0076742

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 K1125 **SAF-RC-030**

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 100-F-53

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EBERLINE 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 R8-02-134-7773, SDG K1125

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 21, 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

Case Narrative

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1125 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 samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on March 6, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.5 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion
Melissa C. Mannion
Senior Program Manager

03/11/08
Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1125

SDG	7773
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K1125

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

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

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Prepared by

Reviewed by

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

SDG 7773
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1125

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 7773
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1125

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 K1125

SDG 7773
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1125

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R802134-01	J16994	100-F-53	SOLID		RC-030	RC-030-066	02/19/08 14:00
R802134-02	Lab Control Sample		SOLID		RC-030		
R802134-03	Method Blank		SOLID		RC-030		
R802134-04	Duplicate (R802134-01)	100-F-53	SOLID		RC-030		02/19/08 14:00

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

EBERLINE SERVICES/RICHMOND

SDG 7773
Contact Melissa C. Mannion

SAMPLE DELIVERY GROUP K1125

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1125

C BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
773	RC-030-066	J16994	SOLID	100.0	145 g		02/21/08	2	R802134-01	7773-001
		Method Blank	SOLID						R802134-03	7773-003
		Lab Control Sample	SOLID						R802134-02	7773-002
		Duplicate (R802134-01)	SOLID	100.0	145 g		02/21/08	2	R802134-04	7773-004

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 K1125

SDG 7773
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1125

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
PU	SOLID	Plutonium, Isotopic in Solids	6148-013	5.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6148-013	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6148-013	10.0	1			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-013	20.0	1			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-013	15.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6148-013	15.0	1			1	1	1/1		

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

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1125

SDG 7773
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1125

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
802134-01	J16994			7773-001	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
02/19/08	100-F-53		SOLID	7773-001	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
02/21/08	RC-030-066	RC-030		7773-001	GAM		02/29/08	03/03/08	CSS	Gamma Scan
				7773-001	PU		03/01/08	03/03/08	BW	Plutonium, Isotopic in Solids
				7773-001	SR		02/29/08	03/03/08	BW	Total Strontium in Solids
				7773-001	U		02/29/08	02/29/08	BW	Uranium, Isotopic in Solids
802134-02	Lab Control Sample			7773-002	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
			SOLID	7773-002	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
		RC-030		7773-002	GAM		02/28/08	03/03/08	CSS	Gamma Scan
				7773-002	PU		03/01/08	03/03/08	BW	Plutonium, Isotopic in Solids
				7773-002	SR		02/29/08	03/03/08	BW	Total Strontium in Solids
				7773-002	U		02/29/08	02/29/08	BW	Uranium, Isotopic in Solids
302134-03	Method Blank			7773-003	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
			SOLID	7773-003	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
		RC-030		7773-003	GAM		02/28/08	03/03/08	CSS	Gamma Scan
				7773-003	PU		03/01/08	03/03/08	BW	Plutonium, Isotopic in Solids
				7773-003	SR		02/29/08	03/03/08	BW	Total Strontium in Solids
				7773-003	U		02/29/08	02/29/08	BW	Uranium, Isotopic in Solids
302134-04	Duplicate (R802134-01)			7773-004	93A/93		03/03/08	03/03/08	BW	Gross Alpha in Solids
02/19/08	100-F-53		SOLID	7773-004	93B/93		03/03/08	03/03/08	BW	Gross Beta in Solids
02/21/08		RC-030		7773-004	GAM		02/29/08	03/03/08	CSS	Gamma Scan
				7773-004	PU		03/01/08	03/03/08	BW	Plutonium, Isotopic in Solids
				7773-004	SR		02/29/08	03/03/08	BW	Total Strontium in Solids
				7773-004	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 K1125

SDG 7773
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K1125

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
GAM	RC-030	Gamma Scan	GAMMA_GS	1			1	1	1	4
PU	RC-030	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	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				6			6	6	6	24

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 K1125

7773-003

Method Blank

METHOD BLANK

SDG	7773	Client/Case no	Hanford	SDG K1125
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R802134-03	Client sample id	Method Blank	
Dept sample id	7773-003	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	1.66	2.9	5.01	10.0	U	93A
Gross Beta	12587-47-2	-0.591	3.0	5.32	15.0	U	93B
Total Strontium	SR-RAD	0.003	0.14	0.296	1.00	U	SR
Uranium 233/234	U-233/234	0	0.044	0.167	1.00	U	U
Uranium 235	15117-96-1	0	0.053	0.202	1.00	U	U
Uranium 238	U-238	0	0.044	0.167	1.00	U	U
Plutonium 238	13981-16-3	0.055	0.11	0.265	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.028	0.055	0.212	1.00	U	PU
Potassium 40	13966-00-2	U		1.16		U	GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.047	0.100	U	GAM
Radium 226	13982-63-3	U		0.137	0.100	U	GAM
Radium 228	15262-20-1	U		0.194	0.200	U	GAM
Europium 152	14683-23-9	U		0.122	0.100	U	GAM
Europium 154	15585-10-1	U		0.113	0.100	U	GAM
Europium 155	14391-16-3	U		0.117	0.100	U	GAM
Thorium 228	14274-82-9	U		0.068		U	GAM
Thorium 232	TH-232	U		0.194		U	GAM
Uranium 235	15117-96-1	U		0.183		U	GAM
Uranium 238	U-238	U		4.97		U	GAM
Americium 241	14596-10-2	U		0.173		U	GAM

RemainSitesConfirmSamp- Other Solid

QC-BLANK #64855

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 K1125

7773-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7773
Contact Melissa C. Mannion

Client/Case no Hanford SDG K1125
Contract No. 630

Lab sample id R802134-02
Dept sample id 7773-002

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	114	17	6.51	10.0		93A	102	4.1	112	58-142	70-130
Gross Beta	93.8	7.6	6.31	15.0		93B	93.8	3.8	100	74-126	80-120
Total Strontium	9.95	0.30	0.142	1.00		SR	9.38	0.38	106	82-118	80-120
Uranium 233/234	17.8	1.8	0.850	1.00		U	18.6	0.74	96	83-117	80-120
Uranium 235	15.6	1.7	0.189	1.00		U	15.1	0.60	103	80-120	80-120
Uranium 238	18.3	1.8	0.815	1.00		U	20.2	0.81	91	84-116	80-120
Plutonium 238	22.1	2.1	0.284	1.00		PU	23.4	0.94	94	84-116	80-120
Plutonium 239/240	25.4	2.3	0.177	1.00		PU	26.4	1.1	96	84-116	80-120
Cobalt 60	2.06	0.084	0.045	0.050		GAM	1.85	0.074	111	73-127	80-120
Cesium 137	2.15	0.071	0.048	0.100		GAM	1.95	0.078	110	74-126	80-120

