0076749

SAF-RC-030
Remaining Sites Confirmation Sampling - Other Solid
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 3/24/08
INITIAL/DATE

COMMENTS:

SDG K1129 **SAF-RC-030**

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 100-F-52

RECEIVED
APR 0 2 2008
EDMC

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SERVICES

RECEIVED
MAR 2008

March 11, 2008

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

Reference: **P.O. #630**
Eberline Services R8-02-138-7775, SDG K1129

Dear Ms. Kessner:

Enclosed is the data report for one solid (other solid) sample designated under SAF No. RC-030 received at Eberline Services on February 22, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

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

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1129 was composed of one solid (other solid) sample designated under SAF No. RC-030 with a Project Designation of: Remaining Site Confirmation Sampling-Other Solid.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on March 7, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analysis

No problems were encountered during the course of the reanalyses.

2.3 Nickel-63 Analysis

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion — 03/11/08

Melissa C. Mannion
Senior Program Manager

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 K1129

SDG	7775
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K1129

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

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	03/06/08

SDG 7775
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1129

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/06/08

SDG 7775
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K1129

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

SDG 7775
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1129

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R802138-01	J16222-A	100-F-52	SOLID		RC-030	RC-030-040	02/20/08 13:45
R802138-02	Lab Control Sample		SOLID		RC-030		
R802138-03	Method Blank		SOLID		RC-030		
R802138-04	Duplicate (R802138-01)	100-F-52	SOLID		RC-030		02/20/08 13:45

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

SDG 7775
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1129

: 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
75	RC-030-040	J16222-A	SOLID	100.0	186 g		02/22/08	2	R802138-01	7775-001
		Method Blank	SOLID						R802138-03	7775-003
		Lab Control Sample	SOLID						R802138-02	7775-002
		Duplicate (R802138-01)	SOLID	100.0	186 g		02/22/08	2	R802138-04	7775-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

SDG 7775
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1129

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
U	SOLID	Uranium, Isotopic in Solids	6145-077	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6145-077	10.0	1			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6145-077	20.0	1			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6145-077	15.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6145-077	15.0	1			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Solids	6145-077	10.0	1			1	1	1/1		
NI_L	SOLID	Nickel 63 in Solids	6145-077	10.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

SDG 7775
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1129

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
02138-01	J16222-A			7775-001	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
02/20/08	100-F-52		SOLID	7775-001	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
02/22/08	RC-030-040	RC-030		7775-001	C		02/28/08	03/03/08	BW	Carbon 14 in Solids
				7775-001	GAM		02/29/08	03/05/08	CSS	Gamma Scan
				7775-001	NI_L		02/28/08	03/04/08	BW	Nickel 63 in Solids
				7775-001	SR		02/29/08	03/05/08	BW	Total Strontium in Solids
				7775-001	U		02/29/08	02/29/08	BW	Uranium, Isotopic in Solids
02138-02	Lab Control Sample			7775-002	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
			SOLID	7775-002	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
		RC-030		7775-002	C		02/29/08	03/03/08	BW	Carbon 14 in Solids
				7775-002	GAM		03/01/08	03/05/08	CSS	Gamma Scan
				7775-002	NI_L		02/28/08	03/04/08	BW	Nickel 63 in Solids
				7775-002	SR		02/29/08	03/05/08	BW	Total Strontium in Solids
				7775-002	U		02/29/08	02/29/08	BW	Uranium, Isotopic in Solids
02138-03	Method Blank			7775-003	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
			SOLID	7775-003	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
		RC-030		7775-003	C		02/28/08	03/03/08	BW	Carbon 14 in Solids
				7775-003	GAM		03/01/08	03/05/08	CSS	Gamma Scan
				7775-003	NI_L		02/28/08	03/04/08	BW	Nickel 63 in Solids
				7775-003	SR		02/29/08	03/05/08	BW	Total Strontium in Solids
				7775-003	U		02/29/08	02/29/08	BW	Uranium, Isotopic in Solids
02138-04	Duplicate (R802138-01)			7775-004	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
02/20/08	100-F-52		SOLID	7775-004	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
02/22/08		RC-030		7775-004	C		02/28/08	03/03/08	BW	Carbon 14 in Solids
				7775-004	GAM		03/04/08	03/05/08	CSS	Gamma Scan
				7775-004	NI_L		02/28/08	03/04/08	BW	Nickel 63 in Solids
				7775-004	SR		02/29/08	03/05/08	BW	Total Strontium in Solids
				7775-004	U		02/29/08	02/29/08	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

SDG 7775
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K1129

COUNTS OF TESTS BY SAMPLE TYPE

TEST.	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-030	Gross Alpha in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-030	Gross Beta in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
C	RC-030	Carbon 14 in Solids	C14_COX_LSC	1			1	1	1	4
GAM	RC-030	Gamma Scan	GAMMA_GS	1			1	1	1	4
NI_L	RC-030	Nickel 63 in Solids	NI63_LSC	1			1	1	1	4
SR	RC-030	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
U	RC-030	Uranium, Isotopic in Solids	UISO_PLATE_AEA	1			1	1	1	4
TOTALS				7			7	7	7	28

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

7775-003 Method Blank

METHOD BLANK

SDG	7775	Client/Case no	Hanford		SDG K1129
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802138-03	Client sample id	Method Blank		
Dept sample id	7775-003	Material/Matrix			SOLID
		SAF No	RC-030		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.808	2.8	6.82	10.0	U	93A
Gross Beta	12587-47-2	-0.741	3.1	5.70	15.0	U	93B
Carbon 14	14762-75-5	-1.69	2.7	4.69	50.0	U	C
Nickel 63	13981-37-8	-1.52	3.3	1.95	30.0	U	NI_L
Total Strontium	SR-RAD	0.055	0.12	0.226	1.00	U	SR
Uranium 233/234	U-233/234	0	0.043	0.166	1.00	U	U
Uranium 235	15117-96-1	0	0.052	0.200	1.00	U	U
Uranium 238	U-238	0.022	0.043	0.166	1.00	U	U
Potassium 40	13966-00-2	U		0.418		U	GAM
Cobalt 60	10198-40-0	U		0.038	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	U		0.073	0.100	U	GAM
Radium 228	15262-20-1	U		0.138	0.200	U	GAM
Europium 152	14683-23-9	U		0.090	0.100	U	GAM
Europium 154	15585-10-1	U		0.098	0.100	U	GAM
Europium 155	14391-16-3	U		0.063	0.100	U	GAM
Thorium 228	14274-82-9	U		0.053		U	GAM
Thorium 232	TH-232	U		0.138		U	GAM
Uranium 235	15117-96-1	U		0.120		U	GAM
Uranium 238	U-238	U		4.16		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM

RemainSitesConfirmSampling - Soil

QC-BLANK #64837

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

7775-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7775

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1129

Contract No. 630

Lab sample id R802138-02

Dept sample id 7775-002

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-030

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	119	18	10.1	10.0		93A	112	4.5	106	60-140	70-130
Gross Beta	112	8.2	5.90	15.0		93B	113	4.5	99	74-126	80-120
Carbon 14	2710	55	10.7	50.0		C	2650	110	102	83-117	80-120
Nickel 63	243	4.9	1.90	30.0		NI_L	266	11	91	85-115	80-120
Total Strontium	11.1	0.58	0.231	1.00		SR	10.3	0.41	108	81-119	80-120
Uranium 233/234	21.1	2.3	0.986	1.00		U	19.3	0.77	109	79-121	80-120
Uranium 235	16.5	1.9	0.234	1.00		U	15.7	0.63	105	79-121	80-120
Uranium 238	21.8	2.3	0.940	1.00		U	21.0	0.84	104	81-119	80-120
Cobalt 60	1.49	0.090	0.065	0.050		GAM	1.54	0.062	97	76-124	80-120
Cesium 137	1.72	0.081	0.065	0.100		GAM	1.67	0.067	103	75-125	80-120

RemainSitesConfirmSampling - Soil

QC-LCS #64836

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

7775-004 J16222-A

DUPLICATE

SDG	7775			Client/Case no	Hanford SDG K1129
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R802138-04	Lab sample id	R802138-01	Client sample id	J16222-A
Dept sample id	7775-004	Dept sample id	7775-001	Location/Matrix	100-F-52 SOLID
		Received	02/22/08	Collected/Weight	02/20/08 13:45 186 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-030-040 RC-030

