0074392

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 11/6/07 INITIAL/DATE
Jeanette Duncan	H4-21	KW 11/6/07 INITIAL/DATE

COMMENTS:

RECEIVED
NOV 14 2007
EDMC

SDG K0995 SAF-RC-032

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: **100-F-26:4 Verification phase 2**

EBERLINE
SERVICES

RECEIVED
Oct 2007

October 25, 2007

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

Reference: **P.O. #630**
Eberline Services R7-10-087-7893, SDG K0995

Dear Ms. Kessner:

Enclosed is the data report for one solid (soil) sample designated under SAF No. RC-032, received at Eberline Services on October 17, 2007. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

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

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K0995 was composed of one solid (soil) sample designated under SAF No. RC-032 with a Project Designation of: 100-F Remaining Sites Burial Grounds-Soil Full Protocol.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on October 24, 2007.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 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

10/25/7

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 K0995

SDG	7893
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K0995

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

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

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	10/25/07

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0995

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 10/25/07

SDG 7893
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K0995

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

LAB SAMPLE SUMMARY

SDG 7893
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K0995

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R710087-01	J15VL4	100-F-26:4 Verif.phase 2	SOLID		RC-032	RC-032-168	10/15/07 09:15
R710087-02	Lab Control Sample		SOLID		RC-032		
R710087-03	Method Blank		SOLID		RC-032		
R710087-04	Duplicate (R710087-01)	100-F-26:4 Verif.phase 2	SOLID		RC-032		10/15/07 09:15

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

SDG 7893
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0995

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
7893	RC-032-168	J15VL4	SOLID	95.1	817 g		10/17/07	2	R710087-01	7893-001
		Method Blank	SOLID						R710087-03	7893-003
		Lab Control Sample	SOLID						R710087-02	7893-002
		Duplicate (R710087-01)	SOLID	95.1	817 g		10/17/07	2	R710087-04	7893-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

SDG 7893
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0995

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6126-189	20.0	1			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6126-189	15.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6126-189	15.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

SDG 7893
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0995

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
2710087-01	J15VL4			7893-001	93A/93		10/22/07	10/22/07	BW	Gross Alpha in Solids
10/15/07	100-F-26:4 Verif.phase 2		SOLID	7893-001	93B/93		10/22/07	10/22/07	BW	Gross Beta in Solids
10/17/07	RC-032-168	RC-032		7893-001	GAM		10/19/07	10/22/07	CSS	Gamma Scan
2710087-02	Lab Control Sample			7893-002	93A/93		10/22/07	10/22/07	BW	Gross Alpha in Solids
			SOLID	7893-002	93B/93		10/22/07	10/22/07	BW	Gross Beta in Solids
		RC-032		7893-002	GAM		10/19/07	10/22/07	CSS	Gamma Scan
2710087-03	Method Blank			7893-003	93A/93		10/22/07	10/22/07	BW	Gross Alpha in Solids
			SOLID	7893-003	93B/93		10/22/07	10/22/07	BW	Gross Beta in Solids
		RC-032		7893-003	GAM		10/19/07	10/22/07	CSS	Gamma Scan
2710087-04	Duplicate (R710087-01)			7893-004	93A/93		10/22/07	10/22/07	BW	Gross Alpha in Solids
10/15/07	100-F-26:4 Verif.phase 2		SOLID	7893-004	93B/93		10/22/07	10/22/07	BW	Gross Beta in Solids
10/17/07		RC-032		7893-004	GAM		10/19/07	10/22/07	CSS	Gamma Scan

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-032	Gross Alpha in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-032	Gross Beta in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
GAM	RC-032	Gamma Scan	GAMMA_GS	1			1	1	1	4
TOTALS				3			3	3	3	12

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

7893-003 **Method Blank**

METHOD BLANK

SDG	7893	Client/Case no	Hanford	SDG K0995	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R710087-03	Client sample id	Method Blank		
Dept sample id	7893-003	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	-3.95	3.8	9.65	10.0	U	93A
Gross Beta	12587-47-2	1.07	3.3	5.70	15.0	U	93B
Potassium 40	13966-00-2	U		2.53		U	GAM
Cobalt 60	10198-40-0	U		0.057	0.050	U	GAM
Cesium 137	10045-97-3	U		0.062	0.100	U	GAM
Radium 226	13982-63-3	U		0.139	0.100	U	GAM
Radium 228	15262-20-1	U		0.396	0.200	U	GAM
Europium 152	14683-23-9	U		0.179	0.100	U	GAM
Europium 154	15585-10-1	U		0.187	0.100	U	GAM
Europium 155	14391-16-3	U		0.163	0.100	U	GAM
Thorium 228	14274-82-9	U		0.133		U	GAM
Thorium 232	TH-232	U		0.396		U	GAM
Uranium 235	15117-96-1	U		0.276		U	GAM
Uranium 238	U-238	U		6.55		U	GAM
Americium 241	14596-10-2	U		0.219		U	GAM
Silver 108m	14391-65-2	U		0.046		U	GAM
Barium 133	13981-41-4	U		0.070		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

QC-BLANK #63197

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

7893-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7893

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0995

Contract No. 630

Lab sample id R710087-02

Dept sample id 7893-002

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	113	18	10.5	10.0		93A	101	4.0	112	57-143	70-130
Gross Beta	87.9	7.1	5.74	15.0		93B	94.6	3.8	93	76-124	80-120
Cobalt 60	2.09	0.12	0.053	0.050		GAM	2.04	0.082	102	75-125	80-120
Cesium 137	2.17	0.11	0.071	0.100		GAM	2.07	0.083	105	74-126	80-120