RemainSitesConfirmSamp- Other Solid

QC-LCS #64854

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 K1125

7773-004

J16994

DUPLICATE

SDG	7773			Client/Case no	Hanford SDG K1125
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R802134-04	Lab sample id	R802134-01	Client sample id	J16994
Dept sample id	7773-004	Dept sample id	7773-001	Location/Matrix	100-F-53 SOLID
		Received	02/21/08	Collected/Weight	02/19/08 14:00 145 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-030-066 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	3.10	3.6	5.34	10.0	U	93A	1.70	3.7	6.56	U	-		0.5
Gross Beta	-0.787	3.3	5.69	15.0	U	93B	-0.614	3.1	5.38	U	-		0.1
Total Strontium	-0.008	0.10	0.212	1.00	U	SR	-0.076	0.13	0.299	U	-		0.8
Uranium 233/234	0.475	0.23	0.214	1.00		U	0.265	0.16	0.156		57	114	1.5
Uranium 235	0	0.068	0.259	1.00	U	U	0.025	0.049	0.189	U	-		0.6
Uranium 238	0.307	0.17	0.214	1.00		U	0.183	0.12	0.156		51	128	1.2
Plutonium 238	0.064	0.13	0.204	1.00	U	PU	0.047	0.14	0.288	U	-		0.2
Plutonium 239/240	0	0.043	0.163	1.00	U	PU	0.023	0.047	0.179	U	-		0.7
Potassium 40	U		0.971		U	GAM	U		1.43	U	-		0.5
Cobalt 60	U		0.062	0.050	U	GAM	U		0.060	U	-		0
Cesium 137	U		0.037	0.100	U	GAM	U		0.063	U	-		0.7
Radium 226	U		0.143	0.100	U	GAM	U		0.128	U	-		0.2
Radium 228	U		0.163	0.200	U	GAM	U		0.261	U	-		0.6
Europium 152	U		0.105	0.100	U	GAM	U		0.161	U	-		0.6
Europium 154	U		0.095	0.100	U	GAM	U		0.163	U	-		0.7
Europium 155	U		0.099	0.100	U	GAM	U		0.143	U	-		0.5
Thorium 228	U		0.058		U	GAM	U		0.088	U	-		0.6
Thorium 232	U		0.163		U	GAM	U		0.261	U	-		0.6
Uranium 235	U		0.153		U	GAM	U		0.224	U	-		0.5
Uranium 238	U		4.08		U	GAM	U		11.0	U	-		1.2
Americium 241	U		0.143		U	GAM	U		0.218	U	-		0.6

RemainSitesConfirmSamp- Other Solid

QC-DUP#1 64856

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 K1125

7773-001 **J16994**

DATA SHEET

SDG	7773	Client/Case no	Hanford		SDG_K1125
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802134-01	Client sample id	J16994		
Dept sample id	7773-001	Location/Matrix	100-F-53		SOLID
Received	02/21/08	Collected/Weight	02/19/08 14:00	145 g	
% solids	100.0	Custody/SAF No	RC-030-066	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	1.70	3.7	6.56	10.0	U	93A
Gross Beta	12587-47-2	-0.614	3.1	5.38	15.0	U	93B
Total Strontium	SR-RAD	-0.076	0.13	0.299	1.00	U	SR
Uranium 233/234	U-233/234	0.265	0.16	0.156	1.00		U
Uranium 235	15117-96-1	0.025	0.049	0.189	1.00	U	U
Uranium 238	U-238	0.183	0.12	0.156	1.00		U
Plutonium 238	13981-16-3	0.047	0.14	0.288	1.00	U	PU
Plutonium 239/240	PU-239/240	0.023	0.047	0.179	1.00	U	PU
Potassium 40	13966-00-2	U		1.43		U	GAM
Cobalt 60	10198-40-0	U		0.060	0.050	U	GAM
Cesium 137	10045-97-3	U		0.063	0.100	U	GAM
Radium 226	13982-63-3	U		0.128	0.100	U	GAM
Radium 228	15262-20-1	U		0.261	0.200	U	GAM
Europium 152	14683-23-9	U		0.161	0.100	U	GAM
Europium 154	15585-10-1	U		0.163	0.100	U	GAM
Europium 155	14391-16-3	U		0.143	0.100	U	GAM
Thorium 228	14274-82-9	U		0.088		U	GAM
Thorium 232	TH-232	U		0.261		U	GAM
Uranium 235	15117-96-1	U		0.224		U	GAM
Uranium 238	U-238	U		11.0		U	GAM
Americium 241	14596-10-2	U		0.218		U	GAM

RemainSitesConfirmSamp- Other Solid

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 K1125

Test PU Matrix SOLID
SDG 7773
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1125

:ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
reparation batch 6148-013								
802134-01			7773-001	J16994	U		U	
802134-02			7773-002	Lab Control Sample	ok		ok	
802134-03			7773-003	Method Blank	U		U	
802134-04			7773-004	Duplicate (R802134-01)	-	U	-	U
ominal values and limits from method				RDLs (pCi/g)	1.00		1.00	
emainSitesConfirmSamp- Other Solid								

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6148-013			2σ prep error 5.0 % Reference Lab Notebook #6148, pg. 13													
302134-01			J16994	0.288	0.500			56		180			11	03/01/08	03/01	SS-061
302134-02			Lab Control Sample	0.284	0.500			64		180				03/01/08	03/01	SS-062
302134-03			Method Blank	0.265	0.500			59		181				03/01/08	03/01	SS-063
302134-04			Duplicate (R802134-01)	0.204	0.500			59		181			11	03/01/08	03/01	SS-064
ominal values and limits from method				1.00	0.500			20-105		100	100		180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.260 ± 0.078
YIELD 60 ± 7

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 K1125

Test U Matrix SOLID
SDG 7773
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1125

RESULTS

AB AMPLE 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
reparation batch 6148-013											
802134-01			7773-001	J16994	0.265	U	0.183	145	129	14	28
802134-02			7773-002	Lab Control Sample	ok	ok	ok				
802134-03			7773-003	Method Blank	U	U	U				
802134-04			7773-004	Duplicate (R802134-01)	ok	- U	ok	155	114	0	22
ominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
emainSitesConfirmSamp- Other Solid								Averages 150		7	

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-013			2σ prep error 5.0 %	Reference Lab Notebook #6148, pg. 13												
302134-01			J16994	0.189	0.500			87		125			10	02/29/08	02/29	SS-055
302134-02			Lab Control Sample	0.850	0.500			91		125				02/29/08	02/29	SS-056
302134-03			Method Blank	0.202	0.500			80		126				02/29/08	02/29	SS-058
302134-04			Duplicate (R802134-01)	0.259	0.500			77		117			10	02/29/08	02/29	SS-059
ominal 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 0.375 ± 0.636
YIELD 84 ± 13

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 K1125

Test SR Matrix SOLID
SDG 7773
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K1125

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
:eparation batch 6148-013					
302134-01			7773-001	J16994	U
302134-02			7773-002	Lab Control Sample	ok
302134-03			7773-003	Method Blank	U
302134-04			7773-004	Duplicate (R802134-01)	- U
›minal values and limits from method				RDLs (pCi/g)	1.00
ɜmainSitesConfirmSamp- Other Solid					