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	4.96	5.0	7.39	10.0	U	93A	4.44	5.4	8.31	U	-		0.1
Gross Beta	3.85	3.5	5.76	15.0	U	93B	3.67	4.9	7.87	U	-		0.1
Carbon 14	-0.959	2.7	4.70	50.0	U	C	-2.27	2.7	4.73	U	-		0.7
Nickel 63	-1.29	3.2	2.26	30.0	U	NI_L	-1.38	3.9	2.26	U	-		0
Total Strontium	-0.103	0.094	0.226	1.00	U	SR	0.015	0.11	0.230	U	-		1.6
Uranium 233/234	0.940	0.27	0.144	1.00		U	1.34	0.38	0.177		35	62	1.7
Uranium 235	0.068	0.091	0.174	1.00	U	U	0.056	0.056	0.215	U	-		0.2
Uranium 238	0.846	0.27	0.144	1.00		U	0.719	0.28	0.177		16	75	0.6
Potassium 40	1.13	0.41	0.384			GAM	1.16	0.26	0.237		3	71	0.1
Cobalt 60	U		0.034	0.050	U	GAM	U		0.020	U	-		0.7
Cesium 137	U		0.030	0.100	U	GAM	U		0.020	U	-		0.5
Radium 226	0.177	0.081	0.077	0.100		GAM	0.148	0.052	0.043		18	94	0.6
Radium 228	U		0.155	0.200	U	GAM	U		0.150	U	-		0
Europium 152	U		0.092	0.100	U	GAM	U		0.055	U	-		0.7
Europium 154	U		0.108	0.100	U	GAM	U		0.063	U	-		0.7
Europium 155	U		0.073	0.100	U	GAM	U		0.042	U	-		0.7
Thorium 228	0.060	0.038	0.047			GAM	0.074	0.025	0.026		21	107	0.6
Thorium 232	U		0.155		U	GAM	U		0.150	U	-		0
Uranium 235	U		0.132		U	GAM	U		0.119	U	-		0.1
Uranium 238	U		4.62		U	GAM	U		4.72	U	-		0
Americium 241	U		0.035		U	GAM	U		0.020	U	-		0.7

RemainSitesConfirmSampling - Soil

QC-DUP#1 64838

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

7775-001 J16222-A

DATA SHEET

SDG	7775	Client/Case no	Hanford	SDG K1129
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R802138-01	Client sample id	J16222-A	
Dept sample id	7775-001	Location/Matrix	100-F-52	SOLID
Received	02/22/08	Collected/Weight	02/20/08 13:45	186 g
% solids	100.0	Custody/SAF No	RC-030-040	RC-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	4.44	5.4	8.31	10.0	U	93A
Gross Beta	12587-47-2	3.67	4.9	7.87	15.0	U	93B
Carbon 14	14762-75-5	-2.27	2.7	4.73	50.0	U	C
Nickel 63	13981-37-8	-1.38	3.9	2.26	30.0	U	NI_L
Total Strontium	SR-RAD	0.015	0.11	0.230	1.00	U	SR
Uranium 233/234	U-233/234	1.34	0.38	0.177	1.00		U
Uranium 235	15117-96-1	0.056	0.056	0.215	1.00	U	U
Uranium 238	U-238	0.719	0.28	0.177	1.00		U
Potassium 40	13966-00-2	1.16	0.26	0.237			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	U		0.020	0.100	U	GAM
Radium 226	13982-63-3	0.148	0.052	0.043	0.100		GAM
Radium 228	15262-20-1	U		0.150	0.200	U	GAM
Europium 152	14683-23-9	U		0.055	0.100	U	GAM
Europium 154	15585-10-1	U		0.063	0.100	U	GAM
Europium 155	14391-16-3	U		0.042	0.100	U	GAM
Thorium 228	14274-82-9	0.074	0.025	0.026			GAM
Thorium 232	TH-232	U		0.150		U	GAM
Uranium 235	15117-96-1	U		0.119		U	GAM
Uranium 238	U-238	U		4.72		U	GAM
Americium 241	14596-10-2	U		0.020		U	GAM

RemainSitesConfirmSampling - Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
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Version	3.06
Report date	03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

Test U Matrix SOLID
SDG 7775
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1129

ESULTS

B MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
eparation batch 6145-077											
02138-01			7775-001	J16222-A	1.34	U	0.719	186	90	8	8
02138-02			7775-002	Lab Control Sample	ok	ok	ok				
02138-03			7775-003	Method Blank	U	U	U				
02138-04			7775-004	Duplicate (R802138-01)	ok	- U	ok	111	48	8	11
minal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
mainSitesConfirmSampling - Soil								Averages 149		8	

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6145-077 2σ prep error 5.0 % Reference Lab Notebook #6145, pg. 77																
02138-01			J16222-A	0.215	0.500			87		117			9	02/29/08	02/29	SS-061
02138-02			Lab Control Sample	0.986	0.500			90		117				02/29/08	02/29	SS-062
02138-03			Method Blank	0.200	0.500			88		153				02/29/08	02/29	SS-063
02138-04			Duplicate (R802138-01)	0.174	0.500			79		154			9	02/29/08	02/29	SS-064
minal values and limits from method				1.00	0.500			20-105		100	100		180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.394 ± 0.790
YIELD 86 ± 10

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

Test SR Matrix SOLID
SDG 7775
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K1129

ESULTS

B MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
eparation batch 6145-077					
02138-01			7775-001	J16222-A	U
02138-02			7775-002	Lab Control Sample	ok
02138-03			7775-003	Method Blank	U
02138-04			7775-004	Duplicate (R802138-01)	- U

minal values and limits from method RDLs (pCi/g) 1.00
mainSitesConfirmSampling - Soil

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6145-077 2σ prep error 10.0 % Reference Lab Notebook #6145, pg. 77																
02138-01			J16222-A	0.230	1.00			92		100			9	02/29/08	02/29	GRB-222
02138-02			Lab Control Sample	0.231	1.00			93		100				02/29/08	02/29	GRB-221
02138-03			Method Blank	0.226	1.00			93		100				02/29/08	02/29	GRB-223
02138-04			Duplicate (R802138-01)	0.226	1.00			93		100			9	02/29/08	02/29	GRB-224
minal values and limits from method				1.00	1.00			30-105		100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.228 ± 0.005
YIELD 93 ± 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

Test 93A Matrix SOLID
SDG 7775
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1129

ESULTS

.B MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
eparation batch 6145-077						
02138-01	93		7775-001	J16222-A	U	
02138-02	93		7775-002	Lab Control Sample	ok	
02138-03	93		7775-003	Method Blank	U	
02138-04	93		7775-004	Duplicate (R802138-01)	-	U

minal values and limits from method RDLs (pCi/g) 10.0
mainSitesConfirmSampling - Soil

ETHOD PERFORMANCE

.B MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6145-077			2σ prep error 20.0 % Reference Lab Notebook #6145, pg. 77													
:02138-01	93		J16222-A	8.31	0.100			92		100			12	02/28/08	03/03	GRB-114
:02138-02	93		Lab Control Sample	10.1	0.100			61		100				02/28/08	03/03	GRB-115
:02138-03	93		Method Blank	6.82	0.100			62		100				02/28/08	03/03	GRB-210
:02138-04	93		Duplicate (R802138-01)	7.39	0.100			91		100			12	02/28/08	03/03	GRB-211
minal values and limits from method				10.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 8.16 ± 2.87
RESIDUE 76 ± 35

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

Test 93B Matrix SOLID
SDG 7775
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1129

ESULTS

B MPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
eparation batch 6145-077					
02138-01	93		7775-001	J16222-A	U
02138-02	93		7775-002	Lab Control Sample	ok
02138-03	93		7775-003	Method Blank	U
02138-04	93		7775-004	Duplicate (R802138-01)	- U

minal values and limits from method RDLs (pCi/g) 15.0
mainSitesConfirmSampling - Soil

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
eparation batch 6145-077			2σ prep error 15.0 % Reference Lab Notebook #6145, pg. 77													
02138-01	93		J16222-A	7.87	0.100			92		100			12	02/28/08	03/03	GRB-114
02138-02	93		Lab Control Sample	5.90	0.100			61		100				02/28/08	03/03	GRB-115
02138-03	93		Method Blank	5.70	0.100			62		100				02/28/08	03/03	GRB-210
02138-04	93		Duplicate (R802138-01)	5.76	0.100			91		100			12	02/28/08	03/03	GRB-211
minal values and limits from method				15.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD	MDA	6.31	± 2.09
FOR 4 SAMPLES	RESIDUE	76	± 35

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

Test GAM Matrix SOLID
SDG 7775
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1129

ESULTS

.B MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
'eparation batch 6145-077								
02138-01			7775-001	J16222-A	U		U	
02138-02			7775-002	Lab Control Sample	ok		ok	
02138-03			7775-003	Method Blank	U		U	
.02138-04			7775-004	Duplicate (R802138-01)	-	U	-	U
›minal values and limits from method				RDLs (pCi/g)	0.050		0.100	