100-F Remain.SitesBurialGrnds-SoilFP

QC-LCS #63196

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

7893-004 J15VL4

DUPLICATE

SDG	7893			Client/Case no	Hanford SDG K0995
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R710087-04	Lab sample id	R710087-01	Client sample id	J15VL4
Dept sample id	7893-004	Dept sample id	7893-001	Location/Matrix	100-F-26:4 Verif.phase 2 SOLID
		Received	10/17/07	Collected/Weight	10/15/07 09:15 817 g
% solids	95.1	% solids	95.1	Custody/SAF No	RC-032-168 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	32.1	9.2	8.29	10.0		93A	26.9	8.7	7.80		18	77	0.7
Gross Beta	18.8	4.3	5.54	15.0		93B	20.3	4.5	5.65		8	57	0.4
Potassium 40	9.57	2.4	0.929			GAM	8.69	2.3	0.811		10	63	0.5
Cobalt 60	U		0.089	0.050	U	GAM	U		0.093	U	-		0.1
Cesium 137	U		0.222	0.100	U	GAM	U		0.091	U	-		1.1
Radium 226	0.420	0.20	0.181	0.100		GAM	0.267	0.14	0.147		45	112	1.2
Radium 228	0.670	0.43	0.420	0.200		GAM	0.531	0.31	0.329		23	136	0.5
Europium 152	U		0.258	0.100	U	GAM	U		0.236	U	-		0.1
Europium 154	U		0.280	0.100	U	GAM	U		0.298	U	-		0.1
Europium 155	U		0.176	0.100	U	GAM	U		0.165	U	-		0.1
Thorium 228	0.490	0.12	0.125			GAM	0.445	0.11	0.114		10	61	0.5
Thorium 232	0.670	0.43	0.420			GAM	0.531	0.31	0.329		23	136	0.5
Uranium 235	U		0.346		U	GAM	U		0.339	U	-		0
Uranium 238	U		10.0		U	GAM	U		44.6	U	-		1.5
Americium 241	U		0.088		U	GAM	U		0.086	U	-		0
Silver 108m	U		0.068		U	GAM	U		0.065	U	-		0.1
Barium 133	U		0.103		U	GAM	U		0.099	U	-		0.1

100-F Remain.SitesBurialGrnds-SoilFP

QC-DUP#1 63198

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

7893-001 J15VL4

DATA SHEET

SDG	7893	Client/Case no	Hanford	SDG K0995	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R710087-01	Client sample id	J15VL4		
Dept sample id	7893-001	Location/Matrix	100-F-26:4 Verif.phase 2	SOLID	
Received	10/17/07	Collected/Weight	10/15/07 09:15	817 g	
% solids	95.1	Custody/SAF No	RC-032-168	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	26.9	8.7	7.80	10.0		93A
Gross Beta	12587-47-2	20.3	4.5	5.65	15.0		93B
Potassium 40	13966-00-2	8.69	2.3	0.811			GAM
Cobalt 60	10198-40-0	U		0.093	0.050	U	GAM
Cesium 137	10045-97-3	U		0.091	0.100	U	GAM
Radium 226	13982-63-3	0.267	0.14	0.147	0.100		GAM
Radium 228	15262-20-1	0.531	0.31	0.329	0.200		GAM
Europium 152	14683-23-9	U		0.236	0.100	U	GAM
Europium 154	15585-10-1	U		0.298	0.100	U	GAM
Europium 155	14391-16-3	U		0.165	0.100	U	GAM
Thorium 228	14274-82-9	0.445	0.11	0.114			GAM
Thorium 232	TH-232	0.531	0.31	0.329			GAM
Uranium 235	15117-96-1	U		0.339		U	GAM
Uranium 238	U-238	U		44.6		U	GAM
Americium 241	14596-10-2	U		0.086		U	GAM
Silver 108m	14391-65-2	U		0.065		U	GAM
Barium 133	13981-41-4	U		0.099		U	GAM

100-F Remain.SitesBurialGrnds-SoilFP

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

Test 93A	Matrix SOLID
SDG 7893	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K0995	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 6126-189					
710087-01	93		7893-001	J15VL4	26.9
710087-02	93		7893-002	Lab Control Sample	ok
710087-03	93		7893-003	Method Blank	U
710087-04	93		7893-004	Duplicate (R710087-01)	ok

Nominal values and limits from method RDLs (pCi/g) 10.0

00-F Remain.SitesBurialGrnds-SoilFP

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 6126-189			2σ prep error 20.0 % Reference Lab Notebook #6126, pg.189													
710087-01	93		J15VL4	7.80	0.100			40		100			7	10/20/07	10/22	GRB-112
710087-02	93		Lab Control Sample	10.5	0.100			58		100				10/20/07	10/22	GRB-209
710087-03	93		Method Blank	9.65	0.100			58		100				10/20/07	10/22	GRB-210
710087-04	93		Duplicate (R710087-01)	8.29	0.100			41		100			7	10/20/07	10/22	GRB-211
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	MDA	9.06	± 2.48
FOR 4 SAMPLES	RESIDUE	49	± 20