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
:eparation batch 6148-013 2σ prep error 10.0 % Reference Lab Notebook #6148, pg. 13																
302134-01			J16994	0.299	1.00			93		100			10	02/29/08	02/29	GRB-222
302134-02			Lab Control Sample	0.142	1.00			93		400				02/29/08	02/29	GRB-226
302134-03			Method Blank	0.296	1.00			93		100				02/29/08	02/29	GRB-224
302134-04			Duplicate (R802134-01)	0.212	1.00			93		100			10	02/29/08	02/29	GRB-207
›minal values and limits from method				1.00	1.00			30-105		100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.237 ± 0.150
YIELD 93 ± 0

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 K1125

Test 93A Matrix SOLID
SDG 7773
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1125

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
:eparation batch 6148-013						
302134-01	93		7773-001	J16994	U	
302134-02	93		7773-002	Lab Control Sample	ok	
302134-03	93		7773-003	Method Blank	U	
302134-04	93		7773-004	Duplicate (R802134-01)	-	U

ominal values and limits from method RDLs (pCi/g) 10.0
emainSitesConfirmSamp- Other Solid

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
:eparation batch 6148-013 2σ prep error 20.0 % Reference Lab Notebook #6148, pg. 13																
.02134-01	93		J16994	6.56	0.100			77		100			13	02/28/08	03/03	GRB-109
02134-02	93		Lab Control Sample	6.51	0.100			62		100				02/28/08	03/03	GRB-110
02134-03	93		Method Blank	5.01	0.100			62		100				02/28/08	03/03	GRB-111
02134-04	93		Duplicate (R802134-01)	5.34	0.100			76		100			13	02/28/08	03/03	GRB-112
ominal 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 5.86 ± 1.59
RESIDUE 69 ± 17

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 K1125

Test 93B Matrix SOLID
SDG 7773
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1125

RESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
reparation batch 6148-013						
802134-01	93		7773-001	J16994	U	
802134-02	93		7773-002	Lab Control Sample	ok	
802134-03	93		7773-003	Method Blank	U	
802134-04	93		7773-004	Duplicate (R802134-01)	-	U

ominal values and limits from method RDLs (pCi/g) 15.0
emainSitesConfirmSamp- Other Solid

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-013			2σ prep error 15.0 % Reference Lab Notebook #6148, pg. 13													
802134-01	93		J16994	5.38	0.100			77		100			13	02/28/08	03/03	GRB-109
802134-02	93		Lab Control Sample	6.31	0.100			62		100				02/28/08	03/03	GRB-110
802134-03	93		Method Blank	5.32	0.100			62		100				02/28/08	03/03	GRB-111
802134-04	93		Duplicate (R802134-01)	5.69	0.100			76		100			13	02/28/08	03/03	GRB-112
ominal values and limits from method				15.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 5.68 ± 0.907
RESIDUE 69 ± 17

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

SAMPLE DELIVERY GROUP K1125

Test GAM Matrix SOLID
SDG 7773
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1125

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
reparation batch 6148-013								
302134-01			7773-001	J16994	U		U	
302134-02			7773-002	Lab Control Sample	ok		ok	
302134-03			7773-003	Method Blank	U		U	
302134-04			7773-004	Duplicate (R802134-01)	-	U	-	U
ominal values and limits from method				RDLs (pCi/g)	0.050		0.100	
emainSitesConfirmSamp- Other Solid								

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6148-013			2σ prep error 15.0 % Reference Lab Notebook #6148, pg. 13													
802134-01			J16994	14.9	122					406			10	02/26/08	02/29	JR,08,00
802134-02			Lab Control Sample	0.045	121					805				02/26/08	02/28	JR,07,00
802134-03			Method Blank	10.9	121					805				02/26/08	02/28	JR,08,00
802134-04			Duplicate (R802134-01)	9.22	122					1153			10	02/26/08	02/29	JR,08,00
ominal values and limits from method				0.050	121					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 8.77 ± 12.6
YIELD ____ ± ____

Lab id EBRLNE
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Form DVD-LMS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1125

SDG	7773
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. 630
Case no	SDG_K1125

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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

SDG 7773
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1125

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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Contract No. 630
Case no SDG K1125

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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Case no SDG K1125

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

Client Hanford
Contract No. 630
Case no SDG K1125

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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Case no SDG K1125

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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Contact Melissa C. Mannion

REPORT GUIDE

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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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GUIDE, cont.

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MATRIX SPIKE

for the recovery.

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

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

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REPORT GUIDE

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METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

SDG 7773
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K1125

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.

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-066	Page 1 of 1

Collector: Welch-Koelling	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 9C	Data Turnaround: 15 Days
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: ~~100-F-49~~ 100-F-53 K1125 (7773)		SAF No.: RC-030		
Ice Chest No.: ERC-02-002	Field Logbook No.: EL-1601-2	COA C00F53A000 ~~C00F49A000~~ ~~BH 2/19/08~~ BH 2/19/08	Method of Shipment: ~~DHL~~ Fed Ex mo 2/20/08		
Shipped To: EBERLINE SERVICES / ~~LIONVILLE~~	Offsite Property No.: A080171		Bill of Lading/Air Bill No.: see OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C						
Type of Container	G/P	G/P	aG	aG	G						
No. of Container(s)	1	1	1	1	1						
Volume	500mL	60mL	60mL	60mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	PCBs - 8082: Pesticides - 8081: Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1						

Sample No.	Matrix *	Sample Date	Sample Time										
J16994	OTHER SOLID	2/19/08	1400	X									
~~J16995~~	~~OTHER SOLID~~												
~~J16996~~	~~OTHER SOLID~~												
~~J16997~~	~~OTHER SOLID~~												
~~J16998~~	~~OTHER SOLID~~												

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BH 2/19/08 EBERLINE T 2-19-08	1431	BH Hudson BHudson	2/19/08 1431
BHUDSON BHudson	2/19/08 1530	1060 #3A	2/19/08 1530
1060/3A	2/20/08 1000	MZK MStankovich	2/20/08 1000
WCH MStankovich	2/20/08 1500	Fed Ex	
Fed Ex		[illegible]	2/21/08 10:00

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137. Cobalt-60. Europium-152. Europium-154. Europium-155}; Gamma Spec - Add-on ~~{Americium-241}~~; ~~Americium-241~~ Gross Alpha & Gross Beta ~~Nickel-63~~; Isotopic Plutonium Strontium-89,90 -- Total Sr ~~Technetium-99~~; Isotopic Uranium {Uranium-233/234. Uranium-235. Uranium-238}; ~~Total Uranium~~ BH 2/19/08

(2) ICP Metals - 6010A (SW-846) {Aluminum. Antimony, Arsenic, Barium. Beryllium. Boron. Cadmium. Calcium, Chromium. Cobalt. Copper, Iron. Lead. Magnesium. Manganese. Molybdenum. Nickel. Potassium, Selenium. Silicon. Silver. Sodium. Vanadium. Zinc}: Mercury - 7471 - (CV)

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: W.C. HANFORD City RICHLAND State WA

Date/Time received 2/21/08 10:00 CoC No. RC-030-066

Container I.D. No. ERC-02-002 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: 2/21/08 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
J16994	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

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

LIONVILLE LABORATORY INC.

