0073911

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 9/11/07 INITIAL/DATE
Jeanette Duncan	H4-21	KW 9/11/07 INITIAL/DATE

COMMENTS:

SDG K0919 SAF-RC-032

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: **100-F-26:10 Verification**
128-F-2 Phase 2 Hex Chromium Samples

RECEIVED
SEP 17 2007
EDMC

EBERLINE
SERVICES

RECEIVED
2007

August 29, 2007

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

Reference: **P.O. #630**
Eberline Services R7-08-118-7850, SDG K0919

Dear Ms. Kessner:

Enclosed is the data report for five solid (soil) samples designated under SAF No. RC-032, received at Eberline Services on August 21, 2007. The samples were 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 K0919 was composed of five solid (soil) samples designated under SAF No. RC-032 with a Project Designation of: 100-F Remaining Sites Burial Grounds-Soil Full Protocol.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on August 28, 2007.

2.0 ANALYSIS NOTES

2.1 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."

Meli Mannion

Melissa C. Mannion
Senior Program Manager

08/29/7

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 K0919

SDG	7850
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG K0919

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

Melissa Mannion

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	08/28/07

SDG 7850
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0919

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 08/28/07

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

LAB SAMPLE SUMMARY

SDG 7850
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K0919

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R708118-01	J15F83	100-F-26:10 Verification	SOLID		RC-032	RC-032-147	08/16/07 07:15
R708118-02	J15F84	100-F-26:10 Verification	SOLID		RC-032	RC-032-147	08/16/07 07:15
R708118-03	J15F85	100-F-26:10 Verification	SOLID		RC-032	RC-032-147	08/16/07 07:35
R708118-04	J15F86	100-F-26:10 Verification	SOLID		RC-032	RC-032-147	08/16/07 07:55
R708118-05	J15F87	100-F-26:10 Verification	SOLID		RC-032	RC-032-147	08/16/07 08:10
R708118-06	Lab Control Sample		SOLID		RC-032		
R708118-07	Method Blank		SOLID		RC-032		
R708118-08	Duplicate (R708118-04)	100-F-26:10 Verification	SOLID		RC-032		08/16/07 07:55

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

SDG 7850
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0919

C 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
850	RC-032-147	J15F83	SOLID	99.3	803 g		08/21/07	5	R708118-01	7850-001
		J15F84	SOLID	99.3	844 g		08/21/07	5	R708118-02	7850-002
		J15F85	SOLID	99.7	803 g		08/21/07	5	R708118-03	7850-003
		J15F86	SOLID	99.3	787 g		08/21/07	5	R708118-04	7850-004
		J15F87	SOLID	99.3	911 g		08/21/07	5	R708118-05	7850-005
		Method Blank	SOLID						R708118-07	7850-007
		Lab Control Sample	SOLID						R708118-06	7850-006
		Duplicate (R708118-04)	SOLID	99.3	787 g		08/21/07	5	R708118-08	7850-008

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

SDG 7850
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0919

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6126-068	15.0	5			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 08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

SDG 7850
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0919

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
708118-01	J15F83			7850-001	GAM		08/23/07	08/27/07	CSS	Gamma Scan
08/16/07	100-F-26:10 Verification		SOLID							
08/21/07	RC-032-147	RC-032								
708118-02	J15F84			7850-002	GAM		08/23/07	08/27/07	CSS	Gamma Scan
08/16/07	100-F-26:10 Verification		SOLID							
08/21/07	RC-032-147	RC-032								
708118-03	J15F85			7850-003	GAM		08/23/07	08/27/07	CSS	Gamma Scan
08/16/07	100-F-26:10 Verification		SOLID							
08/21/07	RC-032-147	RC-032								
708118-04	J15F86			7850-004	GAM		08/25/07	08/27/07	CSS	Gamma Scan
08/16/07	100-F-26:10 Verification		SOLID							
08/21/07	RC-032-147	RC-032								
708118-05	J15F87			7850-005	GAM		08/23/07	08/27/07	CSS	Gamma Scan
08/16/07	100-F-26:10 Verification		SOLID							
08/21/07	RC-032-147	RC-032								
708118-06	Lab Control Sample			7850-006	GAM		08/23/07	08/27/07	CSS	Gamma Scan
			SOLID							
		RC-032								
708118-07	Method Blank			7850-007	GAM		08/23/07	08/27/07	CSS	Gamma Scan
			SOLID							
		RC-032								
708118-08	Duplicate (R708118-04)			7850-008	GAM		08/23/07	08/27/07	CSS	Gamma Scan
08/16/07	100-F-26:10 Verification		SOLID							
08/21/07		RC-032								

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

SDG 7850
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0919

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	RC-032	Gamma Scan	GAMMA_GS	5			1	1	1	8
TOTALS				5			1	1	1	8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-007 Method Blank

METHOD BLANK

SDG	7850	Client/Case no	Hanford	SDG K0919	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708118-07	Client sample id	Method Blank		
Dept sample id	7850-007	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
Potassium 40	13966-00-2	U		0.354		U	GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.057	0.100	U	GAM
Radium 228	15262-20-1	U		0.120	0.200	U	GAM
Europium 152	14683-23-9	U		0.071	0.100	U	GAM
Europium 154	15585-10-1	U		0.100	0.100	U	GAM
Europium 155	14391-16-3	U		0.057	0.100	U	GAM
Thorium 228	14274-82-9	U		0.045		U	GAM
Thorium 232	TH-232	U		0.120		U	GAM
Uranium 235	15117-96-1	U		0.103		U	GAM
Uranium 238	U-238	U		3.41		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM
Silver 108m	14391-65-2	U		0.021		U	GAM
Barium 133	13981-41-4	U		0.034		U	GAM

QC-BLANK #62496

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7850

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0919

Contract No. 630

Lab sample id R708118-06

Dept sample id 7850-006

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
Cobalt 60	2.08	0.061	0.029	0.050		GAM	2.10	0.084	99	77-123	80-120
Cesium 137	2.22	0.057	0.039	0.100		GAM	2.09	0.084	106	75-125	80-120

QC-LCS #62495

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-008 J15F86

DUPLICATE

SDG	7850			Client/Case no	Hanford SDG K0919
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R708118-08	Lab sample id	R708118-04	Client sample id	J15F86
Dept sample id	7850-008	Dept sample id	7850-004	Location/Matrix	100-F-26:10 Verification SOLID
		Received	08/21/07	Collected/Weight	08/16/07 07:55 787 g
% solids	99.3	% solids	99.3	Custody/SAF No	RC-032-147 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
Potassium 40	13.0	2.8	0.635			GAM	10.9	2.7	0.760		18	58	0.9
Cobalt 60	U		0.080	0.050	U	GAM	U		0.065	U	-		0.3
Cesium 137	U		0.084	0.100	U	GAM	U		0.141	U	-		0.7
Radium 226	0.529	0.14	0.132	0.100		GAM	0.456	0.15	0.150		15	70	0.6
Radium 228	0.797	0.35	0.340	0.200		GAM	0.944	0.28	0.256		17	84	0.6
Europium 152	U		0.229	0.100	U	GAM	U		0.200	U	-		0.2
Europium 154	U		0.218	0.100	U	GAM	U		0.230	U	-		0.1
Europium 155	U		0.219	0.100	U	GAM	U		0.197	U	-		0.1
Thorium 228	0.526	0.098	0.106			GAM	0.586	0.13	0.138		11	54	0.6
Thorium 232	0.797	0.35	0.340			GAM	0.944	0.28	0.256		17	84	0.6
Uranium 235	U		0.351		U	GAM	U		0.305	U	-		0.2
Uranium 238	U		9.49		U	GAM	U		7.96	U	-		0.2
Americium 241	U		0.345		U	GAM	U		0.314	U	-		0.1
Silver 108m	U		0.060		U	GAM	U		0.056	U	-		0.1
Barium 133	U		0.092		U	GAM	U		0.079	U	-		0.2

QC-DUP#4 62497

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-001 J15F83

DATA SHEET

SDG	7850	Client/Case no	Hanford	SDG K0919	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708118-01	Client sample id	J15F83		
Dept sample id	7850-001	Location/Matrix	100-F-26:10 Verification	SOLID	
Received	08/21/07	Collected/Weight	08/16/07 07:15	803 g	
% solids	99.3	Custody/SAF No	RC-032-147	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	11.7	1.2	0.550			GAM
Cobalt 60	10198-40-0	U		0.058	0.050	U	GAM
Cesium 137	10045-97-3	U		0.058	0.100	U	GAM
Radium 226	13982-63-3	0.488	0.11	0.103	0.100		GAM
Radium 228	15262-20-1	0.622	0.25	0.271	0.200		GAM
Europium 152	14683-23-9	U		0.126	0.100	U	GAM
Europium 154	15585-10-1	U		0.187	0.100	U	GAM
Europium 155	14391-16-3	U		0.126	0.100	U	GAM
Thorium 228	14274-82-9	0.612	0.094	0.104			GAM
Thorium 232	TH-232	0.622	0.25	0.271			GAM
Uranium 235	15117-96-1	U		0.218		U	GAM
Uranium 238	U-238	U		7.11		U	GAM
Americium 241	14596-10-2	U		0.266		U	GAM
Silver 108m	14391-65-2	U		0.041		U	GAM
Barium 133	13981-41-4	U		0.060		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-002 J15F84

DATA SHEET

SDG	7850	Client/Case no	Hanford	SDG_K0919	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708118-02	Client sample id	J15F84		
Dept sample id	7850-002	Location/Matrix	100-F-26:10 Verification	SOLID	
Received	08/21/07	Collected/Weight	08/16/07 07:15	844 g	
% solids	99.3	Custody/SAF No	RC-032-147	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	12.8	1.1	0.569			GAM
Cobalt 60	10198-40-0	U		0.053	0.050	U	GAM
Cesium 137	10045-97-3	U		0.055	0.100	U	GAM
Radium 226	13982-63-3	0.522	0.13	0.123	0.100		GAM
Radium 228	15262-20-1	0.730	0.22	0.188	0.200		GAM
Europium 152	14683-23-9	U		0.148	0.100	U	GAM
Europium 154	15585-10-1	U		0.196	0.100	U	GAM
Europium 155	14391-16-3	U		0.124	0.100	U	GAM
Thorium 228	14274-82-9	0.618	0.070	0.071			GAM
Thorium 232	TH-232	0.730	0.22	0.188			GAM
Uranium 235	15117-96-1	U		0.230		U	GAM
Uranium 238	U-238	U		6.56		U	GAM
Americium 241	14596-10-2	U		0.064		U	GAM
Silver 108m	14391-65-2	U		0.044		U	GAM
Barium 133	13981-41-4	U		0.071		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-003 J15F85

DATA SHEET

SDG	7850	Client/Case no	Hanford	SDG K0919	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708118-03	Client sample id	J15F85		
Dept sample id	7850-003	Location/Matrix	100-F-26:10 Verification	SOLID	
Received	08/21/07	Collected/Weight	08/16/07 07:35	803 g	
% solids	99.7	Custody/SAF No	RC-032-147	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	8.31	2.4	0.677			GAM
Cobalt 60	10198-40-0	U		0.082	0.050	U	GAM
Cesium 137	10045-97-3	U		0.086	0.100	U	GAM
Radium 226	13982-63-3	U		0.224	0.100	U	GAM
Radium 228	15262-20-1	0.513	0.33	0.317	0.200		GAM
Europium 152	14683-23-9	U		0.218	0.100	U	GAM
Europium 154	15585-10-1	U		0.253	0.100	U	GAM
Europium 155	14391-16-3	U		0.173	0.100	U	GAM
Thorium 228	14274-82-9	0.635	0.15	0.150			GAM
Thorium 232	TH-232	0.513	0.33	0.317			GAM
Uranium 235	15117-96-1	U		0.302		U	GAM
Uranium 238	U-238	U		10.1		U	GAM
Americium 241	14596-10-2	U		0.079		U	GAM
Silver 108m	14391-65-2	U		0.060		U	GAM
Barium 133	13981-41-4	U		0.090		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-004 J15F86

DATA SHEET

SDG	7850	Client/Case no	Hanford	SDG_K0919	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708118-04	Client sample id	J15F86		
Dept sample id	7850-004	Location/Matrix	100-F-26:10 Verification	SOLID	
Received	08/21/07	Collected/Weight	08/16/07 07:55	787 g	
% solids	99.3	Custody/SAF No	RC-032-147	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	10.9	2.7	0.760			GAM
Cobalt 60	10198-40-0	U		0.065	0.050	U	GAM
Cesium 137	10045-97-3	U		0.141	0.100	U	GAM
Radium 226	13982-63-3	0.456	0.15	0.150	0.100		GAM
Radium 228	15262-20-1	0.944	0.28	0.256	0.200		GAM
Europium 152	14683-23-9	U		0.200	0.100	U	GAM
Europium 154	15585-10-1	U		0.230	0.100	U	GAM
Europium 155	14391-16-3	U		0.197	0.100	U	GAM
Thorium 228	14274-82-9	0.586	0.13	0.138			GAM
Thorium 232	TH-232	0.944	0.28	0.256			GAM
Uranium 235	15117-96-1	U		0.305		U	GAM
Uranium 238	U-238	U		7.96		U	GAM
Americium 241	14596-10-2	U		0.314		U	GAM
Silver 108m	14391-65-2	U		0.056		U	GAM
Barium 133	13981-41-4	U		0.079		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/28/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

7850-005 J15F87

DATA SHEET

SDG	7850	Client/Case no	Hanford	SDG K0919	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R708118-05	Client sample id	J15F87		
Dept sample id	7850-005	Location/Matrix	100-F-26:10 Verification	SOLID	
Received	08/21/07	Collected/Weight	08/16/07 08:10	911 g	
% solids	99.3	Custody/SAF No	RC-032-147	RC-032	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	12.6	1.4	0.432			GAM
Cobalt 60	10198-40-0	U		0.075	0.050	U	GAM
Cesium 137	10045-97-3	U		0.061	0.100	U	GAM
Radium 226	13982-63-3	0.348	0.11	0.121	0.100		GAM
Radium 228	15262-20-1	0.503	0.29	0.292	0.200		GAM
Europium 152	14683-23-9	U		0.155	0.100	U	GAM
Europium 154	15585-10-1	U		0.227	0.100	U	GAM
Europium 155	14391-16-3	U		0.158	0.100	U	GAM
Thorium 228	14274-82-9	0.525	0.070	0.076			GAM
Thorium 232	TH-232	0.503	0.29	0.292			GAM
Uranium 235	15117-96-1	U		0.244		U	GAM
Uranium 238	U-238	U		8.40		U	GAM
Americium 241	14596-10-2	U		0.293		U	GAM
Silver 108m	14391-65-2	U		0.050		U	GAM
Barium 133	13981-41-4	U		0.075		U	GAM

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0919

Test	GAM
Matrix	SOLID
SDG	7850
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0919

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
reparation batch 6126-068								
708118-01			7850-001	J15F83	U		U	
708118-02			7850-002	J15F84	U		U	
708118-03			7850-003	J15F85	U		U	
708118-04			7850-004	J15F86	U		U	
708118-05			7850-005	J15F87	U		U	
708118-06			7850-006	Lab Control Sample	ok		ok	
708118-07			7850-007	Method Blank	U		U	
708118-08			7850-008	Duplicate (R708118-04)	-	U	-	U
'ominal values and limits from method				RDLs (pCi/g)	0.050		0.100	

1ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
'reparation batch 6126-068			2σ prep error 15.0 % Reference Lab Notebook #6126, pg. 68													
:708118-01			J15F83	13.0	237					177			7	08/22/07	08/23	JR,05,00
:708118-02			J15F84	14.8	242					146			7	08/22/07	08/23	JR,01,00
:708118-03			J15F85	19.2	229					146			7	08/22/07	08/23	JR,06,00
:708118-04			J15F86	15.2	234					128			9	08/22/07	08/25	JR,08,00
:708118-05			J15F87	14.0	253					117			7	08/22/07	08/23	JR,05,00
:708118-06			Lab Control Sample	0.029	228					949				08/22/07	08/23	JR,05,00
:708118-07			Method Blank	8.06	228					204				08/22/07	08/23	JR,07,00
:708118-08			Duplicate (R708118-04)	18.0	234					105			7	08/22/07	08/23	JR,08,00
'ominal values and limits from method				0.050	228					100			180			

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

AVERAGES ± 2 SD	MDA	12.8	± 12.3
FOR 8 SAMPLES	YIELD		±

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	08/28/07

SDG 7850
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0919

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.