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

Test 93B	Matrix SOLID
SDG 7893	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K0995	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 6126-189					
R710087-01	93		7893-001	J15VL4	20.3
R710087-02	93		7893-002	Lab Control Sample	ok
R710087-03	93		7893-003	Method Blank	U
R710087-04	93		7893-004	Duplicate (R710087-01)	ok

Nominal values and limits from method RDLs (pCi/g) 15.0

100-F Remain.SitesBurialGrnds-SoilFP

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 6126-189 2σ prep error 15.0 % Reference Lab Notebook #6126, pg.189																
R710087-01	93		J15VL4	5.65	0.100			40		100			7	10/20/07	10/22	GRB-112
R710087-02	93		Lab Control Sample	5.74	0.100			58		100				10/20/07	10/22	GRB-209
R710087-03	93		Method Blank	5.70	0.100			58		100				10/20/07	10/22	GRB-210
R710087-04	93		Duplicate (R710087-01)	5.54	0.100			41		100			7	10/20/07	10/22	GRB-211
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	5.66	±	0.173
RESIDUE	49	±	20

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	10/25/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0995

Test GAM Matrix SOLID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0995

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 6126-189								
R710087-01			7893-001	J15VL4	U		U	
R710087-02			7893-002	Lab Control Sample	ok		ok	
R710087-03			7893-003	Method Blank	U		U	
R710087-04			7893-004	Duplicate (R710087-01)	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.100	

.00-F Remain.SitesBurialGrnds-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 6126-189			2σ prep error 15.0 % Reference Lab Notebook #6126, pg.189													
R710087-01			J15VL4	21.9	230					131			4	10/18/07	10/19	JR,06,00
R710087-02			Lab Control Sample	0.053	230					229				10/18/07	10/19	JR,05,00
R710087-03			Method Blank	16.0	230					131				10/18/07	10/19	JR,08,00
R710087-04			Duplicate (R710087-01)	21.8	230					124			4	10/18/07	10/19	JR,06,00
Nominal values and limits from method				0.050	230					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 14.9 ± 20.6
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/25/07

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0995

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 10/25/07

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0995

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 10/25/07

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0995

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 10/25/07

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0995

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/25/07

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 7893
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0995

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 10/25/07

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0995

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
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Report date 10/25/07

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0995

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

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

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

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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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 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0995

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

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Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
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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.

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Version Ver 1.0
Form DVD-RG
Version 3.06
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SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

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Contract No. 630
Case no SDG K0995

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
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METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-168	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-26:4 Verification phase 2 K0995 (7893)	SAF No. RC-032	Price Code: 8B Data Turnaround: 7DAY
Ice Chest No. AFS-04-007	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080007		Bill of Lading/Air Bill No. See BSR

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None					
Type of Container	P	P	aG	aG	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	250mL	500mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha: Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15VL4	SOIL	10-15-07	0915					X	X				BCL-1

JRD 10-15-07

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T Welch-Koelling	10/15/07 0945	Received By/Stored In: JR DeBuigne JR DeBuigne	10-15-07 0945
Relinquished By/Removed From: JR DeBuigne JR DeBuigne	10-15-07 1430	Received By/Stored In: KM Singleton	10-15-07 1430 WCH
Relinquished By/Removed From: KM Singleton	10-16-07 1501 WCH	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX		Received By/Stored In:	10/17/07 09:35
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

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}

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

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

WCH-EE-011

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

10/17/07

Client: W.C. HANFORD City HIGHLAND State WA

Date/Time received 10/17/07 09:35 CoC No. RC-032-168

Container I.D. No. AFS-04-007 Requested TAT (Days) 7 P.O. Received Yes [ ] No [ ]

INSPECTION

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

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 10/17/07 Time: 10:00

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

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____

LIONVILLE LABORATORY INC.

2 November 2007

RECEIVED
NOV 2007

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 #	0710L059
SDG #	K0995
SAF #	RC-032
Date Received	10/17/07
# Samples	1
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-032 K0995

RECEIVED
NOV 2007

DATE RECEIVED: 10/17/07 LVL LOT #:0710L059

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15VL4	001	S	07LE0585	10/15/07	10/19/07	10/22/07
J15VL4	001 MS	S	07LE0585	10/15/07	10/19/07	10/22/07
J15VL4	001 MSD	S	07LE0585	10/15/07	10/19/07	10/22/07

LAB QC:

PBLKHS	MB1	S	07LE0585	N/A	10/19/07	10/22/07
PBLKHS	MB1 BS	S	07LE0585	N/A	10/19/07	10/22/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0710L059
SDG/SAF # K0995 / RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 10-17-2007

PCB

One (1) soil sample was collected on 10-15-2007.

The sample and its associated QC samples was extracted on 10-19-2007 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 10-22-2007. The extraction procedure was based on method 3550B 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. Sample was extracted and analyzed within required holding time.

2. The sample and its associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.

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

4. All surrogate recoveries were within acceptance criteria.

5. All blank spike recoveries were with acceptance criteria.

6. All matrix spike recoveries were with 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\pest\tnu hanford\0710-059ks1.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 10 pages.