21 March 2008

RECEIVED MAR 2008

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0802L635
SDG #	K1125
SAF #	RC-030
Date Received	2/21/08
# Samples	1
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1125

RECEIVED
MAR 2008

DATE RECEIVED: 02/21/08

LVL LOT # 0802L635

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16994	001	SO	08LE0107	02/19/08	02/28/08	03/19/08
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 #: 0802L635
SDG/SAF # K1125 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-21-2008

SEMIVOLATILE

One (1) solid sample was collected on 02-19-2008.

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 Client Specified Semivolatile target compounds on 03-15,16,19-2008.

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. All surrogate recoveries were within acceptance criteria.
5. Twenty-eight (28) of one hundred and twenty-eight (128) blank spike recoveries were outside acceptance criteria.
6. The method blank was below the reporting limit for all target compounds.
7. All initial calibrations associated with data set were within acceptance.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. Internal standard area and retention time criteria were met.

r:\group\data\2008\bna\tnu\0802-635ksol1.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.

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

3/20/08
Date

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08M5039

Initiator: Shawn Taylor
Date: 3-19-08
Client: JNU B0030 K1125

Batch: 08V2L635
Samples: BS, BSD
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Solid
Prep Batch: 08E60107

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)

low spike recoveries in the BS & BSD

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: [signature] 3/20/08
✓ 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: [signature] 3-20-08 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

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

	Cust ID:	J16994	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	49 %	59 %	49 %	42 %
	2-Fluorobiphenyl	70 %	62 %	63 %	55 %
	Terphenyl-d14	71 %	74 %	70 %	60 %
	Phenol-d5	45 %	57 %	60 %	50 %
	2-Fluorophenol	47 %	59 %	61 %	50 %
	2,4,6-Tribromophenol	42 %	41 %	43 %	31 %
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		35 J	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.

000000008

Cust ID:	J16994		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	27	J	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	46	J	330	U	66	%	76	%
Pyrene	32	J	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	23		330	U	62	%	66	%
bis(2-Ethylhexyl)phthalate	21	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.

J16994

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

Client: TNUHANFORD RC-030 K1125

Matrix: (soil/water) SOLID

Lab Sample ID: 0802L635-001

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

Lab File ID: N031813

Level: (low/med) LOW

Date Received: 02/21/08

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

Date Extracted: 02/28/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/19/08

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	4.885	40000	J
2.	UNKNOWN	5.835	80000	J
3.	UNKNOWN	6.698	30000	J
4.	ALDOL CONDENSATE	7.369	2000	JA
5.	UNKNOWN	24.348	2000	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 K1125

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

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802L635

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A Limited Volume

VLI

000000012

nt TNU Hanford RC-030
Final Proj. Sampling Date
ect# 11343-606-001-9999-00
ject Contact/Phone#
nville Laboratory Project Manager Odetta Johnson
SW8446 Del STO TAT 15 Days
te Rec'd 2-21-08 Date Due 3-7-08

Refrigerator #									2							
#/Type Container	Liquid		(3)	(2)		(4)			(1)	*						
	Solid								1gl							
Volume	Solid								60							
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	Pest			Metal + Hg	CN						
			0625H	OPCB		0608H			Met(1)							

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	001	J16994	✓	✓	SO	2.19.08	1400		X	X		X			X					

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

Special Instructions:
* → 1. Per client/Priority of Analysis: ICP Metals + Hg (1), PCB (2),
2. (3) SVOA, Pesticides (4). if sufficient material.
3.
4. Limited Volume
5.
6.

Relinquished by	Received by	Date	Time
FedEx	[illegible]	2.21.08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-066	Page 1 of 1

Collector: Welch-Koelling	Company Contact: Matt Perrott — Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 9C — Data Turnaround: 15 Days
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: ~~100-F-19~~ 100-F-53	SAF No.: RC-030	
Ice Chest No.: ERC-09-046	Field Logbook No.: EL-1601-2 — COA: COCF53A000 ~~C00F49A000~~ BH 2/19/08	Method of Shipment: FED EX	
Shipped To: ~~EDERLINE SERVICES~~/LIONVILLE	Offsite Property No.: A080187	Bill of Lading/Air Bill No.: see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS												
Preservation	None	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	G/P	G/P	aG	aG	G							
No. of Container(s)	1	1	1	1	1							
Volume	300mL	60mL	60mL	60mL	250mL							
	See item (1) in Special Instructions.	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1							
Sample No.	Matrix *	Sample Date	Sample Time									
J16994	OTHER SOLID	2-19-08	1400		X							
~~J16995~~	~~OTHER SOLID~~											
~~J16996~~	~~OTHER SOLID~~											
~~J16997~~	~~OTHER SOLID~~											
~~J16998~~	~~OTHER SOLID~~											

BH 2/19/08

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time	
Tony Starrington 2-19-08 1431	Bill Hudson 2/19/08 1431	
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time	
BHudson 2/19/08 1530	1060 #3A 2/19/08 1530	
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time	
1060/3A 2/20/08 0930	M Stankovich 2/20/08 0930	
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time	
WCH M Stankovich 2/20/08 1900	FED EX	
Relinquished By/Removed From — Date/Time	Received By/Stored In — Date/Time	
FED EX 2-21-08 0940	2-21-08 0940	
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}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(2) Priority of analysis: ICP metals + Hg, PCB, SVOA, pesticides. if sufficient material

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

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Project/SAF/SDW/Release #: RC.030

Date: 2-21-08

LvLI Batch #: 08021635

Sample Custodian: D Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7920 0873 2565
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 2.3	°C	Cooler # ERC.99.046
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	Limited Volume
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.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1125

RECEIVED MAR 2008

DATE RECEIVED: 02/21/08

LVL LOT# :0802L635

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16994	001	SO	08LE0106	02/19/08	02/27/08	03/07/08
J16994	001 MS	SO	08LE0106	02/19/08	02/27/08	03/03/08
J16994	001 MSD	SO	08LE0106	02/19/08	02/27/08	03/03/08

LAB QC:

PBLKNJ	MB1	S	08LE0106	N/A	02/27/08	03/03/08
PBLKNJ	MB1 BS	S	08LE0106	N/A	02/27/08	03/03/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L635
SDG/SAF # K1125 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-21-2008

CHLORINATED PESTICIDES

One (1) solid sample was collected on 02-21-2008.

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 03-03,07-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

1. The sample was extracted and analyzed within required holding time
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were with acceptance criteria.
5. All matrix spike recoveries were outside acceptance criteria.
6. Due to the matrix, samples J16994, J16994 MS, J16994 MSD required a 4-fold dilution.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\2008\pest\tnu\0802-635soil.pest.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.

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

LIONVILLE LABORATORY INC.

9. The results for solid samples were reported on an 'as-received basis' as required by the project.

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.