:mainSitesConfirmSampling - Soil

ETHOD PERFORMANCE

.B MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6145-077 2σ prep error 15.0 % Reference Lab Notebook #6145, pg. 77																
102138-01			J16222-A	5.92	169					1142			9	02/26/08	02/29	JR,01,00
102138-02			Lab Control Sample	0.065	169					415				02/26/08	03/01	JR,08,00
102138-03			Method Blank	9.13	169					415				02/26/08	03/01	JR,01,00
102138-04			Duplicate (R802138-01)	10.2	169					406			13	02/26/08	03/04	JR,01,00
›minal values and limits from method				0.050	169					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 6.33 ± 9.11
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

Test C Matrix SOLID
SDG 7775
Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K1129

ESULTS

B MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Carbon 14	
eparation batch 6145-077						
02138-01			7775-001	J16222-A	U	
02138-02			7775-002	Lab Control Sample	ok	
02138-03			7775-003	Method Blank	U	
02138-04			7775-004	Duplicate (R802138-01)	-	U

minal values and limits from method RDLs (pCi/g) 50.0
mainSitesConfirmSampling - Soil

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6145-077 2σ prep error 10.0 % Reference Lab Notebook #6145, pg. 77																
02138-01			J16222-A	4.73	0.241			100		50			8	02/28/08	02/28	LSC-005
02138-02			Lab Control Sample	10.7	0.241			100		10				02/28/08	02/29	LSC-005
02138-03			Method Blank	4.69	0.241			100		50				02/28/08	02/28	LSC-005
02138-04			Duplicate (R802138-01)	4.70	0.240			100		50			8	02/28/08	02/28	LSC-005
minal values and limits from method				50.0	0.241					10			180			

PROCEDURES REFERENCE C14_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD MDA 6.20 ± 5.99
FOR 4 SAMPLES YIELD 100 ± 0

Lab id EBRLNE
Protocol Hanford
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Form DVD-LMS
Version 3.06
Report date 03/06/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1129

Test NI L Matrix SOLID
SDG 7775
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG K1129

ESULTS

B MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63	
eparation batch 6145-077						
02138-01			7775-001	J16222-A	U	
02138-02			7775-002	Lab Control Sample	ok	
02138-03			7775-003	Method Blank	U	
02138-04			7775-004	Duplicate (R802138-01)	-	U

minal values and limits from method RDLs (pCi/g) 30.0
mainSitesConfirmSampling - Soil

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6145-077			2σ prep error 10.0 % Reference Lab Notebook #6145, pg. 77													
02138-01			J16222-A	2.26	0.500			84		100			8	02/28/08	02/28	LSC-005
02138-02			Lab Control Sample	1.90	0.500			99		100				02/28/08	02/28	LSC-005
02138-03			Method Blank	1.95	0.500			97		100				02/28/08	02/28	LSC-005
02138-04			Duplicate (R802138-01)	2.26	0.500			83		100			8	02/28/08	02/28	LSC-005
minal values and limits from method				30.0	0.500			30-105		25			180			

PROCEDURES	REFERENCE	NI63_LSC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD	MDA 2.09 ± 0.389
FOR 4 SAMPLES	YIELD 91 ± 17

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Protocol Hanford
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Form DVD-LMS
Version 3.06
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Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1129

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.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/06/08

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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1129

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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REPORT GUIDE

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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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REPORT GUIDE

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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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DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

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GUIDE, cont.

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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

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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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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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GUIDE, cont.

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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 date 03/06/08

SDG 7775
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1129

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/06/08

SDG 7775
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1129

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/06/08

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'

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-~~029~~-040	Page 1 of 1
Collector BH 2/20/08 ~~Welch-Koelling~~ Etherington, T	Company Contact: Matt Perrott; Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: BH 2/20/08 ~~8C~~ 9C; Data Turnaround: 15 Days
Project Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: 100-F-52 K1129 (7775)	SAF No.: BH 2/20/08 RC-~~029~~ 030	
Ice Chest No.: AFS-04-033	Field Logbook No.: EL-1601-2; COA: C00F52A000	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080172	Bill of Lading/Air Bill No.: see ospc	

~~POSSIBLE SAMPLE~~ HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	~~Cool~~ 4C MO 2/21/08	None					
Type of Container	P	G	G	P						
No. of Container(s)	1	1	1	1						
Volume	1000mL	60mL	60mL	120mL						
SAMPLE ANALYSIS	See Item (1) in Special Instructions	See (2)	See (3)	See (1)						

Sample No.	Matrix *	Sample Date	Sample Time										
~~J16215~~ PH 2/20/08	SOIL												
J16222 -- A	SOIL	2/20/08	1345		X	X	X						
~~J16233~~	SOIL												
~~J162P1~~	SOIL												
~~J162R3~~ BH 2/20/08	SOIL												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T. ETHERINGTON	2-20-08 1445	BHUDSON BHudson	2/20/08 1445
Relinquished By/Removed From: BHUDSON BHudson	2/20/08 1515	1060 #3A	2/20/08 1515
Relinquished By/Removed From: 1060/3A	2/21/08 1130	MSTankovich	2/21/08 1130
Relinquished By/Removed From: well MSTankovich	2/21/08 1500	Fed Ex	
Relinquished By/Removed From: FED EX		Flex Kelicitu	2/22/08 10:00
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Strontium-89,90 -- Total Sr Ni-63, C-14, 150-U

(2) ICP Metals + Hg

(3) PCBs, SVOA, TPH

} priority of analysis if sufficient material

MO 2/21/08

samples from ~~3728~~ Ref # 311

3728 Custodian removed samples for shipping on 2/21/08

Sampler unavailable to relinquish

Matrix *

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: WC HANFORD City RICHLAND State WA

Date/Time received 2/22/08 10:00 CoC No. RC-030-040

Container I.D. No. AFS-04-033 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

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

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [illegible] Date 2/22/08 Time: 10:50

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J16222	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

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

LvLI
LIONVILLE LABORATORY INC.

RECEIVED
MAR 2008

21 March 2008

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0802L645
SDG #	K1129
SAF #	RC-030
Date Received	2/22/08
# Samples	1
Matrix	OTHER SOLID
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\tmu-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-030 K1129

RECEIVED
2008

DATE RECEIVED: 02/22/08 LVL LOT # : 08021645

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16222-A	001	SO	08LE0107	02/20/08	02/28/08	03/17/08
LAB QC:						
SBLKSZ	MB1	S	08LE0107	N/A	02/28/08	03/16/08
SBLKSZ	MB1 BS	S	08LE0107	N/A	02/28/08	03/15/08
SBLKSZ	MB1 BSD	S	08LE0107	N/A	02/28/08	03/16/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L645
SDG/SAF # K1129 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-22-2008

SEMIVOLATILE

One (1) solid sample was collected on 02-20-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-28-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Client Specified Semivolatile target compounds on 03-15,16,17-2008.

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

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

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

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

4. One (1) of twenty-four (24) surrogate recoveries was outside acceptance criteria. However, surrogate recovery acceptance criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).

5. Twenty-eight (28) of one hundred and twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

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

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

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

r:\group\data\2008\bna\tnu\0802-645ksol1.doc

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

LIONVILLE LABORATORY INC.

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/19/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: ~~8270~~ 08MS051

Initiator: Sharon Saylor
Date: 3-18-08
Client: TRU 8L030

Batch: 0F0716L45
Samples: BS BSD
Method: (SW846)/MCAWW/CLP/

Parameter: 8270
Matrix: Solid
Prep Batch: 0F17E0107

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)

Inadvertently of several spike analytes in the MS, MSD

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: narrate

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

4. Project Manager Instructions...signature/date: 3/18/08

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

5. Final Action...signature/date: 3-26-08 Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
✓	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	✓	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: 03/19/08 11:42

RFW Batch Number: **0802L645** Client: **TNUHANFORD RC-030 K1129** Work Order: 11343606001 Page: 1a