LvLI
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

10/26/07
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.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 10/23/07 13:23

RFW Batch Number: **0710L059** Client: **TNUHANFORD RC-032 K0995** Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J15VL4		J15VL4		J15VL4		PBLKHS		PBLKHS BS	
Sample Information	RFW#:	001		001 MS		001 MSD		07LE0585-MB1		07LE0585-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	72	%	112	%	104	%	111	%	104	%
	Decachlorobiphenyl	76	%	95	%	99	%	118	%	107	%
Aroclor-1016		14	U	83	%	85	%	13	U	91	%
Aroclor-1221		14	U	14	U	14	U	13	U	13	U
Aroclor-1232		14	U	14	U	14	U	13	U	13	U
Aroclor-1242		14	U	14	U	14	U	13	U	13	U
Aroclor-1248		14	U	14	U	14	U	13	U	13	U
Aroclor-1254		14	U	14	U	14	U	13	U	13	U
Aroclor-1260		3.3	J	84	%	90	%	13	U	101	%

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

Lionville Laboratory Use Only

07101059

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD RC-032

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: OJohnson

QC: SW846 Del: STD TAT: 3Day

Date Rec'd: 10-17-07 Date Due: 10-20-07

		A							B		C	D				
Refrigerator #				3					3		3	3				
#/Type Container	Liquid															
	Solid			1G					1P		1G	1P				
Volume				60					250		250	125				
Preservatives				—					—		—	—				
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN	TOTAL TPH 418.1	Hex Chrom				
													Lionville Laboratory Use Only			
				OPC B					MetD		TPHC	ICR6				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected															
001	J15VL4	✓	✓	Soil	11-15-07	0915			X					X		X	X				

Special 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]	10/17/07	1515

Relinquished by	Received by	Date	Time

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

0000000006

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-168	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-26:4 Verification phase 2		SAF No. RC-032
Ice Chest No. GRP-03-018	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080045		Bill of Lading/Air Bill No. See OSPC

Price Code: 8B

Data Turnaround: ~~7 Day~~ 3 day

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None					
Type of Container	P	P	aG	aG	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	250mL	500mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15VL4	SOIL	10-15-07	0915	X	X	X	X						BCL-1

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: TONI WELCH-KOELLING	10/16/07 0945	Received By/Stored In: J R Debringer	10-15-07 0945
Relinquished By/Removed From: J R Debringer	10-15-07 1430	Received By/Stored In: KM Singleton	10-15-07 1430
Relinquished By/Removed From: KM Singleton	10-16-07 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	10/17/07 1515	Received By/Stored In: [illegible]	10/17/07 1515
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

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}

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

0000000007

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 10-17-07

LvLI Batch #: 0710L059

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 790852442164
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4°	°C	Cooler # GRP-03-018
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

000000008

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/19/07 Extraction Batch No: 07LE0585 Analyst: MF Method: SONC3550

Test: OPCB Cleanup Date: 10/19/07 Analyst: MF Client: TNUHANFORD RC-032 K0995

LIMS Report Date: 10/23/07 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	% Solid	Vis H2O	C/D FACTOR	Sulfur Clean?
0710L059-	TNUHANFORD RC-032 K0995												
001	J15VL4		30.0	1.0		10		1.0	N	95.45		349.2	
001 -S	J15VL4		30.0	1.0	1.0	10		1.0	N	95.45		349.2	
001 -T	J15VL4		30.0	1.0	1.0	10		1.0	N	95.45		349.2	
07LE0585-MB1			30.0	1.0		10		1.0	N	100.00		333.3	
07LE0585-MB1 -S			30.0	1.0	1.0	10		1.0	N	100.00		333.3	

Comments:
Surrogate: 250 UL OLM PSURR 89916109
Spike: 250 UL AR660 89915609

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
			CHC	10/23/07	% solids updated

000000009

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/19/07 Extraction Batch No: 07LE0585 Analyst: MF Method: SONC3550

Test: OPCB Cleanup Date: 10/19/07 Analyst: MF Client: TNU-HANFORD RC-032

LIMS Report Date: 10/19/07 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
0710L059-	TNU-HANFORD RC-032										
001	J15VL4		30.0	1.0		10		1.0	N	~~0.0~~ 95.45	333.3
001 -S	J15VL4		30.0	1.0	1.0	10		1.0	N	0.0 95.45	333.3
001 -T	J15VL4		30.0	1.0	1.0	10		1.0	N	0.0 95.45	333.3
07LE0585-MB1	PBLKHS		30.0	1.0		10		1.0	N	100.00	333.3
07LE0585-MB1 -S	PBLKHS		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916109
Spike: 250 UL AR660 89915609

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	10/19/07 1350	CK	10/19/07	GC

000000010

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0995

RECEIVED
NOV 2007

DATE RECEIVED: 10/17/07 LVL LOT # :07[illegible]059

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15VL4						
% SOLIDS	001	S	07L%S130	10/15/07	10/19/07	10/19/07
% SOLIDS	001 REP	S	07L%S130	10/15/07	10/19/07	10/19/07
CHROMIUM VI	001	S	07LVI084	10/15/07	10/19/07	10/19/07
CHROMIUM VI	001 REP	S	07LVI084	10/15/07	10/19/07	10/19/07
CHROMIUM VI	001 MS	S	07LVI084	10/15/07	10/19/07	10/19/07
CHROMIUM VI	001 MSD	S	07LVI084	10/15/07	10/19/07	10/19/07
PETROLEUM HYDROCARBO	001	S	07LHC037	10/15/07	10/19/07	10/23/07
PETROLEUM HYDROCARBO	001 REP	S	07LHC037	10/15/07	10/19/07	10/23/07
PETROLEUM HYDROCARBO	001 MS	S	07LHC037	10/15/07	10/19/07	10/23/07
LAB QC:						
CHROMIUM VI	MB1	S	07LVI084	N/A	10/19/07	10/19/07
CHROMIUM VI	MB1 BS	S	07LVI084	N/A	10/19/07	10/19/07
CHROMIUM VI	MB1 BSD	S	07LVI084	N/A	10/19/07	10/19/07
PETROLEUM HYDROCARBO	MB1	S	07LHC037	N/A	10/19/07	10/23/07
PETROLEUM HYDROCARBO	MB1 BS	S	07LHC037	N/A	10/19/07	10/23/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032 K0995
LVL#: 0710L059

W.O.#: 11343-606-001-9999-00
Date Received: 10-17-07

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.