SDG 7850
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0919

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.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/28/07

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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0919

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.

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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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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 7850
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GUIDE, cont.

Client Hanford
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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.

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REPORT GUIDE

Client Hanford
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Case no SDG_K0919

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.

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REPORT GUIDE

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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.

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REPORT GUIDE

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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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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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SDG 7850
Contact Melissa C. Mannion

REPORT GUIDE

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Case no SDG_K0919

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'

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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-032-147	Page 3 of 3

Collector T. Welch-Koelling	**Company Contact** R.T. Coffman	**Telephone No.** 528-6409	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7 DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	**Sampling Location** 100-F-26:10 Verification K0919 (7850)	**SAF No.** RC-032	
Ice Chest No. AFS-07-007	**Field Logbook No.** EFL-1174-3	**COA** R10F262000	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A070372	**Bill of Lading/Air Bill No.** See OSPC form	

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	P	P	aG	aG	aG	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	120mL	250mL	500mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	Pesticides - 8081	See item (2) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time									
J15F83	SOIL	8-16-07	0715						X				7
J15F84	SOIL	8-16-07	0715						X				7 D
J15F85	SOIL	8-16-07	0735						X				8
J15F86	SOIL	8-16-07	0755						X				9
J15F87	SOIL	8-16-07	0810						X				10

8-16-07 JRD

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TOM WELCH-KOELLING	8/16/07 0900	JR DeRuigne JR DeRuigne	0900 8-16-07
JR DeRuigne JR DeRuigne	8-16-07 1415	3728 JA	1415 8-16-07
3728 JA	8-20-07 0930	KM Singleton	8-20-07 0930
KM Singleton	8-20-07 1500	FED EX	
FED EX		MM	08/21/07 9:15

SPECIAL INSTRUCTIONS

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

Samples unavailable to relinquish samples from 3728 Ref # 3A.
3728 Custodian removed samples for shipping on 8/20/07.
Samples unavailable to relinquish

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

#0919 1550 - 1' 8/21/07

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 08/21/07 9:15 CoC No. RC-032-147

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

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date ____
15. Inspected by [signature] Date 08/21/07 Time: 10:30

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

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

LIONVILLE LABORATORY INC.

6 September 2007

RECEIVED SEP 2007

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0708L784
SDG #	K0919
SAF #	RC-032
Date Received	8/2107
# Samples	15
Matrix	SOIL
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0919

RECEIVED SEP

DATE RECEIVED: 08/21/07 LVL LOT # :07[illegible]

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15F83	001	S	07LE0471	08/16/07	08/20/07	08/23/07
J15F83	001 R1	S	07LE0483	08/16/07	08/24/07	08/27/07
J15F83	001 MS	S	07LE0471	08/16/07	08/20/07	08/23/07
J15F83	001 MS R1	S	07LE0483	08/16/07	08/24/07	08/27/07
J15F83	001 MSD	S	07LE0471	08/16/07	08/20/07	08/23/07
J15F83	001 MSD R1	S	07LE0483	08/16/07	08/24/07	08/27/07
J15F84	002	S	07LE0471	08/16/07	08/20/07	08/22/07
J15F84	002 R1	S	07LE0483	08/16/07	08/24/07	08/28/07
J15F85	003	S	07LE0471	08/16/07	08/20/07	08/22/07
J15F85	003 R1	S	07LE0483	08/16/07	08/24/07	08/28/07
J15F86	004	S	07LE0471	08/16/07	08/20/07	08/22/07
J15F86	004 R1	S	07LE0483	08/16/07	08/24/07	08/28/07
J15F87	005	S	07LE0471	08/16/07	08/20/07	08/22/07
J15F87	005 R1	S	07LE0483	08/16/07	08/24/07	08/28/07

LAB QC:

SBLKNP	MB1	S	07LE0471	N/A	08/20/07	08/23/07
SBLKNP	MB1 BS	S	07LE0471	N/A	08/20/07	08/23/07
SBLKNW	MB1	S	07LE0483	N/A	08/24/07	08/27/07
SBLKNW	MB1 BS	S	07LE0483	N/A	08/24/07	08/27/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0708L784
SDG/SAF # K0919/RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 08-21-2007

SEMIVOLATILE

Five (5) soil samples were collected on 08-16-2007.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 08-20,24-2007 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 08-22,23,27,28-2007.

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

1. Samples were extracted and analyzed within required holding time.

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

3. One (1) of one hundred and eight (108) surrogate recoveries was outside acceptance criteria. However, the surrogate recovery acceptance criteria were met (i.e. no more than one outlier per sample).

4. Four (4) of two hundred fifty-six (256) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report has been enclosed.

5. Twenty-one (21) of one hundred and twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report has been enclosed.

6. The method blanks contained the contained the common laboratory contaminants Bis (2-Ethylhexy) phthalate and Di-n-butylphthalate at a level less than the CRQL. Also the method blank 07LE0483 contained phenol.

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

r:\group\data\bna\tnu-hanford\0708-784ks2.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 33 pages.

LIONVILLE LABORATORY INC.

8. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

9. Due to the presence of Bis(2-Ethylhexyl)phthalate at elevated limits in the blank (07LE0471), The samples were re-extracted (07LE0483) and both results have been reported. A copy of the Sample Discrepancy Report has been enclosed.

10. 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.

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

Iain Daniells
Laboratory Manager
Lionville Laboratory Incorporated

9/5/07
Date

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 07MS182

Initiator: Shum Sylor
Date: 8-23-07
Client: TMU

Batch: 07OFL7F4
Samples: 001msd, BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 07LE0471

1. Reason for SDR

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

b. General Discrepancy

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

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

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

① low recovery of 1,2,4-trichlorobenzene in the msd but the ms is ok

② low recovery of several spike analytes in the BS

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

① + ② narrate

4. Project Manager Instructions...signature/date: 8/23/07

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

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

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

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

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

QA-105-A-0805

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 07M5183

Initiator: Robert Carden
Date: 8/24/07
Client: TNU Hanford R032

Batch: 0708789
Samples: B/C
Method: SW846/MCAWW/CLP/

Parameter: 8625H
Matrix: Solid
Prep Batch: 07LE0471

1. Reason for SDR

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

b. General Discrepancy

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

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

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

laboratory blank contained elevated levels of bis(2-ethylhexyl)phthalate) of many lab samples contained bis(2-ethylhexyl)phthalate also but at much lower levels "J" values

2. Known or Probable Causes(s) laboratory contamination?

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: 8/24/07

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

5. Final Action...signature/date: 8/24/07 Other Explanation:

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

RE-EXTRACTED 07LE0483

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

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

QA-105-A-0805

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 07MS186

Initiator: Shawn Sylvester
Date: 8-30-07
Client: TMM

Batch: 0708L784
Samples: ms, msd
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Solid
Prep Batch: 0708D483

1. Reason for SDR

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

b. General Discrepancy

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

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

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

1 low recovery of 1,2,4-trichlorobenzene in ms reprep & low recovery of 3,3'-dichlorobenzidine in the msd reprep

2 low recovery of several spike analytes in the 85483

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

narrate

4. Project Manager Instructions...signature/date: 8/31/07

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

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

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

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

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

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
J	=	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D	=	Identifies all compounds identified in an analysis at a secondary dilution factor.
I	=	Interference.
NQ	=	Result qualitatively confirmed but not able to quantify.
A	=	Indicates that a TIC is a suspected aldol-condensation product.
N	=	Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
X	=	This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
Y	=	Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 09/05/07 14:50

RFW Batch Number: 0708L784 Client: TNUHANFORD RC-032 K0919 Work Order: 11343606001 Page: 1a

0100000010

	Cust ID:	J15F83	J15F83	J15F83	J15F83	J15F83	J15F83
Sample Information	RFW#:	001	001	001 MS	001 MS	001 MSD	001 MSD
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
			REPREP		REPREP		REPREP
Surrogate Recovery	Nitrobenzene-d5	66 %	62 %	63 %	58 %	55 %	64 %
	2-Fluorobiphenyl	70 %	67 %	93 %	69 %	82 %	79 %
	Terphenyl-d14	99 %	103 %	94 %	86 %	93 %	101 %
	Phenol-d5	74 %	82 %	107 %	77 %	89 %	82 %
	2-Fluorophenol	80 %	84 %	106 %	72 %	88 %	78 %
	2,4,6-Tribromophenol	89 %	70 %	102 %	61 %	98 %	59 %
		fl	fl	fl	fl	fl	fl
Phenol		330 U	330 U	117 %	72 %	105 %	77 %
bis(2-Chloroethyl)ether		330 U	330 U	77 %	57 %	69 %	62 %
2-Chlorophenol		330 U	330 U	104 %	72 %	89 %	80 %
1,3-Dichlorobenzene		330 U	330 U	76 %	52 %	69 %	56 %
1,4-Dichlorobenzene		330 U	330 U	75 %	53 %	68 %	56 %
1,2-Dichlorobenzene		330 U	330 U	82 %	55 %	72 %	59 %
2-Methylphenol		330 U	330 U	101 %	74 %	91 %	88 %
2,2'-oxybis(1-Chloropropane)		330 U	330 U	81 %	58 %	70 %	64 %
3/4 Methylphenol		330 U	330 U	103 %	80 %	95 %	86 %
N-Nitroso-di-n-propylamine		330 U	330 U	91 %	74 %	84 %	79 %
Hexachloroethane		330 U	330 U	71 %	50 %	65 %	52 %
Nitrobenzene		330 U	330 U	58 %	55 %	54 %	65 %
Isophorone		330 U	330 U	67 %	70 %	62 %	79 %
2-Nitrophenol		330 U	330 U	63 %	60 %	59 %	71 %
2,4-Dimethylphenol		330 U	330 U	67 %	62 %	63 %	81 %
bis(2-Chloroethoxy)methane		330 U	330 U	61 %	60 %	57 %	70 %
2,4-Dichlorophenol		330 U	330 U	68 %	67 %	65 %	77 %
1,2,4-Trichlorobenzene		330 U	330 U	60 %	53 * %	54 * %	62 %
Naphthalene		330 U	330 U	67 %	62 %	60 %	74 %
4-Chloroaniline		330 U	330 U	42 %	42 %	40 %	38 %
Hexachlorobutadiene		330 U	330 U	64 %	55 %	57 %	65 %
4-Chloro-3-methylphenol		330 U	330 U	72 %	71 %	71 %	78 %
2-Methylnaphthalene		330 U	330 U	66 %	63 %	61 %	75 %
Hexachlorocyclopentadiene		330 U	330 U	77 %	71 %	63 %	80 %
2,4,6-Trichlorophenol		330 U	330 U	101 %	69 %	100 %	63 %
2,4,5-Trichlorophenol		830 U	830 U	100 %	71 %	98 %	86 %

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0708L784 Client: TNUHANFORD RC-032 K0919 Work Order: 11343606001 Page: 1b

