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.916	1.9	3.74	10.0	U	93A
Gross Beta	12587-47-2	-0.115	3.1	5.56	15.0	U	93B
Gross Beta	14336-70-0	-0.949	3.2	5.63	15.0	U	82B
Total Strontium	SR-RAD	-0.057	0.15	0.266	1.00	U	SR
Potassium 40	13966-00-2	U		0.362		U	GAM
Cobalt 60	10198-40-0	U		0.017	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	U		0.035	0.100	U	GAM
Radium 228	15262-20-1	U		0.084	0.200	U	GAM
Europium 152	14683-23-9	U		0.053	0.100	U	GAM
Europium 154	15585-10-1	U		0.059	0.100	U	GAM
Europium 155	14391-16-3	U		0.052	0.100	U	GAM
Thorium 228	14274-82-9	U		0.047		U	GAM
Thorium 232	TH-232	U		0.084		U	GAM
Uranium 235	15117-96-1	U		0.086		U	GAM
Uranium 238	U-238	U		2.67		U	GAM
Americium 241	14596-10-2	U		0.139		U	GAM
Silver 108m	14391-65-2	U		0.017		U	GAM
Barium 133	13981-41-4	U		0.022		U	GAM

100F RemainSitesBurialGrounds-SoilFP

QC-BLANK #64741

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-011

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7766
Contact Melissa C. Mannion

Client/Case no Hanford SDG K1118
Contract No. 630

Lab sample id R802099-11
Dept sample id 7766-011

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No RC-032

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	124	18	6.47	10.0		93A	102	4.1	122	55-145	70-130
Gross Beta	92.3	8.2	8.61	15.0		93B	93.9	3.8	98	74-126	80-120
Gross Beta	90.9	7.1	5.31	15.0		82B	93.8	3.8	97	75-125	80-120
Total Strontium	9.70	0.57	0.251	1.00		SR	9.38	0.38	103	81-119	80-120
Cobalt 60	0.869	0.055	0.034	0.050		GAM	0.879	0.035	99	75-125	80-120
Cesium 137	0.919	0.046	0.033	0.100		GAM	0.922	0.037	100	76-124	80-120

100F RemainSitesBurialGrounds-SoilFP

QC-LCS #64740

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-014 J16951

DUPLICATE

SDG	7766			Client/Case no	Hanford SDG K1118
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R802099-14	Lab sample id	R802099-01	Client sample id	J16951
Dept sample id	7766-014	Dept sample id	7766-001	Location/Matrix	100-F-26:9 OB Verificatn SOLID
		Received	02/13/08	Collected/Weight	02/11/08 12:30 869 g
		% solids	92.4	Custody/SAF No	RC-032-190 RC-032

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 Beta	20.8	5.5	7.57	15.0		82B	14.8	4.5	6.21		34	68	1.5
Total Strontium	-0.081	0.16	0.282	1.00	U	SR	0.048	0.13	0.258	U	-		1.2

100F RemainSitesBurialGrounds-SoilFP

QC-DUP#1 64831

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-013 J16954

DUPLICATE

SDG	7766			Client/Case no	Hanford SDG K1118
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R802099-13	Lab sample id	R802099-04	Client sample id	J16954
Dept sample id	7766-013	Dept sample id	7766-004	Location/Matrix	100-F-26:9 OB Verificatn SOLID
		Received	02/13/08	Collected/Weight	02/11/08 13:00 905 g
% solids	95.1	% solids	95.1	Custody/SAF No	RC-032-190 RC-032

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	18.7	7.0	5.30	10.0		93A	15.0	6.3	4.99		22	94	0.7
Gross Beta	18.9	4.3	5.27	15.0		93B	18.3	4.3	5.48		3	58	0.2
Potassium 40	15.4	0.66	0.280			GAM	16.6	0.63	0.236		8	33	0.7
Cobalt 60	U		0.027	0.050	U	GAM	U		0.024	U	-		0.2
Cesium 137	U		0.028	0.100	U	GAM	U		0.024	U	-		0.2
Radium 226	0.566	0.060	0.055	0.100		GAM	0.538	0.057	0.051		5	39	0.4
Radium 228	0.873	0.14	0.132	0.200		GAM	0.726	0.11	0.116		18	46	1.2
Europium 152	U		0.069	0.100	U	GAM	U		0.069	U	-		0
Europium 154	U		0.102	0.100	U	GAM	U		0.078	U	-		0.4
Europium 155	U		0.062	0.100	U	GAM	U		0.090	U	-		0.5
Thorium 228	0.784	0.038	0.032			GAM	0.769	0.039	0.034		2	34	0.2
Thorium 232	0.873	0.14	0.132			GAM	0.726	0.11	0.116		18	46	1.2
Uranium 235	U		0.112		U	GAM	U		0.131	U	-		0.2
Uranium 238	U		3.51		U	GAM	U		2.87	U	-		0.3
Americium 241	U		0.041		U	GAM	U		0.116	U	-		1.2
Silver 108m	U		0.019		U	GAM	U		0.020	U	-		0.1
Barium 133	U		0.026		U	GAM	U		0.025	U	-		0.1

100F RemainSitesBurialGrounds-SoilFP

QC-DUP#4 64742

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
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Version	3.06
Report date	03/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-001 J16951

DATA SHEET

SDG	7766	Client/Case no	Hanford SDG K1118
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R802099-01	Client sample id	J16951
Dept sample id	7766-001	Location/Matrix	100-F-26:9 OB Verificatn SOLID
Received	02/13/08	Collected/Weight	02/11/08 12:30 869 g
% solids	92.4	Custody/SAF No	RC-032-190 RC-032

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	8.33	5.9	6.08	10.0		93A
Gross Beta	12587-47-2	14.8	4.5	6.21	15.0		82B
Total Strontium	SR-RAD	0.048	0.13	0.258	1.00	U	SR
Potassium 40	13966-00-2	13.6	1.0	0.259			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.100	U	GAM
Radium 226	13982-63-3	0.485	0.068	0.060	0.100		GAM
Radium 228	15262-20-1	0.732	0.14	0.132	0.200		GAM
Europium 152	14683-23-9	U		0.079	0.100	U	GAM
Europium 154	15585-10-1	U		0.122	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	0.668	0.041	0.038			GAM
Thorium 232	TH-232	0.732	0.14	0.132			GAM
Uranium 235	15117-96-1	U		0.117		U	GAM
Uranium 238	U-238	U		4.12		U	GAM
Americium 241	14596-10-2	U		0.112		U	GAM
Silver 108m	14391-65-2	U		0.023		U	GAM
Barium 133	13981-41-4	U		0.032		U	GAM

100F RemainSitesBurialGrounds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/05/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-002 J16952

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-02	Client sample id	J16952		
Dept sample id	7766-002	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 12:40	799 g	
% solids	93.4	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	10.1	5.9	6.29	10.0		93A
Gross Beta	12587-47-2	15.4	4.5	6.28	15.0		93B
Potassium 40	13966-00-2	15.7	0.73	0.271			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	0.541	0.070	0.066	0.100		GAM
Radium 228	15262-20-1	0.862	0.14	0.132	0.200		GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.093	0.100	U	GAM
Europium 155	14391-16-3	U		0.105	0.100	U	GAM
Thorium 228	14274-82-9	0.772	0.042	0.039			GAM
Thorium 232	TH-232	0.862	0.14	0.132			GAM
Uranium 235	15117-96-1	U		0.145		U	GAM
Uranium 238	U-238	U		3.44		U	GAM
Americium 241	14596-10-2	U		0.196		U	GAM
Silver 108m	14391-65-2	U		0.020		U	GAM
Barium 133	13981-41-4	U		0.039		U	GAM

100F RemainSitesBurialGrounds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-003 J16953

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-03	Client sample id	J16953		
Dept sample id	7766-003	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 12:50	850 g	
% solids	95.6	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	4.57	4.4	5.72	10.0	U	93A
Gross Beta	12587-47-2	15.8	4.1	5.33	15.0		93B
Potassium 40	13966-00-2	14.7	0.81	0.360			GAM
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	U		0.040	0.100	U	GAM
Radium 226	13982-63-3	0.428	0.075	0.068	0.100		GAM
Radium 228	15262-20-1	0.840	0.15	0.135	0.200		GAM
Europium 152	14683-23-9	U		0.114	0.100	U	GAM
Europium 154	15585-10-1	U		0.136	0.100	U	GAM
Europium 155	14391-16-3	U		0.091	0.100	U	GAM
Thorium 228	14274-82-9	0.760	0.052	0.046			GAM
Thorium 232	TH-232	0.840	0.15	0.135			GAM
Uranium 235	15117-96-1	U		0.166		U	GAM
Uranium 238	U-238	U		4.40		U	GAM
Americium 241	14596-10-2	U		0.048		U	GAM
Silver 108m	14391-65-2	U		0.027		U	GAM
Barium 133	13981-41-4	U		0.049		U	GAM

100F RemainSitesBurialGrounds-SoilFP

Lab id	EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-004 J16954

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG_K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-04	Client sample id	J16954		
Dept sample id	7766-004	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 13:00	905 g	
% solids	95.1	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	15.0	6.3	4.99	10.0		93A
Gross Beta	12587-47-2	18.3	4.3	5.48	15.0		93B
Potassium 40	13966-00-2	16.6	0.63	0.236			GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Radium 226	13982-63-3	0.538	0.057	0.051	0.100		GAM
Radium 228	15262-20-1	0.726	0.11	0.116	0.200		GAM
Europium 152	14683-23-9	U		0.069	0.100	U	GAM
Europium 154	15585-10-1	U		0.078	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	0.769	0.039	0.034			GAM
Thorium 232	TH-232	0.726	0.11	0.116			GAM
Uranium 235	15117-96-1	U		0.131		U	GAM
Uranium 238	U-238	U		2.87		U	GAM
Americium 241	14596-10-2	U		0.116		U	GAM
Silver 108m	14391-65-2	U		0.020		U	GAM
Barium 133	13981-41-4	U		0.025		U	GAM

100F RemainSitesBurialGrounds-SoilFP

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

SAMPLE DELIVERY GROUP K1118

7766-005 J16955

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-05	Client sample id	J16955		
Dept sample id	7766-005	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 13:10	806 g	
% solids	91.1	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	9.05	5.6	5.96	10.0		93A
Gross Beta	12587-47-2	20.6	5.6	7.67	15.0		93B
Potassium 40	13966-00-2	14.8	0.93	0.491			GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.100	U	GAM
Radium 226	13982-63-3	0.573	0.077	0.073	0.100		GAM
Radium 228	15262-20-1	0.744	0.18	0.163	0.200		GAM
Europium 152	14683-23-9	U		0.105	0.100	U	GAM
Europium 154	15585-10-1	U		0.137	0.100	U	GAM
Europium 155	14391-16-3	U		0.121	0.100	U	GAM
Thorium 228	14274-82-9	0.726	0.054	0.052			GAM
Thorium 232	TH-232	0.744	0.18	0.163			GAM
Uranium 235	15117-96-1	U		0.179		U	GAM
Uranium 238	U-238	U		5.24		U	GAM
Americium 241	14596-10-2	U		0.314		U	GAM
Silver 108m	14391-65-2	U		0.030		U	GAM
Barium 133	13981-41-4	U		0.040		U	GAM

100F RemainSitesBurialGrounds-SoilFP

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

SAMPLE DELIVERY GROUP K1118

7766-006 J16956

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-06	Client sample id	J16956		
Dept sample id	7766-006	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 13:15	941 g	
% solids	91.0	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	11.4	7.4	9.90	10.0		93A
Gross Beta	12587-47-2	17.2	4.5	5.86	15.0		93B
Potassium 40	13966-00-2	11.0	1.0	0.277			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	0.074	0.037	0.038	0.100		GAM
Radium 226	13982-63-3	0.707	0.076	0.064	0.100		GAM
Radium 228	15262-20-1	0.831	0.14	0.133	0.200		GAM
Europium 152	14683-23-9	U		0.077	0.100	U	GAM
Europium 154	15585-10-1	U		0.107	0.100	U	GAM
Europium 155	14391-16-3	U		0.091	0.100	U	GAM
Thorium 228	14274-82-9	0.867	0.042	0.038			GAM
Thorium 232	TH-232	0.831	0.14	0.133			GAM
Uranium 235	15117-96-1	U		0.116		U	GAM
Uranium 238	U-238	U		3.82		U	GAM
Americium 241	14596-10-2	U		0.114		U	GAM
Silver 108m	14391-65-2	U		0.022		U	GAM
Barium 133	13981-41-4	U		0.032		U	GAM

100F RemainSitesBurialGrounds-SoilFP

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

SAMPLE DELIVERY GROUP K1118

7766-007 J16957

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-07	Client sample id	J16957		
Dept sample id	7766-007	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 13:20	869 g	
% solids	92.9	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	14.0	6.5	5.07	10.0		93A
Gross Beta	12587-47-2	17.2	4.3	5.70	15.0		93B
Potassium 40	13966-00-2	14.9	0.61	0.240			GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.100	U	GAM
Radium 226	13982-63-3	0.487	0.047	0.044	0.100		GAM
Radium 228	15262-20-1	0.743	0.091	0.088	0.200		GAM
Europium 152	14683-23-9	U		0.065	0.100	U	GAM
Europium 154	15585-10-1	U		0.078	0.100	U	GAM
Europium 155	14391-16-3	U		0.109	0.100	U	GAM
Thorium 228	14274-82-9	0.652	0.033	0.032			GAM
Thorium 232	TH-232	0.743	0.091	0.088			GAM
Uranium 235	15117-96-1	U		0.120		U	GAM
Uranium 238	U-238	U		2.94		U	GAM
Americium 241	14596-10-2	U		0.154		U	GAM
Silver 108m	14391-65-2	U		0.017		U	GAM
Barium 133	13981-41-4	U		0.032		U	GAM

100F RemainSitesBurialGrounds-SoilFP

Lab id	EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-008 J16958

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-08	Client sample id	J16958		
Dept sample id	7766-008	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 13:25	824 g	
% solids	93.2	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	9.97	6.1	7.32	10.0		93A
Gross Beta	12587-47-2	22.1	4.5	5.67	15.0		93B
Potassium 40	13966-00-2	11.7	0.63	0.329			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	0.394	0.062	0.052	0.100		GAM
Radium 228	15262-20-1	0.761	0.14	0.120	0.200		GAM
Europium 152	14683-23-9	U		0.070	0.100	U	GAM
Europium 154	15585-10-1	U		0.104	0.100	U	GAM
Europium 155	14391-16-3	U		0.085	0.100	U	GAM
Thorium 228	14274-82-9	0.633	0.038	0.034			GAM
Thorium 232	TH-232	0.761	0.14	0.120			GAM
Uranium 235	15117-96-1	U		0.109		U	GAM
Uranium 238	U-238	U		3.24		U	GAM
Americium 241	14596-10-2	U		0.036		U	GAM
Silver 108m	14391-65-2	U		0.020		U	GAM
Barium 133	13981-41-4	U		0.028		U	GAM