2. The sample was 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 a sample 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.

7. The matrix spike recoveries for Chromium VI and Petroleum Hydrocarbons (PHC) were within the 75-125% control limits.

8. The replicate analyses for Percent Solids and PHC were within the 20% Relative Percent Difference (RPD) control limit however replicate analysis for Chromium VI was outside the control limit that may be attributed to sample inhomogeneity.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

10/24/07
Date

njp\i10- 059

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 11 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**

L-WI-034/B-01/01

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 10/23/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15VL4	% Solids	95.4	%	0.01	1.0
		Chromium VI	0.21 u	MG/KG	0.21	1.0
		Petroleum Hydrocarbons	137 u	MG/KG	137	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/23/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LVI084-MB1	Chromium VI	0.20	u	MG/KG	0.20	1.0
BLANK10	07LHC037-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/23/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15VL4	Soluble Chromium VI	4.0	0.21u	4.2	92.2	1.0
		Insoluble Chromium VI	1140	0.21u	1130	100.9	100
		Petroleum Hydrocarbons	621	48.1	576	99.5	1.0
BLANK10	07LVI084-MB1	Soluble Chromium VI	3.9	0.20u	4.0	98.0	1.0
		Insoluble Chromium VI	1200	0.20u	1240	96.3	100
BLANK10	07LHC037-MB1	Petroleum Hydrocarbons	535	133 u	560	95.5	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/23/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J15VL4	% Solids	95.4	96.2	0.83	1.0
		Chromium VI	0.21u	0.26	62.0	1.0
		Petroleum Hydrocarbons	137 u	137 u	NC	1.0

Lionville Laboratory Use Only

07101059

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD RC-032

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STD TAT: 3 Day

Date Rec'd: 10-17-07 Date Due: 10-20-07

		A							B		C	D				
Refrigerator #				3					3		3	3				
#/Type Container	Liquid															
	Solid			1G					1P		1G	1P				
Volume				60					250		250	125				
Preservatives				—					—		—	—				
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN	(TOTAL) TPH 418.1	Hex Chrom				
		Lionville Laboratory Use Only														
				OPCB					MeTD		IPHC	ICR6				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN	TPH	Hex Chrom				
001	J15VL4	✓	✓	Soil	10-15-07	0915			X					X		X	X				

Special Instructions:

Met ① = HSL + B, Mo, Si (NO TL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[signature]	10/17/07	1515

Relinquished by	Received by	Date	Time

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

000000009

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-168	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 ~~2 Day~~ 3 Day		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:4 Verification phase 2		SAF No. RC-032
Ice Chest No. GRP-03-018	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080045		Bill of Lading/Air Bill No. Ee 05PC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None					
Type of Container	P	P	aG	aG	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	250mL	500mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15VL4	SOIL	10-15-07	0915	X	X	X	X						BCL-1

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TONI WELCH-KOELLING	10/15/07 0945	JR DeBerry	10-15-07 0945
JR DeBerry	10-15-07 1430	KM Singleton	10-15-07 1430
KM Singleton	10-16-07 1500	FED EX	
FED EX	10/17/07 1515		10/17/07 1515

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}

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

000000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 10-17-07

LvLI Batch #: 0710L059

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 79085244 2164
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4°	°C	Cooler # GRP-03-018
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

RECEIVED
NOV 2007

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

K0995

DATE RECEIVED: 10/17/07 LVL LOT # :0710L055

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15VL4						
SILVER, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
SILVER, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
SILVER, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
SILVER, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
ALUMINUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
ALUMINUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
ALUMINUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
ALUMINUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
ARSENIC, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
ARSENIC, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
ARSENIC, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
ARSENIC, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
BORON, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
BORON, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
BORON, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
BORON, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
BARIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
BARIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
BARIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
BARIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
BERYLLIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
BERYLLIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
BERYLLIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
BERYLLIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
CALCIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
CALCIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
CALCIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
CALCIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
CADMIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
CADMIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
CADMIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
CADMIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
COBALT, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
COBALT, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
COBALT, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07

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

DATE RECEIVED: 10/17/07 LVL LOT # :0710L059

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COBALT, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
CHROMIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
CHROMIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
CHROMIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
CHROMIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
COPPER, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
COPPER, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
COPPER, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
COPPER, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
IRON, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
IRON, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
IRON, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
IRON, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
MERCURY, TOTAL	001	S	07C0192	10/15/07	10/22/07	10/22/07
MERCURY, TOTAL	001 REP	S	07C0192	10/15/07	10/22/07	10/22/07
MERCURY, TOTAL	001 MS	S	07C0192	10/15/07	10/22/07	10/22/07
POTASSIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
POTASSIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
POTASSIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
POTASSIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
MAGNESIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
MAGNESIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
MAGNESIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
MAGNESIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
MANGANESE, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
MANGANESE, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
MANGANESE, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
MANGANESE, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
MOLYBDENUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
MOLYBDENUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
MOLYBDENUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
MOLYBDENUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
SODIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
SODIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
SODIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
SODIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
NICKEL, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
NICKEL, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07