Cust ID:	J15F83		J15F83		J15F83		J15F83		J15F83		J15F83	
RFW#:	001		001 REPREP		001 MS		001 MS REPREP		001 MSD		001 MSD REPREP	
2-Chloronaphthalene	330	U	330	U	89	%	68	%	84	%	78	%
2-Nitroaniline	830	U	830	U	95	%	72	%	94	%	88	%
Dimethylphthalate	330	U	330	U	91	%	67	%	90	%	80	%
Acenaphthylene	330	U	330	U	93	%	73	%	89	%	81	%
2,6-Dinitrotoluene	330	U	330	U	96	%	67	%	93	%	86	%
3-Nitroaniline	830	U	830	U	82	%	64	%	80	%	60	%
Acenaphthene	330	U	330	U	90	%	72	%	84	%	80	%
2,4-Dinitrophenol	830	U	830	U	99	%	114	%	82	%	129 *	%
4-Nitrophenol	830	U	830	U	94	%	84	%	96	%	40	%
Dibenzofuran	330	U	330	U	96	%	76	%	94	%	84	%
2,4-Dinitrotoluene	330	U	330	U	101	%	73	%	99	%	87	%
Diethylphthalate	330	U	330	U	94	%	67	%	92	%	86	%
4-Chlorophenyl-phenylether	330	U	330	U	94	%	72	%	91	%	83	%
Fluorene	330	U	330	U	96	%	70	%	95	%	85	%
4-Nitroaniline	830	U	830	U	87	%	69	%	90	%	52	%
4,6-Dinitro-2-methylphenol	830	U	830	U	100	%	95	%	93	%	113	%
N-Nitrosodiphenylamine (1)	330	U	330	U	73	%	61	%	72	%	78	%
4-Bromophenyl-phenylether	330	U	330	U	77	%	62	%	75	%	78	%
Hexachlorobenzene	330	U	330	U	95	%	81	%	92	%	92	%
Pentachlorophenol	830	U	830	U	93	%	93	%	107	%	92	%
Phenanthrene	330	U	330	U	96	%	79	%	95	%	87	%
Anthracene	330	U	330	U	97	%	77	%	96	%	88	%
Carbazole	330	U	330	U	94	%	71	%	96	%	75	%
Di-n-butylphthalate	21	JB	330	U	93	%	77	%	93	%	83	%
Fluoranthene	330	U	330	U	106	%	80	%	105	%	73	%
Pyrene	330	U	330	U	88	%	84	%	89	%	99	%
Butylbenzylphthalate	330	U	330	U	91	%	83	%	92	%	99	%
3,3'-Dichlorobenzidine	330	U	330	U	62	%	51	%	70	%	13 *	%
Benzo(a)anthracene	330	U	330	U	94	%	79	%	95	%	87	%
Chrysene	330	U	330	U	95	%	74	%	94	%	85	%
bis(2-Ethylhexyl)phthalate	33	JB	44	JB	87	%	81	%	89	%	90	%
Di-n-octyl phthalate	330	U	330	U	88	%	81	%	87	%	75	%
Benzo(b)fluoranthene	330	U	330	U	84	%	73	%	93	%	78	%
Benzo(k)fluoranthene	330	U	330	U	100	%	79	%	91	%	79	%
Benzo(a)pyrene	330	U	330	U	91	%	77	%	93	%	85	%
Indeno(1,2,3-cd)pyrene	330	U	330	U	86	%	78	%	93	%	107	%
Dibenz(a,h)anthracene	330	U	330	U	85	%	77	%	95	%	108	%
Benzo(g,h,i)perylene	330	U	330	U	84	%	75	%	93	%	102	%

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

1100000000

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 09/05/07 14:50

RFW Batch Number: 0708L784 Client: TNUHANFORD RC-032 K0919 Work Order: 11343606001 Page: 2a

000000012

	Cust ID:	J15F84		J15F84		J15F85		J15F85		J15F86		J15F86	
Sample Information	RFW#:	002		002		003		003		004		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg REPREP		ug/Kg		ug/Kg REPREP		ug/Kg		ug/Kg REPREP	
Surrogate Recovery	Nitrobenzene-d5	67	%	50	%	89	%	59	%	58	%	53	%
	2-Fluorobiphenyl	70	%	53	%	95	%	57	%	63	%	61	%
	Terphenyl-d14	114	%	92	%	152 *	%	95	%	104	%	102	%
	Phenol-d5	72	%	55	%	93	%	68	%	58	%	62	%
	2-Fluorophenol	79	%	59	%	101	%	69	%	61	%	64	%
	2,4,6-Tribromophenol	68	%	44	%	78	%	33	%	62	%	67	%
			fl		fl		fl		fl		fl		fl
Phenol		330	U	330	U	330	U	330	U	330	U	330	U
bis(2-Chloroethyl)ether		330	U	330	U	330	U	330	U	330	U	330	U
2-Chlorophenol		330	U	330	U	330	U	330	U	330	U	330	U
1,3-Dichlorobenzene		330	U	330	U	330	U	330	U	330	U	330	U
1,4-Dichlorobenzene		330	U	330	U	330	U	330	U	330	U	330	U
1,2-Dichlorobenzene		330	U	330	U	330	U	330	U	330	U	330	U
2-Methylphenol		330	U	330	U	330	U	330	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		330	U	330	U	330	U	330	U	330	U	330	U
3/4 Methylphenol		330	U	330	U	330	U	330	U	330	U	330	U
N-Nitroso-di-n-propylamine		330	U	330	U	330	U	330	U	330	U	330	U
Hexachloroethane		330	U	330	U	330	U	330	U	330	U	330	U
Nitrobenzene		330	U	330	U	330	U	330	U	330	U	330	U
Isophorone		330	U	330	U	330	U	330	U	330	U	330	U
2-Nitrophenol		330	U	330	U	330	U	330	U	330	U	330	U
2,4-Dimethylphenol		330	U	330	U	330	U	330	U	330	U	330	U
bis(2-Chloroethoxy)methane		330	U	330	U	330	U	330	U	330	U	330	U
2,4-Dichlorophenol		330	U	330	U	330	U	330	U	330	U	330	U
1,2,4-Trichlorobenzene		330	U	330	U	330	U	330	U	330	U	330	U
Naphthalene		330	U	330	U	330	U	330	U	330	U	330	U
4-Chloroaniline		330	U	330	U	330	U	330	U	330	U	330	U
Hexachlorobutadiene		330	U	330	U	330	U	330	U	330	U	330	U
4-Chloro-3-methylphenol		330	U	330	U	330	U	330	U	330	U	330	U
2-Methylnaphthalene		330	U	330	U	330	U	330	U	330	U	330	U
Hexachlorocyclopentadiene		330	U	330	U	330	U	330	U	330	U	330	U
2,4,6-Trichlorophenol		330	U	330	U	330	U	330	U	330	U	330	U
2,4,5-Trichlorophenol		830	U	830	U	830	U	830	U	830	U	830	U

*= Outside of EPA CLP QC limits.

Cust ID:	J15F84		J15F84		J15F85		J15F85		J15F86		J15F86	
RFW#:	002		002 REPREP		003		003 REPREP		004		004 REPREP	
2-Chloronaphthalene	330	U	330	U	330	U	330	U	330	U	330	U
2-Nitroaniline	830	U	830	U	830	U	830	U	830	U	830	U
Dimethylphthalate	330	U	330	U	330	U	330	U	330	U	330	U
Acenaphthylene	330	U	330	U	330	U	330	U	330	U	330	U
2,6-Dinitrotoluene	330	U	330	U	330	U	330	U	330	U	330	U
3-Nitroaniline	830	U	830	U	830	U	830	U	830	U	830	U
Acenaphthene	330	U	330	U	330	U	330	U	330	U	330	U
2,4-Dinitrophenol	830	U	830	U	830	U	830	U	830	U	830	U
4-Nitrophenol	830	U	830	U	830	U	830	U	830	U	830	U
Dibenzofuran	330	U	330	U	330	U	330	U	330	U	330	U
2,4-Dinitrotoluene	330	U	330	U	330	U	330	U	330	U	330	U
Diethylphthalate	330	U	330	U	330	U	330	U	330	U	330	U
4-Chlorophenyl-phenylether	330	U	330	U	330	U	330	U	330	U	330	U
Fluorene	330	U	330	U	330	U	330	U	330	U	330	U
4-Nitroaniline	830	U	830	U	830	U	830	U	830	U	830	U
4,6-Dinitro-2-methylphenol	830	U	830	U	830	U	830	U	830	U	830	U
N-Nitrosodiphenylamine (1)	330	U	330	U	330	U	330	U	330	U	330	U
4-Bromophenyl-phenylether	330	U	330	U	330	U	330	U	330	U	330	U
Hexachlorobenzene	330	U	330	U	330	U	330	U	330	U	330	U
Pentachlorophenol	830	U	830	U	830	U	830	U	830	U	830	U
Phenanthrene	330	U	330	U	330	U	330	U	330	U	330	U
Anthracene	330	U	330	U	330	U	330	U	330	U	330	U
Carbazole	330	U	330	U	330	U	330	U	330	U	330	U
Di-n-butylphthalate	26	JB	21	JB	330	U	330	U	330	U	28	JB
Fluoranthene	330	U	330	U	330	U	330	U	22	J	22	J
Pyrene	330	U	330	U	330	U	330	U	33	J	33	J
Butylbenzylphthalate	330	U	330	U	330	U	330	U	330	U	330	U
3,3'-Dichlorobenzidine	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(a)anthracene	330	U	330	U	330	U	330	U	330	U	330	U
Chrysene	330	U	330	U	330	U	330	U	20	J	20	J
bis(2-Ethylhexyl)phthalate	42	JB	84	JB	40	JB	39	JB	37	JB	81	JB
Di-n-octyl phthalate	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(b)fluoranthene	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(k)fluoranthene	330	U	330	U	330	U	330	U	18	J	330	U
Benzo(a)pyrene	330	U	330	U	330	U	330	U	19	J	330	U
Indeno(1,2,3-cd)pyrene	330	U	330	U	330	U	330	U	330	U	330	U
Dibenz(a,h)anthracene	330	U	330	U	330	U	330	U	330	U	330	U
Benzo(g,h,i)perylene	330	U	330	U	330	U	330	U	330	U	330	U

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

000000013

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 09/05/07 14:50

RFW Batch Number: 0708L784 Client: TNUHANFORD RC-032 K0919 Work Order: 11343606001 Page: 3a

	Cust ID:	J15F87	J15F87	SBLKNP	SBLKNP BS	SBLKNW	SBLKNW BS
Sample Information	RFW#:	005	005	07LE0471-MB1	07LE0471-MB1	07LE0483-MB1	07LE0483-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
			REPREP				
Surrogate Recovery	Nitrobenzene-d5	63 %	57 %	81 %	49 %	81 %	48 %
	2-Fluorobiphenyl	66 %	62 %	81 %	68 %	79 %	55 %
	Terphenyl-d14	112 %	102 %	95 %	73 %	122 %	69 %
	Phenol-d5	68 %	69 %	91 %	79 %	105 %	62 %
	2-Fluorophenol	70 %	72 %	95 %	75 %	116 %	56 %
	2,4,6-Tribromophenol	66 %	67 %	55 %	39 %	49 %	39 %
		fl	fl	fl	fl	fl	fl
Phenol		330 U	330 U	330 U	91 %	28 J	54 %
bis(2-Chloroethyl)ether		330 U	330 U	330 U	57 %	330 U	44 * %
2-Chlorophenol		330 U	330 U	330 U	73 %	330 U	52 %
1,3-Dichlorobenzene		330 U	330 U	330 U	56 %	330 U	41 * %
1,4-Dichlorobenzene		330 U	330 U	330 U	54 %	330 U	41 * %
1,2-Dichlorobenzene		330 U	330 U	330 U	57 %	330 U	43 * %
2-Methylphenol		330 U	330 U	330 U	70 %	330 U	57 * %
2,2'-oxybis(1-Chloropropane)		330 U	330 U	330 U	58 %	330 U	45 * %
3/4 Methylphenol		330 U	330 U	330 U	74 %	330 U	59 * %
N-Nitroso-di-n-propylamine		330 U	330 U	330 U	69 %	330 U	53 %
Hexachloroethane		330 U	330 U	330 U	51 %	330 U	42 * %
Nitrobenzene		330 U	330 U	330 U	48 * %	330 U	43 * %
Isophorone		330 U	330 U	330 U	56 * %	330 U	55 * %
2-Nitrophenol		330 U	330 U	330 U	51 %	330 U	47 * %
2,4-Dimethylphenol		330 U	330 U	330 U	51 %	330 U	47 * %
bis(2-Chloroethoxy)methane		330 U	330 U	330 U	51 %	330 U	48 %
2,4-Dichlorophenol		330 U	330 U	330 U	52 %	330 U	52 %
1,2,4-Trichlorobenzene		330 U	330 U	330 U	47 * %	330 U	41 * %
Naphthalene		330 U	330 U	330 U	52 %	330 U	48 %
4-Chloroaniline		330 U	330 U	330 U	37 %	330 U	40 %
Hexachlorobutadiene		330 U	330 U	330 U	50 %	330 U	44 %
4-Chloro-3-methylphenol		330 U	330 U	330 U	60 %	330 U	63 %
2-Methylnaphthalene		330 U	330 U	330 U	54 * %	330 U	50 * %
Hexachlorocyclopentadiene		330 U	330 U	330 U	58 %	330 U	49 %
2,4,6-Trichlorophenol		330 U	330 U	330 U	45 %	330 U	38 %
2,4,5-Trichlorophenol		840 U	840 U	830 U	63 %	830 U	56 %

*= Outside of EPA CLP QC limits.

0000000014

RFW Batch Number: 0708L784 Client: TNUHANFORD RC-032 K0919 Work Order: 11343606001 Page: 3b

Cust ID:	J15F87		J15F87		SBLKNP		SBLKNP BS		SBLKNW		SBLKNW BS	
RFW#:	005		005 REPREP		07LE0471-MB1		07LE0471-MB1		07LE0483-MB1		07LE0483-MB1	
2-Chloronaphthalene	330	U	330	U	330	U	67	%	330	U	52	%
2-Nitroaniline	840	U	840	U	830	U	76	%	830	U	68	%
Dimethylphthalate	330	U	330	U	330	U	74	%	330	U	65	%
Acenaphthylene	330	U	330	U	330	U	70	%	330	U	57 *	%
2,6-Dinitrotoluene	330	U	330	U	330	U	74	%	330	U	65	%
3-Nitroaniline	840	U	840	U	830	U	68	%	830	U	67	%
Acenaphthene	330	U	330	U	330	U	70	%	330	U	56	%
2,4-Dinitrophenol	840	U	840	U	830	U	67	%	830	U	92	%
4-Nitrophenol	840	U	840	U	830	U	47	%	830	U	48	%
Dibenzofuran	330	U	330	U	330	U	73	%	330	U	59 *	%
2,4-Dinitrotoluene	330	U	330	U	330	U	80	%	330	U	71	%
Diethylphthalate	330	U	330	U	330	U	74	%	330	U	67	%
4-Chlorophenyl-phenylether	330	U	330	U	330	U	71	%	330	U	60	%
Fluorene	330	U	330	U	330	U	74	%	330	U	62	%
4-Nitroaniline	840	U	840	U	830	U	68	%	830	U	62	%
4,6-Dinitro-2-methylphenol	840	U	840	U	830	U	80	%	830	U	82	%
N-Nitrosodiphenylamine (1)	330	U	330	U	330	U	61	%	330	U	54	%
4-Bromophenyl-phenylether	330	U	330	U	330	U	66	%	330	U	55	%
Hexachlorobenzene	330	U	330	U	330	U	81	%	330	U	69	%
Pentachlorophenol	840	U	840	U	830	U	77	%	830	U	90	%
Phenanthrene	330	U	330	U	330	U	76	%	330	U	67	%
Anthracene	330	U	330	U	330	U	80	%	330	U	68	%
Carbazole	330	U	330	U	330	U	74	%	330	U	64	%
Di-n-butylphthalate	25	JB	32	JB	17	J	78	%	45	J	67	%
Fluoranthene	330	U	330	U	330	U	83	%	330	U	73	%
Pyrene	330	U	330	U	330	U	70	%	330	U	66	%
Butylbenzylphthalate	330	U	330	U	330	U	73	%	330	U	70	%
3,3'-Dichlorobenzidine	330	U	330	U	330	U	58	%	330	U	52	%
Benzo(a)anthracene	330	U	330	U	330	U	75	%	330	U	70	%
Chrysene	330	U	330	U	330	U	74	%	330	U	69	%
bis(2-Ethylhexyl)phthalate	120	JB	71	JB	1700		0 *	%	65	J	70	%
Di-n-octyl phthalate	330	U	330	U	330	U	68	%	330	U	64	%
Benzo(b)fluoranthene	330	U	330	U	330	U	69	%	330	U	64	%
Benzo(k)fluoranthene	330	U	330	U	330	U	77	%	330	U	67	%
Benzo(a)pyrene	330	U	330	U	330	U	75	%	330	U	66	%
Indeno(1,2,3-cd)pyrene	330	U	330	U	330	U	73	%	330	U	63	%
Dibenz(a,h)anthracene	330	U	330	U	330	U	73	%	330	U	60	%
Benzo(g,h,i)perylene	330	U	330	U	330	U	71	%	330	U	64	%