100F RemainSitesBurialGrounds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-009 J16959

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-09	Client sample id	J16959		
Dept sample id	7766-009	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 13:30	798 g	
% solids	90.3	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	5.63	5.2	7.54	10.0	U	93A
Gross Beta	12587-47-2	16.1	4.1	5.61	15.0		93B
Potassium 40	13966-00-2	14.1	0.79	0.344			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	0.480	0.072	0.073	0.100		GAM
Radium 228	15262-20-1	0.738	0.15	0.155	0.200		GAM
Europium 152	14683-23-9	U		0.083	0.100	U	GAM
Europium 154	15585-10-1	U		0.130	0.100	U	GAM
Europium 155	14391-16-3	U		0.154	0.100	U	GAM
Thorium 228	14274-82-9	0.665	0.046	0.046			GAM
Thorium 232	TH-232	0.738	0.15	0.155			GAM
Uranium 235	15117-96-1	U		0.151		U	GAM
Uranium 238	U-238	U		4.55		U	GAM
Americium 241	14596-10-2	U		0.262		U	GAM
Silver 108m	14391-65-2	U		0.025		U	GAM
Barium 133	13981-41-4	U		0.038		U	GAM

100F RemainSitesBurialGrounds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

7766-010 J16960

DATA SHEET

SDG	7766	Client/Case no	Hanford	SDG K1118	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802099-10	Client sample id	J16960		
Dept sample id	7766-010	Location/Matrix	100-F-26:9 OB Verificatn	SOLID	
Received	02/13/08	Collected/Weight	02/11/08 13:35	950 g	
% solids	93.6	Custody/SAF No	RC-032-190	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	9.82	5.9	6.76	10.0		93A
Gross Beta	12587-47-2	19.3	5.8	8.86	15.0		93B
Potassium 40	13966-00-2	14.3	0.50	0.189			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	0.033	0.018	0.022	0.100		GAM
Radium 226	13982-63-3	0.590	0.045	0.039	0.100		GAM
Radium 228	15262-20-1	0.793	0.093	0.082	0.200		GAM
Europium 152	14683-23-9	U		0.058	0.100	U	GAM
Europium 154	15585-10-1	U		0.061	0.100	U	GAM
Europium 155	14391-16-3	U		0.073	0.100	U	GAM
Thorium 228	14274-82-9	0.825	0.036	0.032			GAM
Thorium 232	TH-232	0.793	0.093	0.082			GAM
Uranium 235	15117-96-1	U		0.109		U	GAM
Uranium 238	U-238	U		2.56		U	GAM
Americium 241	14596-10-2	U		0.095		U	GAM
Silver 108m	14391-65-2	U		0.017		U	GAM
Barium 133	13981-41-4	U		0.022		U	GAM

100F RemainSitesBurialGrounds-SoilFP

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test SR Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K1118

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
Preparation batch 6133-187						
R802099-01			7766-001	J16951	U	
R802099-11			7766-011	Lab Control Sample	ok	
R802099-12			7766-012	Method Blank	U	
R802099-14			7766-014	Duplicate (R802099-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00
100F RemainSitesBurialGrounds-SoilFP

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6133-187 2σ prep error 10.0 % Reference Lab Notebook #6133, pg. 187																
R802099-01			J16951	0.258	1.00			95		100			14	02/25/08	02/25	GRB-227
R802099-11			Lab Control Sample	0.251	1.00			94		100				02/25/08	02/25	GRB-228
R802099-12			Method Blank	0.266	1.00			93		200				02/25/08	02/25	GRB-203
R802099-14			Duplicate (R802099-01)	0.282	1.00			95		200			14	02/25/08	02/25	GRB-204
Nominal values and limits from method				1.00	1.00			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD MDA 0.264 ± 0.027
FOR 4 SAMPLES YIELD 94 ± 2

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test 82B Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1118

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Gross Beta	2: Sum, Beta Emitters	RESULT RATIO (%) 2÷1	2σ
Preparation batch 6133-187								
R802099-01	82		7766-001	J16951	14.8	16.2	110	40
R802099-11	82		7766-011	Lab Control Sample	ok			
R802099-12	82		7766-012	Method Blank	U			
R802099-14	82		7766-014	Duplicate (R802099-01)	ok			

Nominal values and limits from method RDLs (pCi/g) 15.0
100F RemainSitesBurialGrounds-SoilFP Average 110

METHOD PERFORMANCE

LAB SAMPLE 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
Preparation batch 6133-187 2σ prep error 15.0 % Reference Lab Notebook #6133, pg. 187																
R802099-01	82		J16951	6.21	0.100			41		100			15	02/26/08	02/26	GRB-110
R802099-11	82		Lab Control Sample	5.31	0.100			61		100				02/26/08	02/26	GRB-111
R802099-12	82		Method Blank	5.63	0.100			63		100				02/26/08	02/26	GRB-112
R802099-14	82		Duplicate (R802099-01)	7.57	0.100			40		100			15	02/26/08	02/26	GRB-114
Nominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 6.18 ± 2.00
RESIDUE 51 ± 25

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test 93A Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1118

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 6133-187					
R802099-01	93		7766-001	J16951	8.33
R802099-02	93		7766-002	J16952	10.1
R802099-03	93		7766-003	J16953	U
R802099-04	93		7766-004	J16954	15.0
R802099-05	93		7766-005	J16955	9.05
R802099-06	93		7766-006	J16956	11.4
R802099-07	93		7766-007	J16957	14.0
R802099-08	93		7766-008	J16958	9.97
R802099-09	93		7766-009	J16959	U
R802099-10	93		7766-010	J16960	9.82
R802099-11	93		7766-011	Lab Control Sample	ok
R802099-12	93		7766-012	Method Blank	U
R802099-13	93		7766-013	Duplicate (R802099-04)	ok

Nominal values and limits from method RDLs (pCi/g) 10.0
100F RemainSitesBurialGrounds-SoilFP

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test 93A Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1118

METHOD PERFORMANCE

LAB SAMPLE 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
Preparation batch 6133-187			2σ prep error 20.0 % Reference Lab Notebook #6133, pg. 187													
R802099-01	93		J16951	6.08	0.100			65		100			7	02/18/08	02/18	GRB-109
R802099-02	93		J16952	6.29	0.100			60		100			7	02/18/08	02/18	GRB-110
R802099-03	93		J16953	5.72	0.100			65		100			7	02/18/08	02/18	GRB-111
R802099-04	93		J16954	4.99	0.100			41		100			7	02/18/08	02/18	GRB-112
R802099-05	93		J16955	5.96	0.100			64		100			7	02/18/08	02/18	GRB-114
R802099-06	93		J16956	9.90	0.100			58		100			7	02/18/08	02/18	GRB-115
R802099-07	93		J16957	5.07	0.100			59		100			7	02/18/08	02/18	GRB-209
R802099-08	93		J16958	7.32	0.100			62		100			7	02/18/08	02/18	GRB-210
R802099-09	93		J16959	7.54	0.100			71		100			7	02/18/08	02/18	GRB-211
R802099-10	93		J16960	6.76	0.100			58		100			7	02/18/08	02/18	GRB-213
R802099-11	93		Lab Control Sample	6.47	0.100			63		100				02/18/08	02/18	GRB-214
R802099-12	93		Method Blank	3.74	0.100			64		100				02/18/08	02/18	GRB-216
R802099-13	93		Duplicate (R802099-04)	5.30	0.100			40		100			7	02/18/08	02/18	GRB-109
Nominal values and limits from method				10.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 13 SAMPLES
MDA 6.24 ± 3.00
RESIDUE 59 ± 18

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test 93B Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1118

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 6133-187					
R802099-02	93		7766-002	J16952	15.4
R802099-03	93		7766-003	J16953	15.8
R802099-04	93		7766-004	J16954	18.3
R802099-05	93		7766-005	J16955	20.6
R802099-06	93		7766-006	J16956	17.2
R802099-07	93		7766-007	J16957	17.2
R802099-08	93		7766-008	J16958	22.1
R802099-09	93		7766-009	J16959	16.1
R802099-10	93		7766-010	J16960	19.3
R802099-11	93		7766-011	Lab Control Sample	ok
R802099-12	93		7766-012	Method Blank	U
R802099-13	93		7766-013	Duplicate (R802099-04)	ok

Nominal values and limits from method RDLs (pCi/g) 15.0
100F RemainSitesBurialGrounds-SoilFP

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test 93B Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1118

METHOD PERFORMANCE

LAB SAMPLE 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
Preparation batch 6133-187			2σ prep error 15.0 % Reference Lab Notebook #6133, pg. 187													
R802099-02	93		J16952	6.28	0.100			60		100			7	02/18/08	02/18	GRB-110
R802099-03	93		J16953	5.33	0.100			65		100			7	02/18/08	02/18	GRB-111
R802099-04	93		J16954	5.48	0.100			41		100			7	02/18/08	02/18	GRB-112
R802099-05	93		J16955	7.67	0.100			64		100			7	02/18/08	02/18	GRB-114
R802099-06	93		J16956	5.86	0.100			58		100			7	02/18/08	02/18	GRB-115
R802099-07	93		J16957	5.70	0.100			59		100			7	02/18/08	02/18	GRB-209
R802099-08	93		J16958	5.67	0.100			62		100			7	02/18/08	02/18	GRB-210
R802099-09	93		J16959	5.61	0.100			71		100			7	02/18/08	02/18	GRB-211
R802099-10	93		J16960	8.86	0.100			58		100			7	02/18/08	02/18	GRB-213
R802099-11	93		Lab Control Sample	8.61	0.100			63		100				02/18/08	02/18	GRB-214
R802099-12	93		Method Blank	5.56	0.100			64		100				02/18/08	02/18	GRB-216
R802099-13	93		Duplicate (R802099-04)	5.27	0.100			40		100			7	02/18/08	02/18	GRB-109
Nominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES
REFERENCE 900.0_ALPHABETA_GPC
SPP-070 Soil Dissolution, < 1.0g Aliquot, rev 7
SPP-125 Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 12 SAMPLES
MDA 6.32 ± 2.59
RESIDUE 59 ± 19

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test GAM Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1118

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
Preparation batch 6133-187						
R802099-01			7766-001	J16951	U	U
R802099-02			7766-002	J16952	U	U
R802099-03			7766-003	J16953	U	U
R802099-04			7766-004	J16954	U	U
R802099-05			7766-005	J16955	U	U
R802099-06			7766-006	J16956	U	0.074
R802099-07			7766-007	J16957	U	U
R802099-08			7766-008	J16958	U	U
R802099-09			7766-009	J16959	U	U
R802099-10			7766-010	J16960	U	0.033
R802099-11			7766-011	Lab Control Sample	ok	ok
R802099-12			7766-012	Method Blank	U	U
R802099-13			7766-013	Duplicate (R802099-04)	- U	- U
Nominal values and limits from method 100F RemainSitesBurialGrounds-SoilFP				RDLs (pCi/g)	0.050	0.100

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1118

Test GAM Matrix SOLID
SDG 7766
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1118

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6133-187			2σ prep error 15.0 % Reference Lab Notebook #6133, pg. 187													
R802099-01			J16951	6.89	629					123			7	02/15/08	02/18	02,04,00
R802099-02			J16952	6.13	567					123			7	02/15/08	02/18	MB,08,00
R802099-03			J16953	8.80	539					123			7	02/15/08	02/18	MB,06,00
R802099-04			J16954	4.85	512					123			7	02/15/08	02/18	02,02,00
R802099-05			J16955	7.59	611					123			7	02/15/08	02/18	MB,05,00
R802099-06			J16956	6.81	561					163			7	02/15/08	02/18	02,04,00
R802099-07			J16957	4.87	623					164			7	02/15/08	02/18	MB,08,00
R802099-08			J16958	5.58	681					163			7	02/15/08	02/18	MB,06,00
R802099-09			J16959	6.80	607					163			7	02/15/08	02/18	MB,05,00
R802099-10			J16960	4.10	530					168			8	02/15/08	02/19	02,02,00
R802099-11			Lab Control Sample	0.034	511					176				02/15/08	02/19	01,04,00
R802099-12			Method Blank	4.28	511					168				02/15/08	02/19	MB,05,00
R802099-13			Duplicate (R802099-04)	5.17	512					163			7	02/15/08	02/18	MB,07,00
Nominal values and limits from method				0.050	511					100			180			

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

AVERAGES ± 2 SD FOR 13 SAMPLES
MDA 5.53 ± 4.29
YIELD ____ ± ____

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

SDG 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1118

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 03/03/08

SDG	7766
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG K1118

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	03/03/08

SDG 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1118

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 03/03/08

SDG 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1118

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 03/03/08

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 7766
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1118

DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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

SDG 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1118

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 03/03/08

SDG 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1118

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 03/03/08

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 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1118

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 03/03/08

SDG 7766
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K1118

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 03/03/08

SDG 7766
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1118

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 03/03/08

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-032-190	Page 1 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification K1118 (7766)	SAF No.: RC-032	
Ice Chest No.: AF5-04-123	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080168	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions	Gross Alpha: Gross Beta				

Sample No.	Matrix *	Sample Date	Sample Time										
~~J16947~~	~~SOIL~~								X	X			1
~~J16948~~	~~SOIL~~								X	X			2
~~J16949~~	~~SOIL~~								X	X			3
~~J16950~~	~~SOIL~~								X	X			4
J16951	SOIL	2-11-08	1230						X	X			5

RTC 2/4/08

1-29-08

CHAIN OF POSSESSION 2/11/08 — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	2/8/08 1430 Thu	JR DeDuvigne [signature]	1430 2-11-08
JR DeDuvigne [signature]	2-11-08 1615	1060/2B	2-11-08 1615
1060 #2B	2-12-08 0945	T.R. Edmundson JR Edmundson	2-12-08 0945
T.B. Edmundson JR Edmundson WCH	2-12-08 1500	FED EX	
FED EX		[signature]	02/13/08 09:30

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

LABORATORY COPY

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 2 of 3

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 7 DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:9 OB Verification K1118 (77606)	SAF No. RC-032	
Ice Chest No. AFS-04-123	Field Logbook No. EFL-1174-4	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080168	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None			
Type of Container	P	P	aG	aG	aG	G-P	P			
No. of Container(s)	2	1	1	1	1	1	1			
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha: Gross Beta			

Sample No.	Matrix *	Sample Date	Sample Time									
J16952	SOIL	2-11-08	1240					X	X			6
J16953	SOIL		1250					X	X			7
J16954	SOIL		1300					X	X			8
J16955	SOIL		1310					X	X			9
J16956	SOIL	2-11-08	1315					X	X			10

JRD 1-22-08

CHAIN OF POSSESSION 2-11-08

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	2-11-08 1430 TWC	JRDeBuigne [signature]	1430 2-11-08
JRDeBuigne [signature]	1615 2-11-08	1060/2B	1615 2-11-08
1060 #2B	2-12-08 0945	T.R. Edmundson JR Edmundson	2-12-08 0945
T.R. Edmundson JR Edmundson	WCH 2-12-08 1500	FED EX	
FED EX		[signature]	02/13/08 09:30