000000008

	Cust ID:	J16222-A	SBLKSZ	SBLKSZ BS	SBLKSZ BSD
Sample Information	RFW#:	001	08LE0107-MB1	08LE0107-MB1	08LE0107-MB1
	Matrix:	SOLID	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	57 %	59 %	49 %	42 %
	2-Fluorobiphenyl	59 %	62 %	63 %	55 %
	Terphenyl-d14	62 %	74 %	70 %	60 %
	Phenol-d5	37 %	57 %	60 %	50 %
	2-Fluorophenol	25 %	59 %	61 %	50 %
	2,4,6-Tribromophenol	11 * %	41 %	43 %	31 %
		fl	fl	fl	fl fl fl
Phenol		330 U	330 U	57 %	52 %
bis(2-Chloroethyl)ether		330 U	330 U	47 * %	43 * %
2-Chlorophenol		330 U	330 U	62 %	56 %
1,3-Dichlorobenzene		330 U	330 U	57 %	51 %
1,4-Dichlorobenzene		330 U	330 U	57 %	50 %
1,2-Dichlorobenzene		330 U	330 U	60 %	53 %
2-Methylphenol		330 U	330 U	62 %	59 * %
2,2'-oxybis(1-Chloropropane)		330 U	330 U	50 %	43 * %
3/4 Methylphenol		330 U	330 U	64 %	59 * %
N-Nitroso-di-n-propylamine		330 U	330 U	49 * %	45 * %
Hexachloroethane		330 U	330 U	55 %	48 * %
Nitrobenzene		330 U	330 U	42 * %	41 * %
Isophorone		330 U	330 U	49 * %	48 * %
2-Nitrophenol		330 U	330 U	51 %	45 * %
2,4-Dimethylphenol		330 U	330 U	49 * %	45 * %
bis(2-Chloroethoxy)methane		330 U	330 U	46 %	43 %
2,4-Dichlorophenol		330 U	330 U	56 %	54 %
1,2,4-Trichlorobenzene		330 U	330 U	51 * %	48 * %
Naphthalene		330 U	330 U	46 %	45 %
4-Chloroaniline		330 U	330 U	30 %	36 %
Hexachlorobutadiene		330 U	330 U	58 %	54 %
4-Chloro-3-methylphenol		330 U	330 U	56 * %	60 %
2-Methylnaphthalene		330 U	330 U	54 * %	52 * %
Hexachlorocyclopentadiene		330 U	330 U	58 %	50 %
2,4,6-Trichlorophenol		330 U	330 U	51 %	41 %
2,4,5-Trichlorophenol		830 U	830 U	63 %	59 %

*= Outside of EPA CLP QC limits.

Cust ID:	J16222-A		SBLKSZ		SBLKSZ BS		SBLKSZ BSD	
RFW#:	001		08LE0107-MB1		08LE0107-MB1		08LE0107-MB1	
2-Chloronaphthalene	330	U	330	U	58	%	54	%
2-Nitroaniline	830	U	830	U	65	%	67	%
Dimethylphthalate	330	U	330	U	64	%	63	%
Acenaphthylene	330	U	330	U	58 *	%	57 *	%
2,6-Dinitrotoluene	330	U	330	U	61	%	64	%
3-Nitroaniline	830	U	830	U	57	%	64	%
Acenaphthene	330	U	330	U	60	%	58	%
2,4-Dinitrophenol	830	U	830	U	15 *	%	8 *	%
4-Nitrophenol	830	U	830	U	56	%	63	%
Dibenzofuran	330	U	330	U	65	%	64	%
2,4-Dinitrotoluene	330	U	330	U	70	%	71	%
Diethylphthalate	330	U	330	U	64	%	66	%
4-Chlorophenyl-phenylether	330	U	330	U	64	%	62	%
Fluorene	330	U	330	U	62	%	60	%
4-Nitroaniline	830	U	830	U	71	%	75	%
4,6-Dinitro-2-methylphenol	830	U	830	U	19 *	%	11 *	%
N-Nitrosodiphenylamine (1)	330	U	330	U	50	%	52	%
4-Bromophenyl-phenylether	330	U	330	U	55	%	56	%
Hexachlorobenzene	330	U	330	U	69	%	70	%
Pentachlorophenol	830	U	830	U	26 *	%	19 *	%
Phenanthrene	330	U	330	U	62	%	66	%
Anthracene	330	U	330	U	66	%	69	%
Carbazole	330	U	330	U	65	%	70	%
Di-n-butylphthalate	330	U	330	U	60	%	66	%
Fluoranthene	330	U	330	U	66	%	76	%
Pyrene	330	U	330	U	62	%	55	%
Butylbenzylphthalate	330	U	330	U	57	%	58	%
3,3'-Dichlorobenzidine	330	U	330	U	51	%	61	%
Benzo(a)anthracene	330	U	330	U	62	%	63	%
Chrysene	330	U	330	U	62	%	66	%
bis(2-Ethylhexyl)phthalate	18	JB	30	J	55	%	58	%
Di-n-octyl phthalate	330	U	330	U	52	%	55	%
Benzo(b)fluoranthene	330	U	330	U	60	%	65	%
Benzo(k)fluoranthene	330	U	330	U	63	%	62	%
Benzo(a)pyrene	330	U	330	U	65	%	65	%
Indeno(1,2,3-cd)pyrene	330	U	330	U	67	%	65	%
Dibenz(a,h)anthracene	330	U	330	U	68	%	64	%
Benzo(g,h,i)perylene	330	U	330	U	68	%	65	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16222-A

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

Client: TNUHANFORD RC-030 K1129

Matrix: (soil/water) SOLID

Lab Sample ID: 0802L645-001

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

Lab File ID: N031707

Level: (low/med) LOW

Date Received: 02/22/08

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

Date Extracted: 02/28/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/17/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.910	50000	J
2.	UNKNOWN	5.991	200000	J
3.	UNKNOWN	10.767	20000	J
4.	UNKNOWN	10.855	20000	J
5.	UNKNOWN	11.055	30000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKSZ

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

Client: TNUHANFORD RC-030 K1129

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0107-MB1

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

Lab File ID: N031508

Level: (low/med) LOW

Date Received: 02/28/08

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

Date Extracted: 02/28/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.311	800	JA
2.	ALDOL CONDENSATE	5.433	2000	JA
3.	UNKNOWN	6.017	200000	J
4.	ALDOL CONDENSATE	7.158	800	JA
5.	UNKNOWN	20.058	500	J

ionville Laboratory Use Only

08021645

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS Limited Volume

VLI

000000012

lient TNU Hanford SAF# RC-030

t. Final Proj. Sampling Date

oject# 11343-606-001-9999.00

oject Contact/Phone#

onville Laboratory Project Manager Odette Johnson

: SW846 Del STD TAT 15 Days

ate Rec'd 2.22.08 Date Due 3-14-08 (2-25-08 we)

		A						B							
Refrigerator #			2					2							
#/Type Container	Liquid		(3)	(2)		(4)			(1)						
	Solid		*	1gl				*	1gl						
Volume				60					60						
Preservatives															
ANALYSES REQUESTED		ORGANIC							INORG						
		VOA	BNA	(3) PCB	Herb	TPH			(2) Metal + Hg	CN					
		Lionville Laboratory Use Only													
			8625H	OPCB		TPHC			Met(1)						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J16222-A	✓	✓	SO	2.20.08	1345		X	X		X			X					

pecial Instructions:

Met(1) = HSL + B, Mo, Si (NOTL)

Special Instructions:

1. * per client/Priority of Analysis if sufficient material.
2.
3. * (2) ICP Metals + Hg
4. * (3) PCBs, SVOA, TPH.
5. 2.27.08 Change Client ID to J16222-A per client.
6.

Relinquished by	Received by	Date	Time
FedEx	M Smith	2.22.08	13:30

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL DELIVERED			

COMPOSITE WASTE

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-~~029~~ 040 | Page 1 of 1

Collector: BH 2/20/08 ~~Welch-Koelling~~ Etherington, T

Company Contact: Matt Perrott | Telephone No.: 372-9088

Project Coordinator: KESSNER, JH

Price Code: ~~8C~~ BH 2/20/08 9C 2/21/08

Data Turnaround: 15 Days

Project Designation: Remaining Sites Confirmation Sampling - Soil

Sampling Location: 100-F-52

SAF No.: BH 2/20/08 RC-~~029~~ 030

Ice Chest No.: EKC-01-041

Field Logbook No.: EL-1601-2

COA: C00F52A000

Method of Shipment: FedEx

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: A080188

Bill of Lading/Air Bill No.: See 02PC

POSSIBLE SAMPLE HAZARDS/REMARKS: none

Special Handling and/or Storage: Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	P	aG	aG	P							
No. of Container(s)	1	1	1	1							
Volume	1000mL	60mL	60mL	250mL							
SAMPLE ANALYSIS	See Item (1) in Special Instructions	See (2)	See (3)	See							

Sample No.	Matrix *	Sample Date	Sample Time										
~~16215~~ BH 2/20/08	SOIL												
16222	~~SOIL~~ other solid	2/20/08	1345		X	X	X						
~~16233~~	SOIL												
~~162P1~~	SOIL												
~~162R3~~ BH 2/20/08	SOIL												

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Etherington	2-20-08 1445	BHudson BHudson	2/20/08 1445
BHudson BHudson	2/20/08 1515	1060 F3A	2/20/08 1515
1060/3A	2/21/08 1100	mstankovich	2/21/08 1100
mstankovich	2/21/08 1500	FedEx	
FedEx	2-22-08 1330		2-22-08 1330

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Strontium-89,90 -- Total Sr Ni-63, C-14, 150-U

(2) ICP Metals + Hg

(3) PCBs, SVOA, TPH

priority of analysis if sufficient material

2/21/08 1060 samples from ~~3728~~ Ref # 3A

3728 Custodian removed samples for shipping on 2/21/08

Sampler unavailable to relinquish

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

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

/CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford
Project/SAF/SOW/Release #: RC-030

Date: 2.22.08

LvLI Batch #: 08021645

Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7988 7976 2856
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2	°C	Cooler # ERC-01-041
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1129

RECEIVED
MAR 2008

DATE RECEIVED: 02/22/08 LVL LOT # 08021645

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16222-A	001	SO	08LE0106	02/20/08	02/27/08	03/03/08
J16222-A	001 MS	SO	08LE0106	02/20/08	02/27/08	03/03/08
J16222-A	001 MSD	SO	08LE0106	02/20/08	02/27/08	03/03/08

LAB QC:

PBLKNJ	MB1	S	08LE0106	N/A	02/27/08	02/29/08
PBLKNJ	MB1 BS	S	08LE0106	N/A	02/27/08	02/29/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L645
SDG/SAF # K1129 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-22-2008

PCB

One (1) solid sample was collected on 02-20-2008.