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

DATE RECEIVED: 10/17/07 LVL LOT # :0710L059

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NICKEL, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
NICKEL, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
LEAD, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
LEAD, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
LEAD, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
LEAD, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
ANTIMONY, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
ANTIMONY, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
ANTIMONY, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
ANTIMONY, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
SELENIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
SELENIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
SELENIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
SELENIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
SILICON, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
SILICON, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
SILICON, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
SILICON, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
VANADIUM, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
VANADIUM, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
VANADIUM, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
VANADIUM, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07
ZINC, TOTAL	001	S	07L0536	10/15/07	10/19/07	10/19/07
ZINC, TOTAL	001 REP	S	07L0536	10/15/07	10/19/07	10/19/07
ZINC, TOTAL	001 MS	S	07L0536	10/15/07	10/19/07	10/19/07
ZINC, TOTAL	001 MSD	S	07L0536	10/15/07	10/19/07	10/19/07

LAB QC:

SILVER LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
SILVER, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
ALUMINUM LABORTORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
ALUMINUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
ARSENIC LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
ARSENIC, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
BORON LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
BORON, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
BARIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07

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

DATE RECEIVED: 10/17/07 LVL LOT # :0710L059

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
BERYLLIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
BERYLLIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
CALCIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
CALCIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
CADMIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
CADMIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
COBALT LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
COBALT, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
CHROMIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
CHROMIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
COPPER LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
COPPER, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
IRON LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
IRON, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
MERCURY LABORATORY	LC1 BS	S	07C0192	N/A	10/22/07	10/22/07
MERCURY, TOTAL	MB1	S	07C0192	N/A	10/22/07	10/22/07
POTASSIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
POTASSIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
MAGNESIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
MAGNESIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
MANGANESE LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
MANGANESE, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
MOLYBDENUM LABORATOR	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
MOLYBDENUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
SODIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
SODIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
NICKEL LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
NICKEL, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
LEAD LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
LEAD, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
ANTIMONY LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
ANTIMONY, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
SELENIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
SELENIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
SILICON LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
SILICON, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
VANADIUM LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07

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

DATE RECEIVED: 10/17/07 LVL LOT # :0710L059

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07
ZINC LABORATORY	LC1 BS	S	07L0536	N/A	10/19/07	10/19/07
ZINC, TOTAL	MB1	S	07L0536	N/A	10/19/07	10/19/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032
LVL#: 0710L059
SDG/SAF#: K0995/RC-032

W.O.#: 11343-606-001-9999-00
Date Received: 10-17-07

METALS CASE NARRATIVE

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

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

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

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary. The sample was reported with a 3-fold dilution for ICP metals 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).

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

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

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

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

9. The matrix spike (MS) recoveries for 14 analytes and the matrix spike duplicate (MSD) recoveries for 22 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 serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 19 pages.

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J15VL4	Aluminum	66,000	99.8
	Barium	3,300	99.7
	Calcium	66,000	95.5
	Chromium	300	100.9
	Copper	300	106.0
	Iron	66,000	91.5
	Potassium	6,000	109.4
	Magnesium	36,000	94.9
	Manganese	3,000	101.2
	Antimony	300	97.6
	Selenium	300	104.9
	Silicon	6,300	86.1
	Vanadium	3,000	100.2
	Zinc	300	97.8

11. The MSs and MSDs for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Matrix Spike Duplicate Report.

12. The duplicate analyses for 6 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

14. 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.

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

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

10/25/07
Date

jjw/m10-059

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within t

Lot#: 0710L059

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	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	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
000000008