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

000000015

nville Laboratory Use Only

7081784

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

VLI

000000016

nt TMC HANFORD SAF# RC-032

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

vilie Laboratory Project Manager O Johnson

SW846 Del STD TAT 3 days

Rec'd 8-21-07 Date Due 8-24-07

		A	B	C	D	E
Refrigerator #		2	2	2	2	2
#/Type Container	Liquid / Solid	1G	1G	1G	1P	1P
Volume		120	60	250	250	125
Preservatives		—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA					
	ORGANIC: BNA					
	ORGANIC: Pest/PCB					
	ORGANIC: Herb					
	ORGANIC: Pest					
	INORG: Metal					
	INORG: CN					
	INORG: Chlorine					
Lionville Laboratory Use Only		0625H	0PCB	0608H	MetD	ICR6

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0PCB	0608H	MetD	ICR6
001	J15F83			SOIL	8-16-07	0715	X	X	X	X	X
002	J15F84					0715	X	X	X	X	X
003	J15F85					0735	X	X	X	X	X
004	J15F86					0755	X	X	X	X	X
005	J15F87					0810	X	X	X	X	X
006	J15FD0					1000					X
007	J15FD1					1005					X
008	J15FD2					1010					X
009	J15FD3					1015					X
010	J15FD4					1020					X

Special Instructions:

Met① = HSL + B, Mo, Si (NOTL)

Special Instructions:

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

Run Matrix QC

Relinquished by	Received by	Date	Time
DE	V. Hernandez	8/21/07	0940

Relinquished by	Received by	Date	Time

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

ville Laboratory Use Only

'708L 784

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000017

TNU HANFORD RC-632

Final Proj. Sampling Date

ct# See Pg 1

ct Contact/Phone#

ille Laboratory Project Manager

Del TAT

Rec'd 8-21-07 Date Due

Refrigerator #											A 2					
#/Type Container	Liquid / Solid										1P					
Volume											125					
Preservatives											HNO3					
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN						
Lionville Laboratory Use Only											ICR6					

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ICR6
011	J15FD5			Soil	8/6/07	1025	X
012	J15FD6					1030	X
013	J15FD7					1035	X
014	J15FD8					1040	X
015	J15FD9					1045	X

ial Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/21/07	0915

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-147	Page 3 of 3
llector T. Welch-Koelling	Company Contact: R.T. Coffman Telephone No.: 528-6409	Project Coordinator KESSNER, JH	Price Code: 8B Data Turnaround: 3DAYS 7DAY (8-31-07)
olect Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:10 Verification	SAF No. RC-032	
e Chest No. ERC-02-006	Field Logbook No. EFL-1174-3 COA R10F262000	Method of Shipment FED EX	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400	Bill of Lading/Air Bill No. See OSFC form	

'OSSIBLE SAMPLE HAZARDS/REMARKS
/A

ipecial Handling and/or Storage
/A

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	P	P	aG	aG	aG	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	120mL	250mL	500mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	Pesticides - 8081	See item (2) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time										
15F83	SOIL	8-16-07	0715	X	X	X	X	X					7
15F84	SOIL	8-20-07	0715	X	X	X	X	X					7D
15F85	SOIL		0735	X	X	X	X	X					8
15F86	SOIL	8-20-07	0815 0755	X	X	X	X	X					9
15F87	SOIL	8-16-07	0810	X	X	X	X	X					10

CHAIN OF POSSESSION	Sign/Print Names	
elinquished By/Removed From: TDW Welch-Koelling	Date/Time: 8/16/07 0800	Received By/Stored In: JR DeQuoine	Date/Time: 8-16-07 0900
elinquished By/Removed From: JR DeQuoine	Date/Time: 8-16-07	Received By/Stored In: 3728/3A	Date/Time: 8-16-07 1445
elinquished By/Removed From: 3728/3A	Date/Time: 8-20-07 0900	Received By/Stored In: M Singleton	Date/Time: 8-20-07 0900
elinquished By/Removed From: M Singleton	Date/Time: 8-20-07 1500	Received By/Stored In: FED EX	Date/Time:
elinquished By/Removed From: Fed Ex	Date/Time: 8/21/07 0940	Received By/Stored In: Victor Hernandez	Date/Time: 8/21/07 0940
elinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

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

Sampler unavailable to relinquish samples from 3728 Ref# 3A. 3728 Custodian removed samples for shipping on 8/20/07.

TIME J15F85 is 0735 hrs

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

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

VCH-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 1 of 2

ollector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 3DAY 7DAY		
roject Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
e Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
hipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	Cool 4C											
Type of Container	P											
No. of Container(s)	1											
Volume	125mL											
SAMPLE ANALYSIS	Chromium Hex - 7196											

Sample No.	Matrix *	Sample Date	Sample Time										
15FD0	SOIL	8-16-07	1000	X									B-1
15FD1	SOIL	8-16-07	1005	X									B-2
15FD2	SOIL	8-16-07	1010	X									B-3
15FD3	SOIL	8-16-07	1015	X									B-4
15FD4	SOIL	8-16-07	1020	X									B-5

CHAIN OF POSSESSION	Sign/Print Names		
linquished By/Removed From Tom Welch-Koelling	Date/Time 8-16-07 1200	Received By/Stored In JRDeBruijne	Date/Time 1300 8-16-07
linquished By/Removed From JRDeBruijne	Date/Time 1415 8-16-07	Received By/Stored In 3728B3A	Date/Time 1415 8-16-07
linquished By/Removed From 3728B3A	Date/Time 8-20-07 0900	Received By/Stored In MMSingleton	Date/Time 8-20-07 0900
linquished By/Removed From MMSingleton	Date/Time 8-20-07 1500	Received By/Stored In FED EX	Date/Time
linquished By/Removed From Fed Ex	Date/Time 8/21/07 0940	Received By/Stored In Victor Hernandez	Date/Time 8-21-07 0940
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07.

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

FCH-EE-011

000000019

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 2 of 2

ollector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 3DAY 7DAY 14 8-21-07		
roject Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
e Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
hipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
VA

Special Handling and/or Storage
VA

Preservation	Cool 4C											
Type of Container	P											
No. of Container(s)	1											
Volume	125mL											
SAMPLE ANALYSIS	Chromium Hex - 7196											

Sample No.	Matrix *	Sample Date	Sample Time										
15FD5	SOIL	8-16-07	1025	X									B-6
15FD6	SOIL	8-16-07	1030	X									B-7
15FD7	SOIL	8-16-07	1035	X									B-8
15FD8	SOIL	8-16-07	1040	X									B-9
15FD9	SOIL	8-16-07	1045	X									B-10

CHAIN OF POSSESSION	Sign/Print Names	
elinquished By/Removed From Paul Welch-Koelling 8-16-07 1300	Received By/Stored In JRDeBuigne JRDeBuigne 8-16-07	Date/Time 1300
elinquished By/Removed From JRDeBuigne JRDeBuigne 8-16-07	Received By/Stored In 3728B3A	Date/Time 1415 8-16-07 1415
elinquished By/Removed From 3728B3A 8-20-07 0900	Received By/Stored In KMSingleton 8-20-07 0900	Date/Time
elinquished By/Removed From KMSingleton 8-20-07 1500	Received By/Stored In FED EX	Date/Time
elinquished By/Removed From Fed Ex 8/21/07 0940	Received By/Stored In [illegible] 8-21-07 0940	Date/Time
elinquished By/Removed From	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8-20-07

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

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000020

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #:

Date: 8/21/07

LvLI Batch #: 0708L784

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7996 9678 6929
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 2.9°	°C	Cooler # ERC-02-006
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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F83

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-001

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

Lab File ID: N082229

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/20/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/23/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.638	100	JB
2.	ALKANE	4.161	100	JB
3.	UNKNOWN	4.562	40000	JB
4.	UNKNOWN	4.641	40000	J
5.	ALKANE	24.581	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F83RE

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-001

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

Lab File ID: N082715

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/24/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/27/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	1.221	200	J
2.	UNKNOWN	3.340	200	JB
3.	UNKNOWN	4.438	100000	JB
4.	ALDOL CONDENSATE	5.519	300	JAB
5.	ALKANE	24.178	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F84

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-002

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

Lab File ID: N082215

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/20/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/22/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.714	200	JB
2.	ALKANE	4.228	200	JB
3.	ALKANE	4.359	100	JB
4.	UNKNOWN	4.769	90000	JB
5.	ALKANE	24.657	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F84RE

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-002

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

Lab File ID: N082718

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/24/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/28/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	1.246	200	J
2.	UNKNOWN	3.993	200	J
3.	UNKNOWN	4.481	100000	JB
4.	ALDOL CONDENSATE	5.527	200	JAB
5.	UNKNOWN	26.279	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F85

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-003

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

Lab File ID: N082216

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/20/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/22/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.706	400	JB
2.	ALKANE	4.229	200	JB
3.	ALKANE	4.360	200	JB
4.	UNKNOWN	4.778	90000	JB
5.	UNKNOWN	18.825	200	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F85RE

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-003

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

Lab File ID: N082803

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/24/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/28/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.280	200	J
2.	ALKANE	3.926	200	J
3.	UNKNOWN	4.396	100000	JB
4.	ALDOL CONDENSATE	5.443	600	JAB
5.	UNKNOWN	18.330	700	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F86

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-004

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

Lab File ID: N082217

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/20/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/22/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.699	200	JB
2.	UNKNOWN	4.702	70000	JB
3.	UNKNOWN	24.311	200	J
4.	ALKANE	24.660	300	J
5.	ALKANE	26.465	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F86RE

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-004

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

Lab File ID: N082804

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/24/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/28/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	1.221	200	J
2.	UNKNOWN	4.412	100000	JB
3.	ALDOL CONDENSATE	5.441	300	JAB
4.	ALKANE	24.100	200	J
5.	ALKANE	25.678	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F87

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-005

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

Lab File ID: N082218

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/20/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/22/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.699	200	JB
2.	ALKANE	4.222	100	JB
3.	ALKANE	4.353	200	JB
4.	UNKNOWN	4.658	60000	JB
5.	UNKNOWN	29.386	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15F87RE

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 0708L784-005

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

Lab File ID: N082805

Level: (low/med) LOW

Date Received: 08/21/07

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 08/24/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/28/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.295	200	J
2.	UNKNOWN	3.932	100	J
3.	UNKNOWN	4.403	100000	JB
4.	ALDOL CONDENSATE	5.449	300	JAB
5.	ALKANE	24.099	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKNP

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 07LE0471-MB1

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

Lab File ID: N082227

Level: (low/med) LOW

Date Received: 08/22/07

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

Date Extracted: 08/20/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/23/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.635	200	J
2.	ALKANE	4.158	200	J
3.	UNKNOWN	4.280	200	J
4.	UNKNOWN	4.594	70000	J
5.	UNKNOWN	18.763	500	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKNW

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

Client: TNUHANFORD RC-032 K0919

Matrix: (soil/water) SOIL

Lab Sample ID: 07LE0483-MB1

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

Lab File ID: N082714

Level: (low/med) LOW

Date Received: 08/24/07

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

Date Extracted: 08/24/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/27/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	1.903	80	JA
2.	UNKNOWN	3.360	100	J
3.	UNKNOWN	4.545	100000	J
4.	ALDOL CONDENSATE	5.522	700	JA
5.	UNKNOWN	18.409	900	J

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-032 K0919

RECEIVED SEP

DATE RECEIVED: 08/21/07 LVL LOT # :

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15F83	001	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F83	001 MS	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F83	001 MSD	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F84	002	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F85	003	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F86	004	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F87	005	S	07LE0472	08/16/07	08/21/07	08/22/07

LAB QC:

PBLKFD	MB1	S	07LE0472	N/A	08/21/07	08/22/07
PBLKFD	MB1 BS	S	07LE0472	N/A	08/21/07	08/22/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0708L784
SDG/SAF # K0919 /RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 08-15-2007

CHLORINATED PESTICIDES

Five (5) soil samples were collected on 08-16-2007.

The samples and their associated QC samples were extracted on 08-21-2007 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 08-22-2007. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

1. Samples were extracted and analyzed within required holding time.

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

3. Two (2) of eighteen (18) surrogate recoveries were outside acceptance criteria. However the surrogate recovery acceptance criteria were met (i.e. no more than one outlier per sample).

4. One (1) of twenty (20) blank spike recoveries was outside criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

5. All matrix spike recoveries were within acceptance criteria.

6. The samples required a 4-fold instrument dilution due to the sample matrix. The reporting limits were adjusted to reflect the necessary dilution.

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.

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 13 pages.

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

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

8/29/07
Date

kim\r:\group\data\pest\tnu hanford\0708s784s.pst

LvLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 07GC223

Initiator: CAL
Date: 8-23-07
Client: TNU

Batch: 0708L784
Samples: BS
Method: SW846/MCAWW/CLP/

Parameter: 0608Hj
Matrix: SOIL
Prep Batch: 07LE0472

1. Reason for SDR

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

b. General Discrepancy

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

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

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

4,4,-DDE out high

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

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

Other Description:

Samples are all Non Detect for affected analyte.
No impact on data
Narrate ID.