The sample and its associated QC samples were extracted on 02-27-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-29-2007 and 03-03-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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

k:\group\data\pest\tnu\0802-645ksol1.pcb.doc

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

LIONVILLE LABORATORY INC.

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 Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/7/08
Date

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

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 03/04/08 12:36

RFW Batch Number: **0802L645** Client: **TNUHANFORD RC-030 K1129** Work Order: 11343606001 Page: 1

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	Cust ID:	J16222-A	J16222-A	J16222-A	PBLKNJ	PBLKNJ BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0106-MB1	08LE0106-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	100 %	103 %	98 %	96 %	112 %
	Decachlorobiphenyl	101 %	104 %	100 %	94 %	110 %
		fl	fl	fl	fl	fl fl
Aroclor-1016		200 U	92 %	88 %	13 U	99 %
Aroclor-1221		200 U	200 U	200 U	13 U	13 U
Aroclor-1232		200 U	200 U	200 U	13 U	13 U
Aroclor-1242		200 U	200 U	200 U	13 U	13 U
Aroclor-1248		200 U	200 U	200 U	13 U	13 U
Aroclor-1254		200 U	200 U	200 U	13 U	13 U
Aroclor-1260		200 U	92 %	89 %	13 U	99 %

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 02/27/08 Extraction Batch No: 08LE0106 Analyst: MF Method: ****

Test: OPCB Cleanup Date: 02/29/08 Analyst: MF Client: TNUHANFORD RC-030 K1125

LIMS Report Date: 03/05/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0802L635-	TNUHANFORD RC-030 K1125										
001	J16994		2.0	1.0		10		1.0	N	0.00	5000.0
001 -S	J16994		2.0	1.0	1.0	10		1.0	N	0.00	5000.0
001 -T	J16994		2.0	1.0	1.0	10		1.0	N	0.00	5000.0
0802L644-	TNUHANFORD RC-030 K1130										
001	J169J5		2.0	1.0		10		1.0	N	0.00	5000.0
001 -S	J169J5		2.0	1.0	1.0	10		1.0	N	0.00	5000.0
001 -T	J169J5		2.0	1.0	1.0	10		1.0	N	0.00	5000.0
0802L645-	TNUHANFORD RC-030 K1129										
001	J16222-A		2.0	1.0		10		1.0	N	0.00	5000.0
001 -S	J16222-A		2.0	1.0	1.0	10		1.0	N	0.00	5000.0
001 -T	J16222-A		2.0	1.0	1.0	10		1.0	N	0.00	5000.0
0802L646-	VISTA ENGINEERING										
001	B020		30.0	1.0		10		1.0	N	96.64	344.9
001 -S	B020		30.0	1.0	1.0	10		1.0	N	96.64	344.9
001 -T	B020		30.0	1.0	1.0	10		1.0	N	96.64	344.9
002	B021		30.0	1.0		10		1.0	N	97.78	340.9
003	B022		30.0	1.0		10		1.0	N	94.11	354.2
004	B023		30.0	1.0		10		1.0	N	97.63	341.4
005	B024		30.0	1.0		10		1.0	N	97.80	340.8
006	B025		30.0	1.0		10		1.0	N	96.85	344.2
007	B026		30.0	1.0		10		1.0	N	97.43	342.1
08LE0106-MB1	PBLKNJ		30.0	1.0		10		1.0	N	100.00	333.3
08LE0106-MB1 -S	PBLKNJ		30.0	1.0	1.0	10		1.0	N	100.00	333.3

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

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
—	—	—	CK	3-5-08	Revision

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ionville Laboratory Use Only

0802L645

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS Limited Volume

VLI

lent TNU Hanford SAF# RC-030

t. Final Proj. Sampling Date

oject# 11343-606-001-9999-00

oject Contact/Phone#

onville Laboratory Project Manager Arlette Johnson

: SW846 Del STD TAT 15 Days

ate Rec'd 2-22-08 Date Due 3-14-08 (08 we 2-25-08)

Refrigerator #		A						B							
#/Type Container	Liquid		(3)	(2)		(4)			(2)						
	Solid		*	1gl				*	1gl						
Volume				60					60						
Preservatives															
ANALYSES REQUESTED		ORGANIC							INORG						
		VOA	BNA	(3) PCB	Herb	TPH			(2) Metal + Hg	CN					

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
									8625H	OPCB		IPHC			metD					
Soil	001	J16222-A	✓	✓	SO	2-20-08	1345		X	X		X			X					
Sediment																				
Solid																				
Sludge																				
Water																				
Oil																				
Air																				
Drum Solids																				
Drum Liquids																				
EP/TCLP Leachate																				
Wipe																				
Other																				
Fish																				

pecial Instructions:

met(1) = HSL + B, Mo, Sn (NOTL)

Special Instructions:

1. * per client/Priority of Analysis if sufficient material.
2.
3. * (2) ICP Metals + Hg
4. * (3) PCBs, SVOA, TPH.
5. 2-27-08 Change Client ID to J16222-"A" per client.
6.

Relinquished by	Received by	Date	Time
FedEx	M Smith	2-22-08	13:30

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL			

COMPOSITE WASTE

000000007

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-~~029~~-040 | Page 1 of 1

Collector: BH 2/20/08 ~~Welch-Koelling~~ Etherington, T

Company Contact: Matt Perrott | Telephone No.: 372-9088

Project Coordinator: KESSNER, JH

Price Code: ~~8C~~ 9C (JH 2/20/08; mo 2/21/08)

Data Turnaround: 15 Days

Project Designation: Remaining Sites Confirmation Sampling - Soil

Sampling Location: 100-F-52

SAF No.: BH 2/20/08; RC-~~029~~ 030

Ice Chest No.: EKC-01-041

Field Logbook No.: EL-1601-2 | COA: C00F52A000

Method of Shipment: FedEx

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: A080188

Bill of Lading/Air Bill No.: See OSFC

POSSIBLE SAMPLE HAZARDS/REMARKS: none

Special Handling and/or Storage: Cool 4°C

SAMPLE ANALYSIS													
Preservation				None	Cool 4C	Cool 4C	Cool 4C						
Type of Container				~~BH 2/20/08~~	aG	aG	P						
No. of Container(s)					1	1	1						
Volume				1000mL	60mL	60mL	~~120mL~~						
See Item (1) in Special Instructions.					See (2)	See (3)	~~See~~						
Sample No.	Matrix *	Sample Date	Sample Time										
~~16215~~ PH 2/20/08	SOIL												
16222	~~SOIL~~ other soil	2/20/08	1345		X	X	X						
~~16233~~	SOIL												
~~162P1~~	SOIL												
~~162R3~~ BH 2/20/08	SOIL												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Etherington	2-20-08 1445	BHudson BHudson	2/20/08 1445
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BHudson BHudson	2/20/08 1515	1060 #3A	2/20/08 1515
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time 1100
1060/3A	2/21/08 1100	mstankovich	2/21/08
Relinquished By/Removed From	Date/Time 1500	Received By/Stored In	Date/Time
mstankovich	2/21/08	FedEx	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	2-22-08/1330	[illegible]	2-22-08/13:30
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gross Alpha & Gross Beta; Strontium-89,90 -- Total Sr Ni-63, C-14, 150-U

(2) ICP Metals + Hg

(3) PCBs, SVOA, TPH

} priority of analysis if sufficient material

2/21/08 1060 samples from ~~3728~~ Ref # 3A

3728 Custodian removed samples for shipping on 2/21/08.

Sampler unavailable to relinquish

Matrix *

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

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

/CH-EE-011

000000008

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Project/SAF/SOW/Release #: RC-030

Date: 2-22-08

LvLI Batch #: 08022645

Sample Custodian: D Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7988 7976 2056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2 °C		Cooler # ERC-01-041
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1129