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum. Antimony. Arsenic. Barium. Beryllium. Boron. Cadmium, Calcium. Chromium. Cobalt. Copper. Iron. Lead. Magnesium. Manganese. Molybdenum. Nickel, Potassium. Selenium. Silicon. Silver, Sodium. Vanadium. Zinc}: Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137. Cobalt-60. Europium-152, Europium-154. Europium-155}: Gamma Spec - Add-on {Barium-133. Silver-108 metastable}

Samples from 1060 #2B. 1060 Sample Custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 2 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code 8B	Data Turnaround 7 DAY
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:9 OB Verification K1118 (7766)		SAF No. RC-032		
Ice Chest No. AFS-04-123	Field Logbook No. EFL-1174-4	COA R10F262000	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A080168		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None			
Type of Container	P	P	aG	aG	aG	G/P	P			
No. of Container(s)	2	1	1	1	1	1	1			
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions	Gross Alpha; Gross Beta			

1-23-08

Sample No.	Matrix *	Sample Date	Sample Time										
J16957	SOIL	2-11-08	1320						X	X			11
J16958	SOIL		1325						X	X			12
J16959	SOIL		1330						X	X			13
J16960	SOIL	2-11-08	1335						X	X			14

JRD

CHAIN OF POSSESSION 2-11-08 **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Welch-Koelling	2-8-08 Tue 1430	JRDeBruine JRDeBruine	1430 2-11-08
JRDeBruine JRDeBruine	1615 2-11-08	1060 #2B	1615 2-11-08
1060 #2B	2-12-08 0945	JR Edmondson JR Edmondson	2-12-08 0945
T.E. Edmondson JR Edmondson	WCH 2-12-08 1500	FED EX	
FED EX		[illegible]	02/13/08 09:30

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum. Antimony, Arsenic. Barium. Beryllium. Boron. Cadmium. Calcium, Chromium. Cobalt. Copper, Iron. Lead. Magnesium. Manganese. Molybdenum. Nickel. Potassium. Selenium. Silicon. Silver. Sodium. Vanadium. Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137. Cobalt-60. Europium-152. Europium-154. Europium-155}: Gamma Spec - Add-on {Barium-133. Silver-108 metastable}

Samples from 1060#2B. 1060 Sample Custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

LvLI
LIONVILLE LABORATORY INC.

21 March 2008

RECEIVED
MAR 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 #	0802L586
SDG #	K1118
SAF #	RC-032
Date Received	2/13/08
# Samples	10
Matrix	SOIL
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

RECEIVED
MAR 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :08021586

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16951	001	S	08LE0076	02/11/08	02/15/08	02/29/08
J16951	001 MS	S	08LE0076	02/11/08	02/15/08	02/29/08
J16951	001 MSD	S	08LE0076	02/11/08	02/15/08	02/29/08
J16952	002	S	08LE0076	02/11/08	02/15/08	02/29/08
J16953	003	S	08LE0076	02/11/08	02/15/08	02/29/08
J16954	004	S	08LE0076	02/11/08	02/15/08	03/16/08
J16955	005	S	08LE0076	02/11/08	02/15/08	03/16/08
J16956	006	S	08LE0076	02/11/08	02/15/08	03/16/08
J16957	007	S	08LE0076	02/11/08	02/15/08	03/16/08
J16958	008	S	08LE0076	02/11/08	02/15/08	03/16/08
J16959	009	S	08LE0076	02/11/08	02/15/08	03/16/08
J16960	010	S	08LE0076	02/11/08	02/15/08	03/16/08

LAB QC:

SBLKSL	MB1	S	08LE0076	N/A	02/15/08	03/05/08
SBLKSL	MB1 BS	S	08LE0076	N/A	02/15/08	03/04/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0802L586
SDG/SAF # K1118/RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 02-13-2008

SEMIVOLATILE

Ten (10) soil samples were collected on 02-11-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-15-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 02-29-2008 and 03-04,05,16-2008.

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. Samples were extracted and analyzed within required holding time.

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

3. Samples J16951, J16951 MS, and J16951 MSD had elevated final volumes of 4 mLs, due to the nature of the extract. Reporting limits have been adjusted to reflect the elevated final volumes.

4. Four (4) of eighty-four (84) surrogate recoveries were outside acceptance criteria. However, surrogate recovery criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries than 10%). The surrogate recovery criteria were not met for sample 08LE0076-MB1. The loss of the surrogate 2,4,6-Tribromophenol in sample 08LE0076-MB1 appears to be due to a chemical reaction rather than to a problem with the extraction process. Peaks on the chromatogram indicate this reaction. The conversion compound has been reported as a non-target compound in sample 08LE0076-MB1 at a retention time of 20.380 minutes. This surrogate loss has been associated with the use of soxhlet extractions.

r:\group\data\2008\bna\tnu\0802-586ks2.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 29 pages.

LIONVILLE LABORATORY INC.

5. Twenty-five (25) 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.

6. Four (4) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

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

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

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

10. Internal standard area criteria were not met for sample 08LE0076-MB1. Associated blank spike analyses fulfilled its reanalysis requirement.

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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/18/08
Date

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS035

Initiator: Shannon Saylor
Date: 3-17-08
Client: TAU BC032

Batch: 08U2L586
Samples: ms, msd, SS, mb1
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Solid
Prep Batch: 08IEW76

1. Reason for SDR

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

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

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

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

① <10% recovery of 2,4,6-tribromophenol in the mb1
② low recovery of several spike analytes in the SS
③ no or low recovery of several spike analytes in the ms, msd

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: name

__ 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: 3/17/08
✓ 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: KOB 3-19-08 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	②	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0802L586 Client: TNUHANFORD RC-032 K1118 Work Order: 11343606001 Report Date: 03/18/08 11:03 Page: 1a

	Cust ID:	J16951	J16951	J16951	J16952	J16953	J16954
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	8.00	8.00	8.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	63 %	51 %	57 %	46 %	55 %	49 %
	2-Fluorobiphenyl	68 %	54 %	60 %	51 %	65 %	59 %
	Terphenyl-d14	81 %	73 %	78 %	80 %	89 %	80 %
	Phenol-d5	58 %	52 %	60 %	46 %	52 %	54 %
	2-Fluorophenol	60 %	52 %	59 %	45 %	54 %	55 %
	2,4,6-Tribromophenol	17 * %	22 %	41 %	17 * %	19 %	31 %
		fl	fl	fl	fl	fl	fl
Phenol		2900 U	43 * %	61 %	360 U	350 U	360 U
bis(2-Chloroethyl)ether		2900 U	42 * %	54 %	360 U	350 U	360 U
2-Chlorophenol		2900 U	49 * %	69 %	360 U	350 U	360 U
1,3-Dichlorobenzene		2900 U	46 * %	59 %	360 U	350 U	360 U
1,4-Dichlorobenzene		2900 U	47 * %	58 %	360 U	350 U	360 U
1,2-Dichlorobenzene		2900 U	49 * %	61 %	360 U	350 U	360 U
2-Methylphenol		2900 U	61 %	71 %	360 U	350 U	360 U
2,2'-oxybis(1-Chloropropane)		2900 U	43 * %	49 * %	360 U	350 U	360 U
3/4 Methylphenol		2900 U	73 %	73 %	360 U	350 U	360 U
N-Nitroso-di-n-propylamine		2900 U	45 * %	61 %	360 U	350 U	360 U
Hexachloroethane		2900 U	43 * %	58 %	360 U	350 U	360 U
Nitrobenzene		2900 U	44 * %	58 %	360 U	350 U	360 U
Isophorone		2900 U	53 * %	61 %	360 U	350 U	360 U
2-Nitrophenol		2900 U	43 * %	54 %	360 U	350 U	360 U
2,4-Dimethylphenol		2900 U	69 %	76 %	360 U	350 U	360 U
bis(2-Chloroethoxy)methane		2900 U	52 %	60 %	360 U	350 U	360 U
2,4-Dichlorophenol		2900 U	56 %	77 %	360 U	350 U	360 U
1,2,4-Trichlorobenzene		2900 U	56 * %	69 %	360 U	350 U	360 U
Naphthalene		2900 U	55 %	61 %	360 U	350 U	360 U
4-Chloroaniline		2900 U	39 %	57 %	360 U	350 U	360 U
Hexachlorobutadiene		2900 U	69 %	78 %	360 U	350 U	360 U
4-Chloro-3-methylphenol		2900 U	69 %	81 %	360 U	350 U	360 U
2-Methylnaphthalene		2900 U	63 %	71 %	360 U	350 U	360 U
Hexachlorocyclopentadiene		2900 U	D %	11 * %	360 U	350 U	360 U
2,4,6-Trichlorophenol		2900 U	21 %	44 %	360 U	350 U	360 U
2,4,5-Trichlorophenol		7100 U	42 %	63 %	900 U	870 U	890 U

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J16951		J16951		J16951		J16952		J16953		J16954	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	2900	U	52	%	60	%	360	U	350	U	360	U
2-Nitroaniline	7100	U	56 *	%	65	%	900	U	870	U	890	U
Dimethylphthalate	2900	U	58	%	64	%	360	U	350	U	360	U
Acenaphthylene	2900	U	57 *	%	64	%	360	U	350	U	360	U
2,6-Dinitrotoluene	2900	U	54 *	%	67	%	360	U	350	U	360	U
3-Nitroaniline	7100	U	64	%	68	%	900	U	870	U	890	U
Acenaphthene	2900	U	54	%	62	%	360	U	350	U	360	U
2,4-Dinitrophenol	7100	U	D	%	D	%	900	U	870	U	890	U
4-Nitrophenol	7100	U	68	%	73	%	900	U	870	U	890	U
Dibenzofuran	2900	U	60	%	69	%	360	U	350	U	360	U
2,4-Dinitrotoluene	2900	U	56 *	%	68	%	360	U	350	U	360	U
Diethylphthalate	2900	U	59	%	72	%	360	U	350	U	360	U
4-Chlorophenyl-phenylether	2900	U	58	%	67	%	360	U	350	U	360	U
Fluorene	2900	U	54 *	%	68	%	360	U	350	U	360	U
4-Nitroaniline	7100	U	52	%	67	%	900	U	870	U	890	U
4,6-Dinitro-2-methylphenol	7100	U	D	%	D	%	900	U	870	U	890	U
N-Nitrosodiphenylamine (1)	2900	U	46 *	%	52	%	360	U	350	U	360	U
4-Bromophenyl-phenylether	2900	U	50	%	53	%	360	U	350	U	360	U
Hexachlorobenzene	2900	U	63	%	69	%	360	U	350	U	360	U
Pentachlorophenol	7100	U	D	%	D	%	900	U	870	U	890	U
Phenanthrene	2900	U	57 *	%	61	%	360	U	100	J	40	J
Anthracene	2900	U	56 *	%	65	%	360	U	22	J	360	U
Carbazole	2900	U	58 *	%	67	%	360	U	350	U	360	U
Di-n-butylphthalate	2900	U	59	%	67	%	360	U	350	U	360	U
Fluoranthene	2900	U	56	%	62	%	360	U	200	J	73	J
Pyrene	2900	U	59	%	75	%	360	U	250	J	91	J
Butylbenzylphthalate	2900	U	66	%	81	%	360	U	350	U	360	U
3,3'-Dichlorobenzidine	2900	U	59	%	71	%	360	U	350	U	360	U
Benzo(a)anthracene	2900	U	61	%	72	%	360	U	100	J	37	J
Chrysene	2900	U	64	%	73	%	360	U	140	J	48	J
bis(2-Ethylhexyl)phthalate	490	JB	49 *	%	64	%	240	JB	140	JB	140	JB
Di-n-octyl phthalate	2900	U	58	%	74	%	360	U	350	U	360	U
Benzo(b)fluoranthene	2900	U	64	%	64	%	360	U	79	J	27	J
Benzo(k)fluoranthene	2900	U	61	%	75	%	360	U	97	J	43	J
Benzo(a)pyrene	2900	U	68	%	72	%	360	U	92	J	36	J
Indeno(1,2,3-cd)pyrene	2900	U	68	%	73	%	360	U	55	J	30	J
Dibenz(a,h)anthracene	2900	U	70	%	70	%	360	U	19	J	360	U
Benzo(g,h,i)perylene	2900	U	70	%	77	%	360	U	63	J	27	J

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

Semivolatiles by GC/MS, HSL List

Report Date: 03/18/08 11:03

RFW Batch Number: 0802L586 Client: TNUHANFORD RC-032 K1118 Work Order: 11343606001 Page: 2a

000000010

	Cust ID:	J16955	J16956	J16957	J16958	J16959	J16960
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	47 %	50 %	44 %	44 %	37 %	45 %
	2-Fluorobiphenyl	53 %	67 %	52 %	50 %	45 %	56 %
	Terphenyl-d14	82 %	90 %	81 %	85 %	74 %	70 %
	Phenol-d5	48 %	53 %	47 %	45 %	39 %	46 %
	2-Fluorophenol	48 %	47 %	44 %	45 %	32 %	45 %
	2,4,6-Tribromophenol	21 %	22 %	15 * %	42 %	20 %	25 %
		fl	fl	fl	fl	fl	fl
Phenol		370 U	370 U	350 U	360 U	370 U	360 U
bis(2-Chloroethyl)ether		370 U	370 U	350 U	360 U	370 U	360 U
2-Chlorophenol		370 U	370 U	350 U	360 U	370 U	360 U
1,3-Dichlorobenzene		370 U	370 U	350 U	360 U	370 U	360 U
1,4-Dichlorobenzene		370 U	370 U	350 U	360 U	370 U	360 U
1,2-Dichlorobenzene		370 U	370 U	350 U	360 U	370 U	360 U
2-Methylphenol		370 U	370 U	350 U	360 U	370 U	360 U
2,2'-oxybis(1-Chloropropane)		370 U	370 U	350 U	360 U	370 U	360 U
3/4 Methylphenol		370 U	370 U	350 U	360 U	370 U	360 U
N-Nitroso-di-n-propylamine		370 U	370 U	350 U	360 U	370 U	360 U
Hexachloroethane		370 U	370 U	350 U	360 U	370 U	360 U
Nitrobenzene		370 U	370 U	350 U	360 U	370 U	360 U
Isophorone		370 U	370 U	350 U	360 U	370 U	360 U
2-Nitrophenol		370 U	370 U	350 U	360 U	370 U	360 U
2,4-Dimethylphenol		370 U	370 U	350 U	360 U	370 U	360 U
bis(2-Chloroethoxy)methane		370 U	370 U	350 U	360 U	370 U	360 U
2,4-Dichlorophenol		370 U	370 U	350 U	360 U	370 U	360 U
1,2,4-Trichlorobenzene		370 U	370 U	350 U	360 U	370 U	360 U
Naphthalene		370 U	370 U	350 U	360 U	370 U	18 J
4-Chloroaniline		370 U	370 U	350 U	360 U	370 U	360 U
Hexachlorobutadiene		370 U	370 U	350 U	360 U	370 U	360 U
4-Chloro-3-methylphenol		370 U	370 U	350 U	360 U	370 U	360 U
2-Methylnaphthalene		370 U	370 U	350 U	360 U	370 U	27 J
Hexachlorocyclopentadiene		370 U	370 U	350 U	360 U	370 U	360 U
2,4,6-Trichlorophenol		370 U	370 U	350 U	360 U	370 U	360 U
2,4,5-Trichlorophenol		920 U	930 U	880 U	890 U	930 U	910 U

*= Outside of EPA CLP QC limits.