4. Project Manager Instructions...signature/date: 8/29/07

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

5. Final Action...signature/date: 8/29/07 Other Explanation:

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

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

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

QA-105-A-0805

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 08/23/07 10:34

RFW Batch Number: 0708L784 Client: TNU-HANFORD RC-032 Work Order: 11343606001 Page: 1

000000006

	Cust ID:	J15F83	J15F83	J15F83	J15F84	J15F85	J15F86
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	118 %	108 %	118 %	115 %	119 * %	113 %
	Decachlorobiphenyl	106 %	97 %	103 %	102 %	108 %	103 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		1.3 U	90 %	102 %	1.3 U	1.3 U	1.3 U
gamma-BHC (Lindane)		1.3 U	101 %	114 %	1.3 U	1.3 U	1.3 U
Beta-BHC		1.3 U	110 %	121 %	1.3 U	1.3 U	1.3 U
Heptachlor		1.3 U	107 %	117 %	1.3 U	1.3 U	1.3 U
Delta-BHC		1.3 U	87 %	97 %	1.3 U	1.3 U	1.3 U
Aldrin		1.3 U	96 %	106 %	1.3 U	1.3 U	1.3 U
Heptachlor epoxide		1.3 U	100 %	111 %	1.3 U	1.3 U	1.3 U
gamma-Chlordane		1.3 U	99 %	108 %	1.3 U	1.3 U	1.3 U
Endosulfan I		1.3 U	101 %	110 %	1.3 U	1.3 U	1.3 U
alpha-Chlordane		1.3 U	100 %	110 %	1.3 U	1.3 U	1.3 U
4,4'-DDE		1.3 U	100 %	110 %	1.3 U	1.3 U	1.3 U
Dieldrin		1.3 U	98 %	107 %	1.3 U	1.3 U	1.3 U
Endrin		1.3 U	103 %	113 %	1.3 U	1.3 U	1.3 U
4,4'-DDD		1.3 U	99 %	108 %	1.3 U	1.3 U	1.3 U
Endosulfan II		1.3 U	102 %	110 %	1.3 U	1.3 U	1.3 U
4,4'-DDT		1.3 U	104 %	113 %	1.3 U	1.3 U	1.3 U
Endrin aldehyde		1.3 U	98 %	102 %	1.3 U	1.3 U	1.3 U
Endosulfan sulfate		1.3 U	100 %	105 %	1.3 U	1.3 U	1.3 U
Methoxychlor		1.3 U	120 %	120 %	1.3 U	1.3 U	1.3 U
Endrin ketone		1.3 U	104 %	114 %	1.3 U	1.3 U	1.3 U
Toxaphene		13 U	13 U	13 U	13 U	13 U	13 U

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 08/23/07 10:34

RFW Batch Number: 0708L784 Client: TNU-HANFORD RC-032 Work Order: 11343606001 Page: 2

0000000007

	Cust ID:	J15F87	PBLKFD	PBLKFD BS
Sample Information	RFW#:	005	07LE0472-MB1	07LE0472-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	4.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	117 %	119 * %	116 %
	Decachlorobiphenyl	101 %	101 %	100 %
Alpha-BHC		1.3 U	0.33 U	123 %
gamma-BHC (Lindane)		1.3 U	0.33 U	123 %
Beta-BHC		1.3 U	0.33 U	115 %
Heptachlor		1.3 U	0.33 U	115 %
Delta-BHC		1.3 U	0.33 U	119 %
Aldrin		1.3 U	0.33 U	119 %
Heptachlor epoxide		1.3 U	0.33 U	115 %
gamma-Chlordane		1.3 U	0.33 U	116 %
Endosulfan I		1.3 U	0.33 U	117 %
alpha-Chlordane		1.3 U	0.33 U	115 %
4,4'-DDE		1.3 U	0.33 U	123 * %
Dieldrin		4.9 J	0.33 U	120 %
Endrin		1.3 U	0.33 U	117 %
4,4'-DDD		1.3 U	0.33 U	117 %
Endosulfan II		1.3 U	0.33 U	118 %
4,4'-DDT		1.3 U	0.33 U	123 %
Endrin aldehyde		1.3 U	0.33 U	88 %
Endosulfan sulfate		1.3 U	0.33 U	113 %
Methoxychlor		1.7 J.I	0.33 U	115 %
Endrin ketone		1.3 U	0.33 U	120 %
Toxaphene		13 U	3.3 U	3.3 U

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

Lionville Laboratory Use Only

07081784

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

LVLI

Client TMC HANFORD SAF# 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 days

Date Rec'd 8-21-07 Date Due 8-24-07

		A	B	C	D	E
Refrigerator #		2	2	2	2	2
#/Type Container	Liquid					
	Solid	1G	1G	1G	1P	1P
Volume		120	60	250	250	125
Preservatives		—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA					
	ORGANIC: BNA					
	ORGANIC: Pest/PCB					
	ORGANIC: Herb					
		Lest				
	INORG: Total Metal					
	INORG: CN					
	INORG: Chrom VI					

Lionville Laboratory Use Only

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	06025H	0PCB	06008H	Met①	ICR6
001	J15F83			Soil	8-16-07	0715	X	X	X	X	X
002	J15F84					0715	X	X	X	X	X
003	J15F85					0735	X	X	X	X	X
004	J15F86					0755	X	X	X	X	X
005	J15F87					0810	X	X	X	X	X
006	J15FD0					1000					X
007	J15FD1					1005					X
008	J15FD2					1010					X
009	J15FD3					1015					X
010	J15FD4					1020					X

Special Instructions:

Met① = HSL + B, Mo, Si (NOTL)

Special Instructions:

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

Run Matrix QC

Relinquished by	Received by	Date	Time
Ed E	V. Hernandez	8/21/07	0940

Relinquished by	Received by	Date	Time

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

0000000008

Lionville Laboratory Use Only

0708L784

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

0000000009

Client TNU HANFORD RC-032

Est. Final Proj. Sampling Date

Project# See Pg 1

Project Contact/Phone#

Lionville Laboratory Project Manager

QC Del TAT

Date Rec'd 8-21-07 Date Due

Refrigerator #											A 2					
#/Type Container	Liquid / Solid										1P					
Volume											125					
Preservatives											HCL					
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN	Uranium					
		Lionville Laboratory Use Only														
											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													
011	J15FD5			Soil	8/6/07	1025								X					
012	J15FD6					1030								X					
013	J15FD7					1035								X					
014	J15FD8					1040								X					
015	J15FD9					1045								X					

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/21/07	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-147	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 3DAYS 7DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:10 Verification		SAF No. RC-032
Ice Chest No. EBC-02-006	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC form

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
Type of Container	P	P	aG	aG	aG	P				
No. of Container(s)	1	1	1	1	1	1				
Volume	250mL	125mL	60mL	120mL	250mL	500mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	Pesticides - 8081	See item (2) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
J15F83	SOIL	8-16-07	0715	X	X	X	X	X					7
J15F84	SOIL	8-20-07	~~0745~~ 15	X	X	X	X	X					7D
J15F85	SOIL		0735	X	X	X	X	X					8
J15F86	SOIL	8-20-07	~~0815~~ 0755	X	X	X	X	X					9
J15F87	SOIL	8-16-07	0810	X	X	X	X	X					10

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TONI WELCH-KOELLING	8/16/07 0900	JR DeQuiane	8-16-07 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JR DeQuiane	8-16-07	3728/3A	8-16-07 1445
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
3728/3A	8-20-07 0900		8-20-07 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	8-20-07 1500	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	8/21/07 0940		8/21/07 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07

TIME J15F85 is 0735 hrs

Matrix *

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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 1 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 3DAY 7DAY (11 8-21-07)		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
Ice Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	Cool 4C										
Type of Container	P										
No. of Container(s)	1										
Volume	125mL										
SAMPLE ANALYSIS	Chromium Hex - 7196										

Sample No.	Matrix *	Sample Date	Sample Time										
J15FD0	SOIL	8-16-07	1000	X									B-1
J15FD1	SOIL	8-16-07	1005	X									B-2
J15FD2	SOIL	8-16-07	1010	X									B-3
J15FD3	SOIL	8-16-07	1015	X									B-4
J15FD4	SOIL	8-16-07	1020	X									B-5

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: TOM WELCH-KOELLING Date/Time: 8-16-07 1300	Received By/Stored In: JR DeBruijne Date/Time: 1300 8-16-07	Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07
Relinquished By/Removed From: JR DeBruijne Date/Time: 1415 8-16-07	Received By/Stored In: 3728/3A Date/Time: 1415 8-16-07	
Relinquished By/Removed From: 3728/3A Date/Time: 8-20-07 0900	Received By/Stored In: KM Singleton Date/Time: 8-20-07 0900	
Relinquished By/Removed From: KM Singleton Date/Time: 8-20-07 1500	Received By/Stored In: FED EX Date/Time:	
Relinquished By/Removed From: Fed Ex Date/Time: 8/21/07 0940	Received By/Stored In: Vicki Hernandez Date/Time: 8/21/07 0940	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	

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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 2 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 3DAY 7DAY HR 8-21-07		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
Ice Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	Cool 4C										
Type of Container	P										
No. of Container(s)	1										
Volume	125mL										
SAMPLE ANALYSIS	Chromium Hex - 7196										

Sample No.	Matrix *	Sample Date	Sample Time										
J15FD5	SOIL	8-16-07	1025	X									B-6
J15FD6	SOIL	8-16-07	1030	X									B-7
J15FD7	SOIL	8-16-07	1035	X									B-8
J15FD8	SOIL	8-16-07	1040	X									B-9
J15FD9	SOIL	8-16-07	1045	X									B-10

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: Toni Welch-Koelling; Date/Time: 8-16-07 1300	Received By/Stored In: JR DeBruin; Date/Time: 1300 8-16-07	Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8-20-07
Relinquished By/Removed From: JR DeBruin; Date/Time: 1415 8-16-07	Received By/Stored In: 3728-13A; Date/Time: 1415 8-16-07	
Relinquished By/Removed From: 3728-13A; Date/Time: 8-20-07 0900	Received By/Stored In: KM Singleton; Date/Time: 8-20-07 0900	
Relinquished By/Removed From: KM Singleton; Date/Time: 8-20-07 1500	Received By/Stored In: FED EX; Date/Time:	
Relinquished By/Removed From: FED EX; Date/Time: 8/21/07 0940	Received By/Stored In: [illegible]; Date/Time: 8-21-07 0940	
Relinquished By/Removed From: ; Date/Time:	Received By/Stored In: ; Date/Time:	

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD Date: 8/21/07

Project/SAP/SOW/Release #:

LvLI Batch #: 0708L784 Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7996 9678 6929
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 2.9°	°C	Cooler # ERC-02-006
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-032 K0919

RECEIVED SEP 2007

DATE RECEIVED: 08/21/07 LVL LOT # :C708L784

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15F83	001	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F83	001 MS	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F83	001 MSD	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F84	002	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F85	003	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F86	004	S	07LE0472	08/16/07	08/21/07	08/22/07
J15F87	005	S	07LE0472	08/16/07	08/21/07	08/22/07

LAB QC:

PBLKFD	MB1	S	07LE0472	N/A	08/21/07	08/22/07
PBLKFD	MB1 BS	S	07LE0472	N/A	08/21/07	08/22/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0708L784
SDG/SAF # K0919 /RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 08-21-2007

PCB

Five (5) soil samples were collected on 08-16-2007.

The samples and their associated QC samples were extracted on 08-21-2007 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 08-22-2007. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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

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

2. Samples were extracted and analyzed within required holding time.

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

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

5. All surrogate recoveries were within acceptance criteria.

6. The blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

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

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 11 pages.

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/27/07
Date

kim\r:\group\data\pest\tmu hanford\0708s784.pcb

LVLI
LIONVILLE LABORATORY INC.

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 08/23/07 08:46

RFW Batch Number: 0708L784 Client: TNU-HANFORD RC-032 Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J15F83	J15F83	J15F83	J15F84	J15F85	J15F86
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	90 %	84 %	93 %	81 %	84 %	86 %
	Decachlorobiphenyl	100 %	94 %	104 %	92 %	94 %	97 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		13 U	88 %	97 %	13 U	13 U	13 U
Aroclor-1221		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U	13 U	13 U	4.0 J
Aroclor-1260		13 U	96 %	107 %	13 U	13 U	13 U

	Cust ID:	J15F87	PBLKFD	PBLKFD BS
Sample Information	RFW#:	005	07LE0472-MB1	07LE0472-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	87 %	88 %	92 %
	Decachlorobiphenyl	98 %	103 %	102 %
		fl	fl	fl
Aroclor-1016		13 U	13 U	92 %
Aroclor-1221		13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U
Aroclor-1254		57	13 U	13 U
Aroclor-1260		54	13 U	102 %

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

Lionville Laboratory Use Only

07081784

Custody Transfer Record/Lab Work Request

Page 1 of 2

See SRC

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNC HANFORD SAF# 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 days

Date Rec'd 8-21-07 Date Due 8-24-07

		A	B	C	D	E
Refrigerator #		2	2	2	2	2
#/Type Container	Liquid					
	Solid	1G	1G	1G	1P	1P
Volume		120	60	250	250	125
Preservatives		—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA					
	ORGANIC: BNA					
	ORGANIC: Pest/PCB					
	ORGANIC: Herb					
		6GT				
	INORG: Total Metal					
	INORG: CN					
						HEX Chrom

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	Lionville Laboratory Use Only													
								0625H	OPC13		0608H			Met①		ICP6				
001	J15F83			Soil	8-16-07	0715		X	X		X			X		X				
002	J15F84					0715		X	X		X			X		X				
003	J15F85					0735		X	X		X			X		X				
004	J15F86					0755		X	X		X			X		X				
005	J15F87					0810		X	X		X			X		X				
006	J15FD0					1000										X				
007	J15FD1					1005										X				
008	J15FD2					1010										X				
009	J15FD3					1015										X				
010	J15FD4					1020										X				

Special Instructions:

Met① = HSL + B, Mo, Si (NOTL)

Run Matrix QC

Special Instructions:

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

Relinquished by	Received by	Date	Time
Ed Eo	V. Hernandez	8/21/07	0940

Relinquished by	Received by	Date	Time

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

0000000006

Lionville Laboratory Use Only

0708L784

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000007

Client TNU HANFORD RC-032

Est. Final Proj. Sampling Date

Project# See Pg 1

Project Contact/Phone#

Lionville Laboratory Project Manager

QC Del TAT

Date Rec'd 8-21-07 Date Due

Refrigerator #											A 2					
#/Type Container	Liquid / Solid										1P					
Volume											125					
Preservatives											HNO3					
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
		Lionville Laboratory Use Only														
											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													
011	J15FD5			Soil	8-6-07	1025									X				
012	J15FD6			↓	↓	1030									X				
013	J15FD7			↓	↓	1035									X				
014	J15FD8			↓	↓	1040									X				
015	J15FD9			↓	↓	1045									X				

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/21/07	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-147	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 3DAYS 7DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:10 Verification		SAF No. RC-032
Ice Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC form

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
Type of Container	P	P	aG	aG	aG	P				
No. of Container(s)	1	1	1	1	1	1				
Volume	250mL	125mL	60mL	120mL	250mL	500mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	Pesticides - 8081	See item (2) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
J15F83	SOIL	8-16-07	0715	X	X	X	X	X					7
J15F84	SOIL	8-20-07	0715	X	X	X	X	X					7D
J15F85	SOIL		0735	X	X	X	X	X					8
J15F86	SOIL	8-20-07	0815 0755	X	X	X	X	X					9
J15F87	SOIL	8-16-07	0810	X	X	X	X	X					10

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TON WELCH-KOELLING	8/16/07 0900	JR DeDuigne	8-16-07 0900
JR DeDuigne	8-16-07	3728/3A	8-16-07 1415
3728/3A	8-20-07 0900		8-20-07 0900
	8-20-07 1500	FED EX	
Fed Ex	8/21/07 0940		8/21/07 0940

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)

Sampler unavailable to relinquish samples from 3728 Ref # 3A 3728 Custodian removed samples for shipping on 8/20/07

TIME J15F85 is 0735 hrs

Matrix *

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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 1 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code 8B	Data Turnaround 3DAY ~~7DAY~~ 10 8-21-07
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 128-F-2 phase 2 hex chromium samples		SAF No. RC-032		
Ice Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	Cool 4C										
Type of Container	P										
No. of Container(s)	1										
Volume	125mL										
SAMPLE ANALYSIS	Chromium Hex - 7196										

Sample No.	Matrix *	Sample Date	Sample Time										
J15FD0	SOIL	8-16-07	1000	X									B-1
J15FD1	SOIL	8-16-07	1005	X									B-2
J15FD2	SOIL	8-16-07	1010	X									B-3
J15FD3	SOIL	8-16-07	1015	X									B-4
J15FD4	SOIL	8-16-07	1020	X									B-5

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From TONY WELCH-KOELLING	Date/Time 8-16-07 1300	Received By/Stored In JR DeBruin	Date/Time 1300 8-16-07
Relinquished By/Removed From JR DeBruin	Date/Time 1415 8-16-07	Received By/Stored In 3728/3A	Date/Time 1415 8-16-07
Relinquished By/Removed From 3728/3A	Date/Time 8-20-07 0900	Received By/Stored In KM Singleton	Date/Time 8-20-07 0900
Relinquished By/Removed From KM Singleton	Date/Time 8-20-07 1500	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 8/21/07 0940	Received By/Stored In Victor Hernandez	Date/Time 8-21-07 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07.

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 2 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 3DAY 7DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
Ice Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	Cool 4C										
Type of Container	P										
No. of Container(s)	1										
Volume	125mL										
SAMPLE ANALYSIS	Chromium Hex - 7196										
Sample No. / Matrix * / Sample Date / Sample Time											
J15FD5 / SOIL / 8-16-07 / 1025	X										B-6
J15FD6 / SOIL / 8-16-07 / 1030	X										B-7
J15FD7 / SOIL / 8-16-07 / 1035	X										B-8
J15FD8 / SOIL / 8-16-07 / 1040	X										B-9
J15FD9 / SOIL / 8-16-07 / 1045	X										B-10

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: T. Welch-Koelling — Date/Time: 8-16-07 1300	Received By/Stored In: JPDeBruijn JPDeBruijn — Date/Time: 8-16-07 1300	Sampler unavailable to relinquish samples from 3728 Ref# 3A. 3728 Custodian removed samples for shipping on 8-20-07
Relinquished By/Removed From: JPDeBruijn JPDeBruijn — Date/Time: 8-16-07 1415	Received By/Stored In: 3728/3A — Date/Time: 8-16-07 1415	
Relinquished By/Removed From: 3728/3A — Date/Time: 8-20-07 0900	Received By/Stored In: KMSimpkins — Date/Time: 8-20-07 0900	
Relinquished By/Removed From: KMSimpkins — Date/Time: 8-20-07 1500	Received By/Stored In: FED EX — Date/Time:	
Relinquished By/Removed From: FED EX — Date/Time: 8/21/07 0940	Received By/Stored In: [illegible] — Date/Time: 8-21-07 0940	
Relinquished By/Removed From — Date/Time:	Received By/Stored In — Date/Time:	

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TMC HANFORD

Project/SAP/SOW/Release #:

Date: 8/21/07

LvLI Batch #: 0708L784

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7996 9678 6929
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 2.9°	°C	Cooler # ERC-02-006
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-032 K0919

RECEIVED SEP 2007

DATE RECEIVED: 08/21/07 LVL LOT # :07[illegible]

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15F83						
SILVER, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
SILVER, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
SILVER, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
ALUMINUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
ALUMINUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
ALUMINUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
ARSENIC, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
ARSENIC, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
ARSENIC, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
BORON, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
BORON, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
BORON, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
BARIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
BARIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
BARIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
BERYLLIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
BERYLLIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
BERYLLIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
CALCIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
CALCIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
CALCIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
CADMIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
CADMIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
CADMIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
COBALT, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
COBALT, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
COBALT, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
CHROMIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
CHROMIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
CHROMIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
COPPER, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
COPPER, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
COPPER, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
IRON, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
IRON, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07

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

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
MERCURY, TOTAL	001	S	07C0159	08/16/07	08/22/07	08/23/07
MERCURY, TOTAL	001 REP	S	07C0159	08/16/07	08/22/07	08/23/07
MERCURY, TOTAL	001 MS	S	07C0159	08/16/07	08/22/07	08/23/07
POTASSIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
POTASSIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
POTASSIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
MAGNESIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
MAGNESIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
MAGNESIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
MANGANESE, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
MANGANESE, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
MANGANESE, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
MOLYBDENUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
MOLYBDENUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
MOLYBDENUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
SODIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
SODIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
SODIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
NICKEL, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
NICKEL, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
NICKEL, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
LEAD, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
LEAD, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
LEAD, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
ANTIMONY, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
ANTIMONY, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
ANTIMONY, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
SELENIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
SELENIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
SELENIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
SILICON, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
SILICON, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
SILICON, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
VANADIUM, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07
VANADIUM, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
VANADIUM, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
ZINC, TOTAL	001	S	07L0416	08/16/07	08/22/07	08/22/07

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

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	S	07L0416	08/16/07	08/22/07	08/22/07
ZINC, TOTAL	001 MS	S	07L0416	08/16/07	08/22/07	08/22/07
J15F84						
SILVER, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
ALUMINUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
ARSENIC, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
BORON, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
BARIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
BERYLLIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
CALCIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
CADMIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
COBALT, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
CHROMIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
COPPER, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
IRON, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
MERCURY, TOTAL	002	S	07C0159	08/16/07	08/22/07	08/23/07
POTASSIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
MAGNESIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
MANGANESE, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
MOLYBDENUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
SODIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
NICKEL, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
LEAD, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
ANTIMONY, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
SELENIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
SILICON, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
VANADIUM, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
ZINC, TOTAL	002	S	07L0416	08/16/07	08/22/07	08/22/07
J15F85						
SILVER, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
ALUMINUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
ARSENIC, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
BORON, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
BARIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07

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

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
CALCIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
CADMIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
COBALT, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
CHROMIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
COPPER, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
IRON, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
MERCURY, TOTAL	003	S	07C0159	08/16/07	08/22/07	08/23/07
POTASSIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
MAGNESIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
MANGANESE, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
MOLYBDENUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
SODIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
NICKEL, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
LEAD, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
ANTIMONY, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
SELENIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
SILICON, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
VANADIUM, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
ZINC, TOTAL	003	S	07L0416	08/16/07	08/22/07	08/22/07
J15F86						
SILVER, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
ALUMINUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
ARSENIC, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
BORON, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
BARIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
BERYLLIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
CALCIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
CADMIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
COBALT, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
CHROMIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
COPPER, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
IRON, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
MERCURY, TOTAL	004	S	07C0159	08/16/07	08/22/07	08/23/07
POTASSIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
MAGNESIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07

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

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
MOLYBDENUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
SODIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
NICKEL, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
LEAD, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
ANTIMONY, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
SELENIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
SILICON, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
VANADIUM, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
ZINC, TOTAL	004	S	07L0416	08/16/07	08/22/07	08/22/07
J15F87						
SILVER, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
ALUMINUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
ARSENIC, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
BORON, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
BARIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
BERYLLIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
CALCIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
CADMIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
COBALT, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
CHROMIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
COPPER, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
IRON, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
MERCURY, TOTAL	005	S	07C0159	08/16/07	08/22/07	08/23/07
POTASSIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
MAGNESIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
MANGANESE, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
MOLYBDENUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
SODIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
NICKEL, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
LEAD, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
ANTIMONY, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
SELENIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
SILICON, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
VANADIUM, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07
ZINC, TOTAL	005	S	07L0416	08/16/07	08/22/07	08/22/07

LAB QC:

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

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
SILVER, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
ALUMINUM LABORTORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
ALUMINUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
ARSENIC LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
ARSENIC, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
BORON LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
BORON, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
BARIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
BARIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
BERYLLIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
BERYLLIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
CALCIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
CALCIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
CADMIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
CADMIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
COBALT LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
COBALT, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
CHROMIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
CHROMIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
COPPER LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
COPPER, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
IRON LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
IRON, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
MERCURY LABORATORY	LC1 BS	S	07C0159	N/A	08/22/07	08/23/07
MERCURY, TOTAL	MB1	S	07C0159	N/A	08/22/07	08/23/07
POTASSIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
POTASSIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
MAGNESIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
MAGNESIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
MANGANESE LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
MANGANESE, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
MOLYBDENUM LABORATOR	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
MOLYBDENUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
SODIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07

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

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
NICKEL LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
NICKEL, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
LEAD LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
LEAD, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
ANTIMONY LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
ANTIMONY, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
SELENIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
SELENIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
SILICON LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
SILICON, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
VANADIUM LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
VANADIUM, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07
ZINC LABORATORY	LC1 BS	S	07L0416	N/A	08/22/07	08/22/07
ZINC, TOTAL	MB1	S	07L0416	N/A	08/22/07	08/22/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032
LVL#: 0708L784
SDG/SAF#: K0919/RC-032

W.O.#: 11343-606-001-9999-00
Date Received: 08-21-07

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 analyses of 5 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. All samples were reported with 3-fold dilutions for ICP metals due to sample matrix.

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.

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

6. The preparation/method blanks for 2 analytes were outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB results for Sodium and Zinc were greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and sample J15F85 for Zinc, and all samples for Sodium, read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the

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 26 pages.

Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J15F94	Aluminum	66,000	99.5
	Iron	66,000	105.3
	Antimony	300	101.3
	Silicon	6,300	96.4

11. The duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/27/07
Date

jjw/m08-784

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 07081784

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
000000010

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 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15F83	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	6310	MG/KG	4.6	3.0
		Arsenic, Total	4.0	MG/KG	1.1	3.0
		Boron, Total	3.4	MG/KG	1.0	3.0
		Barium, Total	68.0	MG/KG	0.06	3.0
		Beryllium, Total	0.31	MG/KG	0.03	3.0
		Calcium, Total	5160	MG/KG	2.0	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	6.3	MG/KG	0.22	3.0
		Chromium, Total	10.1	MG/KG	0.28	3.0
		Copper, Total	13.2	MG/KG	0.25	3.0
		Iron, Total	15700	MG/KG	6.6	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1020	MG/KG	8.9	3.0
		Magnesium, Total	4170	MG/KG	2.3	3.0
		Manganese, Total	281	MG/KG	0.19	3.0
		Molybdenum, Total	0.44 u	MG/KG	0.44	3.0
		Sodium, Total	190	MG/KG	1.9	3.0
		Nickel, Total	11.2	MG/KG	0.75	3.0
		Lead, Total	9.4	MG/KG	0.92	3.0
		Antimony, Total	0.61 u	MG/KG	0.61	3.0
		Selenium, Total	1.3	MG/KG	1.2	3.0
		Silicon, Total	1600	MG/KG	2.4	3.0
		Vanadium, Total	33.9	MG/KG	0.22	3.0
		Zinc, Total	35.1	MG/KG	0.11	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J15F84	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	5970	MG/KG	4.8	3.0
		Arsenic, Total	3.9	MG/KG	1.2	3.0
		Boron, Total	3.6	MG/KG	1.1	3.0
		Barium, Total	72.3	MG/KG	0.06	3.0
		Beryllium, Total	0.32	MG/KG	0.03	3.0
		Calcium, Total	5050	MG/KG	2.1	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	6.2	MG/KG	0.23	3.0
		Chromium, Total	9.2	MG/KG	0.29	3.0
		Copper, Total	13.2	MG/KG	0.26	3.0
		Iron, Total	14900	MG/KG	7.0	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1030	MG/KG	9.3	3.0
		Magnesium, Total	4070	MG/KG	2.4	3.0
		Manganese, Total	285	MG/KG	0.20	3.0
		Molybdenum, Total	0.47 u	MG/KG	0.47	3.0
		Sodium, Total	191	MG/KG	2.0	3.0
		Nickel, Total	11.8	MG/KG	0.79	3.0
		Lead, Total	10.1	MG/KG	0.96	3.0
		Antimony, Total	0.64 u	MG/KG	0.64	3.0
		Selenium, Total	1.3 u	MG/KG	1.3	3.0
		Silicon, Total	1580	MG/KG	2.5	3.0
		Vanadium, Total	31.6	MG/KG	0.23	3.0
		Zinc, Total	33.8	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J15F85	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	4110	MG/KG	4.7	3.0
		Arsenic, Total	3.0	MG/KG	1.2	3.0
		Boron, Total	1.0 u	MG/KG	1.0	3.0
		Barium, Total	28.9	MG/KG	0.06	3.0
		Beryllium, Total	0.21	MG/KG	0.03	3.0
		Calcium, Total	3000	MG/KG	2.0	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	4.7	MG/KG	0.22	3.0
		Chromium, Total	8.3	MG/KG	0.28	3.0
		Copper, Total	11.0	MG/KG	0.25	3.0
		Iron, Total	11600	MG/KG	6.7	3.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	482	MG/KG	9.0	3.0
		Magnesium, Total	3140	MG/KG	2.3	3.0
		Manganese, Total	202	MG/KG	0.20	3.0
		Molybdenum, Total	0.45 u	MG/KG	0.45	3.0
		Sodium, Total	80.3	MG/KG	2.0	3.0
		Nickel, Total	8.8	MG/KG	0.76	3.0
		Lead, Total	3.7	MG/KG	0.93	3.0
		Antimony, Total	0.62 u	MG/KG	0.62	3.0
		Selenium, Total	1.2 u	MG/KG	1.2	3.0
		Silicon, Total	871	MG/KG	2.4	3.0
		Vanadium, Total	28.8	MG/KG	0.22	3.0
		Zinc, Total	27.9	MG/KG	0.11	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J15P86	Silver, Total	0.26 u	MG/KG	0.26	3.0
		Aluminum, Total	6140	MG/KG	4.8	3.0
		Arsenic, Total	3.7	MG/KG	1.2	3.0
		Boron, Total	4.3	MG/KG	1.0	3.0
		Barium, Total	87.5	MG/KG	0.06	3.0
		Beryllium, Total	0.35	MG/KG	0.03	3.0
		Calcium, Total	4590	MG/KG	2.1	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	6.1	MG/KG	0.23	3.0
		Chromium, Total	9.5	MG/KG	0.29	3.0
		Copper, Total	12.2	MG/KG	0.26	3.0
		Iron, Total	15600	MG/KG	7.0	3.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	1260	MG/KG	9.3	3.0
		Magnesium, Total	3810	MG/KG	2.4	3.0
		Manganese, Total	292	MG/KG	0.20	3.0
		Molybdenum, Total	0.47 u	MG/KG	0.47	3.0
		Sodium, Total	142	MG/KG	2.0	3.0
		Nickel, Total	10.3	MG/KG	0.79	3.0
		Lead, Total	12.6	MG/KG	0.96	3.0
		Antimony, Total	0.64 u	MG/KG	0.64	3.0
		Selenium, Total	1.3 u	MG/KG	1.3	3.0
		Silicon, Total	1510	MG/KG	2.5	3.0
		Vanadium, Total	33.4	MG/KG	0.23	3.0
		Zinc, Total	37.2	MG/KG	0.12	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J15F87	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	4820	MG/KG	4.5	3.0
		Arsenic, Total	2.9	MG/KG	1.1	3.0
		Boron, Total	0.98 u	MG/KG	0.98	3.0
		Barium, Total	39.8	MG/KG	0.05	3.0
		Beryllium, Total	0.25	MG/KG	0.03	3.0
		Calcium, Total	6200	MG/KG	1.9	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	5.2	MG/KG	0.22	3.0
		Chromium, Total	9.0	MG/KG	0.27	3.0
		Copper, Total	12.6	MG/KG	0.25	3.0
		Iron, Total	12800	MG/KG	6.5	3.0
		Mercury, Total	0.01	MG/KG	0.01	1.0
		Potassium, Total	788	MG/KG	8.7	3.0
		Magnesium, Total	3520	MG/KG	2.2	3.0
		Manganese, Total	249	MG/KG	0.19	3.0
		Molybdenum, Total	0.44 u	MG/KG	0.44	3.0
		Sodium, Total	93.6	MG/KG	1.9	3.0
		Nickel, Total	10.1	MG/KG	0.74	3.0
		Lead, Total	4.0	MG/KG	0.90	3.0
		Antimony, Total	0.60 u	MG/KG	0.60	3.0
		Selenium, Total	1.2 u	MG/KG	1.2	3.0
		Silicon, Total	1040	MG/KG	2.4	3.0
		Vanadium, Total	29.1	MG/KG	0.22	3.0
		Zinc, Total	37.2	MG/KG	0.11	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0416-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	1.7 u	MG/KG	1.7	1.0
		Arsenic, Total	0.41 u	MG/KG	0.41	1.0
		Boron, Total	0.36 u	MG/KG	0.36	1.0
		Barium, Total	0.15	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Calcium, Total	23.4	MG/KG	0.71	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.08 u	MG/KG	0.08	1.0
		Chromium, Total	0.20	MG/KG	0.10	1.0
		Copper, Total	0.25	MG/KG	0.09	1.0
		Iron, Total	9.7	MG/KG	2.4	1.0
		Potassium, Total	5.1	MG/KG	3.2	1.0
		Magnesium, Total	6.1	MG/KG	0.81	1.0
		Manganese, Total	0.07	MG/KG	0.07	1.0
		Molybdenum, Total	0.16 u	MG/KG	0.16	1.0
		Sodium, Total	14.7	MG/KG	0.70	1.0
		Nickel, Total	0.27 u	MG/KG	0.27	1.0
		Lead, Total	0.33 u	MG/KG	0.33	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0
		Silicon, Total	3.6	MG/KG	0.86	1.0
		Vanadium, Total	0.08 u	MG/KG	0.08	1.0
		Zinc, Total	1.4	MG/KG	0.04	1.0
BLANK1	07C0159-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15F83	Silver, Total	4.3	0.25u	4.6	93.5	3.0
		Aluminum, Total	7000	6310	184	373.5*	3.0
		Arsenic, Total	176	4.0	184	93.7	3.0
		Boron, Total	88.7	3.4	91.8	92.9	3.0
		Barium, Total	242	68.0	184	94.9	3.0
		Beryllium, Total	4.7	0.31	4.6	95.3	3.0
		Calcium, Total	7430	5160	2300	98.9	3.0
		Cadmium, Total	4.5	0.14u	4.6	97.8	3.0
		Cobalt, Total	50.1	6.3	45.9	95.4	3.0
		Chromium, Total	27.5	10.1	18.4	94.6	3.0
		Copper, Total	36.8	13.2	22.9	103.1	3.0
		Iron, Total	15400	15700	91.8	-310. *	3.0
		Mercury, Total	0.17	0.01u	0.15	112.9	1.0
		Potassium, Total	3160	1020	2300	93.0	3.0
		Magnesium, Total	6410	4170	2300	97.8	3.0
		Manganese, Total	325	281	45.9	95.6*	3.0
		Molybdenum, Total	84.1	0.44u	91.8	91.6	3.0
		Sodium, Total	2370	190	2300	95.0	3.0
		Nickel, Total	54.9	11.2	45.9	95.2	3.0
		Lead, Total	52.5	9.4	45.9	93.9	3.0
		Antimony, Total	20.4	0.61u	45.9	44.4	3.0
		Selenium, Total	150	1.3	184	81.1	3.0
		Silicon, Total	1530	1600	91.8	-85. *	3.0
		Vanadium, Total	75.6	33.9	45.9	90.8	3.0
		Zinc, Total	78.4	35.1	45.9	94.3	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J15F83	Silver, Total	0.25u	0.24u	NC	3.0
		Aluminum, Total	6310	6370	0.94	3.0
		Arsenic, Total	4.0	4.4	9.5	3.0
		Boron, Total	3.4	3.5	2.9	3.0
		Barium, Total	68.0	93.9	32.0	3.0
		Beryllium, Total	0.31	0.33	4.7	3.0
		Calcium, Total	5160	4970	3.8	3.0
		Cadmium, Total	0.14u	0.13u	NC	3.0
		Cobalt, Total	6.3	6.2	1.6	3.0
		Chromium, Total	10.1	10.0	1.0	3.0
		Copper, Total	13.2	13.2	0.00	3.0
		Iron, Total	15700	15600	0.45	3.0
		Mercury, Total	0.01u	0.02u	NC	1.0
		Potassium, Total	1020	1060	3.6	3.0
		Magnesium, Total	4170	4150	0.43	3.0
		Manganese, Total	281	284	1.2	3.0
		Molybdenum, Total	0.44u	0.42u	NC	3.0
		Sodium, Total	190	202	6.2	3.0
		Nickel, Total	11.2	11.3	0.89	3.0
		Lead, Total	9.4	15.8	50.8	3.0
		Antimony, Total	0.61u	0.58u	NC	3.0
		Selenium, Total	1.3	1.1 u	~~NC~~ 200	3.0
		Silicon, Total	1600	1460	9.5 corrected value	3.0
		Vanadium, Total	33.9	33.7	0.59 MW 8/24/07	3.0
		Zinc, Total	35.1	35.1	0.00	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 08/24/07

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0416-LC1	Silver, LCS	46.2	49.5	MG/KG	93.3
		Aluminum, LCS	468	495	MG/KG	94.6
		Arsenic, LCS	928	990	MG/KG	93.8
		Boron, LCS	453	495	MG/KG	91.6
		Barium, LCS	454	495	MG/KG	91.7
		Beryllium, LCS	24.4	24.8	MG/KG	98.4
		Calcium, LCS	2510	2480	MG/KG	101.3
		Cadmium, LCS	24.4	24.8	MG/KG	98.4
		Cobalt, LCS	243	248	MG/KG	98.0
		Chromium, LCS	48.5	49.5	MG/KG	98.0
		Copper, LCS	116	124	MG/KG	93.6
		Iron, LCS	486	495	MG/KG	98.2
		Potassium, LCS	2240	2480	MG/KG	90.4
		Magnesium, LCS	2380	2480	MG/KG	96.1
		Manganese, LCS	74.0	74.2	MG/KG	99.7
		Molybdenum, LCS	466	495	MG/KG	94.0
		Sodium, LCS	2230	2480	MG/KG	90.2
		Nickel, LCS	193	198	MG/KG	97.3
		Lead, LCS	243	248	MG/KG	98.0
		Antimony, LCS	276	297	MG/KG	93.0
		Selenium, LCS	881	990	MG/KG	89.0
		Silicon, LCS	27.0	495	MG/KG	5.5
		Vanadium, LCS	238	248	MG/KG	96.2
		Zinc, LCS	95.9	99.0	MG/KG	96.9
LCS1	07C0159-LC1	Mercury, LCS	2.8	2.8	MG/KG	101.1

ville Laboratory Use Only

7081784

Custody Transfer Record/Lab Work Request

Page 1 of 2

See SRC

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

0000000021

TNC HANFORD SAF# RC-032

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O Johnson

SW846 Del STD TAT 3 days

Rec'd 8-21-07 Date Due 8-24-07

		A	B	C	D	E
Refrigerator #		2	2	2	2	2
#/Type Container	Liquid / Solid	1G	1G	1G	1P	1P
Volume		120	60	250	250	125
Preservatives		—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA					
	ORGANIC: BNA	06025H		06008H		
	ORGANIC: Pest/PCB		OPCB			
	ORGANIC: Herb					
	ORGANIC: GRT					
	INORG: TCLP Metal				MetO	
	INORG: Hg					
	INORG: CN					
	INORG: Chrom VI					TCR6

Matrix: AQ Aqueous, SO Soil, SE Sediment, SL Solid, SU Sludge, WT Water, OL Oil, AI Air, DR Drum Solids, DL Drum Liquids, EP/TCLP Extract, LE Leachate, WI Wipe, OT Other, FI Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	J15F83			SOIL	8-16-07	0715
002	J15F84					0715
003	J15F85					0735
004	J15F86					0755
005	J15F87					0810
006	J15FD0					1000
007	J15FD1					1005
008	J15FD2					1010
009	J15FD3					1015
010	J15FD4					1020

Lionville Laboratory Use Only

cial Instructions:

MetO = HSL + B, Mo, Si (NITL)

Run Matrix QC

Special Instructions:

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

Relinquished by	Received by	Date	Time
DE	V. Hernandez	8/21/07	0940

Relinquished by	Received by	Date	Time

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

ville Laboratory Use Only

708L784

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000022

TNU HANFORD RC-032

Final Proj. Sampling Date

ct# See Pg 1

ct Contact/Phone#

ille Laboratory Project Manager

Del TAT

Rec'd 8-21-07 Date Due

Refrigerator #											A 2					
#/Type Container	Liquid / Solid										1P					
Volume											125					
Preservatives											HNO3					
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
		Lionville Laboratory Use Only														
											ICR6					

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ICR6
011	J15FD5			Soil	8/6/07	1025	X
012	J15FD6					1030	X
013	J15FD7					1035	X
014	J15FD8					1040	X
015	J15FD9					1045	X

IX
Si
oil
ediment
olid
ludge
Water
Oil
Air
Drum Solids
Drum Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

cial Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/21/07	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-147	Page 3 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 3DAYS ~~7DAY~~		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 100-F-26:10 Verification		SAF No.: RC-032
Ice Chest No.: EBC-02-006	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A070400		Bill of Lading/Air Bill No.: See OSPC form

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	P	P	aG	aG	aG	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	120mL	250mL	500mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	Pesticides - 8081	See item (2) in Special Instructions.					
Sample No. / Matrix * / Sample Date / Sample Time											
15F83 / SOIL / 8-16-07 / 0715	X	X	X	X	X	X					7
15F84 / SOIL / 8-20-07 / 0715	X	X	X	X	X	X					7D
15F85 / SOIL / / 0735	X	X	X	X	X	X					8
15F86 / SOIL / 8-20-07 / 0815 0755	X	X	X	X	X	X					9
15F87 / SOIL / 8-16-07 / 0810	X	X	X	X	X	X					10

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: TDAI Welch-Koelling	8/16/07 0900	JR DeQuiane	8-16-07 0900
Relinquished By/Removed From: JR DeQuiane	8-16-07	3728/3A	8-16-07 1445
Relinquished By/Removed From: 3728/3A	8-20-07 0900	Received By/Stored In: [illegible]	8-20-07 0900
Relinquished By/Removed From: [illegible]	8-20-07 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	8/21/07 0940	Received By/Stored In: [illegible]	8/21/07 0940
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)

Sampler unavailable to relinquish samples from 3728 Ref# 3A. 3728 Custodian removed samples for shipping on 8/20/07

TIME J15F85 is 0735 hrs

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

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

VCH-EE-011

000000023

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 1 of 4

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 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
Ice Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC

Price Code: 8B

Data Turnaround: ~~3DAY~~ ~~7DAY~~ 111 8-21-07

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
NA

Preservation	Cool 4C											
Type of Container	P											
No. of Container(s)	1											
Volume	125mL											
SAMPLE ANALYSIS	Chromium Hex - 7196											

Sample No.	Matrix *	Sample Date	Sample Time										
15FD0	SOIL	8-16-07	1000	X									B-1
15FD1	SOIL	8-16-07	1005	X									B-2
15FD2	SOIL	8-16-07	1010	X									B-3
15FD3	SOIL	8-16-07	1015	X									B-4
15FD4	SOIL	8-16-07	1020	X									B-5

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: TOM LOCKER / [signature] Date/Time: 8-16-07 1200	Received By/Stored In: JR DeBruin / [signature] Date/Time: 1300 8-16-07	
Relinquished By/Removed From: JR DeBruin / [signature] Date/Time: 1415 8-16-07	Received By/Stored In: 3728/2A Date/Time: 1415 8-16-07	
Relinquished By/Removed From: 3728/3A Date/Time: 8-20-07 0900	Received By/Stored In: VM Singleton / [signature] Date/Time: 8-20-07 0900	
Relinquished By/Removed From: VM Singleton / [signature] Date/Time: 8-20-07 1500	Received By/Stored In: FED EX Date/Time:	
Relinquished By/Removed From: Fed Ex Date/Time: 8/21/07 0940	Received By/Stored In: Victor Hernandez / [signature] Date/Time: 8-21-07 0940	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07.

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

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

VCH-EE-011

0000000024

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 2 of 2

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 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
Ice Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. SCS OSPC

Price Code: 8B

Data Turnaround: 3DAY 7DAY (14 8-21-07)

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

SAMPLE ANALYSIS

Preservation				Cool 4C									
Type of Container				P									
No. of Container(s)				1									
Volume				125mL									
				Chromium Hex - 7196									
Sample No.	Matrix *	Sample Date	Sample Time										
J15FD5	SOIL	8-16-07	1025	X									B-6
J15FD6	SOIL	8-16-07	1030	X									B-7
J15FD7	SOIL	8-16-07	1035	X									B-8
J15FD8	SOIL	8-16-07	1040	X									B-9
J15FD9	SOIL	8-16-07	1045	X									B-10

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From TJ Welch-Koelling 8-16-07 1300	Received By/Stored In JR DeBuigne 8-16-07	Date/Time 1300
Relinquished By/Removed From JR DeBuigne 8-16-07	Received By/Stored In 3728 & 13A	Date/Time 1415 8-16-07
Relinquished By/Removed From 3728/13A 8-20-07 0900	Received By/Stored In KM Singleton 8-20-07 0900	Date/Time
Relinquished By/Removed From KM Singleton 8-20-07 1500	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex 8/21/07 0940	Received By/Stored In [illegible] 8-21-07 0940	Date/Time
Relinquished By/Removed From	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8-20-07

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

000000025

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 8/21/07

Project/SAP/SOW/Release #:

LvLI Batch #: 0708L784

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7996 9678 6929
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 2.9°	°C	Cooler # ERC-02-006
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
SEP

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0919

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15F83						
% SOLIDS	001	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	001	S	07LVI069	08/16/07	08/22/07	08/22/07
J15F84						
% SOLIDS	002	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	002	S	07LVI069	08/16/07	08/22/07	08/22/07
J15F85						
% SOLIDS	003	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	003	S	07LVI069	08/16/07	08/22/07	08/22/07
J15F86						
% SOLIDS	004	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	004	S	07LVI069	08/16/07	08/22/07	08/22/07
J15F87						
% SOLIDS	005	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	005	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD0						
% SOLIDS	006	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	006	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD1						
% SOLIDS	007	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	007	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD2						
% SOLIDS	008	S	07L%S102	08/16/07	08/22/07	08/22/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0919

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	008	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD3						
% SOLIDS	009	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	009	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD4						
% SOLIDS	010	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	010	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD5						
% SOLIDS	011	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	011	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD6						
% SOLIDS	012	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	012	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD7						
% SOLIDS	013	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	013	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD8						
% SOLIDS	014	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	014	S	07LVI069	08/16/07	08/22/07	08/22/07
J15FD9						
% SOLIDS	015	S	07L%S102	08/16/07	08/22/07	08/22/07
% SOLIDS	015 REP	S	07L%S102	08/16/07	08/22/07	08/22/07
CHROMIUM VI	015	S	07LVI069	08/16/07	08/22/07	08/22/07
CHROMIUM VI	015 REP	S	07LVI069	08/16/07	08/22/07	08/22/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K0919

DATE RECEIVED: 08/21/07 LVL LOT # :0708L784

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	015 MS	S	07LVI069	08/16/07	08/22/07	08/22/07
CHROMIUM VI	015 MSD	S	07LVI069	08/16/07	08/22/07	08/22/07

LAB QC:

CHROMIUM VI	MB1	S	07LVI069	N/A	08/22/07	08/22/07
CHROMIUM VI	MB1 BS	S	07LVI069	N/A	08/22/07	08/22/07
CHROMIUM VI	MB1 BSD	S	07LVI069	N/A	08/22/07	08/22/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032 K0919
LVL#: 0708L784

W.O.#: 11343-606-001-9999-00
Date Received: 08-21-07

INORGANIC NARRATIVE

1. This narrative covers the analyses of 15 soil samples.

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

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

3. Sample holding times as required by the method and/or contract were met.

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

5. The method blank for Chromium VI was within the method criteria.

6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.

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

8. The replicate analysis for Percent Solids was within the 20% Relative Percent Difference (RPD) control limit however replicate analysis for Chromium Vi was outside the control limit.

9. Results for solid 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

Date 8/27/07

njp\ii08-784

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 17 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/23/07

CLIENT: TNU-HANFORD RC-032 K0919 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15F83	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-002	J15F84	% Solids	99.8	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-003	J15F85	% Solids	100	%	0.01	1.0
		Chromium VI	0.24	MG/KG	0.20	1.0
-004	J15F86	% Solids	100	%	0.01	1.0
		Chromium VI	0.27	MG/KG	0.20	1.0
-005	J15F87	% Solids	99.8	%	0.01	1.0
		Chromium VI	0.26	MG/KG	0.20	1.0
-006	J15FD0	% Solids	98.3	%	0.01	1.0
		Chromium VI	1.0	MG/KG	0.20	1.0
-007	J15FD1	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.61	MG/KG	0.20	1.0
-008	J15FD2	% Solids	99.8	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-009	J15FD3	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.23	MG/KG	0.20	1.0
-010	J15FD4	% Solids	97.8	%	0.01	1.0
		Chromium VI	2.0	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/23/07

CLIENT: TNU-HANFORD RC-032 K0919

LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	J15FD5	% Solids	100	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-012	J15FD6	% Solids	99.7	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-013	J15FD7	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.26	MG/KG	0.20	1.0
-014	J15FD8	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.24	MG/KG	0.20	1.0
-015	J15FD9	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.22	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/23/07

CLIENT: TNU-HANFORD RC-032 K0919

LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LVI069-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 08/23/07

CLIENT: TNU-HANFORD RC-032 K0919

LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-015	J15FD9	Soluble Chromium VI	4.0	0.22	4.0	94.4	1.0
		Insoluble Chromium VI	1120	0.22	1150	97.4	100
BLANK10	07LVI069-MB1	Soluble Chromium VI	4.0	0.20u	4.0	99.8	1.0
		Insoluble Chromium VI	1090	0.20u	1100	98.6	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 08/23/07

CLIENT: TNU-HANFORD RC-032 K0919 LVL LOT #: 0708L784

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-015REP	J15FD9	% Solids	99.9	99.9	0.010	1.0
		Chromium VI	0.22	0.31	37.4	1.0

ville Laboratory Use Only

7084784

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNel: COMPLETE ONLY SHADED AREAS

See SRC

LVLI

000000012

TNU HANFORD SAF# RC-032

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ville Laboratory Project Manager O Johnson

SW846 Del STD TAT 3 days

Rec'd 8-21-07 Date Due 8-24-07

		A	B	C	D	E
Refrigerator #		2	2	2	2	2
#/Type Container	Liquid / Solid	1G	1G	1G	1P	1P
Volume		120	60	250	250	125
Preservatives			1	1	1	1
ANALYSES REQUESTED	ORGANIC: VOA					
	ORGANIC: BNA					
	ORGANIC: Pest/PCB					
	ORGANIC: Herb					
	VOC					
	INORG: Metal					
	INORG: Hg					
	INORG: CN					
	INORG: Chlorid					
	INORG: HEX					
Lionville Laboratory Use Only		06025H	0PC13	06008H	Met①	IC126

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	J15F83			Soil	8-16-07	0715
002	J15F84					0715
003	J15F85					0735
004	J15F86					0755
005	J15F87					0810
006	J15FD0					1000
007	J15FD1					1005
008	J15FD2					1010
009	J15FD3					1015
010	J15FD4					1020

cial Instructions:

Met① = HSL + B, Mo, Si (NITL)

Special Instructions:

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

Run Matrix QC

Relinquished by	Received by	Date	Time
JE	V. Hernandez	8/21/07	0940

Relinquished by	Received by	Date	Time

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

ville Laboratory Use Only

'708L784

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000013

:TNU HANFORD RC-032

Final Proj. Sampling Date

cts# See Pg 1

ct Contact/Phone#

ille Laboratory Project Manager

Del TAT

Rec'd 8-21-07 Date Due

Refrigerator #											A 2					
#/Type Container	Liquid / Solid										1P					
Volume											125					
Preservatives											HCl / None					
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/ PCB	Herb				Metal	CN						
		Lionville Laboratory Use Only														
											ICR6					

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ICR6
011	J15FD5			Soil	8/6/07	1025	X
012	J15FD6					1030	X
013	J15FD7					1035	X
014	J15FD8					1040	X
015	J15FD9					1045	X

IX
S:
oil
ediment
olid
ludge
Water
Oil
Air
Drum
Solids
Drum
Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

cial Instructions:

Special Instructions:

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

linquished by	Received by	Date	Time
[illegible]	[illegible]	8/21/07	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-147	Page 1 of 1

ollector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 3DAYS 7DAY		
roject Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 100-F-26:10 Verification		SAF No. RC-032
e Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment FED EX
hipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC form

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	P	P	aG	aG	aG	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	250mL	125mL	60mL	120mL	250mL	500mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082	Semi-VOA - 8270A (TCL)	Pesticides - 8081	See item (2) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time										
J15F83	SOIL	8-16-07	0715	X	X	X	X	X					7
J15F84	SOIL	8-20-07	0715	X	X	X	X	X					7D
J15F85	SOIL		0735	X	X	X	X	X					8
J15F86	SOIL	8-20-07	0815 0755	X	X	X	X	X					9
J15F87	SOIL	8-16-07	0810	X	X	X	X	X					10

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From TONY WELCH-KOELLING Date/Time 8/16/07 0900	Received By/Stored In JR DeDuigne Date/Time 0900 8-16-07	
Relinquished By/Removed From JR DeDuigne Date/Time 8-16-07	Received By/Stored In 3728/3A Date/Time 1445 8-16-07	
Relinquished By/Removed From 3728/3A Date/Time 8-20-07 0900	Received By/Stored In K Washington Date/Time 8-20-07 0900	
Relinquished By/Removed From K Washington Date/Time 8-20-07 1500	Received By/Stored In FED EX Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 8/21/07 0940	Received By/Stored In Victor Hunnard Date/Time 8/21/07 0940	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

SPECIAL INSTRUCTIONS

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

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07

TIME J15F85 is 0735 hrs

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

000000014

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 1 of 2

ollector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 3DAY 7DAY 14 8-21-07		
oject Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 128-F-2 phase 2 hex chromium samples		SAF No. RC-032
e Chest No. ERC-02-006	Field Logbook No. EFL-1174-3	COA R128F22000	Method of Shipment FED EX
hipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A070400		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

A

Special Handling and/or Storage

A

SAMPLE ANALYSIS

Preservation	Cool 4C											
Type of Container	P											
No. of Container(s)	1											
Volume	125mL											
	Chromium Hex - 7196											

Sample No.	Matrix *	Sample Date	Sample Time										
15FD0	SOIL	8-16-07	1000	X									B-1
15FD1	SOIL	8-16-07	1005	X									B-2
15FD2	SOIL	8-16-07	1010	X									B-3
15FD3	SOIL	8-16-07	1015	X									B-4
15FD4	SOIL	8-16-07	1020	X									B-5

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TONY WELCH-KOELLING	8-16-07 1300	JR DeBruin	8-16-07 1300
JR DeBruin	8-16-07 1415	3728/3A	8-16-07 1415
3728/3A	8-20-07 0900	KM Singleton	8-20-07 0900
KM Singleton	8-20-07 1500	FED EX	
Fed Ex	8/21/07 0940	Vicki Hernandez	8/21/07 0940

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07.

Matrix *

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

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

VCH-EE-011

000000015

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-150	Page 2 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 3DAY 7DAY (VA 8-21-07)		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 128-F-2 phase 2 hex chromium samples		SAF No.: RC-032
Ice Chest No.: ERC-02-006	Field Logbook No.: EFL-1174-3	COA: R128F22000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A070400		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
NA

Preservation	Cool 4C										
Type of Container	P										
No. of Container(s)	1										
Volume	125mL										
SAMPLE ANALYSIS	Chromium Hex - 7196										

Sample No.	Matrix *	Sample Date	Sample Time										
15FD5	SOIL	8-16-07	1025	X									B-6
15FD6	SOIL	8-16-07	1030	X									B-7
15FD7	SOIL	8-16-07	1035	X									B-8
15FD8	SOIL	8-16-07	1040	X									B-9
15FD9	SOIL	8-16-07	1045	X									B-10

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: [signature]	Date/Time: 8-16-07 1300	Received By/Stored In: JRDeBruin JRDeBruin	Date/Time: 1300 8-16-07
Relinquished By/Removed From: JRDeBruin JRDeBruin	Date/Time: 8-16-07 1415	Received By/Stored In: 3728/13A	Date/Time: 1415 8-16-07
Relinquished By/Removed From: 3728/13A	Date/Time: 8-20-07 0900	Received By/Stored In: KMSimpkins	Date/Time: 8-20-07 0900
Relinquished By/Removed From: KMSimpkins	Date/Time: 8-20-07 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 8/21/07 0940	Received By/Stored In: [signature]	Date/Time: 8-21-07 0940
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 8/20/07

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

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

VCH-EE-011

000000016

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD Date: 8/21/07

Project/SA#/SOW/Release #:

LvLI Batch #: 0708L784 Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7996 9678 6929
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 2.9°	°C	Cooler # ERC-02-006
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