RECEIVED MAR 2008

DATE RECEIVED: 02/22/08 LVL LOT # : 08021645

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16222-A						
SILVER, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
SILVER, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
SILVER, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
ALUMINUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
ALUMINUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
ALUMINUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
ARSENIC, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
ARSENIC, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
ARSENIC, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
BORON, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
BORON, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
BORON, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
BARIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
BARIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
BARIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
BERYLLIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
BERYLLIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
BERYLLIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
CALCIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
CALCIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
CALCIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
CADMIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
CADMIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
CADMIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
COBALT, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
COBALT, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
COBALT, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
CHROMIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
CHROMIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
CHROMIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
COPPER, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
COPPER, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
COPPER, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
IRON, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
IRON, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1129

DATE RECEIVED: 02/22/08 LVL LOT # :0802L645

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
MERCURY, TOTAL	001	SO	08C0039	02/20/08	02/27/08	02/28/08
MERCURY, TOTAL	001 REP	SO	08C0039	02/20/08	02/27/08	02/28/08
MERCURY, TOTAL	001 MS	SO	08C0039	02/20/08	02/27/08	02/28/08
POTASSIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
POTASSIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
POTASSIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
MAGNESIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
MAGNESIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
MAGNESIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
MANGANESE, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
MANGANESE, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
MANGANESE, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
MOLYBDENUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
MOLYBDENUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
MOLYBDENUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
SODIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
SODIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
SODIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
NICKEL, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
NICKEL, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
NICKEL, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
LEAD, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
LEAD, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
LEAD, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
ANTIMONY, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
ANTIMONY, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
ANTIMONY, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
SELENIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
SELENIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
SELENIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
SILICON, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
SILICON, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
SILICON, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
VANADIUM, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08
VANADIUM, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
VANADIUM, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08
ZINC, TOTAL	001	SO	08L0095	02/20/08	03/06/08	03/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1129

DATE RECEIVED: 02/22/08 LVL LOT # :0802L645

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	SO	08L0095	02/20/08	03/06/08	03/07/08
ZINC, TOTAL	001 MS	SO	08L0095	02/20/08	03/06/08	03/07/08

AB QC:

SILVER LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
SILVER, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
ALUMINUM LABORTORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
ALUMINUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
ARSENIC LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
ARSENIC, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
BORON LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
BORON, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
BARIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
BARIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
BERYLLIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
CALCIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
CALCIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
CADMIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
CADMIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
COBALT LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
COBALT, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
CHROMIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
CHROMIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
COPPER LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
COPPER, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
IRON LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
IRON, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
MERCURY LABORATORY	LC1 BS	S	08C0039	N/A	02/27/08	02/28/08
MERCURY, TOTAL	MB1	S	08C0039	N/A	02/27/08	02/28/08
POTASSIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
POTASSIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
MAGNESIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
MANGANESE LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
MANGANESE, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1129

DATE RECEIVED: 02/22/08 LVL LOT # :0802L645

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
SODIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
SODIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
NICKEL LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
NICKEL, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
LEAD LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
LEAD, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
ANTIMONY LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
ANTIMONY, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
SELENIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
SELENIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
SILICON LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
SILICON, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
VANADIUM LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
VANADIUM, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08
ZINC LABORATORY	LC1 BS	S	08L0095	N/A	03/06/08	03/07/08
ZINC, TOTAL	MB1	S	08L0095	N/A	03/06/08	03/07/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-030
LVL#: 0802L645
SDG/SAF#: K1129/RC-030

W.O.#: 11343-606-001-9999-00
Date Received: 02-22-08

METALS CASE NARRATIVE

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

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

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

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

   The sample was analyzed with a 6-fold dilution for ICP metals due to sample matrix. The sample was rerun with a 24-fold dilution for Iron high concentration.

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

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

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

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

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

8. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon at 12.4%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

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

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

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

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J16222-A	Aluminum	6,000	108.0
	Calcium	62,400	101.6
	Chromium	600	108.2
	Copper	600	105.7
	Iron	960,000	98.8
	Manganese	6,000	111.2
	Silicon	6,600	123.9
	Zinc	600	110.0