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 10/25/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15VL4	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	6480	MG/KG	11.5	3.0
		Arsenic, Total	4.1	MG/KG	1.4	3.0
		Boron, Total	8.0	MG/KG	1.4	3.0
		Barium, Total	101	MG/KG	0.29	3.0
		Beryllium, Total	0.23	MG/KG	0.14	3.0
		Calcium, Total	6880	MG/KG	11.5	3.0
		Cadmium, Total	0.29 u	MG/KG	0.29	3.0
		Cobalt, Total	6.0	MG/KG	0.58	3.0
		Chromium, Total	10.4	MG/KG	0.58	3.0
		Copper, Total	13.7	MG/KG	0.58	3.0
		Iron, Total	16800	MG/KG	13.0	3.0
		Mercury, Total	0.02	MG/KG	0.005	1.0
		Potassium, Total	1090	MG/KG	11.5	3.0
		Magnesium, Total	3930	MG/KG	7.2	3.0
		Manganese, Total	297	MG/KG	0.12	3.0
		Molybdenum, Total	0.87 u	MG/KG	0.87	3.0
		Sodium, Total	286	MG/KG	5.8	3.0
		Nickel, Total	9.9	MG/KG	0.58	3.0
		Lead, Total	9.5	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	2740	MG/KG	11.5	3.0
		Vanadium, Total	41.5	MG/KG	0.40	3.0
		Zinc, Total	56.6	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/25/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0536-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	7.7	MG/KG	3.8	1.0
		Cadmium, Total	0.09 u	MG/KG	0.09	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	0.19 u	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	7.6	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	07C0192-MB1	Mercury, Total	0.005u	MG/KG	0.005	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/25/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15VL4	Silver, Total	4.3	0.29u	4.8	89.6	3.0
		Silver, Total MSD	3.6	0.29u	4.8	75.0	3.0
		Aluminum, Total	5410	6480	192	-560. *	3.0
		Aluminum, Total MSD	5540	6480	192	-490. *	3.0
		Arsenic, Total	157	4.1	192	79.5	3.0
		Arsenic, Total MSD	147	4.1	192	74.3	3.0
		Boron, Total	82.1	8.0	96.2	77.0	3.0
		Boron, Total MSD	77.7	8.0	96.2	72.5	3.0
		Barium, Total	222	101	192	62.8	3.0
		Barium, Total MSD	211	101	192	57.0	3.0
		Beryllium, Total	4.1	0.23	4.8	80.7	3.0
		Beryllium, Total MSD	3.8	0.23	4.8	74.5	3.0
		Calcium, Total	7360	6880	2400	19.8	3.0
		Calcium, Total MSD	7510	6880	2400	26.1	3.0
		Cadmium, Total	3.9	0.29u	4.8	81.2	3.0
		Cadmium, Total MSD	3.7	0.29u	4.8	77.1	3.0
		Cobalt, Total	43.8	6.0	48.1	78.6	3.0
		Cobalt, Total MSD	41.1	6.0	48.1	73.0	3.0
		Chromium, Total	23.1	10.4	19.2	66.1	3.0
		Chromium, Total MSD	22.9	10.4	19.2	65.1	3.0
		Copper, Total	31.2	13.7	24.1	72.6	3.0
		Copper, Total MSD	31.0	13.7	24.1	71.8	3.0
		Iron, Total	13400	16800	96.2	-3500. *	3.0
		Iron, Total MSD	14700	16800	96.2	-2200. *	3.0
		Mercury, Total	0.20	0.02	0.16	116.4	1.0
		Potassium, Total	2810	1090	2400	71.4	3.0
		Potassium, Total MSD	2700	1090	2400	66.9	3.0
		Magnesium, Total	5180	3930	2400	52.0	3.0
		Magnesium, Total MSD	4980	3930	2400	43.9	3.0
		Manganese, Total	277	297	48.1	-41. *	3.0
		Manganese, Total MSD	278	297	48.1	-39. *	3.0
		Molybdenum, Total	74.3	0.87u	96.2	77.2	3.0
		Molybdenum, Total MSD	69.4	0.87u	96.2	72.1	3.0
		Sodium, Total	2160	286	2400	77.9	3.0
		Sodium, Total MSD	2040	286	2400	72.8	3.0
		Nickel, Total	46.0	9.9	48.1	75.1	3.0
		Nickel, Total MSD	44.3	9.9	48.1	71.5	3.0
		Lead, Total	46.5	9.5	48.1	76.9	3.0
		Lead, Total MSD	42.7	9.5	48.1	69.0	3.0
		Antimony, Total	31.7	0.87u	48.1	65.9	3.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/25/07

CLIENT: TNUHANPORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15VL4	Antimony, Total MSD	28.5	0.87u	48.1	59.3	3.0
		Selenium, Total	135	1.7 u	192	70.1	3.0
		Selenium, Total MSD	128	1.7 u	192	66.8	3.0
		Silicon, Total	3290	2740	96.2	569.8*	3.0
		Silicon, Total MSD	1970	2740	96.2	-810. *	3.0
		Vanadium, Total	68.8	41.5	48.1	56.8	3.0
		Vanadium, Total MSD	69.8	41.5	48.1	58.8	3.0
		Zinc, Total	78.0	56.6	48.1	44.5	3.0
		Zinc, Total MSD	76.3	56.6	48.1	41.0	3.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 10/25/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	J15VL4	Silver, Total	89.6	75.0	17.7
		Aluminum, Total	-560.	-490. *	~~*~~ ~~NC~~ 13.3
		Arsenic, Total	79.5	74.3	6.7
		Boron, Total	77.0	72.5	6.1
		Barium, Total	62.8	57.0	9.7
		Beryllium, Total	80.7	74.5	8.1
		Calcium, Total	19.8	26.1	27.7
		Cadmium, Total	81.2	77.1	5.3
		Cobalt, Total	78.6	73.0	7.4
		Chromium, Total	66.1	65.1	1.6
		Copper, Total	72.6	71.8	1.1
		Iron, Total	-3500.	-2200. *	~~*~~ ~~NC~~ 45.6
		Potassium, Total	71.4	66.9	6.4
		Magnesium, Total	52.0	43.9	16.8
		Manganese, Total	-41.	-39. *	~~*~~ ~~NC~~ 5.0%
		Molybdenum, Total	77.2	72.1	6.8
		Sodium, Total	77.9	72.8	6.7
		Nickel, Total	75.1	71.5	4.8
		Lead, Total	76.9	69.0	10.8
		Antimony, Total	65.9	59.3	10.6
		Selenium, Total	70.1	66.8	4.8
		Silicon, Total	569.8	-810. *	~~*~~ ~~NC~~ 1148.9
		Vanadium, Total	56.8	56.8	3.6
		Zinc, Total	44.5	41.0	8.3

*corrected values
AW 10/25/07

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/25/07

CLIENT: TNUHANFORD RC-032 K0995 LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J15VL4	Silver, Total	0.29u	0.29u	NC	3.0
		Aluminum, Total	6480	6210	4.3	3.0
		Arsenic, Total	4.1	3.0	31.0	3.0
		Boron, Total	8.0	4.7	52.0	3.0
		Barium, Total	101	74.0	31.1	3.0
		Beryllium, Total	0.23	0.22	2.6	3.0
		Calcium, Total	6880	5710	18.6	3.0
		Cadmium, Total	0.29u	0.29u	NC	3.0
		Cobalt, Total	6.0	5.7	5.1	3.0
		Chromium, Total	10.4	10.2	1.9	3.0
		Copper, Total	13.7	13.4	2.2	3.0
		Iron, Total	16800	17000	1.1	3.0
		Mercury, Total	0.02	0.02	0.00	1.0
		Potassium, Total	1090	1040	5.1	3.0
		Magnesium, Total	3930	3660	7.1	3.0
		Manganese, Total	297	268	10.2	3.0
		Molybdenum, Total	0.87u	0.87u	NC	3.0
		Sodium, Total	286	248	14.2	3.0
		Nickel, Total	9.9	8.9	10.6	3.0
		Lead, Total	9.5	7.0	30.3	3.0
		Antimony, Total	0.87u	0.87u	NC	3.0
		Selenium, Total	1.7 u	1.7 u	NC	3.0
		Silicon, Total	2740	1190	79.2	3.0
		Vanadium, Total	41.5	41.5	0.00	3.0
		Zinc, Total	56.6	43.9	25.3	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/25/07

CLIENT: TNUHANFORD RC-032 K0995

LVL LOT #: 0710L059

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0536-LC1	Silver, LCS	47.3	50.0	MG/KG	94.6
		Aluminum, LCS	485	500	MG/KG	96.9
		Arsenic, LCS	933	1000	MG/KG	93.3
		Boron, LCS	462	500	MG/KG	92.5
		Barium, LCS	476	500	MG/KG	95.2
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
		Calcium, LCS	2400	2500	MG/KG	96.1
		Cadmium, LCS	23.8	25.0	MG/KG	95.2
		Cobalt, LCS	240	250	MG/KG	96.0
		Chromium, LCS	48.3	50.0	MG/KG	96.6
		Copper, LCS	122	125	MG/KG	97.6
		Iron, LCS	478	500	MG/KG	95.5
		Potassium, LCS	2320	2500	MG/KG	92.8
		Magnesium, LCS	2320	2500	MG/KG	92.9
		Manganese, LCS	73.1	75.0	MG/KG	97.5
		Molybdenum, LCS	463	500	MG/KG	92.5
		Sodium, LCS	2300	2500	MG/KG	92.2
		Nickel, LCS	192	200	MG/KG	96.2
		Lead, LCS	241	250	MG/KG	96.2
		Antimony, LCS	280	300	MG/KG	93.4
		Selenium, LCS	873	1000	MG/KG	87.3
		Silicon, LCS	452	500	MG/KG	90.5
		Vanadium, LCS	236	250	MG/KG	94.6
		Zinc, LCS	95.3	100	MG/KG	95.3
LCS1	07C0192-LC1	Mercury, LCS	5.0	4.7	MG/KG	105.7

Lionville Laboratory Use Only

07101059

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: TNU HANFORD RC-032

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

PC: SW846 Del: STD TAT: 3 Day

Date Rec'd: 10-17-07 Date Due: 10-20-07

		A					B		C	D				
Refrigerator #		3					3		3	3				
#/Type Container	Liquid / Solid	1G					1P		1G	1P				
Volume		60					250		250	125				
Preservatives		—					—		—	—				
ANALYSES REQUESTED		ORGANIC					INORG							
		VOA	BNA	Pest/PCB	Herb		ICP Metals	CN	TOTALS TPH 418.1	Hex Chrom				
				OPCB			MetD		TPHC	ICR6				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	OPCB	MetD	TPHC	ICR6
001	J15VL4	✓	✓	Soil	10-15-07	0915	X	X	X	X

Special Instructions:

MetD = HSL + B, Mo, Si (NO TL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	10/17/07	1515

Relinquished by	Received by	Date	Time

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

0000000017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-168	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-26:4 Verification phase 2		SAF No. RC-032
Ice Chest No. GRP-03-018	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080045		Bill of Lading/Air Bill No. See OSPC

Price Code: 8B

Data Turnaround: ~~7 Day~~ 3 day

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None					
Type of Container	P	P	aG	aG	P	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	250mL	500mL	125mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta					

Sample No.	Matrix *	Sample Date	Sample Time										
J15VL4	SOIL	10-15-07	0915	X	X	X	X						BCL-1

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JON WELCH-KOELLING	10/15/07 0945	Received By/Stored In JRD	10-15-07 0945
Relinquished By/Removed From JRD	10-15-07 1430	Received By/Stored In KMSingleton	10-15-07 1430
Relinquished By/Removed From KMSingleton	10-16-07 1500	Received By/Stored In FED EX	
Relinquished By/Removed From FED EX	10/17/07 1515	Received By/Stored In [illegible]	10/17/07 1515
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

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)

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

000000018

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 10-17-07

LvLI Batch #: 0710L059

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier: Fed Ex		Airbill #: 7908 5214 2164
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4°	°C	Cooler #: GRP-03-018
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