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/13/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 03/07/08 13:34

RFW Batch Number: 0802L635 Client: TNUHANFORD RC-030 K1125 Work Order: 11343606001 Page: 1

000000005

Sample Information																	
	Cust ID:	J16994		J16994		J16994		PBLKNJ		PBLKNJ BS							
	RFW#:	001		001 MS		001 MSD		08LE0106-MB1		08LE0106-MB1							
	Matrix:	SOLID		SOLID		SOLID		SOIL		SOIL							
	D.F.:	1.00		4.00		4.00		1.00		1.00							
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG							
Surrogate:	Tetrachloro-m-xylene	81	%	102	%	102	%	87	%	91	%						
	Decachlorobiphenyl	81	%	96	%	96	%	80	%	85	%						
			fl		fl		fl		fl		fl		fl				
Alpha-BHC		5.0	U	98	%	102	%	0.33	U	106	%						
gamma-BHC (Lindane)		5.0	U	103	%	107	%	0.33	U	106	%						
Beta-BHC		5.0	U	109	%	113	%	0.33	U	102	%						
Heptachlor		5.0	U	108	%	113	%	0.33	U	103	%						
Delta-BHC		5.0	U	89	%	93	%	0.33	U	102	%						
Aldrin		5.0	U	99	%	103	%	0.33	U	103	%						
Heptachlor epoxide		5.0	U	107	%	110	%	0.33	U	104	%						
gamma-Chlordane		5.0	U	106	%	109	%	0.33	U	106	%						
Endosulfan I		5.0	U	106	%	109	%	0.33	U	106	%						
alpha-Chlordane		5.0	U	107	%	110	%	0.33	U	104	%						
4,4'-DDE		5.0	U	109	%	110	%	0.33	U	112	%						
Dieldrin		5.0	U	106	%	108	%	0.33	U	108	%						
Endrin		5.0	U	109	%	112	%	0.33	U	110	%						
4,4'-DDD		5.0	U	106	%	109	%	0.33	U	109	%						
Endosulfan II		5.0	U	108	%	110	%	0.33	U	106	%						
4,4'-DDT		5.0	U	100	%	104	%	0.33	U	115	%						
Endrin aldehyde		5.0	U	92	%	100	%	0.33	U	79	%						
Endosulfan sulfate		5.0	U	106	%	110	%	0.33	U	104	%						
Methoxychlor		5.0	U	115	%	120	%	0.33	U	114	%						
Endrin ketone		5.0	U	109	%	112	%	0.33	U	108	%						
Toxaphene		50	U	NS		NS		3.3	U	NS							

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: **** 8OX3540

Test: O608 Cleanup Date: Analyst: Client: TNUHANFORD RC-030 K1125

LIMS Report Date: 03/07/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

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 H	J16994		2.0	1.0		10		1.0	N	0.0	5000.0
001 HS	J16994		2.0	1.0	1.0	10		1.0	N	0.0	5000.0
001 HT	J16994		2.0	1.0	1.0	10		1.0	N	0.0	5000.0
08LE0106-MB1 H	PBLKNJ		30.0	1.0		10		1.0	N	100.00	333.3
08LE0106-MB1 HS	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 FULL LIST PEST SPIKE 89915509

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	3/7/08 0945	SZ	3/7/08 9:45	Revision

For 635-001

000000006

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 02/27/08 Extraction Batch No: 08LE0106 Analyst: MF Method: ****SOX3540

Test: O608 Cleanup Date: Analyst: Client: TNUHANFORD RC-030 K1125

LIMS Report Date: 02/29/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

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 H	J16994		10.0	1.0		10		1.0	N		1000.0
001 HS	J16994		10.0	1.0	1.0	10		1.0	N		1000.0
001 HT	J16994		10.0	1.0	1.0	10		1.0	N		1000.0
08LE0106-MB1 H	PBLKNJ		30.0	1.0		10		1.0	N	100.00	333.3
08LE0106-MB1 HS	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 FULL LIST PEST SPIKE 89915509

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
dll	[illegible]	2/29/08 1450	SZ	2/29/08 14:50	GC

000000007

nville Laboratory Use Only

802L635

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A Limited Volume

nt TNU Hanford RC-030

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

ville Laboratory Project Manager Ollette Johnson

SW846 Del STD TAT 15 Days

e Rec'd 2-21-08 Date Due 3-7-08

Refrigerator #									2						
#/Type Container	Liquid		(3)	(2)		(4)			(1) *						
	Solid								1gl						
Volume	Solid		1						60						
Preservatives															
ANALYSES REQUESTED		ORGANIC							INORG						
		VOA	BNA	Pest/PCB	Herb	Pest			Metal + Hg	CN					
		Lionville Laboratory Use Only													
			0625H	OPCB		0608H			Metl						

RIX ES:	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	J116994	✓	✓	SO	2-19-08	1400		X	X		X		X					

ecial Instructions:

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

Special Instructions:

* → 1. Per client/Priority of Analysis: ICP Metals + Hg (1), PCB (6),
2. (3) SVOA, Pesticides (4). If sufficient material.
3.
4. Limited Volume
5.
6.

Relinquished by	Received by	Date	Time
e) Ex	[signature]	2-21-08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000008

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-066	Page 1 of 1
Collector: Welch-Koelling	Company Contact: Matt Perrott; Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 9C; Data Turnaround: 15 Days
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: ~~100-F-19~~ 100-F-53	SAF No.: RC-030	
Ice Chest No.: FRC-09-046	Field Logbook No.: EL-1601-2; COA: ~~C00F49A000~~ C00F53A000 BH 2/19/08	Method of Shipment: FedEx	
Shipped To: ~~EBERLINE SERVICES~~/LIONVILLE	Offsite Property No.: A080187	Bill of Lading/Air Bill No.: see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C						
Type of Container	G/P	G/P	aG	aG	G						
No. of Container(s)	1	1	1	1	1						
Volume	300mL	60mL	60mL	60mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1						
Sample No. / Matrix * / Sample Date / Sample Time											
J16994 / OTHER SOLID / 2-19-08 / 1400		X									
~~J16995 / OTHER SOLID~~											
~~J16996 / OTHER SOLID~~											
~~J16997 / OTHER SOLID~~											
~~J16998 / OTHER SOLID~~											

BH 2/19/08

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Tony Bolerington	2-19-08 1431	Bill Hudson	2/19/08 1431
B Hudson	2/19/08 1530	1060 #3A	2/19/08 1530
1060/3A	2/20/08 0930	M Stankovich	2/20/08 0930
M Stankovich	2/20/08 1500	FedEx	
FedEx	2-21-08 0940		2-21-08 0940
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}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(2) Priority of analysis: ICP metals + Hg, PCB, SVOA, pesticides. if sufficient material

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

60000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

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

Date: 2.21.08

LvLI Batch #: 08021635

Sample Custodian: D Yanich

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7920 0873 2565
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 2.3	°C	Cooler # ERC.99.046
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	Limited Volume
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 _____	

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SR-002-B.doc

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Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1125

RECEIVED MAR 2008

DATE RECEIVED: 02/21/08 LVL LOT # 0802L635

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16994	001	SO	08LE0106	02/19/08	02/27/08	03/03/08
J16994	001 MS	SO	08LE0106	02/19/08	02/27/08	03/03/08
J16994	001 MSD	SO	08LE0106	02/19/08	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 #: 0802L635
SDG/SAF # K1125 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-21-2008

PCB

One (1) solid sample was collected on 02-19-2008.