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/11/08
Date

jjw/m02-645

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

ot#: 080 2L645

eaching Procedure: __1310 __1311 __1312 __Other:_____

LP 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
luminum	X6010B		__200.7				__99
ntimony	X6010B	__7041 [5]	__200.7	__204.2			__99
rsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
arium	X6010B		__200.7				__99
eryllium	X6010B		__200.7				__99
ismuth	__6010B [1]		__200.7 [1]			__1620	__99
oron	X6010B		__200.7				__99
admium	X6010B	__7131A [5]	__200.7	__213.2			__99
alcium	X6010B		__200.7				__99
hromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
obalt	X6010B		__200.7				__99
opper	X6010B	__7211 [5]	__200.7	__220.2			__99
ron	X6010B		__200.7				__99
ead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
ithium	__6010B	__7430 [4]	__200.7			__1620	__99
agnesium	X6010B		__200.7				__99
anganese	X6010B		__200.7				__99
ercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
olybdenum	X6010B		__200.7				__99
ickel	X6010B		__200.7				__99
otassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
are Earths	__6010B [1]		__200.7 [1]			__1620	__99
elenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
ilicon	X6010B [1]		__200.7			__1620	__99
ilica	__6010B		__200.7			__1620	__99
ilver	X6010B	__7761 [5]	__200.7	__272.2			__99
odium	X6010B	__7770 [4]	__200.7	__273.1 [4]			__99
trontium	__6010B		__200.7				__99
hallium	__6010B	__7841 [5]	__200.7	__279.2__200.9			__99
in	__6010B		__200.7				__99
itanium	__6010B		__200.7				__99
ranium	__6010B [1]		__200.7 [1]			__1620	__99
anadium	X6010B		__200.7				__99
inc	X6010B		__200.7				__99
irconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/10/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16222-A	Silver, Total	0.75	MG/KG	0.54	6.0
		Aluminum, Total	235	MG/KG	21.6	6.0
		Arsenic, Total	15.7	MG/KG	2.7	6.0
		Boron, Total	2.7 u	MG/KG	2.7	6.0
		Barium, Total	63.9	MG/KG	0.54	6.0
		Beryllium, Total	0.27 u	MG/KG	0.27	6.0
		Calcium, Total	3950	MG/KG	21.6	6.0
		Cadmium, Total	5.0	MG/KG	0.27	6.0
		Cobalt, Total	9.7	MG/KG	1.1	6.0
		Chromium, Total	70.0	MG/KG	1.1	6.0
		Copper, Total	59.8	MG/KG	1.1	6.0
		Iron, Total	550000	MG/KG	97.3	24.0
		Mercury, Total	0.06	MG/KG	0.008	1.0
		Potassium, Total	72.9	MG/KG	21.6	6.0
		Magnesium, Total	341	MG/KG	13.5	6.0
		Manganese, Total	1760	MG/KG	0.22	6.0
		Molybdenum, Total	15.2	MG/KG	1.6	6.0
		Sodium, Total	26.6	MG/KG	10.8	6.0
		Nickel, Total	50.5	MG/KG	1.1	6.0
		Lead, Total	2.2	MG/KG	1.6	6.0
		Antimony, Total	3.3	MG/KG	1.6	6.0
		Selenium, Total	3.2 u	MG/KG	3.2	6.0
		Silicon, Total	1150	MG/KG	21.6	6.0
		Vanadium, Total	0.76 u	MG/KG	0.76	6.0
		Zinc, Total	244	MG/KG	3.2	6.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/10/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0095-MB1	Silver, Total	0.10	u	MG/KG	0.10	1.0
		Aluminum, Total	4.0	u	MG/KG	4.0	1.0
		Arsenic, Total	0.50	u	MG/KG	0.50	1.0
		Boron, Total	0.50	u	MG/KG	0.50	1.0
		Barium, Total	0.10	u	MG/KG	0.10	1.0
		Beryllium, Total	0.05	u	MG/KG	0.05	1.0
		Calcium, Total	7.1		MG/KG	4.0	1.0
		Cadmium, Total	0.05		MG/KG	0.05	1.0
		Cobalt, Total	0.20	u	MG/KG	0.20	1.0
		Chromium, Total	0.24		MG/KG	0.20	1.0
		Copper, Total	0.26		MG/KG	0.20	1.0
		Iron, Total	5.5		MG/KG	4.5	1.0
		Potassium, Total	4.5		MG/KG	4.0	1.0
		Magnesium, Total	2.5	u	MG/KG	2.5	1.0
		Manganese, Total	0.05		MG/KG	0.04	1.0
		Molybdenum, Total	0.30	u	MG/KG	0.30	1.0
		Sodium, Total	8.0		MG/KG	2.0	1.0
		Nickel, Total	0.23		MG/KG	0.20	1.0
		Lead, Total	0.30	u	MG/KG	0.30	1.0
		Antimony, Total	0.30	u	MG/KG	0.30	1.0
		Selenium, Total	0.60	u	MG/KG	0.60	1.0
		Silicon, Total	4.0	u	MG/KG	4.0	1.0
		Vanadium, Total	0.14	u	MG/KG	0.14	1.0
		Zinc, Total	0.60	u	MG/KG	0.60	1.0
BLANK1	08C0039-MB1	Mercury, Total	0.01	u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/10/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16222-A	Silver, Total	5.4	0.75	4.4	105.6	6.0
		Aluminum, Total	718	235	177	273.0	6.0
		Arsenic, Total	196	15.7	177	101.9	6.0
		Boron, Total	89.6	2.7 u	88.5	101.2	6.0
		Barium, Total	248	63.9	177	104.2	6.0
		Beryllium, Total	4.4	0.27u	4.4	100	6.0
		Calcium, Total	4750	3950	2210	36.1	6.0
		Cadmium, Total	8.8	5.0	4.4	86.4	6.0
		Cobalt, Total	53.0	9.7	44.3	97.7	6.0
		Chromium, Total	93.9	70.0	17.7	135.0	6.0
		Copper, Total	105	59.8	22.1	205.0	6.0
		Iron, Total	474000	550000	88.5	85000. *	24.0
		Mercury, Total	0.21	0.06	0.14	105.8	1.0
		Potassium, Total	2240	72.9	2210	98.1	6.0
		Magnesium, Total	2670	341	2210	105.5	6.0
		Manganese, Total	1930	1760	44.3	381.3*	6.0
		Molybdenum, Total	102	15.2	88.5	97.7	6.0
		Sodium, Total	2060	26.6	2210	91.8	6.0
		Nickel, Total	97.9	50.5	44.3	107.0	6.0
		Lead, Total	48.1	2.2	44.3	103.6	6.0
		Antimony, Total	37.0	3.3	44.3	76.1	6.0
		Selenium, Total	147	3.2 u	177	83.1	6.0
		Silicon, Total	1320	1150	88.5	188.5*	6.0
		Vanadium, Total	44.3	0.76u	44.3	100	6.0
		Zinc, Total	310	244	44.3	149.0*	6.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/10/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16222-A	Silver, Total	0.75	0.48u	~~NC~~ zero	6.0
		Aluminum, Total	235	441	61.1 corrected value	6.0
		Arsenic, Total	15.7	14.3	9.3 JW 3/10/08	6.0
		Boron, Total	2.7 u	2.4 u	NC	6.0
		Barium, Total	63.9	68.3	6.7	6.0
		Beryllium, Total	0.27u	0.24u	NC	6.0
		Calcium, Total	3950	5010	23.8	6.0
		Cadmium, Total	5.0	4.5	10.5	6.0
		Cobalt, Total	9.7	6.1	45.6	6.0
		Chromium, Total	70.0	67.5	3.6	6.0
		Copper, Total	59.8	57.9	3.2	6.0
		Iron, Total	550000	466000	16.5	24.0
		Mercury, Total	0.06	0.06	3.2	1.0
		Potassium, Total	72.9	102	32.9	6.0
		Magnesium, Total	341	423	21.6	6.0
		Manganese, Total	1760	1880	6.6	6.0
		Molybdenum, Total	15.2	12.7	17.9	6.0
		Sodium, Total	26.6	27.4	3.0	6.0
		Nickel, Total	50.5	37.8	28.8	6.0
		Lead, Total	2.2	6.1	94.0	6.0
		Antimony, Total	3.3	3.5	5.9	6.0
		Selenium, Total	3.2 u	2.9 u	NC	6.0
		Silicon, Total	1150	1010	12.8	6.0
		Vanadium, Total	0.76u	0.68u	NC	6.0
		Zinc, Total	244	248	1.4	6.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 03/10/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0095-LC1	Silver, LCS	51.8	50.0	MG/KG	103.6
		Aluminum, LCS	524	500	MG/KG	104.7
		Arsenic, LCS	990	1000	MG/KG	99.0
		Boron, LCS	492	500	MG/KG	98.4
		Barium, LCS	516	500	MG/KG	103.1
		Beryllium, LCS	25.7	25.0	MG/KG	102.8
		Calcium, LCS	2550	2500	MG/KG	101.8
		Cadmium, LCS	25.4	25.0	MG/KG	101.6
		Cobalt, LCS	261	250	MG/KG	104.6
		Chromium, LCS	52.1	50.0	MG/KG	104.2
		Copper, LCS	131	125	MG/KG	104.7
		Iron, LCS	528	500	MG/KG	105.7
		Potassium, LCS	2510	2500	MG/KG	100.2
		Magnesium, LCS	2500	2500	MG/KG	100.0
		Manganese, LCS	77.5	75.0	MG/KG	103.3
		Molybdenum, LCS	508	500	MG/KG	101.5
		Sodium, LCS	2430	2500	MG/KG	97.2
		Nickel, LCS	205	200	MG/KG	102.3
		Lead, LCS	255	250	MG/KG	102.0
		Antimony, LCS	298	300	MG/KG	99.5
		Selenium, LCS	961	1000	MG/KG	96.1
		Silicon, LCS	62.1	500	MG/KG	12.4
		Vanadium, LCS	255	250	MG/KG	102.0
		Zinc, LCS	102	100	MG/KG	101.8
LCS1	08C0039-LC1	Mercury, LCS	4.8	4.7	MG/KG	101.3

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: Ten
Date: 2/27/08
Start Time/Temp: 1425 / 93°
End Time/Temp: 1505 / 95°

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

Prep Batch: 08C003S
Worksheet: HG022801
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	PT			10mL	50mL	
0.2 µg/L	X8	0.100				
1.0	PC	0.500				
2.0	XD	1.000				
5.0	CX	2.500				
10.0	3VG	5.000				
ICV	DLV	0.125				
CCV	AG4	0.250				
ICB/CCB	IV					9.50L
MB1	31			0.30		PRS5139 100.0
LC1	P18	✱	✱	0.31		LCSS139
0802L634-001	H			0.32		93.59
001R	C15			0.34		
001S	HH	0.500	1.0	0.32		
002	H5			0.36		98.60
0802L654-001	205			0.37		95.57
001R	CA			0.32		
001S	HT	0.500	1.0	0.37		
002	J1			0.33		98.09
003	ST			0.35		97.65
004	B14			0.34		95.80
005	1C			0.33		97.60
006	A9			0.37		99.57
⊗0802L629-002	111E			0.35		90.65
002R	508			0.31		
002S	LV	0.500	1.0	0.36		
0802L644-001	AIR			0.33		100.00 ~~96.64~~

Standard:	ID	Prep Date/Time
ICAL/MS	R16072-75-07B	2/27/08 1055
ICV/CCV/LCS	US 6072-75-08 A	↓

Reviewed By/Date: Mitchell 3/3/08

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

⊗ Redigest

Page #:

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Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: UA
Date 2/27/08
Start Time/Temp: see page
End Time/Temp: 025

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

Prep Batch: 08C0039
Worksheet: HG022801
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
08022644-001R	B2			0.35	50mL	100.00
001S	DR	0.500	1.0	0.33		
08022645-001	TR			0.36		
001R	5H			0.31		
001S	CB	0.500	1.0	0.36		
08022646-001	41			0.32		96.64
001R	45			0.34		
001S	C8	0.500	1.0	0.32		
002	HW			0.37		97.78
003	1721			0.32		94.11
004	I4			0.31		R 97.63
005	C48			0.31		L 97.80
006	88			0.31		96.85
007	503			0.31		97.43
001T	P18	0.500	1.0	0.34		96.64

UA 2/27/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 025	

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

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

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Lionville Laboratory Incorporated Logbook #: 311

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0095
Date/Time Initiated: 3/6/08 1800
Date/Time Completed: 3/6/08 2045
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: HSL + B, Mo, Si (No Tl)

Digested / Undigested (circle one)
Balance #: B29
Balance Cal Verif: (Y) NA
Hot Plate Temp: 92°C

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

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

TM

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
08022645-001	1.11gm		100ml	<2	TO	coarse	metal(?) pieces and rust powder		
001R	1.24gm								
001S	1.13gm	1.0ml							
08L0095-LC1	1.0gm	1.0ml					boiling chips		
MB1	1.0gm								

MW 3/6/08

Spiking IDs:
MS #: 8100-04-01
02
03
8072-072-01
LCS #: 02
03
04
05

Reagent IDs:
HNO_3 E22D71
HCL E40060
H_2O_2 E44A06
1:1 HNO_3 9789-070-06
1:1 HCL

File ID#: IC009501
LIMS Transfer: (Y) N updated
Data Review By/Date: PMP, 03/07/08

Lionville Laboratory Use Only

08021645

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS Limited Volume

VLI

Client INW Hanford SAF# RC-030

est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager Arlette Johnson

PO SW2846 Del STD TAT 15 Days

Date Rec'd 2-22-08 Date Due 3-14-08 (2-25-08)

		A						B							
Refrigerator #			2					2							
#/Type Container	Liquid		(3)	(2)		(4)			(1)						
	Solid		*	1gl				*	1gl						
Volume				60					60						
Preservatives															
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	(1) PCB	Herb	TPH		(2) Metal + Hg	CN						
		Lionville Laboratory Use Only													
			8625H	OPCB		I.PHC			MetO						

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													
001	J16222-A	✓	✓	SO	2-20-08	1345		X	X		X			X					

Special Instructions:

Met(1) = HSL + B, Mo, Si (NOTL)

Special Instructions:

1. * Per Client/Priority of Analysis if sufficient material.
2.
3. * (2) ICP Metals + Hg
4. * (3) PCBs, SVOA, TPH.
5. 2-27-08 Change Client ID to J16222-"A" per Client.
6.