Cust ID:	J16955		J16956		J16957		J16958		J16959		J16960	
RFW#:	005		006		007		008		009		010	
2-Chloronaphthalene	370	U	370	U	350	U	360	U	370	U	360	U
2-Nitroaniline	920	U	930	U	880	U	890	U	930	U	910	U
Dimethylphthalate	370	U	370	U	350	U	360	U	370	U	360	U
Acenaphthylene	370	U	370	U	350	U	360	U	370	U	360	U
2,6-Dinitrotoluene	370	U	370	U	350	U	360	U	370	U	360	U
3-Nitroaniline	920	U	930	U	880	U	890	U	930	U	910	U
Acenaphthene	370	U	370	U	350	U	360	U	370	U	360	U
2,4-Dinitrophenol	920	U	930	U	880	U	890	U	930	U	910	U
4-Nitrophenol	920	U	930	U	880	U	890	U	930	U	910	U
Dibenzofuran	370	U	370	U	350	U	360	U	370	U	360	U
2,4-Dinitrotoluene	370	U	370	U	350	U	360	U	370	U	360	U
Diethylphthalate	370	U	370	U	350	U	360	U	370	U	360	U
4-Chlorophenyl-phenylether	370	U	370	U	350	U	360	U	370	U	360	U
Fluorene	370	U	370	U	350	U	360	U	370	U	360	U
4-Nitroaniline	920	U	930	U	880	U	890	U	930	U	910	U
4,6-Dinitro-2-methylphenol	920	U	930	U	880	U	890	U	930	U	910	U
N-Nitrosodiphenylamine (1)	370	U	370	U	350	U	360	U	370	U	360	U
4-Bromophenyl-phenylether	370	U	370	U	350	U	360	U	370	U	360	U
Hexachlorobenzene	370	U	370	U	350	U	360	U	370	U	360	U
Pentachlorophenol	920	U	930	U	880	U	890	U	930	U	910	U
Phenanthrene	370	U	370	U	110	J	360	U	370	U	360	U
Anthracene	370	U	370	U	19	J	360	U	370	U	360	U
Carbazole	370	U	370	U	350	U	360	U	370	U	360	U
Di-n-butylphthalate	370	U	370	U	350	U	360	U	370	U	360	U
Fluoranthene	370	U	370	U	220	J	360	U	370	U	360	U
Pyrene	370	U	370	U	260	J	360	U	370	U	360	U
Butylbenzylphthalate	370	U	370	U	350	U	360	U	370	U	360	U
3,3'-Dichlorobenzidine	370	U	370	U	350	U	360	U	370	U	360	U
Benzo(a)anthracene	370	U	370	U	95	J	360	U	370	U	360	U
Chrysene	370	U	370	U	130	J	360	U	370	U	360	U
bis(2-Ethylhexyl)phthalate	130	JB	220	JB	110	JB	110	JB	260	JB	330	JB
Di-n-octyl phthalate	370	U	370	U	350	U	360	U	370	U	360	U
Benzo(b)fluoranthene	370	U	370	U	89	J	360	U	370	U	360	U
Benzo(k)fluoranthene	370	U	370	U	90	J	360	U	370	U	360	U
Benzo(a)pyrene	370	U	370	U	110	J	360	U	370	U	360	U
Indeno(1,2,3-cd)pyrene	370	U	370	U	71	J	360	U	370	U	360	U
Dibenz(a,h)anthracene	370	U	370	U	22	J	360	U	370	U	360	U
Benzo(g,h,i)perylene	370	U	370	U	70	J	360	U	370	U	360	U

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

000000011

000000012

	Cust ID:	SBLKSL	SBLKSL BS
Sample Information	RFW#:	08LE0076-MB1	08LE0076-MB1
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.00
	Units:	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	66 %	61 %
	2-Fluorobiphenyl	58 %	76 %
	Terphenyl-d14	81 %	89 %
	Phenol-d5	65 %	70 %
	2-Fluorophenol	65 %	76 %
	2,4,6-Tribromophenol	7 * %	20 %
Phenol		330 U	74 %
bis(2-Chloroethyl)ether		330 U	69 %
2-Chlorophenol		330 U	69 %
1,3-Dichlorobenzene		330 U	70 %
1,4-Dichlorobenzene		330 U	69 %
1,2-Dichlorobenzene		330 U	68 %
2-Methylphenol		330 U	65 %
2,2'-oxybis(1-Chloropropane)		330 U	69 %
3/4 Methylphenol		330 U	67 %
N-Nitroso-di-n-propylamine		330 U	65 %
Hexachloroethane		330 U	66 %
Nitrobenzene		330 U	57 %
Isophorone		330 U	63 %
2-Nitrophenol		330 U	58 %
2,4-Dimethylphenol		330 U	46 * %
bis(2-Chloroethoxy)methane		330 U	60 %
2,4-Dichlorophenol		330 U	52 %
1,2,4-Trichlorobenzene		330 U	55 * %
Naphthalene		330 U	57 %
4-Chloroaniline		330 U	46 %
Hexachlorobutadiene		330 U	63 %
4-Chloro-3-methylphenol		330 U	59 * %
2-Methylnaphthalene		330 U	57 * %
Hexachlorocyclopentadiene		330 U	67 %
2,4,6-Trichlorophenol		330 U	31 %
2,4,5-Trichlorophenol		830 U	64 %

*= Outside of EPA CLP QC limits.

000000012

	Cust ID:	SBLKSL	SBLKSL BS
Sample Information	RFW#:	08LE0076-MB1	08LE0076-MB1
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.00
	Units:	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	66 %	61 %
	2-Fluorobiphenyl	58 %	76 %
	Terphenyl-d14	81 %	89 %
	Phenol-d5	65 %	70 %
	2-Fluorophenol	65 %	76 %
	2,4,6-Tribromophenol	7 * %	20 %
Phenol		330 U	74 %
bis(2-Chloroethyl)ether		330 U	69 %
2-Chlorophenol		330 U	69 %
1,3-Dichlorobenzene		330 U	70 %
1,4-Dichlorobenzene		330 U	69 %
1,2-Dichlorobenzene		330 U	68 %
2-Methylphenol		330 U	65 %
2,2'-oxybis(1-Chloropropane)		330 U	69 %
3/4 Methylphenol		330 U	67 %
N-Nitroso-di-n-propylamine		330 U	65 %
Hexachloroethane		330 U	66 %
Nitrobenzene		330 U	57 %
Isophorone		330 U	63 %
2-Nitrophenol		330 U	58 %
2,4-Dimethylphenol		330 U	46 * %
bis(2-Chloroethoxy)methane		330 U	60 %
2,4-Dichlorophenol		330 U	52 %
1,2,4-Trichlorobenzene		330 U	55 * %
Naphthalene		330 U	57 %
4-Chloroaniline		330 U	46 %
Hexachlorobutadiene		330 U	63 %
4-Chloro-3-methylphenol		330 U	59 * %
2-Methylnaphthalene		330 U	57 * %
Hexachlorocyclopentadiene		330 U	67 %
2,4,6-Trichlorophenol		330 U	31 %
2,4,5-Trichlorophenol		830 U	64 %

*= Outside of EPA CLP QC limits.

Cust ID:	SBLKSL		SBLKSL BS	
RFW#:	08LE0076-MB1		08LE0076-MB1	
2-Chloronaphthalene	330	U	74	%
2-Nitroaniline	830	U	89	%
Dimethylphthalate	330	U	78	%
Acenaphthylene	330	U	77	%
2,6-Dinitrotoluene	330	U	82	%
3-Nitroaniline	830	U	89	%
Acenaphthene	330	U	74	%
2,4-Dinitrophenol	830	U	22	%
4-Nitrophenol	830	U	67	%
Dibenzofuran	330	U	84	%
2,4-Dinitrotoluene	330	U	97	%
Diethylphthalate	330	U	84	%
4-Chlorophenyl-phenylether	330	U	79	%
Fluorene	330	U	77	%
4-Nitroaniline	830	U	82	%
4,6-Dinitro-2-methylphenol	830	U	40	%
N-Nitrosodiphenylamine (1)	330	U	59	%
4-Bromophenyl-phenylether	330	U	63	%
Hexachlorobenzene	330	U	88	%
Pentachlorophenol	830	U	31	%
Phenanthrene	330	U	78	%
Anthracene	330	U	78	%
Carbazole	330	U	84	%
Di-n-butylphthalate	330	U	88	%
Fluoranthene	330	U	94	%
Pyrene	330	U	82	%
Butylbenzylphthalate	330	U	90	%
3,3'-Dichlorobenzidine	330	U	64	%
Benzo(a)anthracene	330	U	82	%
Chrysene	330	U	83	%
bis(2-Ethylhexyl)phthalate	23	J	94	%
Di-n-octyl phthalate	330	U	98	%
Benzo(b)fluoranthene	330	U	87	%
Benzo(k)fluoranthene	330	U	94	%
Benzo(a)pyrene	330	U	88	%
Indeno(1,2,3-cd)pyrene	330	U	86	%
Dibenz(a,h)anthracene	330	U	87	%
Benzo(g,h,i)perylene	330	U	89	%

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

000000013

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16951

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-001

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

Lab File ID: N022912

Level: (low/med) LOW

Date Received: 02/13/08

% Moisture: 7 decanted: (Y/N)__

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/29/08

Injection Volume: 2.0(uL)

Dilution Factor: 8.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.200	60000	JB
2.	UNKNOWN	20.464	1000	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16952

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-002

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

Lab File ID: N022915

Level: (low/med) LOW

Date Received: 02/13/08

% Moisture: 7 decanted: (Y/N)__

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/29/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.741	200	JA
2.	ALDOL CONDENSATE	5.764	200	JA
3.	UNKNOWN	5.877	100	JB
4.	UNKNOWN	6.357	60000	JB
5.	UNKNOWN	20.473	1000	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16953

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-003

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

Lab File ID: N022916

Level: (low/med) LOW

Date Received: 02/13/08

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

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/29/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.353	500	J
2.	ALDOL CONDENSATE	5.763	100	JA
3.	UNKNOWN	5.876	200	JB
4.	UNKNOWN	6.016	100	JB
5.	UNKNOWN	6.399	80000	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16954

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-004

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

Lab File ID: N031511

Level: (low/med) LOW

Date Received: 02/13/08

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

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.306	300	JA
2.	UNKNOWN	5.419	100	J
3.	UNKNOWN	5.864	60000	JB
4.	UNKNOWN	20.053	600	JB
5.	UNKNOWN	26.895	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16955

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-005

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

Lab File ID: N031512

Level: (low/med) LOW

Date Received: 02/13/08

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

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.285	300	JA
2.	ALDOL CONDENSATE	5.307	300	JA
3.	UNKNOWN	5.420	100	J
4.	UNKNOWN	5.874	60000	JB
5.	UNKNOWN	20.054	1000	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16956

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-006

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

Lab File ID: N031513

Level: (low/med) LOW

Date Received: 02/13/08

% Moisture: 10 decanted: (Y/N)__

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.834	50000	JB
2.	ALAKNE	18.367	400	J
3.	UNKNOWN	20.058	1000	JB
4.	ALKANE	23.431	200	J
5.	ALKANE	26.630	200	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16957

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-007

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

Lab File ID: N031514

Level: (low/med) LOW

Date Received: 02/13/08

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.254	200	JA
2.	ALDOL CONDENSATE	5.293	200	JA
3.	UNKNOWN	5.842	50000	JB
4.	UNKNOWN	8.248	100	J
5.	UNKNOWN	20.058	900	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16958

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-008

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

Lab File ID: N031515

Level: (low/med) LOW

Date Received: 02/13/08

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

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.300	500	JA
2.	UNKNOWN	5.413	100	J
3.	UNKNOWN	5.553	100	J
4.	UNKNOWN	5.884	80000	JB
5.	UNKNOWN	20.056	300	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16959

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-009

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

Lab File ID: N031516

Level: (low/med) LOW

Date Received: 02/13/08

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDNESATE	3.228	100	JA
2.	ALDOL CONDENSATE	5.294	300	JA
3.	UNKNOWN	5.399	90	J
4.	UNKNOWN	5.852	70000	JB
5.	UNKNOWN	20.050	800	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16960

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L586-010

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

Lab File ID: N031517

Level: (low/med) LOW

Date Received: 02/13/08

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

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.301	300	JA
2.	UNKNOWN	5.894	80000	JB
3.	ALKANE	18.366	500	J
4.	UNKNOWN	20.048	800	JB
5.	UNKNOWN	26.637	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKSL

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

Client: TNUHANFORD RC-032 K1118

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0076-MB1

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

Lab File ID: N030503

Level: (low/med) LOW

Date Received: 02/15/08

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

Date Extracted: 02/15/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.688	200	J
2.	UNKNOWN	5.802	100	J
3.	UNKNOWN	5.941	90	J
4.	UNKNOWN	6.307	90000	J
5.	UNKNOWN	20.380	1000	J

Lionville Laboratory Use Only

7802L586

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

000000025

Client TNU HANFORD SAF# RC-032

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager OJ

QC SW846 Del STD TAT TDY

Date Rec'd 2-13-08 Date Due 2-20-08

		A	B			C		DE		F					
Refrigerator #		2	2			2		2		2					
#/Type Container	Liquid / Solid	1G	1G			1G		2P		1P					
Volume		120	60			120		125		125					
Preservatives						—		—		—					
ANALYSES REQUESTED	ORGANIC: VOA	BNA	~~Pest~~ PCB	Herb		TOT TPH		INORG: Metal	CN	Hex Chrome					
Lionville Laboratory Use Only		0625H	0PCB			IPHC		MetD		ICR6					

MATRIX CODES: 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	0625H	0PCB	IPHC	MetD	ICR6
001	J16951			Soil	2/1/08	1230	X	X	X	X	X
002	52					1240	X	X	X	X	X
003	53					1250	X	X	X	X	X
004	54					1300	X	X	X	X	X
005	55					1310	X	X	X	X	X
006	56					1315	X	X	X	X	X
007	57					1320	X	X	X	X	X
008	58					1325	X	X	X	X	X
009	59					1330	X	X	X	X	X
010	60					1335	X	X	X	X	X

Special Instructions: Met① = HSL+B,Mo,Si (NOTL)

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	2-13-08	1230

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-032-190	Page 1 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification		SAF No.: RC-032
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / CLONVILLE	Offsite Property No.: A080167		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

Cool to 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				

Sample No.	Matrix *	Sample Date	Sample Time										
~~J16947~~	~~SOIL~~			X	X	X	X	X					1
~~J16948~~	~~SOIL~~			X	X	X	X	X					2
~~J16949~~	~~SOIL~~			X	X	X	X	X					3
~~J16950~~	~~SOIL~~			X	X	X	X	X					4
J16951	SOIL	2-11-08	1230	X	X	X	X	X					5

CHAIN OF POSSESSION 2/11/08

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-11-08 1430	JR DeBuigne JR DeBuigne	1430 2-11-08
JR DeBuigne JR DeBuigne	1615 2-11-08	1060/2B	1615 2-11-08
1060 #2B	2-12-08 0945	J.R. Edmundson JR Edmundson	2-12-08 0945
J.R. Edmundson JR Edmundson (WCH)	2-12-08 1500	FED EX	
FED EX	2-13-08 1230	[illegible]	2-13-08 1230

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

Samples from 1060 #2B. 1060 sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

000000026

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 2 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification	SAF No.: RC-032	
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / CONVILLE	Offsite Property No.: A080167	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				
Sample No. / Matrix * / Sample Date / Sample Time											
J16952 / SOIL / 2-11-08 / 1240	X	X	X	X	X						6
J16953 / SOIL / ↓ / 1250	X	X	X	X	X						7
J16954 / SOIL / ↓ / 1300	X	X	X	X	X						8
J16955 / SOIL / ↓ / 1310	X	X	X	X	X						9
J16956 / SOIL / 2-11-08 / 1315	X	X	X	X	X						10

CHAIN OF POSSESSION 2-11-08 — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	~~2-11-08~~ Tue 1430	JR DeBuigne [signature]	1430 2-11-08
JR DeBuigne [signature]	1615 2-11-08	1060 12D	1615 2-11-08
1060 #2B	2-12-08 0945	T.R. Edmundson JR Edmundson	2-12-08 0945
T.R. Edmundson JR Edmundson WCH	2-12-08 1500	FED EX	
[signature]	2-13-08 1230	[signature]	2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

0000000027

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-032-190	Page 1 of 1
Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code 8B	Data Turnaround 7 DAY
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:9 OB Verification		SAF No. RC-032	
Ice Chest No. AFS-08-001	Field Logbook No. EFL-1174-4	COA R10F262000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080167		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J16957	SOIL	2-11-08	1320	X	X	X	X	X			11
J16958	SOIL		1325	X	X	X	X	X			12
J16959	SOIL		1330	X	X	X	X	X			13
J16960	SOIL	2-11-08	1335	X	X	X	X	X			14

CHAIN OF POSSESSION 2-11-08 **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	2-11-08 1430	[signature]	1430 2-11-08
[signature]	1615 2-11-08	1060 #2B	1615 2-11-08
1060 #2B	2-12-08 0945	[signature]	2-12-08 0945
T.R. Edmondson [signature]	WCH 2-12-08 1500	FED EX	
[signature]	2-13-08 1230	[signature]	2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

0000000028

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU-HANFORD

Project/SAF/SOW/Release #: RC-032

Date: 2-13-08

LvLI Batch #: 08021 586

Sample Custodian: Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7983 7295 9609
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 3.2	°C	Cooler # AFS-08-001
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	
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

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-032 K1118

RECEIVED MAR 2008

DATE RECEIVED: 02/13/08 LVL LOT #:0802L586

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16951	001	S	08LE0078	02/11/08	02/17/08	02/18/08
J16952	002	S	08LE0078	02/11/08	02/17/08	02/18/08
J16952	002 MS	S	08LE0078	02/11/08	02/17/08	02/18/08
J16952	002 MSD	S	08LE0078	02/11/08	02/17/08	02/18/08
J16953	003	S	08LE0078	02/11/08	02/17/08	02/18/08
J16954	004	S	08LE0078	02/11/08	02/17/08	02/19/08
J16955	005	S	08LE0078	02/11/08	02/17/08	02/19/08
J16956	006	S	08LE0078	02/11/08	02/17/08	02/19/08
J16957	007	S	08LE0078	02/11/08	02/17/08	02/19/08
J16958	008	S	08LE0078	02/11/08	02/17/08	02/19/08
J16959	009	S	08LE0078	02/11/08	02/17/08	02/19/08
J16960	010	S	08LE0078	02/11/08	02/17/08	02/19/08

LAB QC:

PBLKMT	MB1	S	08LE0078	N/A	02/17/08	02/18/08
PBLKMT	MB1 BS	S	08LE0078	N/A	02/17/08	02/18/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0802L586
SDG/SAF # K1118 / RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 02-13-2008

PCB

Ten (10) soil samples were collected on 02-11-2008.

The samples and their associated QC samples were extracted on 02-17-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-18,19-2008. 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. The 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. The 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.

r:\group\data\2008\pest\tnu\0802-586ks2.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 12 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

2/26/08
Date

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.
[illegible]		No pattern match for multi-component target analytes

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 02/19/08 11:06

RFW Batch Number: **0802L586** Client: **TNU-HANFORD RC-032** Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J16951	J16952	J16952	J16952	J16953	J16954
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	99 %	91 %	89 %	91 %	87 %	93 %
	Decachlorobiphenyl	100 %	99 %	93 %	89 %	96 %	96 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		14 U	14 U	74 %	73 %	14 U	14 U
Aroclor-1221		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1232		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1242		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1248		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1254		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1260		14 U	14 U	94 %	89 %	14 U	14 U

	Cust ID:	J16955	J16956	J16957	J16958	J16959	J16960
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	90 %	93 %	83 %	84 %	89 %	90 %
	Decachlorobiphenyl	92 %	96 %	88 %	84 %	92 %	93 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		15 U	15 U	14 U	14 U	15 U	15 U
Aroclor-1221		15 U	15 U	14 U	14 U	15 U	15 U
Aroclor-1232		15 U	15 U	14 U	14 U	15 U	15 U
Aroclor-1242		15 U	15 U	14 U	14 U	15 U	15 U
Aroclor-1248		15 U	15 U	14 U	14 U	15 U	15 U
Aroclor-1254		15 U	15 U	14 U	14 U	15 U	15 U
Aroclor-1260		15 U	24	14 U	14 U	15 U	180

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.

PCBs by GC

Report Date: 02/19/08 11:06

RFW Batch Number: 0802L586 Client: TNU-HANFORD RC-032 Work Order: 11343606001 Page: 2

000000006

	Cust ID:	PBLKMT	PBLKMT BS
Sample Information	RFW#:	08LE0078-MB1	08LE0078-MB1
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.00
	Units:	UG/KG	UG/KG

Surrogate:	Tetrachloro-m-xylene	100	%	101	%
	Decachlorobiphenyl	99	%	99	%
Aroclor-1016		13	U	83	%
Aroclor-1221		13	U	13	U
Aroclor-1232		13	U	13	U
Aroclor-1242		13	U	13	U
Aroclor-1248		13	U	13	U
Aroclor-1254		13	U	13	U
Aroclor-1260		13	U	102	%

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 02/17/08 Extraction Batch No: 08LE0078 Analyst: MF Method: **** 50X3540

Test: OPCB Cleanup Date: 02/18/08 Analyst: MF Client: TNU-HANFORD RC-032

LIMS Report Date: 02/18/08 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
0802L586-	TNU-HANFORD RC-032										
001	J16951		30.0	1.0		10		1.0	N	93.40	356.9
002	J16952		30.0	1.0		10		1.0	N	92.89	358.8
002 -S	J16952		30.0	1.0	1.0	10		1.0	N	92.89	358.8
002 -T	J16952		30.0	1.0	1.0	10		1.0	N	92.89	358.8
003	J16953		30.0	1.0		10		1.0	N	96.19	346.5
004	J16954		30.0	1.0		10		1.0	N	93.55	356.3
005	J16955		30.0	1.0		10		1.0	N	90.89	366.7
006	J16956		30.0	1.0		10		1.0	N	89.68	371.7
007	J16957		30.0	1.0		10		1.0	N	94.76	351.8
008	J16958		30.0	1.0		10		1.0	N	93.76	355.5
009	J16959		30.0	1.0		10		1.0	N	89.48	372.5
010	J16960		30.0	1.0		10		1.0	N	91.36	364.9
08LE0078-MB1	PBLKMT		30.0	1.0		10		1.0	N	100.00	333.3
08LE0078-MB1 -S	PBLKMT		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
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]	2/18/08 1420	SZ 14:20	2/18/08	GC

000000007

Lionville Laboratory Use Only

28021586

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU HANFORD SAF# RC-032

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager OJ

PC SW846 Del STD TAT 7DY

Date Rec'd 2-13-08 Date Due 2-20-08

		A	B		C		DE		F					
Refrigerator #		2	2		2		2		2					
#/Type Container	Liquid													
	Solid	1G	1G		1G		2P		1P					
Volume		120	60		120		125		125					
Preservatives					—		—		—					
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Herb	TOT TPH		INORG: Metal	CN	HCl Metal					
Lionville Laboratory Use Only		0625H	OPCB		IPHC		Met①		ICR6					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	J16951			Soil	2/14/08	1230
002	52					1240
003	53					1250
004	54					1300
005	55					1310
006	56					1315
007	57					1320
008	58					1325
009	59					1330
010	60					1335

Special Instructions: Met① = HSL+B,Mo,Si (NOTL)

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/13/08	1230

Relinquished by	Received by	Date	Time

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

000000008

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-032-190 | Page 1 of 1

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification		SAF No.: RC-032
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / CLONVILLE	Offsite Property No.: A080167		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None			
Type of Container	P	P	aG	aG	aG	G/P	P			
No. of Container(s)	2	1	1	1	1	1	1			
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta			

Sample No.	Matrix *	Sample Date	Sample Time										
~~J16947~~	~~SOIL~~			X	X	X	X	X					1
~~J16948~~	~~SOIL~~			X	X	X	X	X					2
~~J16949~~	~~SOIL~~			X	X	X	X	X					3
~~J16950~~	~~SOIL~~			X	X	X	X	X					4
J16951	SOIL	2-11-08	1230	X	X	X	X	X					5

CHAIN OF POSSESSION 2/11/08

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Welch-Koelling	2-11-08 1430	JR DeBuigne JR DeBuigne	1430 2-11-08
JR DeBuigne JR DeBuigne	1615 2-11-08	1060/2B	1615 2-11-08
1060 #2B	2-12-08 0945	T.R. Edmundson JR Blandon	2-12-08 0945
T.R. Edmundson JR Blandon	2-12-08 1500	FED EX	
FED EX	2-13-08 1230	Vert Henry	2-13-08 1230

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

6000000000

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 2 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification	SAF No.: RC-032	
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / CONVILLE	Offsite Property No.: A080167	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

SAMPLE ANALYSIS												
Preservation				None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container				P	P	aG	aG	aG	G/P	P		
No. of Container(s)				2	1	1	1	1	1	1		
Volume				125mL	125mL	60mL	120mL	120mL	500mL	125mL		
				See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time									
J16952	SOIL	2-11-08	1240	X	X	X	X	X				6
J16953	SOIL		1250	X	X	X	X	X				7
J16954	SOIL		1300	X	X	X	X	X				8
J16955	SOIL		1310	X	X	X	X	X				9
J16956	SOIL	2-11-08	1315	X	X	X	X	X				10

JRD 2-11-08

CHAIN OF POSSESSION 2-11-08

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	~~2-11-08~~ 1430	JR DeDuigne [signature]	1430 2-11-08
JR DeDuigne [signature]	1615 2-11-08	1060 12D	1615 2-11-08
1060 #2B	2-12-08 0945	T.R. Edmundson [signature]	2-12-08 0945
T.R. Edmundson [signature]	WCH 2-12-08 1500	FED EX	
FED EX	2-13-08 1230	[signature]	2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Sign/Print Names

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

NCH-EE-011

000000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 1 of 1

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:9 OB Verification		SAF No. RC-032
Ice Chest No. AFS-08-001	Field Logbook No. EFL-1174-4	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080167		Bill of Lading/Air Bill No. SEE OSPC

Price Code: 8B

Data Turnaround: 7 DAY

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

SAMPLE ANALYSIS													
			Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None			
			Type of Container	P	P	aG	aG	aG	G/P	P			
			No. of Container(s)	2	1	1	1	1	1	1			
			Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL			
				See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta			
Sample No.	Matrix *	Sample Date	Sample Time										
J16957	SOIL	2-11-08	1320	X	X	X	X	X	X				11
J16958	SOIL		1325	X	X	X	X	X	X				12
J16959	SOIL		1330	X	X	X	X	X	X				13
J16960	SOIL	2-11-08	1335	X	X	X	X	X	X				14

CHAIN OF POSSESSION 2-11-08 — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	2-11-08 1430	JRDeBrigue [signature]	2-11-08 1430
JRDeBrigue [signature]	2-11-08 1615	1060 #2B	2-11-08 1615
1060 #2B	2-12-08 0945	JR Edmundson [signature]	2-12-08 0945
J.R. Edmundson WCH JR Edmundson	2-12-08 1500	FED EX	
[signature]	2-13-08 1230	[signature]	2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

0000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU-HANFORD **Date:** 2-13-08

Project/SAF/SOW/Release #: RC-032

LvLI Batch #: 08021586 **Sample Custodian:** Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7983 7295 9609
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 3.2	°C	Cooler # AFS-08-001
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	
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.

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

RECEIVED MAR 2008

DATE RECEIVED: 02/13/08 LVL LOT # :0802D[illegible]

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16951						
SILVER, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
SILVER, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
SILVER, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
BERYLLIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
BERYLLIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
BERYLLIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
COPPER, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/20/08
COPPER, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/20/08
COPPER, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
IRON, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
MERCURY, TOTAL	001	S	08C0030	02/11/08	02/14/08	02/15/08
MERCURY, TOTAL	001 REP	S	08C0030	02/11/08	02/14/08	02/15/08
MERCURY, TOTAL	001 MS	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
POTASSIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
POTASSIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
MANGANESE, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
MANGANESE, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
MANGANESE, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
SODIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/20/08
SODIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/20/08
SODIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
NICKEL, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
NICKEL, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/19/08
ZINC, TOTAL	001	S	08L0068	02/11/08	02/14/08	02/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	S	08L0068	02/11/08	02/14/08	02/20/08
ZINC, TOTAL	001 MS	S	08L0068	02/11/08	02/14/08	02/20/08
J16952						
SILVER, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
BERYLLIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
COPPER, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
MERCURY, TOTAL	002	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
MANGANESE, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
SODIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/19/08
ZINC, TOTAL	002	S	08L0068	02/11/08	02/14/08	02/20/08
J16953						
SILVER, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
COPPER, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
MERCURY, TOTAL	003	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
MANGANESE, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
SODIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/19/08
ZINC, TOTAL	003	S	08L0068	02/11/08	02/14/08	02/20/08
J16954						
SILVER, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
BERYLLIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
COPPER, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
MERCURY, TOTAL	004	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
SODIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/19/08
ZINC, TOTAL	004	S	08L0068	02/11/08	02/14/08	02/20/08
J16955						
SILVER, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
BERYLLIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
COPPER, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
MERCURY, TOTAL	005	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
MANGANESE, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
SODIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/19/08
ZINC, TOTAL	005	S	08L0068	02/11/08	02/14/08	02/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16956						
SILVER, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
ALUMINUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
ARSENIC, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
BORON, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
BARIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
BERYLLIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
CALCIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
CADMIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
COBALT, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
CHROMIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
COPPER, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
MERCURY, TOTAL	006	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
MAGNESIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
MANGANESE, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
MOLYBDENUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
SODIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
LEAD, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
ANTIMONY, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
SELENIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
SILICON, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
VANADIUM, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/19/08
ZINC, TOTAL	006	S	08L0068	02/11/08	02/14/08	02/20/08
J16957						
SILVER, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
ALUMINUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
ARSENIC, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
BORON, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
BARIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
BERYLLIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
CALCIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
COBALT, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
CHROMIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
COPPER, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
MERCURY, TOTAL	007	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
MAGNESIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
MANGANESE, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
MOLYBDENUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
SODIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
LEAD, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
ANTIMONY, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
SELENIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
SILICON, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
VANADIUM, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
ZINC, TOTAL	007	S	08L0068	02/11/08	02/14/08	02/20/08
J16958						
SILVER, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
ALUMINUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
ARSENIC, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
BORON, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
BARIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
BERYLLIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
CALCIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
CADMIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
COBALT, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
CHROMIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
COPPER, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
MERCURY, TOTAL	008	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
MAGNESIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
MANGANESE, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
MOLYBDENUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
LEAD, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
ANTIMONY, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
SELENIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
SILICON, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
VANADIUM, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
ZINC, TOTAL	008	S	08L0068	02/11/08	02/14/08	02/20/08
J16959						
SILVER, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
ALUMINUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
ARSENIC, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
BORON, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
BARIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
BERYLLIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
CALCIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
CADMIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
COBALT, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
CHROMIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
COPPER, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
MERCURY, TOTAL	009	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
MAGNESIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
MANGANESE, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
MOLYBDENUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
SODIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
LEAD, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
ANTIMONY, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
SELENIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
SILICON, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
VANADIUM, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
ZINC, TOTAL	009	S	08L0068	02/11/08	02/14/08	02/20/08
J16960						
SILVER, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS CLIENT ID /ANALYSIS	LVL # LVL #	MTX MTX	PREP # PREP #	COLLECTION COLLECTION	EXTR/PREP EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
ARSENIC, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
BORON, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
BARIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
BERYLLIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
CALCIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
CADMIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
COBALT, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
CHROMIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
COPPER, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
IRON, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
MERCURY, TOTAL	010	S	08C0030	02/11/08	02/14/08	02/15/08
POTASSIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
MAGNESIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
MANGANESE, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
MOLYBDENUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
SODIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
NICKEL, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
LEAD, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
ANTIMONY, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
SELENIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
SILICON, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
VANADIUM, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08
ZINC, TOTAL	010	S	08L0068	02/11/08	02/14/08	02/20/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
SILVER, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
ALUMINUM LABORTORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
ALUMINUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
ARSENIC LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
ARSENIC, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
BORON LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
BORON, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
BARIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
BARIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
CALCIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
CALCIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
CADMIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
CADMIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
COBALT LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
COBALT, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
CHROMIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
CHROMIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
COPPER LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
COPPER, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/20/08
IRON LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
IRON, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
MERCURY LABORATORY	LC1 BS	S	08C0030	N/A	02/14/08	02/15/08
MERCURY, TOTAL	MB1	S	08C0030	N/A	02/14/08	02/15/08
POTASSIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
POTASSIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
MAGNESIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
MANGANESE LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
MANGANESE, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
MOLYBDENUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
SODIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
SODIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/20/08
NICKEL LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
NICKEL, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
LEAD LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
LEAD, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
ANTIMONY LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
ANTIMONY, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
SELENIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
SELENIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
SILICON LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
SILICON, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
VANADIUM LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08
VANADIUM, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/19/08
ZINC LABORATORY	LC1 BS	S	08L0068	N/A	02/14/08	02/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	MB1	S	08L0068	N/A	02/14/08	02/20/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032
LVL#: 0802L586
SDG/SAF#: K1118/RC-032

W.O.#: 11343-606-001-9999-00
Date Received: 02-13-08

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 analyses of 10 soil samples.

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

   All samples were reported with 3-fold dilutions for ICP metals due to sample matrix. The samples were rerun on a different instrument for Copper, Sodium and Zinc due to sample matrix.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of the ending CCV in file TA0219B for most analytes. Samples J16957 through J16960, the LCS, and the PDS, were rerun in file TA0220A.

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

6. The preparation/method blank for 1 analyte was outside 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.

   a). The MB result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} and only samples J16953, J16954, J16957, and J16959 read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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

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

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J168X4	Aluminum	60,000	97.0
	Copper	600	88.5
	Iron	60,000	102.8
	Silicon	4,800	93.9

11. The duplicate analyses for 2 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.

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

2/25/08
Date

jjw/m08-586

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within tl
Lot#: 08021586

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium W.E. MW 2/21/08	X6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-WI-033/M-03/01
000000014

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 02/21/08

CLIENT: TNUHANFORD RC-032 K1118

LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16951	Silver, Total	0.31 u	MG/KG	0.31	3.0
		Aluminum, Total	6030	MG/KG	12.3	3.0
		Arsenic, Total	2.2	MG/KG	1.5	3.0
		Boron, Total	2.7	MG/KG	1.5	3.0
		Barium, Total	73.6	MG/KG	0.31	3.0
		Beryllium, Total	0.20	MG/KG	0.15	3.0
		Calcium, Total	4060	MG/KG	12.3	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	6.1	MG/KG	0.62	3.0
		Chromium, Total	8.0	MG/KG	0.62	3.0
		Copper, Total	19.9	MG/KG	0.62	3.0
		Iron, Total	15800	MG/KG	13.9	3.0
		Mercury, Total	0.008u	MG/KG	0.008	1.0
		Potassium, Total	961	MG/KG	12.3	3.0
		Magnesium, Total	3560	MG/KG	7.7	3.0
		Manganese, Total	273	MG/KG	0.12	3.0
		Molybdenum, Total	0.93 u	MG/KG	0.93	3.0
		Sodium, Total	216	MG/KG	6.2	3.0
		Nickel, Total	9.6	MG/KG	0.62	3.0
		Lead, Total	4.0	MG/KG	0.93	3.0
		Antimony, Total	0.93 u	MG/KG	0.93	3.0
		Selenium, Total	1.9 u	MG/KG	1.9	3.0
		Silicon, Total	2840	MG/KG	12.3	3.0
		Vanadium, Total	37.7	MG/KG	0.43	3.0
		Zinc, Total	35.5	MG/KG	1.9	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J16952	Silver, Total	0.28 u	MG/KG	0.28	3.0
		Aluminum, Total	6590	MG/KG	11.3	3.0
		Arsenic, Total	2.9	MG/KG	1.4	3.0
		Boron, Total	4.8	MG/KG	1.4	3.0
		Barium, Total	86.9	MG/KG	0.28	3.0
		Beryllium, Total	0.29	MG/KG	0.14	3.0
		Calcium, Total	4150	MG/KG	11.3	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	6.6	MG/KG	0.57	3.0
		Chromium, Total	8.5	MG/KG	0.57	3.0
		Copper, Total	13.2	MG/KG	0.57	3.0
		Iron, Total	17000	MG/KG	12.7	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	1110	MG/KG	11.3	3.0
		Magnesium, Total	3910	MG/KG	7.1	3.0
		Manganese, Total	302	MG/KG	0.11	3.0
		Molybdenum, Total	0.85 u	MG/KG	0.85	3.0
		Sodium, Total	229	MG/KG	5.7	3.0
		Nickel, Total	10.0	MG/KG	0.57	3.0
		Lead, Total	4.4	MG/KG	0.85	3.0
		Antimony, Total	0.85 u	MG/KG	0.85	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	3290	MG/KG	11.3	3.0
		Vanadium, Total	40.3	MG/KG	0.40	3.0
		Zinc, Total	37.6	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J16953	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	5720	MG/KG	11.5	3.0
		Arsenic, Total	2.9	MG/KG	1.4	3.0
		Boron, Total	1.4 u	MG/KG	1.4	3.0
		Barium, Total	52.9	MG/KG	0.29	3.0
		Beryllium, Total	0.23	MG/KG	0.14	3.0
		Calcium, Total	5350	MG/KG	11.5	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	5.7	MG/KG	0.58	3.0
		Chromium, Total	9.0	MG/KG	0.58	3.0
		Copper, Total	14.3	MG/KG	0.58	3.0
		Iron, Total	15400	MG/KG	13.0	3.0
		Mercury, Total	0.09	MG/KG	0.01	1.0
		Potassium, Total	788	MG/KG	11.5	3.0
		Magnesium, Total	3840	MG/KG	7.2	3.0
		Manganese, Total	253	MG/KG	0.12	3.0
		Molybdenum, Total	0.87 u	MG/KG	0.87	3.0
		Sodium, Total	194	MG/KG	5.8	3.0
		Nickel, Total	10.5	MG/KG	0.58	3.0
		Lead, Total	7.4	MG/KG	0.87	3.0
		Antimony, Total	0.87 u	MG/KG	0.87	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	2490	MG/KG	11.5	3.0
		Vanadium, Total	33.9	MG/KG	0.40	3.0
		Zinc, Total	73.9	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J16954	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	5680	MG/KG	11.5	3.0
		Arsenic, Total	1.4 u	MG/KG	1.4	3.0
		Boron, Total	1.4 u	MG/KG	1.4	3.0
		Barium, Total	54.6	MG/KG	0.29	3.0
		Beryllium, Total	0.23	MG/KG	0.14	3.0
		Calcium, Total	4790	MG/KG	11.5	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	5.5	MG/KG	0.58	3.0
		Chromium, Total	8.9	MG/KG	0.58	3.0
		Copper, Total	15.0	MG/KG	0.58	3.0
		Iron, Total	15100	MG/KG	13.0	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	793	MG/KG	11.5	3.0
		Magnesium, Total	3810	MG/KG	7.2	3.0
		Manganese, Total	261	MG/KG	0.12	3.0
		Molybdenum, Total	0.87 u	MG/KG	0.87	3.0
		Sodium, Total	207	MG/KG	5.8	3.0
		Nickel, Total	10.8	MG/KG	0.58	3.0
		Lead, Total	8.5	MG/KG	0.87	3.0
		Antimony, Total	1.0	MG/KG	0.87	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	2820	MG/KG	11.5	3.0
		Vanadium, Total	36.4	MG/KG	0.40	3.0
		Zinc, Total	42.7	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J16955	Silver, Total	0.31 u	MG/KG	0.31	3.0
		Aluminum, Total	6070	MG/KG	12.3	3.0
		Arsenic, Total	3.5	MG/KG	1.5	3.0
		Boron, Total	1.8	MG/KG	1.5	3.0
		Barium, Total	66.4	MG/KG	0.31	3.0
		Beryllium, Total	0.28	MG/KG	0.15	3.0
		Calcium, Total	3800	MG/KG	12.3	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	6.6	MG/KG	0.62	3.0
		Chromium, Total	7.9	MG/KG	0.62	3.0
		Copper, Total	12.2	MG/KG	0.62	3.0
		Iron, Total	17800	MG/KG	13.9	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1100	MG/KG	12.3	3.0
		Magnesium, Total	3800	MG/KG	7.7	3.0
		Manganese, Total	296	MG/KG	0.12	3.0
		Molybdenum, Total	0.93 u	MG/KG	0.93	3.0
		Sodium, Total	223	MG/KG	6.2	3.0
		Nickel, Total	10.0	MG/KG	0.62	3.0
		Lead, Total	3.8	MG/KG	0.93	3.0
		Antimony, Total	0.93 u	MG/KG	0.93	3.0
		Selenium, Total	1.9 u	MG/KG	1.9	3.0
		Silicon, Total	4000	MG/KG	12.3	3.0
		Vanadium, Total	41.2	MG/KG	0.43	3.0
		Zinc, Total	36.8	MG/KG	1.9	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J16956	Silver, Total	0.30 u	MG/KG	0.30	3.0
		Aluminum, Total	9650	MG/KG	11.8	3.0
		Arsenic, Total	4.2	MG/KG	1.5	3.0
		Boron, Total	48.5	MG/KG	1.5	3.0
		Barium, Total	520	MG/KG	0.30	3.0
		Beryllium, Total	0.61	MG/KG	0.15	3.0
		Calcium, Total	12900	MG/KG	11.8	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	7.3	MG/KG	0.59	3.0
		Chromium, Total	10.6	MG/KG	0.59	3.0
		Copper, Total	22.3	MG/KG	0.59	3.0
		Iron, Total	18200	MG/KG	13.3	3.0
		Mercury, Total	0.10	MG/KG	0.01	1.0
		Potassium, Total	1010	MG/KG	11.8	3.0
		Magnesium, Total	5890	MG/KG	7.4	3.0
		Manganese, Total	290	MG/KG	0.12	3.0
		Molybdenum, Total	0.89 u	MG/KG	0.89	3.0
		Sodium, Total	634	MG/KG	5.9	3.0
		Nickel, Total	14.7	MG/KG	0.59	3.0
		Lead, Total	11.7	MG/KG	0.89	3.0
		Antimony, Total	0.89 u	MG/KG	0.89	3.0
		Selenium, Total	1.8 u	MG/KG	1.8	3.0
		Silicon, Total	1650	MG/KG	11.8	3.0
		Vanadium, Total	44.7	MG/KG	0.41	3.0
		Zinc, Total	47.9	MG/KG	1.8	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J16957	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	4680	MG/KG	11.6	3.0
		Arsenic, Total	1.5 u	MG/KG	1.5	3.0
		Boron, Total	1.5 u	MG/KG	1.5	3.0
		Barium, Total	53.5	MG/KG	0.29	3.0
		Beryllium, Total	0.15 u	MG/KG	0.15	3.0
		Calcium, Total	4390	MG/KG	11.6	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	5.9	MG/KG	0.58	3.0
		Chromium, Total	7.1	MG/KG	0.58	3.0
		Copper, Total	10.4	MG/KG	0.58	3.0
		Iron, Total	16100	MG/KG	13.1	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	803	MG/KG	11.6	3.0
		Magnesium, Total	3530	MG/KG	7.3	3.0
		Manganese, Total	253	MG/KG	0.12	3.0
		Molybdenum, Total	0.87 u	MG/KG	0.87	3.0
		Sodium, Total	151	MG/KG	5.8	3.0
		Nickel, Total	8.7	MG/KG	0.58	3.0
		Lead, Total	5.0	MG/KG	0.87	3.0
		Antimony, Total	0.87 u	MG/KG	0.87	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	1550	MG/KG	11.6	3.0
		Vanadium, Total	40.6	MG/KG	0.41	3.0
		Zinc, Total	34.2	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J16958	Silver, Total	0.32 u	MG/KG	0.32	3.0
		Aluminum, Total	5040	MG/KG	12.7	3.0
		Arsenic, Total	2.2	MG/KG	1.6	3.0
		Boron, Total	8.0	MG/KG	1.6	3.0
		Barium, Total	80.7	MG/KG	0.32	3.0
		Beryllium, Total	0.16 u	MG/KG	0.16	3.0
		Calcium, Total	5240	MG/KG	12.7	3.0
		Cadmium, Total	0.16 u	MG/KG	0.16	3.0
		Cobalt, Total	6.3	MG/KG	0.63	3.0
		Chromium, Total	6.7	MG/KG	0.63	3.0
		Copper, Total	13.3	MG/KG	0.63	3.0
		Iron, Total	17300	MG/KG	14.3	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	825	MG/KG	12.7	3.0
		Magnesium, Total	4010	MG/KG	7.9	3.0
		Manganese, Total	245	MG/KG	0.13	3.0
		Molybdenum, Total	0.95 u	MG/KG	0.95	3.0
		Sodium, Total	246	MG/KG	6.3	3.0
		Nickel, Total	9.1	MG/KG	0.63	3.0
		Lead, Total	2.8	MG/KG	0.95	3.0
		Antimony, Total	0.95 u	MG/KG	0.95	3.0
		Selenium, Total	1.9 u	MG/KG	1.9	3.0
		Silicon, Total	3030	MG/KG	12.7	3.0
		Vanadium, Total	44.2	MG/KG	0.44	3.0
		Zinc, Total	33.3	MG/KG	1.9	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	J16959	Silver, Total	0.32 u	MG/KG	0.32	3.0
		Aluminum, Total	4830	MG/KG	12.8	3.0
		Arsenic, Total	1.7	MG/KG	1.6	3.0
		Boron, Total	1.6 u	MG/KG	1.6	3.0
		Barium, Total	54.7	MG/KG	0.32	3.0
		Beryllium, Total	0.16 u	MG/KG	0.16	3.0
		Calcium, Total	3560	MG/KG	12.8	3.0
		Cadmium, Total	0.16 u	MG/KG	0.16	3.0
		Cobalt, Total	5.5	MG/KG	0.64	3.0
		Chromium, Total	6.5	MG/KG	0.64	3.0
		Copper, Total	10.5	MG/KG	0.64	3.0
		Iron, Total	16100	MG/KG	14.4	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1080	MG/KG	12.8	3.0
		Magnesium, Total	3340	MG/KG	8.0	3.0
		Manganese, Total	252	MG/KG	0.13	3.0
		Molybdenum, Total	0.96 u	MG/KG	0.96	3.0
		Sodium, Total	170	MG/KG	6.4	3.0
		Nickel, Total	8.0	MG/KG	0.64	3.0
		Lead, Total	3.4	MG/KG	0.96	3.0
		Antimony, Total	0.96 u	MG/KG	0.96	3.0
		Selenium, Total	1.9 u	MG/KG	1.9	3.0
		Silicon, Total	2770	MG/KG	12.8	3.0
		Vanadium, Total	37.9	MG/KG	0.45	3.0
		Zinc, Total	33.3	MG/KG	1.9	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-010	J16960	Silver, Total	0.28 u	MG/KG	0.28	3.0
		Aluminum, Total	6900	MG/KG	11.0	3.0
		Arsenic, Total	2.8	MG/KG	1.4	3.0
		Boron, Total	14.3	MG/KG	1.4	3.0
		Barium, Total	184	MG/KG	0.28	3.0
		Beryllium, Total	0.20	MG/KG	0.14	3.0
		Calcium, Total	9600	MG/KG	11.0	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	6.4	MG/KG	0.55	3.0
		Chromium, Total	8.7	MG/KG	0.55	3.0
		Copper, Total	18.8	MG/KG	0.55	3.0
		Iron, Total	16200	MG/KG	12.4	3.0
		Mercury, Total	0.09	MG/KG	0.009	1.0
		Potassium, Total	1030	MG/KG	11.0	3.0
		Magnesium, Total	4080	MG/KG	6.9	3.0
		Manganese, Total	310	MG/KG	0.11	3.0
		Molybdenum, Total	0.83 u	MG/KG	0.83	3.0
		Sodium, Total	323	MG/KG	5.5	3.0
		Nickel, Total	10.6	MG/KG	0.55	3.0
		Lead, Total	8.8	MG/KG	0.83	3.0
		Antimony, Total	0.83 u	MG/KG	0.83	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	2360	MG/KG	11.0	3.0
		Vanadium, Total	37.5	MG/KG	0.39	3.0
		Zinc, Total	40.8	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0068-MB1	Silver, Total	0.09	u	MG/KG	0.09	1.0
		Aluminum, Total	3.8	u	MG/KG	3.8	1.0
		Arsenic, Total	0.47	u	MG/KG	0.47	1.0
		Boron, Total	0.47	u	MG/KG	0.47	1.0
		Barium, Total	0.09	u	MG/KG	0.09	1.0
		Beryllium, Total	0.05	u	MG/KG	0.05	1.0
		Calcium, Total	4.8		MG/KG	3.8	1.0
		Cadmium, Total	0.05	u	MG/KG	0.05	1.0
		Cobalt, Total	0.19	u	MG/KG	0.19	1.0
		Chromium, Total	0.19	u	MG/KG	0.19	1.0
		Copper, Total	0.41		MG/KG	0.19	1.0
		Iron, Total	4.2	u	MG/KG	4.2	1.0
		Potassium, Total	3.8	u	MG/KG	3.8	1.0
		Magnesium, Total	2.4	u	MG/KG	2.4	1.0
		Manganese, Total	0.04		MG/KG	0.04	1.0
		Molybdenum, Total	0.28	u	MG/KG	0.28	1.0
		Sodium, Total	10.4		MG/KG	1.9	1.0
		Nickel, Total	0.19	u	MG/KG	0.19	1.0
		Lead, Total	0.28	u	MG/KG	0.28	1.0
		Antimony, Total	0.28	u	MG/KG	0.28	1.0
		Selenium, Total	0.57	u	MG/KG	0.57	1.0
		Silicon, Total	3.8	u	MG/KG	3.8	1.0
		Vanadium, Total	0.13	u	MG/KG	0.13	1.0
		Zinc, Total	0.57	u	MG/KG	0.57	1.0
BLANK1	08C0030-MB1	Mercury, Total	0.01	u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16951	Silver, Total	4.9	0.31u	5.1	96.1	3.0
		Aluminum, Total	6970	6030	206	458.1*	3.0
		Arsenic, Total	203	2.2	206	97.6	3.0
		Boron, Total	104	2.7	103	98.3	3.0
		Barium, Total	271	73.6	206	95.9	3.0
		Beryllium, Total	5.3	0.20	5.1	100.0	3.0
		Calcium, Total	6560	4060	2570	97.1	3.0
		Cadmium, Total	5.1	0.15u	5.1	100	3.0
		Cobalt, Total	57.1	6.1	51.5	99.0	3.0
		Chromium, Total	30.2	8.0	20.6	107.8	3.0
		Copper, Total	37.1	19.9	25.7	66.9	3.0
		Iron, Total	16200	15800	103	345.1*	3.0
		Mercury, Total	0.16	0.00u	0.14	110.6	1.0
		Potassium, Total	3380	961	2570	94.1	3.0
		Magnesium, Total	6280	3560	2570	105.6	3.0
		Manganese, Total	320	273	51.5	92.0*	3.0
		Molybdenum, Total	96.7	0.93u	103	94.0	3.0
		Sodium, Total	2680	216	2570	95.6	3.0
		Nickel, Total	62.0	9.6	51.5	101.7	3.0
		Lead, Total	54.4	4.0	51.5	97.9	3.0
		Antimony, Total	41.5	0.93u	51.5	80.6	3.0
		Selenium, Total	176	1.9 u	206	85.3	3.0
		Silicon, Total	2460	2840	103	-360. *	3.0
		Vanadium, Total	86.3	37.7	51.5	94.4	3.0
		Zinc, Total	82.6	35.5	51.5	91.5	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16951	Silver, Total	0.31u	0.31u	NC	3.0
		Aluminum, Total	6030	5970	1.0	3.0
		Arsenic, Total	2.2	2.7	20.4	3.0
		Boron, Total	2.7	2.4	11.8	3.0
		Barium, Total	73.6	67.9	8.1	3.0
		Beryllium, Total	0.20	0.21	4.5	3.0
		Calcium, Total	4060	4040	0.68	3.0
		Cadmium, Total	0.15u	0.15u	NC	3.0
		Cobalt, Total	6.1	5.5	10.3	3.0
		Chromium, Total	8.0	8.6	7.2	3.0
		Copper, Total	19.9	23.9	18.3	3.0
		Iron, Total	15800	15100	5.0	3.0
		Mercury, Total	0.00u	0.01u	NC	1.0
		Potassium, Total	961	923	4.1	3.0
		Magnesium, Total	3560	3620	1.6	3.0
		Manganese, Total	273	261	4.6	3.0
		Molybdenum, Total	0.93u	0.93u	NC	3.0
		Sodium, Total	216	214	1.2	3.0
		Nickel, Total	9.6	10.8	11.8	3.0
		Lead, Total	4.0	3.9	2.5	3.0
		Antimony, Total	0.93u	0.93u	NC	3.0
		Selenium, Total	1.9 u	1.9 u	NC	3.0
		Silicon, Total	2840	3480	20.3	3.0
		Vanadium, Total	37.7	34.1	10.0	3.0
		Zinc, Total	35.5	32.3	9.4	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/21/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0068-LC1	Silver, LCS	46.6	50.0	MG/KG	93.2
		Aluminum, LCS	468	500	MG/KG	93.7
		Arsenic, LCS	899	1000	MG/KG	89.9
		Boron, LCS	455	500	MG/KG	90.9
		Barium, LCS	466	500	MG/KG	93.2
		Beryllium, LCS	23.0	25.0	MG/KG	92.0
		Calcium, LCS	2380	2500	MG/KG	95.1
		Cadmium, LCS	23.0	25.0	MG/KG	92.0
		Cobalt, LCS	232	250	MG/KG	92.8
		Chromium, LCS	46.3	50.0	MG/KG	92.6
		Copper, LCS	115	125	MG/KG	91.9
		Iron, LCS	469	500	MG/KG	93.8
		Potassium, LCS	2230	2500	MG/KG	89.2
		Magnesium, LCS	2320	2500	MG/KG	92.8
		Manganese, LCS	71.9	75.0	MG/KG	95.9
		Molybdenum, LCS	454	500	MG/KG	90.7
		Sodium, LCS	.2330	2500	MG/KG	93.3
		Nickel, LCS	185	200	MG/KG	92.6
		Lead, LCS	232	250	MG/KG	92.7
		Antimony, LCS	273	300	MG/KG	91.0
		Selenium, LCS	861	1000	MG/KG	86.1
		Silicon, LCS	437	500	MG/KG	87.4
		Vanadium, LCS	235	250	MG/KG	94.2
		Zinc, LCS	87.8	100	MG/KG	87.8
LCS1	08C0030-LC1	Mercury, LCS	4.9	4.7	MG/KG	103.3

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: CAB
Date 2/14/08
Start Time/Temp: 1420 / 94°
End Time/Temp: 1450 / 92.0

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

Prep Batch: 08C0030
Worksheet: HG021501
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	X3			10mL	50mL	
0.2 µg/L	5H	0.100				
1.0	CX	0.500				
2.0	BLV	1.000				
5.0	3H	2.500				
10.0	411	5.000				
ICV	11A	0.125				
CCV	503	0.250				
ICB/CCB	G12					90.50
MB1	401			0.30		PBS130 100.0
LC1	194	*	*	0.30		LCSS130
0802L586-001	222			0.38		93.45
001R	111E			0.33		
001S	HW	0.500	1.0	0.38		
002	C8			0.36		92.89
003	I4			0.31		96.19
004	C4D			0.35		93.55
005	2I			0.33		90.89
006	WN			0.31		89.68
007	27			0.37		94.76
008	JS			0.33		93.76
009	JB			0.35		89.48
010	HT			0.35		91.36

CAB 2/14/08

Standard:	ID	Prep Date/Time
ICAL/MS	RI 6072-75-07B	2/14/08, 1145
ICV/CCV/LCS	US 6072-75-08A	

Reviewed By/Date: [signature] 2/15/08

see book # 9368 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 Incorporated

Logbook #: [illegible]

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0068
Date/Time Initiated: 2/14/08 9:45 AM
Date/Time Completed: 2/14/08 11:45 AM
Analyst(s): MW/BMC
Matrix: Soil Water Other:
Instr. Type: AA ICP
Parameters: Ice backlog

Digested / Undigested (circle one)
Balance #: B2001
Balance Cal Verif: Y NA
Hot Plate Temp: 92°

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

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

TNU

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
08L0068-001		1.04g	100mL	N/A	TO	Not fine	Soil sand	stones	N/A
-002		1.04g							
-003	1.0mL	1.04g							
-004		1.14g							
-005		1.08g							
-006		1.18g							
-007		1.07g							
-008		1.13g							
-009		1.09g							
-010		1.01g							
-011		1.05g							
-012		1.19g							
08L0068-MB1		1.00g				N/A	Boiling chips	N/A	
-101	1.0mL	1g							

hnc 2/14/08

Spiking IDs: 8100-04-01
MS #: -02
-03
0072-077 01
LCS #: -02
-03
-04
-05

Reagent IDs:
HNO_3 E22071
HCL E4C060
H_2O_2 E44A06
1:1 HNO_3 4784-070-06
1:1 HCL

File ID#: IC006801
LIMS Transfer: Y N updated
Data Review By/Date: PMP, 02/15/08

onville Laboratory Use Only

28021586

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent TNU HANFORD SAF# RC-032

t. Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

onville Laboratory Project Manager OJ

SW846 Del STD TAT TDY

te Rec'd 2-13-08 Date Due 2-20-08

		A	B			C		DE		F					
Refrigerator #		2	2			2		2		2					
#/Type Container	Liquid														
	Solid	1G	1G			1G		2P		1P					
Volume		120	60			120		125		125					
Preservatives						—		—		—					
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb	TOT TPH		Metal	CN	HCN					
		Lionville Laboratory Use Only													
			0625H	0PCB		IPHC		Met①		ICR6					

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	001	J16951			Soil	2/14/08	1230
	002	52					1240
	003	53					1250
	004	54					1300
	005	55					1310
	006	56					1315
	007	57					1320
	008	58					1325
	009	59					1330
	010	60					1335

pecial Instructions:

Met① = HSL+B,Mo,Si (NOTL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
		2-13-08	1230

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN	COMPOSITE MADE		

000000032

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 1 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification		SAF No.: RC-032
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080167		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				

Sample No.	Matrix *	Sample Date	Sample Time										
~~J16947~~	~~SOIL~~			X	X	X	X	X					1
~~J16948~~	~~SOIL~~			X	X	X	X	X					2
~~J16949~~	~~SOIL~~			X	X	X	X	X					3
~~J16950~~	~~SOIL~~			X	X	X	X	X					4
J16951	SOIL	2-11-08	1230	X	X	X	X	X					5

CHAIN OF POSSESSION 2/11/08	Sign/Print Names		
Relinquished By/Removed From	Date/Time 2-11-08 1430	Received By/Stored In	Date/Time 1430 2-11-08
Relinquished By/Removed From	Date/Time 1615 2-11-08	Received By/Stored In	Date/Time 1615 2-11-08
Relinquished By/Removed From	Date/Time 2-12-08 0945	Received By/Stored In	Date/Time 2-12-08 0945
Relinquished By/Removed From	Date/Time 2-12-08 1500	Received By/Stored In	Date/Time FED EX
Relinquished By/Removed From	Date/Time 2-13-08 1230	Received By/Stored In	Date/Time 2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

000000033

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 2 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification		SAF No.: RC-032
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / CONVILLE	Offsite Property No.: A080167		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				

Sample No.	Matrix *	Sample Date	Sample Time										
J16952	SOIL	2-11-08	1240	X	X	X	X	X					6
J16953	SOIL		1250	X	X	X	X	X					7
J16954	SOIL		1300	X	X	X	X	X					8
J16955	SOIL		1310	X	X	X	X	X					9
J16956	SOIL	2-11-08	1315	X	X	X	X	X					10

CHAIN OF POSSESSION 2-11-08

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	~~[illegible]~~ 1430	JP DeDuigne [signature]	1430 2-11-08
JP DeDuigne [signature]	1615 2-11-08	1060 12D	1615 2-11-08
1060 #2B	2-12-08 0945	T.R. Edmondson [signature]	2-12-08 0945
T.R. Edmondson [signature]	WCH 2-12-08 1500	FED EX	
[signature]	2-13-08 1230	[signature]	2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

000000034

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 3 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification		SAF No.: RC-032
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080167		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				

Sample No.	Matrix *	Sample Date	Sample Time										
J16957	SOIL	2-11-08	1320	X	X	X	X	X					11
J16958	SOIL		1325	X	X	X	X	X					12
J16959	SOIL		1330	X	X	X	X	X					13
J16960	SOIL	2-11-08	1335	X	X	X	X	X					14

CHAIN OF POSSESSION 2-11-08 — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	2-11-08 1430	JR DeBuigne [signature]	1430 2-11-08
JR DeBuigne [signature]	1615 2-11-08	1060 #2B	1615 2-11-08
1060 #2B	2-12-08 0945	JR Edmundson [signature]	2-12-08 0945
J.R. Edmundson WCH [signature]	2-12-08 1500	FED EX	
FED EX	2-13-08 1230	[signature]	2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

VCH-EE-011

000000035

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU-HANFORD

Project/SAF/SOW/Release #: RC-032

Date: 2-13-08

LvLI Batch #: 08021586

Sample Custodian: Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7983 7295 9609
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 3.2	°C	Cooler # AFS-08-001
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	
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 LABORATORIES INC

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

RECEIVED MAR 2008

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16951						
% SOLIDS	001	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	001	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	001	S	08LHC004	02/11/08	02/20/08	02/26/08
J16952						
% SOLIDS	002	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	002	S	08LVI012	02/11/08	02/14/08	02/14/08
CHROMIUM VI	002 REP	S	08LVI012	02/11/08	02/14/08	02/14/08
CHROMIUM VI	002 MS	S	08LVI012	02/11/08	02/14/08	02/14/08
CHROMIUM VI	002 MSD	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	002	S	08LHC004	02/11/08	02/20/08	02/26/08
J16953						
% SOLIDS	003	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	003	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	003	S	08LHC004	02/11/08	02/20/08	02/26/08
J16954						
% SOLIDS	004	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	004	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	004	S	08LHC004	02/11/08	02/20/08	02/26/08
J16955						
% SOLIDS	005	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	005	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	005	S	08LHC004	02/11/08	02/20/08	02/26/08
J16956						
% SOLIDS	006	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	006	S	08LVI012	02/11/08	02/14/08	02/14/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1118

DATE RECEIVED: 02/13/08 LVL LOT # :0802L586

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PETROLEUM HYDROCARBO	006	S	08LHC004	02/11/08	02/20/08	02/26/08
J16957						
% SOLIDS	007	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	007	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	007	S	08LHC004	02/11/08	02/20/08	02/26/08
J16958						
% SOLIDS	008	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	008	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	008	S	08LHC004	02/11/08	02/20/08	02/26/08
J16959						
% SOLIDS	009	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	009	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	009	S	08LHC004	02/11/08	02/20/08	02/26/08
J16960						
% SOLIDS	010	S	08L%S019	02/11/08	02/14/08	02/15/08
% SOLIDS	010 REP	S	08L%S019	02/11/08	02/14/08	02/15/08
CHROMIUM VI	010	S	08LVI012	02/11/08	02/14/08	02/14/08
PETROLEUM HYDROCARBO	010	S	08LHC004	02/11/08	02/20/08	02/26/08
PETROLEUM HYDROCARBO	010 REP	S	08LHC004	02/11/08	02/20/08	02/26/08
PETROLEUM HYDROCARBO	010 MS	S	08LHC004	02/11/08	02/20/08	02/26/08

LAB QC:

CHROMIUM VI	MB1	S	08LVI012	N/A	02/14/08	02/14/08
CHROMIUM VI	MB1 BS	S	08LVI012	N/A	02/14/08	02/14/08
CHROMIUM VI	MB1 BSD	S	08LVI012	N/A	02/14/08	02/14/08
PETROLEUM HYDROCARBO	MB1	S	08LHC004	N/A	02/20/08	02/26/08
PETROLEUM HYDROCARBO	MB1 BS	S	08LHC004	N/A	02/20/08	02/26/08
PETROLEUM HYDROCARBO	MB1 BSD	S	08LHC004	N/A	02/20/08	02/26/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032 K1118
LVL#: 0802L586

W.O.#: 11343-606-001-9999-00
Date Received: 02-13-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 10 soil samples.

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

   LvLI is NELAP accredited by the State of Pennsylvania. 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 times as required by the method and/or contract were met.

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

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Petroleum Hydrocarbons was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit with the exception of Chromium VI that was outside the control limit that may be attributed to sample inhomogeneity.

9. Results for soil are reported on a dry weight basis.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/5/08
Date

njp\i02-586

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 15 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 (mod.)	✓ EPA 418.1 (mod.)
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	
Other:	**Method:**		
Other:	**Method**		

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/04/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16951	% Solids	93.4		%	0.01	1.0
		Chromium VI	0.21	u	MG/KG	0.21	1.0
		Petroleum Hydrocarbons	141	u	MG/KG	141	1.0
-002	J16952	% Solids	92.9		%	0.01	1.0
		Chromium VI	0.25		MG/KG	0.22	1.0
		Petroleum Hydrocarbons	142	u	MG/KG	142	1.0
-003	J16953	% Solids	96.2		%	0.01	1.0
		Chromium VI	0.24		MG/KG	0.21	1.0
		Petroleum Hydrocarbons	138	u	MG/KG	138	1.0
-004	J16954	% Solids	93.6		%	0.01	1.0
		Chromium VI	0.28		MG/KG	0.21	1.0
		Petroleum Hydrocarbons	142	u	MG/KG	142	1.0
-005	J16955	% Solids	90.9		%	0.01	1.0
		Chromium VI	0.28		MG/KG	0.22	1.0
		Petroleum Hydrocarbons	146	u	MG/KG	146	1.0
-006	J16956	% Solids	89.7		%	0.01	1.0
		Chromium VI	0.22	u	MG/KG	0.22	1.0
		Petroleum Hydrocarbons	148	u	MG/KG	148	1.0
-007	J16957	% Solids	94.8		%	0.01	1.0
		Chromium VI	0.26		MG/KG	0.21	1.0
		Petroleum Hydrocarbons	140	u	MG/KG	140	1.0
-008	J16958	% Solids	93.8		%	0.01	1.0
		Chromium VI	0.21	u	MG/KG	0.21	1.0
		Petroleum Hydrocarbons	141	u	MG/KG	141	1.0
-009	J16959	% Solids	89.5		%	0.01	1.0
		Chromium VI	0.29		MG/KG	0.22	1.0
		Petroleum Hydrocarbons	147	u	MG/KG	147	1.0
-010	J16960	% Solids	91.4		%	0.01	1.0
		Chromium VI	0.22	u	MG/KG	0.22	1.0
		Petroleum Hydrocarbons	145	u	MG/KG	145	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/04/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LVI012-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK10	08LHC004-MB1	Petroleum Hydrocarbons	133 u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/04/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J16952	Soluble Chromium VI	4.3	0.25	4.3	94.9	1.0
		Insoluble Chromium VI	1210	0.25	1210	100.6	100
-010	J16960	Petroleum Hydrocarbons	703	69.6	609	104.0	1.0
BLANK10	08LVI012-MB1	Soluble Chromium VI	4.0	0.20u	4.0	99.3	1.0
		Insoluble Chromium VI	1160	0.20u	1110	104.5	100
BLANK10	08LHC004-MB1	Petroleum Hydrocarbons	608	133 u	559	108.7	1.0
		Petroleum Hydrocarbons	615	133 u	558	110.1	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 03/04/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	08LHC004-MB1	Petroleum Hydrocarbons	108.7	110.1	1.3

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/04/08

CLIENT: TNUHANFORD RC-032 K1118 LVL LOT #: 0802L586

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J16952	Chromium VI	0.25	0.32	25.5	1.0
-010REP	J16960	% Solids	91.4	94.0	2.8	1.0
		Petroleum Hydrocarbons	145 u	144 u	NC	1.0

onville Laboratory Use Only
78021586

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

ont TNU HANFORD SAF# RC-032

. Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager O.J.

SW846 Del STD TAT 7DY

e Rec'd 2-13-08 Date Due 2-20-08

		A	B			C		DE		F					
Refrigerator #		2	2			2		2		2					
#/Type Container	Liquid														
	Solid	1G	1G			1G		2P		1P					
Volume		120	60			120		125		125					
Preservatives		—				—		—		—					
ANALYSES REQUESTED	ORGANIC: VOA	BNA	~~Pest~~/PCB	Herb		TOT TPH		INORG: Metal	CN	Hex Cr					
	Lionville Laboratory Use Only	0625H	0PCB			IPHC		Met		ICR6					

MATRIX CODES: 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	0625H	0PCB	IPHC	Met	ICR6
	001	J16951			Soil	2/1/08	1230	X	X	X	X	X
	002	52					1240	X	X	X	X	X
	003	53					1250	X	X	X	X	X
	004	54					1300	X	X	X	X	X
	005	55					1310	X	X	X	X	X
	006	56					1315	X	X	X	X	X
	007	57					1320	X	X	X	X	X
	008	58					1325	X	X	X	X	X
	009	59					1330	X	X	X	X	X
	010	60					1335	X	X	X	X	X

cial Instructions:
Met (1) = HSL + B, Mo, Si
(NO TL)

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2-13-08	1230

Relinquished by	Received by	Date	Time

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

0000000011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 1 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification		SAF No.: RC-032
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / CLONVILLE	Offsite Property No.: A080167		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				

Sample No.	Matrix *	Sample Date	Sample Time											
~~J16947~~	~~SOIL~~			X	X	X	X	X						1
~~J16948~~	~~SOIL~~			X	X	X	X	X						2
~~J16949~~	~~SOIL~~			X	X	X	X	X						3
~~J16950~~	~~SOIL~~			X	X	X	X	X						4
J16951	SOIL	2-11-08	1230	X	X	X	X	X						5

CHAIN OF POSSESSION 2/11/08 — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	~~2-8-08~~ 1430	[signature]	1430 2-11-08
[signature]	1615 2-11-08	1060/2B [signature]	1615 2-11-08
1060 #2B [signature]	2-12-08 0945	[signature]	2-12-08 0945
[signature]	2-12-08 1500	FED EX	
[signature]	2-13-08 1230	[signature]	2-13-08 1230

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Barium-133, Silver-108 metastable}

Samples from 1060 #2B. 1060 sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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

VCH-EE-011

000000012

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 2 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification		SAF No.: RC-032
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080167		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				
Sample No. / Matrix * / Sample Date / Sample Time											
J16952 / SOIL / 2-11-08 / 1240	X	X	X	X	X						6
J16953 / SOIL / ↓ / 1250	X	X	X	X	X						7
J16954 / SOIL / ↓ / 1300	X	X	X	X	X						8
J16955 / SOIL / ↓ / 1310	X	X	X	X	X						9
J16956 / SOIL / 2-11-08 / 1315	X	X	X	X	X						10

23-08

CHAIN OF POSSESSION 2-11-08 — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	~~2-11-08~~ 1430	JR DeBuigne [signature]	1430 2-11-08
JR DeBuigne [signature]	1615 2-11-08	1060 12D	1615 2-11-08
1060 #2B	2-12-08 0945	T.R. Edmundson [signature]	2-12-08 0945
T.R. Edmundson [signature]	WCH 2-12-08 1500	FED EX.	
FedEx	2-13-08 1230	[signature]	2-13-08 1230
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-133, Silver-108 metastable)

Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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L=Liquid
V=Vegetation
X=Other

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

VCH-EE-011

000000013

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-190	Page 1 of 1

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:9 OB Verification	SAF No.: RC-032	
Ice Chest No.: AFS-08-001	Field Logbook No.: EFL-1174-4	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080167	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

~~NA~~ TRE 2-12-08

COOL TO 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Type of Container	P	P	aG	aG	aG	G/P	P				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	125mL	60mL	120mL	120mL	500mL	125mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta				
Sample No. / Matrix * / Sample Date / Sample Time											
J16957 / SOIL / 2-11-08 / 1320	X	X	X	X	X						11
J16958 / SOIL / ↓ / 1325	X	X	X	X	X						12
J16959 / SOIL / ↓ / 1330	X	X	X	X	X						13
J16960 / SOIL / 2-11-08 / 1335	X	X	X	X	X						14

CHAIN OF POSSESSION 2-11-08 — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	2-11-08 1430	JR DeBrigne [signature]	1430 2-11-08
JR DeBrigne [signature]	2-11-08 1615	1060 12B	1615 2-11-08
1060 #2B	2-12-08 0945	JR Edmondson [signature]	2-12-08 0945
J.R. Edmondson JR Edmondson	2-12-08 1500	FED EX	
[signature]	2-13-08 1230	[signature]	2-13-08 1230

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
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Samples from 1060 #2B. 1060 Sample custodian removed samples for shipping on 2-12-08. Sampler unavailable to relinquish.

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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

CH-EE-011

000000014

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU-HANFORD **Date:** 2-13-08

Project/SAF/SOW/Release #: RC-032

LvLI Batch #: 08021586 **Sample Custodian:** Vita Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7983 7295 9609
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 3.2°	°C	Cooler # AFS-08-001
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	
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.