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\0802-635ksol1.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.

Judy Stone

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 11:45

RFW Batch Number: **0802L635** Client: **TNUHANFORD RC-030 K1125** Work Order: 11343606001 Page: 1

	Cust ID:	J16994	J16994	J16994	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	97 %	97 %	98 %	96 %	112 %
	Decachlorobiphenyl	98 %	93 %	96 %	94 %	110 %
Aroclor-1016		200 U	83 %	84 %	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	82 %	84 %	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

000000006

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
—	—	—	LK	3-5-08	Revision

onville Laboratory Use Only

1802L635

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A Limited Volume

VLI

000000007

ant TNU Hanford RC-030

. Final Proj. Sampling Date

ject# 11543-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager Juliette Johnson

SW846 Del STD TAT 15 Days

te Rec'd 2-21-08 Date Due 3-7-08

Refrigerator #									2							
#/Type Container	Liquid / Solid		(3)	(2)		(4)			(1)	*						
									1gl							
Volume	Solid								60							
Preservatives																
ANALYSES REQUESTED →			ORGANIC						INORG							
			VOA	BNA	Pest/PCB	Herb	Pest		Metal + Hg	CN						
				Lionville Laboratory Use Only												
				0625H	OPCB		0608H		Met(1)							

TRIX DES	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J16994	✓	✓	SO	2.19.08	1400		X	X		X			X				

Special Instructions:

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

Special Instructions:

* → 1. Per client/Priority of Analysis: ICP Metals + Hg, PCB, (1) (2)

2. (3) SVOA, Pesticides (4) if sufficient material.

3.

4. Limited Volume

5.

6.

Relinquished by	Received by	Date	Time
FedEx	[signature]	2.21.08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-030-066

Collector: Welch-Koelling	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: ~~100-F-49~~ 100-F-53		SAF No.: RC-030
Ice Chest No.: ERC-09-046	Field Logbook No.: EL-1601-2	COA: COCF53A000 ~~C00F49A000~~ BH 2/19/08	Method of Shipment: FED EX
Shipped To: ~~EBERLINE SERVICES~~/LIONVILLE	Offsite Property No.: A080187		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C						
Type of Container	G/P	G/P	aG	aG	G						
No. of Container(s)	1	1	1	1	1						
Volume	500mL	60mL	60mL	60mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1						

Sample No.	Matrix *	Sample Date	Sample Time									
J16994	OTHER SOLID	2-19-08	1400		X							
~~J16995~~	~~OTHER SOLID~~											
~~J16996~~	~~OTHER SOLID~~											
~~J16997~~	~~OTHER SOLID~~											
~~J16998~~	~~OTHER SOLID~~											

BH 2/19/08

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	2-19-08 1431	BILL HUDSON	2/19/08 1431
BHUDSON	2/19/08 1530	1060#3A	2/19/08 1530
1060/3A	2/20/08 0930	MSTankovich	2/20/08 0930
MSTankovich	2/20/08 1900	FED EX	
FED EX	2-21-08 0940	[illegible]	2/21/08 0940

Sign/Print Names

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(2) Priority of analysis: ICP metals + Hg, PCB, SVOA, pesticides. if sufficient material

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
	Disposed By		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		

WCH-EE-011

0000000008

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

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

Date: 2-21-08

LvLI Batch #: 08021635

Sample Custodian: D Yynch

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7920 0873 2565
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 2.3	°C	Cooler # ERC-99-046
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	Limited Volume
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.

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1125

RECEIVED MAR 2008

DATE RECEIVED: 02/21/08 LVL LOT # :0802L635

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16994						
SILVER, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
SILVER, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
SILVER, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
ALUMINUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/05/08
ALUMINUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/05/08
ALUMINUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/05/08
ARSENIC, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
ARSENIC, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
ARSENIC, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
BORON, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
BORON, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
BORON, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
BARIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
BARIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
BARIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
BERYLLIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
BERYLLIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
BERYLLIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
CALCIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
CALCIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
CALCIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
CADMIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/05/08
CADMIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/05/08
CADMIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/05/08
COBALT, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
COBALT, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
COBALT, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
CHROMIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
CHROMIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
CHROMIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
COPPER, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
COPPER, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
COPPER, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
IRON, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/05/08
IRON, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1125

DATE RECEIVED: 02/21/08 LVL LOT # :0802L635

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/05/08
MERCURY, TOTAL	001	SO	08C0037	02/19/08	02/25/08	02/26/08
MERCURY, TOTAL	001 REP	SO	08C0037	02/19/08	02/25/08	02/26/08
MERCURY, TOTAL	001 MS	SO	08C0037	02/19/08	02/25/08	02/26/08
POTASSIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
POTASSIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
POTASSIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
MAGNESIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
MAGNESIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
MAGNESIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
MANGANESE, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
MANGANESE, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
MANGANESE, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
MOLYBDENUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
MOLYBDENUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
MOLYBDENUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
SODIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
SODIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
SODIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
NICKEL, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
NICKEL, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
NICKEL, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
LEAD, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
LEAD, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
LEAD, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
ANTIMONY, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
ANTIMONY, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
ANTIMONY, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
SELENIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
SELENIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
SELENIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
SILICON, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
SILICON, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
SILICON, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
VANADIUM, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/04/08
VANADIUM, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/04/08
VANADIUM, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/04/08
ZINC, TOTAL	001	SO	08L0089	02/19/08	02/29/08	03/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1125

DATE RECEIVED: 02/21/08

LVL LOT # :0802L635

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	SO	08L0089	02/19/08	02/29/08	03/05/08
ZINC, TOTAL	001 MS	SO	08L0089	02/19/08	02/29/08	03/05/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
SILVER, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
ALUMINUM LABORTORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
ALUMINUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
ARSENIC LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
ARSENIC, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
BORON LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
BORON, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
BARIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
BARIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
BERYLLIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
CALCIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
CALCIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
CADMIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
CADMIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
COBALT LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
COBALT, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
CHROMIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
CHROMIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
COPPER LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
COPPER, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
IRON LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
IRON, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
MERCURY LABORATORY	LC1 BS	S	08C0037	N/A	02/25/08	02/26/08
MERCURY, TOTAL	MB1	S	08C0037	N/A	02/25/08	02/26/08
POTASSIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
POTASSIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
MAGNESIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
MANGANESE LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
MANGANESE, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1125

DATE RECEIVED: 02/21/08

LVL LOT # :0802L635

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
SODIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
SODIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
NICKEL LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
NICKEL, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
LEAD LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
LEAD, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
ANTIMONY LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
ANTIMONY, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
SELENIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
SELENIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
SILICON LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
SILICON, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
VANADIUM LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
VANADIUM, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08
ZINC LABORATORY	LC1 BS	S	08L0089	N/A	02/29/08	03/03/08
ZINC, TOTAL	MB1	S	08L0089	N/A	02/29/08	03/03/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-030
LVL#: 0802L635
SDG/SAF#: K1125/RC-030

W.O.#: 11343-606-001-9999-00
Date Received: 02-21-08

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 3-fold dilution for ICP metals due to sample matrix. The sample was rerun with a 12-fold dilution for Aluminum, Cadmium, Iron, and Zinc due to sample matrix (high concentration of Iron).

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. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

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 15 pages.

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

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 8.1%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

9. The matrix spike (MS) recoveries for 5 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
J16994	Calcium	66,000	104.6
	Iron	504,000	71.8
	Manganese	3,000	89.1
	Selenium	300	94.4
	Silicon	6,300	93.5

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.

3/11/08
Date

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 08021635

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X 6010B		__200.7				__99
Antimony	X 6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X 6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	X 6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X 6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X 6010B		__200.7				__99
Chromium	X 6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X 6010B		__200.7				__99
Copper	X 6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X 6010B		__200.7				__99
Lead	X 6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X 6010B		__200.7				__99
Manganese	X 6010B		__200.7				__99
Mercury	__7470A [3]	X 7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X 6010B		__200.7				__99
Nickel	X 6010B		__200.7				__99
Potassium	X 6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X 6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X 6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X 6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X 6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X 6010B		__200.7				__99
Zinc	X 6010B		__200.7				__99
Zirconium	__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 K1125

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

LVL LOT #: 0802L635

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16994	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	112	MG/KG	46.1	12.0
		Arsenic, Total	16.1	MG/KG	1.4	3.0
		Boron, Total	3.9	MG/KG	1.4	3.0
		Barium, Total	7.6	MG/KG	0.29	3.0
		Beryllium, Total	0.14 u	MG/KG	0.14	3.0
		Calcium, Total	2680	MG/KG	11.5	3.0
		Cadmium, Total	0.58 u	MG/KG	0.58	12.0
		Cobalt, Total	2.4	MG/KG	0.58	3.0
		Chromium, Total	5.8	MG/KG	0.58	3.0
		Copper, Total	7.2	MG/KG	0.58	3.0
		Iron, Total	437000	MG/KG	51.9	12.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	27.3	MG/KG	11.5	3.0
		Magnesium, Total	81.8	MG/KG	7.2	3.0
		Manganese, Total	1680	MG/KG	0.12	3.0
		Molybdenum, Total	3.0	MG/KG	0.86	3.0
		Sodium, Total	27.0	MG/KG	5.8	3.0
		Nickel, Total	7.3	MG/KG	0.58	3.0
		Lead, Total	2.0	MG/KG	0.86	3.0
		Antimony, Total	0.89	MG/KG	0.86	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	1020	MG/KG	11.5	3.0
		Vanadium, Total	5.9	MG/KG	0.40	3.0
		Zinc, Total	6.9 u	MG/KG	6.9	12.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/10/08

CLIENT: TNUHANFORD RC-030 K1125

LVL LOT #: 0802L635

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0089-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	13.7	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	4.5 u	MG/KG	4.5	1.0
		Potassium, Total	4.0 u	MG/KG	4.0	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.10	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	10.4	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		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	08C0037-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 K1125

LVL LOT #: 0802L635

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16994	Silver, Total	4.1	0.29u	4.9	83.7	3.0
		Aluminum, Total	284	112	194	89.0	12.0
		Arsenic, Total	179	16.1	194	83.9	3.0
		Boron, Total	93.4	3.9	97.1	92.2	3.0
		Barium, Total	186	7.6	194	92.1	3.0
		Beryllium, Total	4.5	0.14u	4.9	91.8	3.0
		Calcium, Total	6880	2680	2430	173.1	3.0
		Cadmium, Total	4.3	0.58u	4.9	87.8	12.0
		Cobalt, Total	48.4	2.4	48.6	94.7	3.0
		Chromium, Total	28.2	5.8	19.4	115.5	3.0
		Copper, Total	35.9	7.2	24.3	118.1	3.0
		Iron, Total	325000	437000	97.1	10000. *	12.0
		Mercury, Total	0.18	0.01u	0.16	108.7	1.0
		Potassium, Total	2260	27.3	2430	91.9	3.0
		Magnesium, Total	2370	81.8	2430	94.2	3.0
		Manganese, Total	1960	1680	48.6	594.0*	3.0
		Molybdenum, Total	87.8	3.0	97.1	87.3	3.0
		Sodium, Total	2100	27.0	2430	85.3	3.0
		Nickel, Total	55.5	7.3	48.6	99.2	3.0
		Lead, Total	46.1	2.0	48.6	90.7	3.0
		Antimony, Total	42.0	0.89	48.6	84.6	3.0
		Selenium, Total	92.3	1.7 u	194	47.5	3.0
		Silicon, Total	942	1020	97.1	-77. *	3.0
		Vanadium, Total	52.6	5.9	48.6	96.1	3.0
		Zinc, Total	44.1	6.9 u	48.6	90.7	12.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/10/08

CLIENT: TNUHANFORD RC-030 K1125

LVL LOT #: 0802L635

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16994	Silver, Total	0.29u	0.29u	NC	3.0
		Aluminum, Total	112	105	5.6	12.0
		Arsenic, Total	16.1	14.1	13.2	3.0
		Boron, Total	3.9	4.4	12.0	3.0
		Barium, Total	7.6	8.2	7.6	3.0
		Beryllium, Total	0.14u	0.14u	NC	3.0
		Calcium, Total	2680	2760	3.1	3.0
		Cadmium, Total	0.58u	0.57u	NC	12.0
		Cobalt, Total	2.4	3.8	45.2	3.0
		Chromium, Total	5.8	10.3	55.9	3.0
		Copper, Total	7.2	13.1	58.1	3.0
		Iron, Total	437000	412000	5.9	12.0
		Mercury, Total	0.01u	0.01u	NC	1.0
		Potassium, Total	27.3	26.9	1.5	3.0
		Magnesium, Total	81.8	92.8	12.6	3.0
		Manganese, Total	1680	1580	6.1	3.0
		Molybdenum, Total	3.0	2.6	14.3	3.0
		Sodium, Total	27.0	24.6	9.3	3.0
		Nickel, Total	7.3	9.4	25.1	3.0
		Lead, Total	2.0	5.3	90.4	3.0
		Antimony, Total	0.89	0.86u	~~NC~~	3.0
		Selenium, Total	1.7 u	1.7 u	NC	3.0
		Silicon, Total	1020	822	21.2	3.0
		Vanadium, Total	5.9	9.1	42.7	3.0
		Zinc, Total	6.9 u	6.9 u	NC	12.0

zero corrected value
MW 3/10/08

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 03/10/08

CLIENT: TNUHANFORD RC-030 K1125

LVL LOT #: 0802L635

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0089-LC1	Silver, LCS	46.6	50.0	MG/KG	93.2
		Aluminum, LCS	492	500	MG/KG	98.4
		Arsenic, LCS	911	1000	MG/KG	91.1
		Boron, LCS	458	500	MG/KG	91.6
		Barium, LCS	476	500	MG/KG	95.3
		Beryllium, LCS	23.5	25.0	MG/KG	94.0
		Calcium, LCS	2350	2500	MG/KG	94.0
		Cadmium, LCS	22.9	25.0	MG/KG	91.6
		Cobalt, LCS	233	250	MG/KG	93.1
		Chromium, LCS	46.9	50.0	MG/KG	93.8
		Copper, LCS	122	125	MG/KG	97.3
		Iron, LCS	469	500	MG/KG	93.8
		Potassium, LCS	2310	2500	MG/KG	92.5
		Magnesium, LCS	2300	2500	MG/KG	91.9
		Manganese, LCS	72.2	75.0	MG/KG	96.3
		Molybdenum, LCS	451	500	MG/KG	90.1
		Sodium, LCS	2220	2500	MG/KG	88.8
		Nickel, LCS	185	200	MG/KG	92.7
		Lead, LCS	234	250	MG/KG	93.7
		Antimony, LCS	280	300	MG/KG	93.2
		Selenium, LCS	905	1000	MG/KG	90.5
		Silicon, LCS	40.4	500	MG/KG	8.1
		Vanadium, LCS	235	250	MG/KG	93.9
		Zinc, LCS	92.6	100	MG/KG	92.6
LCS1	08C0037-LC1	Mercury, LCS	4.7	4.7	MG/KG	100.3

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: EB
Date 2/25/08
Start Time/Temp: 1240 | 93°
End Time/Temp: 1315 | 95°

Instrument ID Hg3.1
Balance #: 829 /NA
Pipette Calibration (Daily) Y /

Prep Batch: 08C0037
Worksheet: HG022502/HG022601
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	500			10mL	50mL	
0.2 µg/L	114	0.100				
1.0	71L	0.500				
2.0	AP	1.000				
5.0	CGR	2.500				
10.0	27	5.000				
ICV	WN	0.125	2.5			
CCV	OLN	0.250	5.0			
ICB/CCB	CYD					90.50L
MB1	S			0.30		PBS137 100.00
LC1	PT	*	*	0.30		LCS137
08022629-001	K35			0.30		100.00
002 ~~001R~~	G12			0.34		90.65
002R ~~001S~~	3P			0.36		
002S	2V	0.500	1.0	0.34		
003	JS			0.33		90.34
004	SM			0.40		89.79
08022630-001	2I			0.34		100.00
001R	A4			0.31		
001S	I94	0.500	1.0	0.34		
002	SM			0.37		
003	BG			0.34		
08022635-001	Z4			0.31		
001R	700			0.30		
001S	2B	0.500	1.0	0.31		
		~~EB 2/25/08~~				

Standard:	ID	Prep Date/Time
ICAL/MS	R1 6072-75-07A	2/25/08 1030
ICV/CCV/LCS	US 6072-75-08B	

Reviewed By/Date: [signature] 2/27/08

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 #:

Lionville Laboratory Incorporated

Logbook #: 371

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0089
Date/Time Initiated: 2/29/08 1130
Date/Time Completed: 2/29/08 1800
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See Worklog

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (✓) NA
Hot Plate Temp: 91°

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 Tyflon

TNW

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
08022629-001		1.16gm	100ml		TO	coarse	tan/orange	(C) black	some
002		1.11gm				fine	brown/rocks	roots	
002R		1.18gm							
002S	1.0ml	1.11gm							
003		1.13gm						none	
004		1.06gm					tan		
08022630-001		1.06gm							
001R		1.05gm							
001S	1.0ml	1.06gm							
002		1.09gm							
003		1.12gm				coarse	dk. tan/chunk	of root	(?)
08022635-001		1.04gm							
001R		1.05gm							
001S	1.0ml	1.03gm				fine			
08022644-001		1.04gm							
001R		1.08gm							
001S	1.0ml	1.06gm							
08L0089-MB1		1.0gm							
LCS		1.0gm							

MW 2/29/08

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

Reagent IDs:
HNO_3
HCL
H_2O_2
1:1 HNO_3 9789-070-06
1:1 HCL

File ID#: IC008901
LIMS Transfer: (✓) N Updated
Data Review By/Date: PMP, 02/29/08

Lionville Laboratory Use Only
0802L635

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A Limited Volume

VLI

000000016

ent TNU Hanford RC-030
. Final Proj. Sampling Date
ject# 11343-606-001-9999-00
ject Contact/Phone#
nville Laboratory Project Manager Debbie Johnson
SW8446 Del STO TAT 15 Days
te Rec'd 2-21-08 Date Due 3-7-08

Refrigerator #										2							
#/Type Container	Liquid / Solid		3	2		4				1 *							
			1							1gl							
Volume	Solid		1							60							
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	Pest				Metal + Hg	CN						
		Lionville Laboratory Use Only															
			0625H	OPCB		0608H				Met①							
			X	X		X				X							

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

Lab. ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	J116994	✓	✓	SO	2.19.08	1400

pecial Instructions:

Met① = HSL+B, Mo, S; (NOTL)

Special Instructions:

* → 1. Per client/Priority of Analysis: ICP Metals + Hg, PCB,
2. ③SVOA, Pesticides④, if sufficient material.
3.
4. Limited Volume
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	2.21.08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-066	Page 1 of 1
Collector: Welch-Koelling	Company Contact: Matt Perrott; Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 9C; Data Turnaround: 15 Days
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: ~~100-F-49~~ 100-F-53	SAF No.: RC-030	
Ice Chest No.: ERC-09-046	Field Logbook No.: EL-1601-2; COA: ~~C00F49A000~~ C00F53A000 BH 2/19/08	Method of Shipment: FedEx	
Shipped To: ~~EDERLINE SERVICES~~/LIONVILLE	Offsite Property No.: A080187	Bill of Lading/Air Bill No.: see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C
Type of Container	G/P	G/P	aG	aG	G
No. of Container(s)	1	1	1	1	1
Volume	500mL	60mL	60mL	60mL	250mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1

BH 2/19/08

Sample No.	Matrix *	Sample Date	Sample Time										
J16994	OTHER SOLID	2-19-08	1400		X								
~~J16995~~	~~OTHER SOLID~~												
~~J16996~~	~~OTHER SOLID~~												
~~J16997~~	~~OTHER SOLID~~												
~~J16998~~	~~OTHER SOLID~~												

BH 2/19/08

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
~~Tony Bowington~~	2-19-08 1431	Bill Hudson	2/19/08 1431
BHudson	2/19/08 1530	1060 #3A	2/19/08 1530
1060/3A	2/20/08 0930	MStankovich	2/20/08 0930
WCH / MStankovich	2/20/08 1500	FedEx	
FedEx	2-21-08 0940		2/21/08 0940

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(2) Priority of analysis: ICP metals + Hg, PCB, SVOA, pesticides. if sufficient material

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

000000017

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford Date: 2-21-08

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

LvLI Batch #: 08021635 Sample Custodian: D Yanch

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7920 0873 2565
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 2.3	°C	Cooler # E RC-99-046
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	Limited Volume
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