Relinquished by	Received by	Date	Time
FedEx	[illegible]/Smith	2-22-08	13:30

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000017

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-~~029~~-040 | Page 1 of 1

Collector: BH 2/20/08 ~~Welch Koelling~~ Etherington, T

Company Contact: Matt Perrott | Telephone No.: 372-9088

Project Coordinator: KESSNER, JH

Price Code: ~~8C~~ BH 2/20/08 9C 2/21/08

Data Turnaround: 15 Days

Project Designation: Remaining Sites Confirmation Sampling - Soil

Sampling Location: 100-F-52

SAF No.: BH 2/20/08 RC-~~029~~ 030

Ice Chest No.: EKC-01-041

Field Logbook No.: EL-1601-2

COA: C00F52A000

Method of Shipment: FedEx

Shipped To: EBERLINE SERVICES / LIONVILLE

Offsite Property No.: A080188

Bill of Lading/Air Bill No.: See 08PC

POSSIBLE SAMPLE HAZARDS/REMARKS: none

Special Handling and/or Storage: Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	P	aG	aG	P							
No. of Container(s)	1	1	1	1							
Volume	1000mL	60mL	60mL	500mL							
SAMPLE ANALYSIS	See Item (1) in Special Instructions.	See (2)	See (3)	See							

Sample No.	Matrix *	Sample Date	Sample Time										
~~J16215~~ BH 2/20/08	SOIL												
J16222	~~SOIL~~ other solid	2/20/08	1345		X	X	X						
~~J16223~~	SOIL												
~~J16P1~~	SOIL												
~~J16R3~~ BH 2/20/08	SOIL												

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Etherington	2-20-08 1445	BHUDSON BHudson	2/20/08 1445
BHUDSON BHudson	2/20/08 1500	1060 F3A	2/20/08 1515
1060/3A	2/21/08 1100	mstankovich	2/21/08 1100
WCH mstankovich	2/21/08 1500	Fed Ex	
Fed Ex	2.22.08 1330		2.22.08 13:30

Sign/Print Names

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gross Alpha & Gross Beta; Strontium-89,90 -- Total Sr Ni-63, C-14, 130-U

(2) ICP Metals + Hg

(3) PCBs, SVOA, TPH

priority of analysis if sufficient material

2/21/08 1060 samples from ~~3728~~ Ref # 3A

3728 Custodian removed samples for shipping on 2/21/08.

Sampler unavailable to relinquish

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

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

WCH-EE-011

0000000018

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford
Project/SAF/SOW/Release #: RC-030

Date: 2-22-08

LvLI Batch #: 08021645

Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7988 7976 2056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2	°C	Cooler # ERC-01-041
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1129

RECEIVED MAR 2008

DATE RECEIVED: 02/22/08 LVL LOT # :08021645

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16222-A						
PETROLEUM HYDROCARBO	001	SO	08LHC009	02/20/08	03/06/08	03/11/08
PETROLEUM HYDROCARBO	001 REP	SO	08LHC009	02/20/08	03/06/08	03/11/08
PETROLEUM HYDROCARBO	001 MS	SO	08LHC009	02/20/08	03/06/08	03/11/08
AB QC:						
PETROLEUM HYDROCARBO	MB1	S	08LHC009	N/A	03/06/08	03/11/08
PETROLEUM HYDROCARBO	MB1 BS	S	08LHC009	N/A	03/06/08	03/11/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-030 K1129
LVL#: 0802L645

W.O.#: 11343-606-001-9999-00
Date Received: 02-22-08

INORGANIC NARRATIVE

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

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

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

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

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

5. The method blank was within the method criteria.

6. The Laboratory Control Sample (LCS) was within the laboratory control limits.

7. The matrix spike recovery was within the 75-125% control limits.

8. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.

9. Results for solid samples are reported on an "as-received" weight basis.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/17/08
Date

njp\i02-645

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

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METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/11/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16222-A	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/11/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LHC009-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/11/08

CLIENT: TNUHANFORD RC-030 K1129

LVL LOT #: 0802L645

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16222-A	Petroleum Hydrocarbons	542	18.1		559	93.8	1.0
BLANK10	08LHC009-MB1	Petroleum Hydrocarbons	543	133	u	558	97.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/11/08

CLIENT: TNUHANFORD RC-030 K1129 LVL LOT #: 0802L645

WORK ORDER: 12343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT		REPLICATE		RPD	DILUTION FACTOR(REP)
-001REP	J16222-A	Petroleum Hydrocarbons	133	u	133	u	NC	1.0

Lionville Laboratory Use Only

08021645

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS Limited Volume

VLI

Client: TNU Hanford SAF# RC-030

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager Arlette Johnson

SW846 Del STD TAT 15 Days

Date Rec'd 2-22-08 Date Due 3-14-08 (08 we 2-25-08)

		A						B							
Refrigerator #				2				2							
#/Type Container	Liquid		(3)	(2)		(4)		(1)							
	Solid		*	1gl				* 1gl							
Volume				60				60							
Preservatives															
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	(3) PCB	Herb	TPH		(2) Metal + Hg	CN						
		Lionville Laboratory Use Only													
			8625H	OPCB		IPHC		MetD							

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													
	001	J16222-A	✓	✓	SO	2-20-08	1345		X	X		X			X					

Special Instructions:

MetD = HSL + B, Mo, Si (NOTL)

Special Instructions:

1. * per client/Priority of Analysis if sufficient material.
2.
3. * (2) ICP Metals + Hg
4. * (3) PCBs, SVOA, TPH.
5. 2-27-08 Change Client ID to J16222-A" per client.
6.

Relinquished by	Received by	Date	Time
FedEx	M Smith	2-22-08	13:30

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL			

COMPOSITE WASTE

000000009

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-~~029~~-040 | Page 1 of 1

Collector BH 2/20/08 ~~Welch-Koelling~~ Etherington, T	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code ~~8C~~ BH 2/20/08 9C mw 2/21/08	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: 100-F-52		SAF No. BH 2/20/08 RC-~~029~~ 030
Ice Chest No. EKC-01-041	Field Logbook No.: EL-1601-2	COA: C00F52A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080188		Bill of Lading/Air Bill No.: See 08PC

POSSIBLE SAMPLE HAZARDS/REMARKS: none

Special Handling and/or Storage: Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	P	aG	aG	P							
No. of Container(s)	1	1	1	1							
Volume	1000mL	60mL	60mL	500mL							
SAMPLE ANALYSIS	See Item (1) in Special Instructions	See (2)	See (3)	See							
Sample No.	Matrix *	Sample Date	Sample Time								
~~116215~~ BH 2/20/08	SOIL										
116222	~~SOIL~~ other soil	2/20/08	1345		X	X	X				
~~116223~~	SOIL										
~~116224~~	SOIL										
~~116225~~ BH 2/20/08	SOIL										

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Eberline Svcs	2-20-08 1445	BHudson BHudson	2/20/08 1445
BHudson BHudson	2/20/08 1515	1060 F3A	2/20/08 1515
1060/3A	2/21/08 1100	mstankovich	2/21/08 1100
mstankovich	2/21/08 1500	FedEx	
FedEx	2.22.08 1330		2.22.08 13:30
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gross Alpha & Gross Beta; Strontium-89,90 -- Total Sr Ni-63, C-14, 150-U

(2) ICP Metals + Hg

(3) PCBs, SVOA, TPH

} priority of analysis if sufficient material

2/21/08 1060 samples from ~~3728~~ Ref # 3A
3728 Custodian removed samples for shipping on 2/21/08
Sampler unavailable to relinquish

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

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

VCH-EE-011

00000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Project/SAF/SOW/Release #: RC-030

Date: 2-22-08

LvLI Batch #: 0802L645

Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier: FedEx		Airbill # 7988 7976 2056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2 °C		Cooler # ERC-01-041
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc